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BRIEF REPORT

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Can social pain be medicated away? A pilot study on everyday discrimination and its exacerbation of opioid misuse risk in people of color with chronic pain

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ABSTRACT

Despite mounting evidence of a robust relation between discrimination and poor pain outcomes in people of color (POC) with chronic pain, little is known about everyday discrimination's role in increasing the risk of opioid misuse and its potential interactive effects. This study aimed to evaluate the potential moderating effect of everyday discrimination on the relationship between chronic pain severity and the risk of opioid misuse among POC with chronic pain. Everyday discrimination was assessed using the 9-item Everyday Discrimination Scale (EDS), while the risk of opioid misuse was measured with the 14-item Screener and Opioid Assessment for Patients with Pain (SOAPP). Using a racially diverse sample of 348 individuals with chronic pain, ranging in age from 20 to 75 years old (M = 28.56), this study investigated these relationships through path analysis conducted in Mplus, controlling for age, sex, and social class. The results showed that high levels of everyday discrimination placed POC patients at a higher risk of opioid misuse when they experienced more severe pain. When chronic physical pain was accompanied by chronic social pain stemming from discrimination, POC patients reported a significantly higher risk of opioid misuse. Discrimination may intensify pain severity, potentially necessitating a higher dose and/or longer-term opioid treatment and, thus, increasing the risk of opioid misuse among POC. The integration of routine assessments of patients' experiences of discrimination could strengthen the ecological validity of pain assessment and treatment. Where feasible, clinicians might consider exploring the experiences of discrimination among POC patients as part of a holistic approach to pain management, and when indicated, facilitate referrals to psychosocial services to address both social and physical aspects of pain.

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Introduction

Chronic pain affects 18% to 34.5% of the United States population (Zelaya et al., 2020). Nevertheless, it does not affect individuals equally across racial and ethnic groups, and disparities in pain prevalence and management are established well. People of color (POC) with pain are more likely to be under documented and undertreated for a variety of pain conditions (Ezenwa & Fleming, 2012; Meghani et al., 2012; Mossey, 2011). POC patients with chronic pain are also less likely to receive opioid monitoring or referrals to pain specialists for pain management services (Hausmann et al., 2013; Santoro & Santoro, 2018).

The glaring pain care disparities among POC with pain warrant further investigation into the contextual and psychosocial factors that contribute to pain severity and opioid use. According to the biopsychosocial theory of chronic pain, biological, social, and psychological factors interact to predict health, well-being, and pain-related outcomes (Sullivan & Howe, 2013). Research on *social pain* – conceptualized as pain that derives from social isolation, rejection, or major life stressors – exemplifies this theory (Gatchel et al., 2007). Social pain has been found to trigger, exacerbate, and increase individuals' physical pain sensitivity and severity (Gatchel et al., 2007; Lott & Maluso, 1995; Masten et al., 2011; Sturgeon & Zautra, 2016; Sullivan & Ballantyne, 2021). Further, it shares physical pain's underlying neural circuitry (Gatchel et al., 2007; Lott & Maluso, 1995; Lumley et al., 2011; Masten et al., 2011; Sturgeon & Zautra, 2016; Sullivan & Ballantyne, 2021), which makes it impossible to isolate one from the other.

Discrimination, conceptualized as a type of social pain, is a chronic stressor that places individuals at risk for a host of adverse health outcomes (Brown et al., 2018). A large body of literature has found a relation between perceived discrimination and poor pain-related outcomes among Whites (Myers et al., 2003; Ong et al., 2021), African Americans (Boring et al., 2021; Burgess et al., 2009), Latinx (Carlisle, 2014), and Asian Americans (Hyeouk et al., 2010). While the direct link between racial discrimination and opioid misuse specifically is underexplored, existing evidence suggests that discrimination may indirectly contribute to the risk of opioid misuse. For instance, in a study of patients on long term opioid therapy, Black individuals who experienced higher levels of perceived discrimination reported less effective pain management (Ezenwa & Fleming, 2012). This inadequate pain management, often due to undertreatment or inappropriate treatment, can lead to increased reliance on pain medications as individuals attempt to self-manage their pain, thereby potentially increasing the risk of opioid misuse. Additionally, a study on Filipino Americans found that experiences of unfair treatment – a broad form of discrimination – were associated with increased use of analgesics, including nonsteroidal anti-inflammatory drugs (NSAIDs) and other over-the-counter pain relievers (Gee et al., 2007), suggesting that discrimination-related stress may lead to greater use of pain medications, which could include opioids in certain contexts. Moreover, broader literature on substance use and social determinants of health highlights the vulnerabilities faced by marginalized groups. Studies applying social determinants of health framework suggest that socially based stressors, including discrimination, play a critical role in creating vulnerabilities to substance use disorders (SUDs) (Amaro et al., 2021). These stressors can exacerbate existing health disparities and increase the likelihood of substance misuse, particularly in populations already facing systemic

inequities. Addressing these vulnerabilities is essential for developing targeted interventions that can mitigate the risk of opioid misuse among those most affected by social discrimination. These findings suggest that discrimination may indeed be a risk factor for opioid misuse in people with chronic pain. Exposure to discrimination among patients of color with chronic pain could worsen or prolong their physical pain, thereby increasing their susceptibility to opioid misuse as they seek relief from inadequately managed pain.

Despite mounting evidence that indicates significant chronic pain care disparities among POC, including higher rates of pain prevalence and increased risk of opioid misuse, no formal investigation into the social factors that contribute to greater risks of opioid misuse and their potential interactive effects on pain severity has been conducted. Therefore, the purpose of this study was to evaluate everyday discrimination's potential moderating effect on the relation between chronic pain severity and risk of opioid misuse among POC who experience chronic pain. Based upon prior research that found that POC who perceive greater discrimination report greater effects of discrimination on pain outcomes than Whites (Ezenwa & Fleming, 2012; Hausmann et al., 2013; Mossey, 2011; Santoro & Santoro, 2018), we hypothesized that everyday discrimination would strengthen the relation between pain intensity and risk of opioid misuse among POC. In this study, opioid misuse refers to behaviors associated with an elevated risk for problematic opioid use, such as unsanctioned dose escalation or noncompliance with prescribed regimens, among individuals prescribed opioid agonists for chronic pain management. This sample does not include individuals meeting criteria for opioid use disorder (OUD), which typically involves broader diagnostic criteria beyond misuse behaviors.

Methods

Procedures

The project was approved by the Research Ethics Committee of a U.S. university. Informed consent was obtained from all individual participants included in the study. In this study on psychosocial functioning in chronic pain, Participants were recruited via Amazon Mechanical Turk (MTurk), a crowdsourcing platform that allows researchers to access diverse populations. This sample consisted of individuals from the general population with chronic pain who were prescribed opioids for pain management. While this recruitment strategy provides broad access, it does not represent clinical populations such as those seen in specialized pain clinics. Participants were required to have a 95% approval rating on MTurk and to have completed at least 50 prior tasks, ensuring a reliable track record of high-quality responses. Recruitment was restricted to U.S. residents to ensure cultural and linguistic relevance of the measures. These criteria were implemented to enhance the quality and reliability of the data collected. Data were collected between January 1 and April 30, 2019. Participants met specific criteria: (1) a 95% MTurk approval rating; (2) age 18 or older; (3) U.S. residency; (4) chronic pain on at least 4 days weekly for 3 months, with an average pain intensity of 4/10 or higher; and (5) current prescribed opioid usage for chronic pain management. Such pain criteria align with chronic pain literature and are validated by prior MTurk-based pain studies (Vowles et al., 2018).

Measures

Pain Severity The four-item Pain Frequency, Intensity, and Burden Scale (P-FIBS) was utilized to gauge the severity of participants' pain (Dela Cruz et al., 2014). The scale covered past-week pain frequency, intensity, and its interference and burden. Ratings were done on a 9-point scale, ranging from 0 (Never/No pain) to 8 (Every day/Unbearable), and summed; higher scores signaled more severe pain. In a prior study with a sample of White, Black, Hispanic, and other (not specified) participants in substance misuse programs, pain severity scores were associated with compromised mental and physical functioning, demonstrating the scale's broader utility (Dela Cruz et al., 2014). In the same study, the Cronbach's alpha was .90 (Dela Cruz et al., 2014), while Cronbach's alpha in this study was .87.

Perceived Everyday Discrimination The 9-item Everyday Discrimination Scale (EDS) was utilized to gauge daily experiences of discrimination (Williams et al., 1997), which served as our operational measure of social pain in this study. Social pain refers to the psychological distress caused by experiences of social exclusion, rejection, or chronic stressors such as discrimination (Gatchel et al., 2007). By capturing the frequency and intensity of discriminatory experiences, the EDS allows us to assess the level of social pain participants endure in their daily lives. The EDS is suitable for use across various racial and ethnic groups (Lewis et al., 2012) and employs a 6-point response scale, where higher scores signify greater perceived discrimination. The scale has demonstrated strong internal consistency in previous research, with a Cronbach's alpha of .88 (Kim et al., 2014) and it showed similarly high reliability in our sample, with a Cronbach's alpha of .93.

Risk of Opioid Misuse The 14-item Screener and Opioid Assessment for Patients with Pain (SOAPP) was utilized to assess participants' risk stratification for chronic opioid therapy (Akbik et al., 2006), specifically evaluating their elevated risk for behaviors associated with opioid misuse. Responses were recorded on a 5-point scale, with higher scores indicating a greater need for intensive monitoring during opioid therapy. The SOAPP has demonstrated utility in identifying patients at elevated risk for opioid-related concerns. For example, in prior research (Butler et al., 2008), SOAPP scores were associated with prescription pain reliever use and the Aberrant Drug Behavior Index (ADBI). In that study, the SOAPP demonstrated strong internal consistency with Cronbach's alpha of .88, supporting its reliability. It should be noted that the ADBI was not assessed in the current study; this reference is included solely to highlight the SOAPP's validation in prior research (Butler et al., 2008).

Social class. Social Class was assessed via a single-item self-report measure asking participants to identify their socioeconomic status ('Upper Class,' 'Upper-Middle Class,' 'Middle Class,' 'Working Class,' or 'Living in Poverty').

Results of validity check in MTurk

We recognize that the use of MTurk can introduce potential concerns regarding the reliability and validity of the data collected. To address these concerns, we implemented several steps to increase confidence in the data obtained from our sample. First, we included a series of qualifying criteria to ensure that only participants

who met specific conditions relevant to our study were included in the final analysis. These criteria assessed the presence and frequency of chronic pain, the duration of pain, and the intensity of pain. Specifically, participants were required to report experiencing chronic pain for at least 3 months, with a frequency of 4 or more days per week and a pain intensity of 4 or greater on a standard pain scale. Of the total responses, 147 participants failed to meet these criteria and were excluded from the analysis. These measures ensured that the sample was both relevant and consistent with the study's objectives. Additionally, we incorporated two attention checks within the survey to ensure that participants were engaged and responding thoughtfully. These checks included reverse-coded items and questions with clear correct responses, which helped identify inattentive participants. A total of six responses failed these attention checks and were excluded from the final dataset. By incorporating these rigorous validity checks, we excluded a total of 153 responses from the original dataset, minimizing data quality concerns and strengthening the reliability of our findings. The final sample included 348 participants (Table 1).

Data analysis plan

Bivariate correlations, means, and standard deviations of the measured variables were computed using SPSS v. 25 (Table 2). We applied Mplus v. 8.6 for path analysis to evaluate our primary hypothesis, incorporating age, sex, and social class as covariates. The initial model assessed pain severity and daily discrimination's primary effects on opioid misuse risk, controlling for age, sex, and social class. Subsequently, an interaction

Table 1. Demographics.

Variable	Frequency/Value/Proportion
Sample Size	348
Age Range	20–75 years
Mean Age (SD)	28.56 (5.35)
Gender	
Male	79%
Female	21%
Ethnicity	
Asian American	53%
African American	24.4%
American Indian/Alaska Native	10.3%
Latinx	8.3%
Multiracial	1.1%
Relationship Status	
Married	40%
In a relationship	17%
Single	43%
Employment Status	
Full-time	85%
Part-time	8.9%
Unemployed	1.4%
Retired	0.3%
Social Class	
Poverty	0.6%
Working class	10.1%
Middle class	67.0%
Upper-middle class	17.2%
Upper class	3.7%

Table 2. Descriptive statistics.

Variable	*M*	*SD*	*Min*	*Max*	1	2	3	4	5
1. Age	28.56	5.35	20	75					
2. Gender (1 = female, 0 = male)	0.21	0.41	0	1	.01				
3. Social Class	3.14	0.66	1	5	-.02	.001			
4. Pain Severity (PFIBs)	21.30	5.58	3.00	32.00	-.09	-.10	.12*		
5. Everyday Discrimination (EDS)	38.20	9.85	9.00	52.00	-.14*	-.16**	.12*	.53**	
6. Risk of Opioid Misuse (SOAPP)	49.15	12.80	14.00	66.00	-.25**	-.22**	.17**	.49**	.82**

Note. *$p < .05$, **$p < .01$.

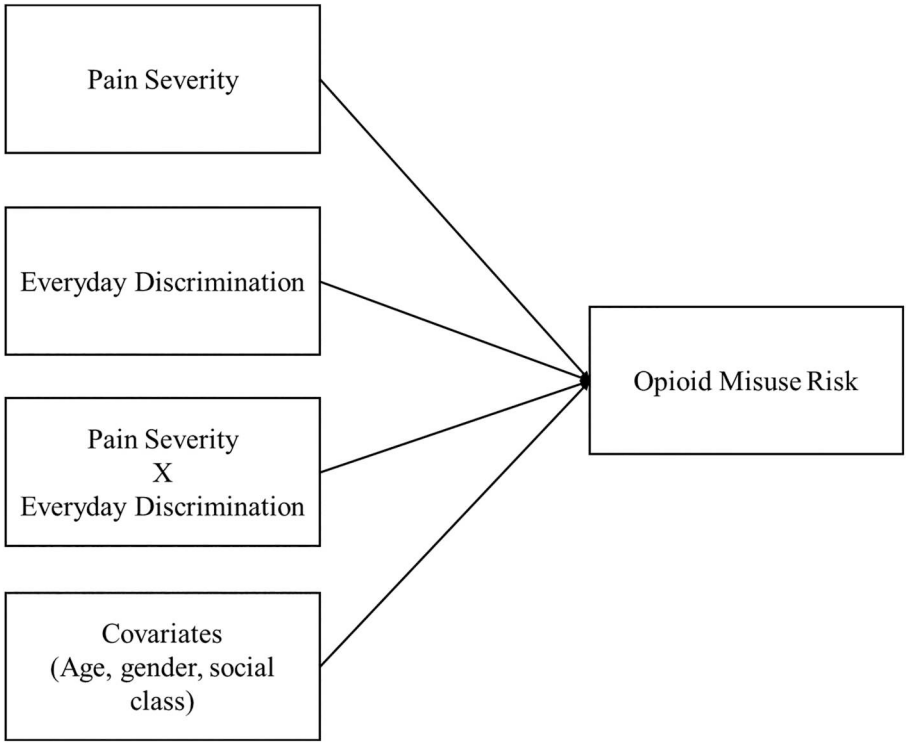

Figure 1. Conceptual model of the path analysis.

term of pain severity and daily discrimination was added. The conceptual model is shown in Figure 1.

Results

Participants

In the study, 348 persons of color (POC), aged between 20 and 75 years, with chronic pain were examined (Mean age = 28.56, SD = 5.35). The demographic totals might not amount to 100% due to missing data. Of the participants, 79% identified as male and 21% as female. Ethnically, 53% were Asian American, 24.4% African American, 10.3% American Indian/Alaska Native, 8.3% Latinx, and 1.1% multiracial. Pertaining to

relationship status, 40% indicated they were married, 17% were engaged in a relationship, and 43% were single. In terms of employment, 85% were full-time employees, 8.9% were part-time, 1.4% were unemployed, and 0.3% had retired. Socioeconomically, 0.6% lived in poverty, 10.1% were working class, 67.0% middle class, 17.2% upper-middle class, and 3.7% upper class. Participants' responses on the Everyday Discrimination Scale (EDS) further highlighted the prevalence and nature of discrimination in this sample. Of the 348 participants, 337 reported experiencing at least one item on the EDS at a frequency of 'a few times a year' (score of 3) or higher, qualifying them to provide optional follow-up data on the cause of their discrimination experiences. Among these, 41 participants provided additional information about the primary cause of the discrimination they experienced, citing factors such as ancestry (3 participants), gender (17 participants), race (1 participant), age (9 participants), religion (2 participants), height (2 participants), sexual orientation (1 participant), education (2 participants), disability (1 participant), skin color (1 participant), and other (2 participants).

Missing data

Regarding missing data, 10.7% of the responses were missing. In examining the pattern of the missing data, Little's Missing Completely at Random (MCAR) test showed a Chi-square value of 645.72 (df = 607, $p = .13$), suggesting the data were MCAR. MCAR implies that among our research variables, no systematic patterns in the missingness are found, and as a result, missingness is not associated with any value of the data. For path analysis, the missing data were handled using the Full Information Maximum Likelihood (FIML) method.

Descriptive statistics

Descriptive statistics and correlation coefficients are in Table 2. Younger individuals and females experienced more everyday discrimination and higher opioid misuse risk ($p < .05$). Those with elevated social class were likelier to experience severe pain, everyday discrimination, and increased opioid misuse risk ($p < .05$). Severe pain, discrimination, and opioid misuse risk were positively associated ($p < .01$).

Path analysis

A path analysis was conducted to examine the main effects of pain severity and everyday discrimination on the risk of opioid misuse and the interaction effect with age, gender, and social class controlled (Model 1). In step one of the model ($\chi^2(3) = .31$, $p = .96$; standard root-mean-square error (SRMR) = .01, comparative fit index (CFI) = 1.00; root-mean-square error of approximation (RMSEA) < .001, 90% confidence interval [CI [00, .00], significant main effects of both pain severity ($\beta = .08$, $B = .18$, $SE = .09$, $p = .045$) and everyday discrimination ($\beta = .75$, $B = .95$, $SE = .05$, $p < .001$) were found. The R-square was .70 ($p < .001$). In step two, we examined the interaction effect of pain severity and everyday discrimination on the risk of opioid misuse ($\chi^2(3) = .31$, $p = .96$; SRMR = .01, CFI = 1.00; RMSEA < .001, 90% CI [.00, .00]). The interaction effect between pain severity and everyday discrimination was significant ($\beta = .57$, $B = .02$, SE

Table 3. Path analyses results from model 1 (with gender as a covariate) and Model 2 (without gender as a covariate).

	Model 1 (Step 1 R^2 = .70; Step 2 R^2 = .71)				Model 2 (Step 1 R^2 = .69; Step 2 R^2 = .70)			
Variable	*β*	*B*	*SE*	*p*	*β*	*B*	*SE*	*p*
Step 1								
Pain Severity	0.08	0.18	0.09	.05	0.08	0.18	0.09	.05
Everyday Discrimination	0.75	0.95	0.05	<.001	0.76	0.97	0.05	< .001
Age	−0.08	−0.18	0.09	.02	−0.08	−0.18	0.08	.03
Social Class	−0.04	−0.67	0.64	.29	−0.03	−0.64	0.65	.32
Gender (1 = Female, 0 = Male)	−0.10	−2.36	1.00	.02	-	-	-	-
Step 2								
Pain Severity X Everyday Discrimination	0.57	0.02	0.01	.02	0.61	0.02	0.01	.02

= .01, p = .02). Further, the R-square was .71, and the R-square change was also statistically significant (ΔR^2 = .01, p = .02). All the results from Model 1 are presented in Table 3. When the significant interaction effect was inspected, the moderation graph indicated that there was a positive association between pain severity and the risk of opioid misuse among those who experienced higher levels of perceived everyday discrimination (p = .002); however, this association was not significant among individuals who experienced average and lower levels of everyday discrimination (p > .05; Figure 2).

Validity check

Considering that gender is commonly considered as one of the primary causes of discrimination, we conducted additional path analysis without the gender variable

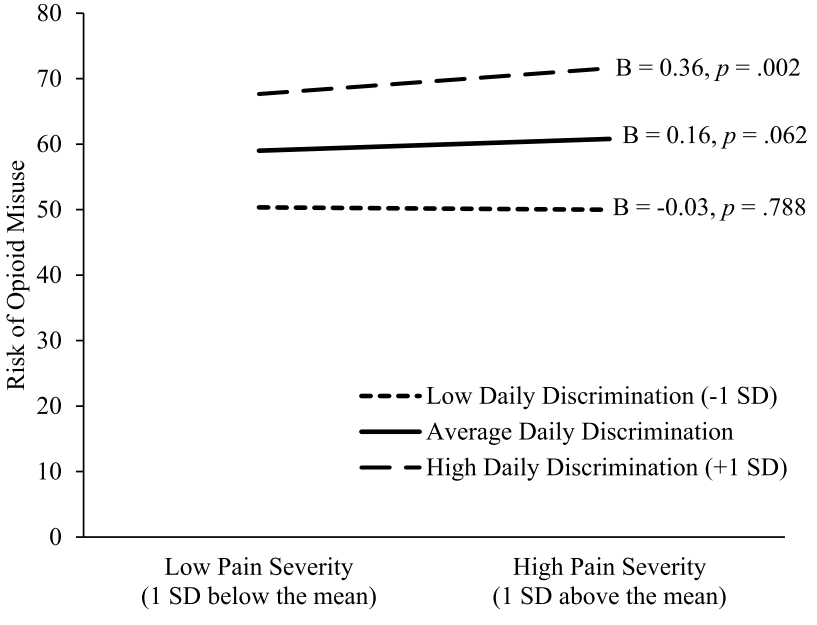

Figure 2. Moderation effects of everyday discrimination and pain severity on risk of opioid misuse among people of Color (POC).

(Model 2) as the variance of gender may overlap significantly with discrimination in explaining the risk of opioid use. Therefore, the covariates for this model only included age and social class. The results were the same in both step one ($\chi^2(1) = .10$, $p = .76$; SRMR = .004, CFI = 1.00; RMSEA < .001, 90% CI [.00, .10]) and step two ($\chi^2(1) = .10$, $p = .76$; SRMR = .003, CFI = 1.00; RMSEA < .001, 90% CI [.00, .10]) of the model. In step one, there were significant main effects of both pain severity (β = .08, $B = .18$, $SE = .09$, $p = .045$) and everyday discrimination (β = .76, $B = .97$, $SE = .05$, $p < .001$) on the risk of opioid use. The R-square was .69 ($p < .001$). In step two, there was a significant interaction effect between pain severity and everyday discrimination (β = .61, $B = .02$, $SE = .01$, $p = .01$). The R-square was .70 ($p < .001$). All results from Model 2 are presented in Table 3. When inspecting the simple slopes, similar trend was found where there was a positive association between pain severity and the risk of opioid misuse only among those who experienced higher levels of perceived everyday discrimination (B = .37, $p = .002$). These additional analyses suggest a robust nature of our findings in both female and male participants.

Discussion

This study investigated perceived everyday discrimination's potential moderating effect on the relation between pain severity and the risk of opioid misuse among POC who experience chronic pain. As predicted, high everyday discrimination placed POC patients at a higher risk of opioid misuse when they experienced more severe pain. The POC participants indicated that when their chronic physical pain was accompanied by chronic social pain stemming from discrimination, they reported significantly higher risks for opioid misuse. These findings align with the biopsychosocial theory of chronic pain, which emphasizes the interplay of biological, psychological, and social factors in shaping health outcomes. This study contributes uniquely by demonstrating associations between everyday discrimination, increased psychological distress, and impaired coping abilities, which may, in turn, be linked to higher reliance on opioids. While our cross-sectional design does not permit causal conclusions, these associations suggest that discrimination could function as a chronic stressor that exacerbates pain experiences and challenges patients' coping resources. Beyond the findings of this study, it is possible that persistent exposure to everyday discrimination might influence the development of maladaptive coping mechanisms over time, which could increase vulnerability to opioid misuse. Additionally, structural inequities and systemic barriers that co-occur with experiences of discrimination may further compound these risks by limiting access to effective pain management interventions. Future research could explore these relationships longitudinally to better understand potential pathways, including how discrimination-related stress interacts with pain severity over time to influence opioid misuse risk. This novel insight not only aligns with existing theories but also underscores a pressing need to address the compounded challenges faced by individuals experiencing both physical and social pain (Gatchel et al., 2007; Santoro & Santoro, 2018). Persistent opioid use, as documented in prior research, has been associated with increased risks of complex withdrawal, dependence, and misuse, underscoring the importance of holistic interventions targeting these intersecting factors (Crowston, 2012).

Further, the results of our study highlight the relation between everyday discrimination and the risk of opioid misuse and contribute to our understanding of this relation within the broader context of health. Interestingly, we found that individuals in elevated social classes reported more severe pain and greater discrimination. This finding, although surprising, could be explained by research on microaggressions, which suggests that subtle forms of exclusion or negative stereotyping, particularly in professional or social settings, can accumulate over time and contribute significantly to psychological distress and social pain, exacerbating the perception of physical pain (Sue et al., 2007). Additionally, those in higher social classes might have higher expectations for equitable treatment and may be more sensitive to instances where these expectations are not met, leading to greater perceptions of discrimination (Kteily et al., 2019). Moreover, individuals in higher social classes may have more resources to recognize and articulate the discrimination they face, resulting in higher self-reported rates of both discrimination and pain (Williams & Mohammed, 2009). LaVeist et al. argued previously that individuals from marginalized communities, particularly POC, are more likely to experience discrimination, which can have significant adverse consequences on their health and ability to cope with illness (LaVeist et al., 2001). Moreover, POC patients are particularly vulnerable to racial biases and stereotypes within the healthcare system, as evidenced by disparities between them and their White counterparts in pain management and referrals to mental health professionals (Ezenwa & Fleming, 2012). Identifying patients with high Everyday Discrimination Scale (EDS) scores may assist healthcare providers in recognizing individuals at elevated risk for opioid misuse. These individuals may benefit from additional supports, including closer monitoring of opioid therapy and referrals to psychosocial services to address underlying stressors associated with high discrimination experiences. While assessing discrimination may not directly prevent opioid misuse, it could provide critical insights into psychosocial vulnerabilities that intersect with pain management challenges.

Social determinants of health (SDOH), such as systemic racism, socioeconomic barriers, access to healthcare, and housing instability, are critical factors that exacerbate health disparities and contribute to higher risks of opioid misuse (Dasgupta et al., 2018; Kunins, 2020). These systemic factors intersect with individual vulnerabilities, including chronic pain and psychological distress, creating compounded risks for opioid misuse in marginalized populations. For example, inadequate access to culturally competent care and provider biases often lead to the under-treatment of pain and an over-reliance on opioids as a primary management strategy (Mossey, 2011). Discrimination, as a chronic stressor, uniquely amplifies these vulnerabilities by contributing to physiological dysregulation and maladaptive coping mechanisms (Williams & Mohammed, 2009), which may increase reliance on opioids. This study uniquely contributes to this body of literature by demonstrating how everyday discrimination, operationalized through the Everyday Discrimination Scale (EDS), intersects with chronic pain experiences to exacerbate the risk of opioid misuse among persons of color (POC). Unlike previous studies that focus broadly on SDOH, our findings emphasize the specific role of discrimination as both a psychosocial stressor and a predictor of heightened risk in pain management contexts. This highlights the urgent need for targeted interventions that address the compounded effects of discrimination and chronic pain in shaping opioid-related risks.

This study's limitations should be acknowledged. First, the cross-sectional design prohibits causal interpretations of the results, limiting the findings to a descriptive role and serving as preliminary groundwork for future longitudinal or quasi-experimental research. Second, by examining POC as a single group – an essential initial step to identify factors in pain care disparities – the study may have overlooked intragroup differences and assumed uniformity within diverse populations. This approach could obscure important nuances within these groups. Third, the results may not apply to people with different levels of pain, as the sample included only those who experience chronic pain four or more days a week. Fourth, social class was self-reported by participants, which, while capturing subjective perceptions, may not fully account for regional variations in socioeconomic status or reflect the complex, multifaceted nature of social class. Future research would benefit from combining self-reported social class with objective economic indicators to better capture these regional variations and the multifaceted nature of socioeconomic status. Lastly, although MTurk provides a convenient and diverse sample, research has shown that it can also introduce biases, such as an overrepresentation of certain demographics, in this case, a predominantly male sample (79% male, 21% female), which is not representative of the broader population experiencing chronic pain, particularly given that chronic pain disproportionately affects women. Furthermore, while we implemented several steps to ensure data quality, including attention checks and stringent qualifying criteria, there remains a risk of data validity issues inherent to MTurk samples, such as participants not fully engaging with the survey content or providing socially desirable responses. Future research should consider these limitations and explore additional strategies to mitigate these risks, potentially including more balanced sampling methods and alternative recruitment strategies (Aguinis et al., 2021). Despite these constraints, the study provided foundational insights for more sophisticated quantitative methods such as mixture modeling, to explore latent variables, unobserved heterogeneity, and specific social identities associated with everyday discrimination experiences.

Conclusions

This study's findings underscored the imperative for healthcare providers to acknowledge psychosocial stressors, notably social pain specifically stemming from discrimination, which influences pain care in POC. As one of the preliminary investigations in this area, the study illuminated the value of incorporating routine assessments of individual susceptibilities to social pain attributable to everyday discrimination from various sources of discrimination (e.g. age, race, gender, sexual orientation, or socioeconomic status). However, we acknowledge that in time-constrained primary care settings, implementing additional assessments can be challenging. To address this, we suggest incorporating brief screening tools into standard patient intake forms or electronic health records, which could be administered by non-clinical staff to avoid burdening clinicians. Even if adding brief measures is not feasible, didactic trainings (e.g. continuing education credits) for pain clinicians should be considered to increase awareness of these relationships, and training programs should explicitly cover topics related to discrimination and the experience of chronic pain and its treatment. Moreover, while this study provides valuable insights, we acknowledge that the evidence base for routinely assessing

discrimination in clinical settings is still emerging. Future research should continue to build on these findings, validating the use of brief screening tools and exploring their impact on patient outcomes and clinician workflow. This approach can enhance the ecological validity of clinical judgments when assessing and treating pain. In doing so, healthcare professionals will be better positioned to identify POC patients for whom perceived everyday discrimination may be a risk factor for opioid misuse and enable them to refer these individuals to suitable psychosocial services. This ensures a more holistic approach in which both social and physical pain are addressed effectively.

Institutional review board statement

The study was conducted in accordance with the Declaration of Helsinki and was approved by authors' institutional review board. See details under Methods.

Consent to participate

Informed consent was obtained from all participants in the study.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to restrictions, e.g. their containing information that could compromise the privacy of research participants.

Ethics statement

This study was conducted in accordance with the principles of the Declaration of Helsinki. Ethical approval was obtained from the Ethics Committee of Texas Tech University (IRB2018-257). Informed consent was obtained from all individual participants included in the study.

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