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## Risk Factors Associated with Opioid Use Among African American Faith-Based Populations

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### Recommended Citation

Christensen, Kelsey MA; Berkley-Patton, Jannette PhD; Bauer, Alexandria PhD; Bowe Thompson, Carole; and Burgin, Tacia (2020) "Risk Factors Associated with Opioid Use Among African American Faith-Based Populations," *Journal of Health Disparities Research and Practice*: Vol. 13 : Iss. 4 , Article 3.  
Available at: <https://digitalscholarship.unlv.edu/jhdrp/vol13/iss4/3>

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# Risk Factors Associated with Opioid Use Among African American Faith-Based Populations

## Abstract

African Americans (AAs) in the Midwest are more likely to die from an opioid overdose compared to Whites, despite lower rates of use. Little is known about factors related to opioid use among AAs residing in the Midwest, particularly church-affiliated AAs. AAs have the highest rate of church attendance among all racial/ethnic groups, and the Black Church may be an appropriate setting for prevention efforts. The present study sought to better understand factors related to opioid use among Midwestern church-affiliated AAs to inform future faith-based interventions. This study examined predictors of opioid use (ever) using survey data from Taking It to the Pews (TIPS), a faith-based HIV/STD/hepatitis C virus (HCV) education and testing intervention conducted in 4 AA churches (N = 250) in the Kansas City metropolitan area. Participants were predominantly female (71%) and church members (74%), with an average age of 47. Fifty-three percent of participants reported prescription opioid use at some point in their lifetime. Logistic regression analyses indicated that those who reported opioid use in their lifetime attended church more frequently, less likely to be on Medicaid, had a history of severe pain, a history of illicit drug use, and a history of marijuana use. AA churches are in a uniquely positioned to reach church congregants and community members utilizing church outreach services. AA churches may benefit from offering lifestyle interventions, such as exercise classes and stress management programs, for pain management and to prevent misuse of prescription opioids.

## Keywords

African Americans; opioid use; chronic pain; church attendance; health disparities; Black Churches

## Cover Page Footnote

This study was supported by the National Institute of Health (Grant #5R01MH099981-04) and Frontiers: University of Kansas Clinical and Translational Science Institute (Grant #0056046). We would like to thank Calvary Community Outreach Network, KC FAITH Initiative, Ms. Nia Johnson, and Ms. Sheila Lister for their contributions to this project.

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**Journal of Health Disparities Research and Practice**

**Volume 13, Issue 4, Winter 2020, pp. 18-31**

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### **ABSTRACT**

African Americans (AAs) in the Midwest are more likely to die from an opioid overdose compared to Whites, despite lower rates of use. Little is known about factors related to opioid use among AAs residing in the Midwest, particularly church-affiliated AAs. AAs have the highest rate of church attendance among all racial/ethnic groups, and the Black Church may be an appropriate setting for prevention efforts. The present study sought to better understand factors related to opioid use among Midwestern church-affiliated AAs to inform future faith-based interventions. This study examined predictors of opioid use (ever) using survey data from Taking It to the Pews (TIPS), a faith-based HIV/STD/hepatitis C virus (HCV) education and testing intervention conducted in 4 AA churches (N = 250) in the Kansas City metropolitan area. Participants were predominantly female (71%) and church members (74%), with an average age of 47. Fifty-three percent of participants reported prescription opioid use at some point in their lifetime. Logistic regression analyses indicated that those who reported opioid use in their lifetime attended church more frequently, less likely to be on Medicaid, had a history of severe pain, a history of illicit drug use, and a history of marijuana use. AA churches are in a uniquely positioned to reach church congregants and community members utilizing church outreach services. AA churches may benefit from offering lifestyle interventions, such as exercise classes and stress management programs, for pain management and to prevent misuse of prescription opioids.

**Keywords:** African Americans, opioid use, chronic pain, church attendance, health disparities, Black Churches

Journal of Health Disparities Research and Practice Volume 13, Issue 4, Winter 2020

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## INTRODUCTION

An estimated 1.7 million people in the United States (US) suffer from an opioid-use disorder, and 47,000 Americans die from an opioid overdose each year (Schuchat, Houry, & Guy, 2017; Substance Abuse and Mental Health Services Administration, 2017). The economic burden of the opioid crisis is estimated to be nearly 79 billion dollars annually (Florence, Luo, Xu, & Zhou, 2016). Recently, the Midwest has seen the largest increases in opioid overdoses, with rates increasing by up to 70% (Vivolo-Kantor et al., 2018). National data suggests that the rate of opioid misuse and overdose rate is lower in African Americans (AAs; 3.9%; 10.3 per 100,000, respectively) compared to Whites (4.5%; 17.5 per 100,000) (Center for Disease Control, 2018). Although opioid overdoses tend to be higher in Whites, opioid overdose rates are higher among AAs in some Midwestern states (e.g., Missouri, Illinois, Iowa, Michigan, Wisconsin) compared to Whites (Henry J Kaiser Family Foundation, 2017).

In Missouri, an estimated 31.5 per 100,000 AAs die from opioid overdoses compared to 15.5 per 100,000 in Whites (Henry J Kaiser Family Foundation, 2017). This is surprising given that AAs are about 50% less likely to be prescribed opioids compared to Whites (Santoro & Santoro, 2018), even AAs with advanced cancer pain (Cleeland, Gonin, Baez, Loehrer, & Pandya, 1997; Shah & Xiao, 2019). In addition to often lacking access to medical care, AAs who do seek care often receive sub-optimal pain assessment and management due to social factors, including medical providers' implicit racial biases and false beliefs (e.g., AAs are more likely to get addicted to pain medications) (Hoffman, Trawalter, Axt, & Oliver, 2016), and well-documented institutional racism (Jones, 2000).

AAs are also disproportionately burdened by the consequences of opioid misuse. For example, one national study found that AAs were more likely to be urine-tested following being prescribed opioids, and AAs who tested positive for cannabis or other substances were 2.1 to 3.3 times more likely to have their opioid treatment revoked compared to Whites (Gaither et al., 2018). AAs are also more likely to face criminal consequences as a result of opioid abuse (Human Rights Watch, 2009), and 76% of those convicted for drug-related crimes identify as AA or Latino, despite higher drug abuse rates among Whites (Taxy, Samuels, & Adams, 2015).

Certain demographic and behavioral factors are associated with increased risk of opioid abuse, including male sex, low income, rural residence, mental health and/or substance abuse issues, obtaining overlapping prescriptions from multiple providers/pharmacies, and receiving high dose opioid prescriptions (Center for Disease Control, 2017; Cragg et al., 2019; García et al., 2019; Han et al., 2017). Studies also suggest that prescription opioids are prescribed at higher rates in geographical areas with higher unemployment and Medicaid enrollment (Guy Jr et al., 2017) and individuals with Medicaid or Medicare patients, persons particularly of low-income, are more likely to be prescribed opioids and abuse opioids than their privately insured counterparts (Center for Disease Control, 2019b). Of note, AAs make up approximately 12% of the population, yet account for 21% of those covered by Medicaid in the US (25% in Missouri) (Henry J Kaiser Family Foundation, 2013). Furthermore, opioid use may also complicate health conditions AAs are disproportionately burdened by, such as Hepatitis C Virus (HCV) and chronic kidney disease (Assari, 2016; Mallapallil, Sabu, Friedman, & Salifu, 2017).

The National Institute of Health (NIH) has released calls for research to reduce disparities in opioid care, understand mechanisms through which disparities are perpetuated, and implement

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community-based interventions (National Institute of Health, 2018). The Black Church is a highly influential, trusted institution in AA communities that could play an important role in responding to this call. Also, AAs have the highest rate of church attendance among all racial/ethnic groups, with greatest attendance in the Midwest and South (Pew Research Center, 2014).

A few community-based studies have implemented interventions targeting opioid abuse risk reduction (e.g., ways to resist peer pressure) among youth, which have been found to be effective in reducing delinquent behavior, gateway drug use (e.g., alcohol use) and prescription opioid abuse years later (Communities That Care, n.d.; Spoth et al., 2013). A few church-based studies have conducted substance use education and prevention interventions with a focus on AA youth (Brown et al., 2006) and others have focused on harm-reduction behaviors with drug users (MacMaster et al., 2007; Stahler, Kirby, & Kerwin, 2007). However, to our knowledge, no studies have conducted interventions to address prescription opioid abuse in AA churches.

Given that AAs are disproportionately burdened by opioid abuse risk factors (Han et al., 2017), are less likely to seek substance use treatment (Acevedo et al., 2015; Saloner & Cook, 2013), and are more likely to die from opioid overuse in the Midwest (Henry J Kaiser Family Foundation, 2017), the present study sought to better understand factors related to opioid use among Midwestern church-affiliated AAs to inform future faith-based interventions.

## **METHODS**

### Participants and Procedures

This study used posttest survey data collected from the Taking It to the Pews (TIPS) project, a clustered, randomized community trial focused on HIV/STD education and testing with 14 AA churches. The TIPS intervention was supplemented with Hepatitis C virus (HCV) education and testing in four of 14 churches in Kansas City, Missouri.

Participants consisted of church members and community members served through outreach ministries. Community members are often underserved (e.g., food insecure), and community members regularly using services are connected to information disseminated through churches. Pastors and research team members made announcements during church services and events (e.g., food pantries, clothing drives). Individuals who expressed interest in participating in the study were provided with study information, screened for eligibility, and provided informed consent. Eligibility criteria included: a) self-identifying as AA, b) being aged 18 to 64, c) attending church services at least once per month and/or using outreach services (e.g., food pantries) at least four times per year, d) being willing to participate in four surveys total, and e) willingness to provide personal contact information.

Church members and community members (N=250) completed surveys on HIV/STD/HCV health beliefs and behaviors, risk factors and health screening histories, and history of prescription opioid use. For the purposes of the present study, only relevant posttest survey procedures and measures are described. Survey completion took an hour to complete, and participants were compensated \$50 for their time. All procedures were approved by University of Missouri – Kansas City’s Institutional Review Board.

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### Survey Measures

*Prescription opioid use.* Our main outcome variable was assessed using one item: whether participants had used prescription opioids (e.g., OxyContin, Vicodin) in their lifetime (ever; 0 = no to 1 = yes).

*Religiosity.* Church attendance and prayer frequency were assessed using questions from a widely-used scale on religious background and behavior (Connors, Tonigan, & Miller, 1996). Participants were asked how often they attended church services and prayed in the past year (1 = never to 8 = more than once a day).

*Tobacco use.* Current tobacco use was assessed with one question assessing frequency of cigarette smoking (1 = not at all to 3 = everyday).

*Pain history.* One question assessed a history of severe pain due to injury, a medical procedure, or illness that required medical intervention (e.g., pain medication; 0 = no to 1 = yes).  
*HCV diagnosis.* One question assessed if participants had ever been diagnosed with HCV in their lifetime (ever; 0 = no to 1 = yes).

*Substance use behaviors.* Two questions assessed marijuana and crack/cocaine/heroin use, and one question asked whether five or more alcoholic beverages had ever been consumed in one sitting (ever; 0 = no to 1 = yes).

*Substance use risks.* Several other questions assessed other drug use behaviors (ever), including history of injection drug use, homelessness, substance abuse treatment, and time in the correctional system (0 = no to 1 = yes).

*Attitudes towards substance abuse.* Participants attitudes towards addiction and substance abuse was assessed using a five-item scale (Cronbach's  $\alpha = .92$ ). Sample items included: "Drug addiction is a sign of weakness of character" and "Drug addicts do not want to quit using drugs." Responses ranged from 1 = strongly disagree to 5 = strongly agree. Items were summed and scores ranged from 5 to 25, with higher scores indicating higher negative beliefs towards people with substance abuse/drug addiction.

*Demographics.* Demographic survey items included age, gender at birth, health insurance status, church affiliation, and health insurance coverage.

### Data Analysis

Descriptive statistics were used to examine participant characteristics and prescription opioid use. Chi-square analyses for categorical variables and t-test analyses for continuous variables were conducted to examine differences between those who endorsed prescription opioid use in their lifetime and those who did not. A p-value of  $< 0.1$  was used for preliminary bivariate analyses to identify significant relationships and variables to include in logistic regression analysis to determine predictors of prescription opioid use. Model fit was assessed using Nagelkerke R Square.

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Table 1. *Participant Characteristics (N=250)*<sup>a</sup>

	All Participants (N=250)	Church Members (N=184)	Community Members (N=66)	Test Statistic <sup>b</sup>
Characteristics	No. (%) <sup>a</sup>	No. (%) <sup>a</sup>	No. (%) <sup>a</sup>	$\chi^2$ or <i>t</i>
Age, mean (SD)	47.4 (12.03)	45.6 (12.0)	52.4 (10.9)	4.02*
Gender				
Female	178 (71.2)	134 (72.8)	44 (66.7)	.87
Male	72 (28.8)	50 (27.2)	22 (33.3)	
Church affiliation				
Church members	184 (73.6)	-	-	-
Community member	66 (26.4)	-	-	-
Medicaid				
Yes	34 (13.6)	18 (9.8)	16 (24.2)	8.64*
No	216 (86.4)	166 (90.2)	50 (75.8)	
Medicare				
Yes	40 (16.0)	25 (13.6)	15 (22.7)	3.02
No	210 (84.0)	159 (86.4)	51 (77.3)	
History of opioid use (ever)				
Yes	131 (53.0)	99 (54.7)	32 (48.5)	.75
No	116 (47.0)	82 (45.3)	34 (51.5)	
Pain history				
Yes	172 (73.5)	132 (74.2)	40 (71.4)	.16
No	62 (26.5)	46 (25.8)	16 (28.6)	
Tobacco use				
Not at all	183 (73.5)	153 (83.6)	30 (45.5)	39.76*
Some days	20 (8.0)	6 (3.3)	15 (21.2)	
Everyday	46 (18.5)	24 (13.1)	22 (33.3)	
Hepatitis C virus diagnosis (ever)				
Yes	8 (3.3)	5 (2.7)	3 (4.7)	.54
No	236 (96.7)	175 (97.2)	61 (95.3)	
History of crack/cocaine/heroin use				
Yes	28 (11.4)	16 (8.9)	12 (18.2)	4.14*
No	218 (88.6)	164 (91.1)	54 (81.8)	
History of marijuana use				
Yes	149 (59.8)	111 (60.7)	38 (57.6)	.19
No	100 (40.2)	72 (39.3)	28 (42.4)	
History of binge drinking <sup>c</sup>				
Yes	109 (44.3)	81 (44.8)	28 (43.1)	.05
No	137 (55.7)	100 (55.2)	37 (56.9)	
History of injection drug use				
Yes	6 (2.4)	2 (1.1)	4 (6.1)	5.13*
No	244 (97.6)	182 (98.9)	62 (93.9)	

<sup>a</sup>Unless otherwise indicated, values are numbers (percentages). Percentages may total less than 100 because of rounding or missing responses. <sup>b</sup>Test statistic comparing church members and community members

<sup>c</sup>History of drinking five or more drinks in one sitting.

\**p* < .05

## RESULTS

As shown in Table 1, participants were predominantly female (71%,  $n = 178$ ) and church members (74%,  $n = 184$ ) and had a mean age of 47 ( $SD = 12.03$ ). Fourteen percent ( $n = 34$ ) reported being on Medicaid. Our sample was highly religious, with 79% ( $n = 190$ ) attending church weekly or more and 90% ( $n = 223$ ) praying almost daily or more.

Findings indicated that 53% ( $n = 131$ ) of participants had taken prescription pain medications at some point in their lifetime, and 31% ( $n = 76$ ) reported prescription opioid use in the past 12 months. Nearly 74% reported a history of severe pain (e.g., from injury, illness) that required medical intervention in their lifetime. Few participants (3%,  $n = 8$ ) reported an HCV diagnosis (ever). Regarding other substance use behaviors, 27% ( $n = 66$ ) reported current tobacco use, 60% ( $n = 149$ ) reported previous marijuana use, and 11% ( $n = 28$ ) reported previous illicit drug use.

### Preliminary Analyses

Independent t-test analyses and chi-square analyses were first conducted. As shown in Table 2, participants who endorsed prescription opioid use ever in their lifetime were less likely to be on Medicaid ( $\chi^2(1) = 5.94, p = .02$ ) and were more likely to report a history of serious pain requiring medical intervention ( $\chi^2(1) = 59.93, p < .001$ ). They were also more likely to attend church more regularly ( $M = 5.43, SD = 1.65, \text{range } 1-8$ ) compared to those who did not report prescription opioid use ( $M = 4.95, SD = 1.77, \text{range } 1-8$ ),  $t(237) = -2.17, p = .03$ . Additionally, those who reported prescription opioid use (ever) were more likely to report a history of crack/cocaine/heroin use ( $\chi^2(1) = 7.68, p = .006$ ), marijuana use ( $\chi^2(1) = 11.47, p = .001$ ), and binge drinking (e.g., consuming 5 or more beverages per sitting;  $\chi^2(1) = 15.91, p < .001$ ).

Age, gender, church affiliation, prayer, tobacco use, a HCV diagnosis, attitudes towards substance abuse, history of injection drug use, history of homelessness, history of substance use treatment, and a history of time in the correctional system were not associated with ever using prescription opioids.

Table 2. *Factors Related to Prescription Opioid Use Ever– Preliminary Analyses (N=250)*

Variable of Interest	Test Statistic	
	$\chi^2$	<i>t</i>
Age	-	-.23
Gender	2.54	-
Medicaid	5.94**	-
Church affiliation	.75	-
Church attendance	-	-2.17**
Prayer	-	-1.65
Pain history	59.93***	-
Tobacco use	-	1.31
Hepatitis C virus diagnosis (ever)	.83	-
Drug addiction beliefs	-	.67
History of crack/cocaine/heroin use	7.68**	-
History of marijuana use	11.47**	-
History of binge drinking <sup>a</sup>	15.91***	-
History of injection drug use	.46	-
History of homelessness	1.92	-
History of substance use treatment	.13	-
History of time in correctional system	.84	-

<sup>a</sup>History of drinking five or more drinks in one sitting.

\* $p < .1$  \*\*  $p < .05$  \*\*\*  $p < .001$

### Logistic Regression

Using significant variables from preliminary analyses, a direct binary logistic regression was conducted to determine predictors of prescription opioid use ever in participants' lifetime. Data screening indicated no issues with multicollinearity, and all assumptions were met. The full model was significant ( $X^2(6) = 92.33, p < .001$ , Nagelkerke  $R^2 = .46$ ), and the Hosmer-Lemeshow test indicated that the model had good fit.

As indicated in Table 3, Medicaid status, church attendance, history of severe pain, history of crack/cocaine/heroin, and a history of marijuana use were significant predictors of past prescription opioid use. Participants who received Medicaid were 78% less likely to report past prescription opioid use. Those who reported more frequent church attendance were 29% more likely to report a history of prescription opioid use ever in their lifetime. Those with a self-reported history of severe pain requiring medical intervention were 24.2 times more likely to report a history of prescription opioid use ever in their lifetime. Participants with a history of crack/cocaine/heroin use were 4.4 times more likely to report prescription opioid use ever. Those with a history of marijuana use were 2.7 times more likely to report prescription opioid use in their lifetime.

Table 3. *Predictors of Prescription Opioid Use Ever – Logistic Regression (N=250)*

Variable of Interest	<i>B</i>	<i>SE</i>	<i>Wald</i>	<i>OR</i>	95% CI	<i>p</i>
Medicaid	-1.53	.53	8.28	.22	[.08, .61]	.004
Church attendance	.26	.11	5.89	1.29	[1.05, 1.58]	.02
Pain history	3.19	.49	41.58	24.17	[9.18, 63.63]	<.001
History of crack/cocaine/heroin use	1.49	.69	4.59	4.42	[1.14, 17.18]	.03
History of marijuana use	.99	.39	6.53	2.70	[1.26, 5.77]	.01
History of binge drinking <sup>a</sup>	.38	.38	1.01	1.46	[.70, 3.07]	.32

<sup>a</sup> History of drinking five or more drinks in one sitting.

## DISCUSSION

Few studies have examined predictors of prescription opioid use among AA church-affiliated populations. Our study found that 53% of participants had prescription opioid use at some point in their lifetime, and 31% reported prescription opioid use in the past year. National data suggests that 15% of the U.S. population have had at least one opioid prescription filled in the past year (Center for Disease Control, 2019a). Opioid use was higher in our sample than the general population, which is surprising given that AAs are less likely to be prescribed prescription opioids than white counterparts (Santoro & Santoro, 2018). This may be due to medical indications, such as increased sensitivity to pain among AAs (Ostrom et al., 2017) and well-established disparities in cancer incidence (Singh & Jemal, 2017). Opioid prescribing rates are also typically higher in middle-aged/older adults and females (Center for Disease Control, 2019a), a population that is typically highly concentrated in AA churches (Bauer, Berkley-Patton, Bowe Thompson, & Christensen, 2018; Christensen et al., 2020).

Furthermore, participants who reported more frequent church attendance were more likely to report prescription opioid use ever. The protective effects of religiosity on substance abuse is well-established in the literature, particularly among AA youth (Parrish & Taylor, 2018). However, studies are mixed with regards to the relationship between church attendance and prescription opioid misuse in AAs. For example, one recent study conducted among urban women (N=3,176, 50% AA) found that church attendance was linked to reduction in risk of illicit drug use, was not associated with prescription drug misuse (e.g., taking longer, differently than medically prescribed) (Burdette, Hill, Webb, Ford, & Haynes, 2018). However, a national study (N=14,341 AAs) found that church attendance was associated with a reduced likelihood of meeting criteria for an opioid use disorder (Ransome, Haeny, McDowell, & Jordan, 2019). Notably, there may be varied perceptions about opioid misuse among church-affiliated AAs. Studies suggest that opioid misuse may be viewed as more socially acceptable than illicit drug use and people may believe there are fewer legal consequences (Inciardi, Surratt, Cicero, & Beard, 2009; Mui, Sales, & Murphy, 2014). Researchers have posited that prescription drug use is not as readily discussed as illicit drug use in settings such as churches (Burdette et al., 2018), which may foster misconceptions and a sense of moral uncertainty regarding opioid misuse (Burdette et al., 2018). Given the high rates of opioid overdose among AAs in Missouri and our findings (e.g., high rates of opioid use, those attending church more frequently were more likely to report opioid use ever), further attention is needed on implementation of faith-based opioid misuse prevention efforts.

Studies indicate that opioid prescribing rates are higher among Medicaid/Medicare patients compared to those who are privately insured (Center for Disease Control, 2017; Mack, Zhang,

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Paulozzi, & Jones, 2015). Contrary to past studies, we found that participants who reported being on Medicaid were 78% less likely to report prescription opioid use ever in their lifetime. This may be due to social determinants, such as transportation and cost, that limit access to medical care and subsequently, there may be fewer opportunities to receive opioid prescriptions. A recent study found that opioids were prescribed at lower rates for pain management among AAs, especially if a co-payment was needed (Yazdanshenas et al., 2016), which suggests that cost and access to care are salient factors in prescription opioid use among church-affiliated AAs. Additionally, a recent study by the U.S. Department of Health and Human Services indicated that primary care providers are less likely to accept Medicaid (72%) compared to private insurance (94%) and Medicare (77%) (US Department of Health and Human Services, 2017). Moreover, previous research has reported that community members served through AA church ministries are often underserved and lack access to medical care (Berkley-Patton et al., 2013), suggesting that Black Churches may be well-positioned to engage in opioid abuse prevention services among underserved diverse populations.

Opioid misuse tends to be highest among persons aged 18-34 (Center for Disease Control, 2018), however, age was unrelated to opioid use in our study. This may be due to our sample being older – with an average age was 47 and less than 12% of participants were 30 and under. Consideration should be given to designing opioid prevention and harm reduction interventions for middle-age and older adults, particularly given that AAs are less likely to seek substance use treatment in adulthood (Acevedo et al., 2015; Saloner & Cook, 2013). Church ministries that target these adult populations, such as women’s groups and activities for seniors, may be a culturally and age appropriate prevention/education efforts in faith-based settings.

Participants who reported experiencing severe pain (e.g., due to procedure, illness, or injury) in their lifetime were 24 times more likely to report prescription opioid use ever in their lifetime. Although prescription opioids are appropriate in various medical circumstances (e.g., following medical procedures, cancer pain), these drugs are not the first-line of treatment for chronic pain (Center for Disease Control, 2019b). National guidelines suggest alternative treatments, such as physical therapy, exercise, acetaminophen/ibuprofen, and psychological intervention (e.g., cognitive-behavioral therapy), should first be considered to treat chronic pain (Center for Disease Control, 2019b). Although previous research highlights that the pain of church-affiliated AAs is poorly managed and undertreated (Yazdanshenas et al., 2016), faith-based pain and stress management programs remain largely understudied. AA churches may be an ideal medium to offer alternative lifestyle interventions that include physical activity, pain management, and stress management, which together may help individuals facing chronic pain who may not receive optimal medical treatment (Cleeland et al., 1997; Hoffman et al., 2016).

Studies also suggest that there may be racial/ethnic differences in coping with pain and AAs are more likely to engage in prayer and pain catastrophizing (e.g., exaggerated belief towards actual/anticipated pain) (Gatchel & Neblett, 2017) compared to Whites (Meints & Hirsh, 2015; Meints, Miller, & Hirsh, 2016). Pain catastrophizing, passive coping strategies, and avoidant behaviors are linked to increased pain severity, pain interference, and disability (Craner, Sperry, & Evans, 2016; Meints & Hirsh, 2015; Meints et al., 2016; Mercado, Carroll, Cassidy, & Côté, 2005). Prayer is often categorized as a passive coping strategy associated with avoidance (e.g., praying the pain away), which is associated with negative outcomes. However, other dimensions of prayer and meditation (e.g., acceptance, assistance, calming/focus) and their relationship to pain

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outcomes is not well understood (Meints et al., 2016) and should be further studied in the AA churches.

Our findings also suggest that prescription opioid use may overlap with use of other substances, such as marijuana and crack/cocaine/heroin. Illicit drug use often begins with gateway drugs/behaviors (e.g., marijuana, risky drinking) and progresses to more dangerous drug use. For example, national studies have found that 80% of heroin users first misused prescription opioids (Muhuri, Gfroerer, & Davies, 2013). Given the possible high overlap amongst substances among church-affiliated AAs, interventions may benefit from educating AAs on substance use generally, discussing healthy coping strategies, and providing community referrals when appropriate. Community partnerships with local health departments and medical clinics should be considered in providing linkage-to-care services. Discussion of coping strategies may be particularly salient given that AAs are less likely to see mental health care than Whites (Cook et al., 2014) and misuse of substances may be means of coping with emotional distress and racial stressors (Gerrard et al., 2012; Pittman, Brooks, Kaur, & Obasi, 2019).

Only a few substance abuse prevention intervention studies have been implemented in AA churches. One such study by Brown et al. (2006) provided education on youth developing substance use prevention programs in 23 AA churches (e.g., program planning, resources, group facilitation). Three years later, one-third of participants successfully implemented a substance use prevention program and one-third were in process of developing a program. Also, a study by MacMaster et al. (2007) conducted a faith-based intervention (e.g., support groups, HIV risk reduction) to reduce illicit drug use and HIV risk behaviors among 163 AAs and found a decrease in substance use and HIV risk behaviors. These church-based studies suggest that churches may be well-positioned to reduce drug use and associated risks by provide education on general substance abuse risk factors, disparities in substance abuse treatment among AAs, and alternative strategies for managing stress and/or pain which may lead to substance abuse. More research is needed to better understand the acceptability/feasibility, effectiveness, and sustainability of substance abuse prevention programs in AA churches.

The present study is not without its limitations. This study was conducted among a highly religious church-affiliated population, and generalizability beyond faith-based samples in the Midwest may be limited. Also, our survey item that assessed prescription opioid use (ever in their lifetime) did not assess if it was taken for medical or recreational reasons. Moreover, if it was taken for medical reasons – we are unable to assess if it was taken as prescribed by their provider (e.g., recommended frequency, dose) or if taken differently than prescribed (e.g., taking more often or higher quantities than recommended). Additionally, our items were self-report measures, which are subject to social desirability biases.

### CONCLUSION

Although the opioid crisis is largely discussed as being a burden in White communities, AAs are disproportionately burdened by opioid abuse risk factors and mortalities, particularly in the Midwest (Henry J Kaiser Family Foundation, 2017), despite lower rates of use. Consistent with calls for community-based interventions that target opioid use in racial/ethnic minorities (National Institute of Health, 2018), our findings suggest that a large number of church-affiliated AAs may benefit from lifestyle-oriented pain prevention and opioid use prevention interventions along with

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opioid/substance abuse prevention programs. AA churches may be well-positioned to reach church members and the community members they serve with such programs.

### ACKNOWLEDGEMENTS

This study was supported by the National Institute of Health (Grant #5R01MH099981-04) and Frontiers: University of Kansas Clinical and Translational Science Institute (Grant #0056046). We would like to thank Calvary Community Outreach Network, KC FAITH Initiative, Ms. Nia Johnson, and Ms. Sheila Lister for their contributions to this project.

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