

SBIRT of Patients Treated for Firearm Injury: Differences by Race and Ethnicity

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BACKGROUND

- Patients treated for firearm injury are at risk of developing mental or behavioral health disorders related to their trauma. They may also have pre-existing mental or behavioral health conditions.
- Because of this, mental and behavioral health-related assessments and, where indicated, referrals for follow-up care can be critical for this patient population.
- **Screening, Brief Intervention, and Referral to Treatment (SBIRT)** is an evidence-based program implemented in primary care settings, hospital emergency rooms, trauma centers, and other community settings. SBIRT helps to identify, reduce, and prevent problematic substance use by helping providers identify individuals who engage in substance use and connect them with early intervention and treatment.
- SBIRT is known to decrease alcohol and illicit drug use and has been shown to reduce trauma recidivism by 47%, making it an effective intervention for those at risk of substance abuse.
- There is little information on delivery of SBIRT to patients treated for firearm injury or whether there are disparities in delivery according to patient race and ethnicity.

SETTING

- Trauma registry data from a Level 1 trauma center at an academic health center treating patients with firearm injuries.

OBJECTIVE

- To identify potential disparities in the delivery of SBIRT among firearm injury patients.

METHODS

- We conducted a retrospective cohort study of patients with a firearm injury who presented to the trauma center between 01/2017 and 01/2025 and were discharged alive.
- We compared proportions of patients who received SBIRT during their initial episode of care or during follow-up outreach after a firearm injury, by patient race and ethnicity.
- Associations between patient race and ethnicity and receipt of SBIRT, among eligible patients, were analyzed using logistic regression. We present odds ratios (ORs) with 95% confidence intervals (CIs) from bivariable models and adjusted odds ratios (aORs) with 95% CIs from multivariable models that controlled for age and sex.
- For purposes of this analysis, race and ethnicity data from the registry were used to generate broader race and ethnicity categories to reduce inflation of the white count. The four categories derived to represent patients are Black/African American, Hispanic/Latinx, Other Person of Color, and White.

RESULTS

- Among the 944 patients who received care for a firearm injury, 93.5% (n=880) received SBIRT screening and 48.7% (n=428) screened positive for potentially problematic substance use.
- Among the 428 patients who screened positive, 61.9% (n=257) received a brief intervention. Black/African American patients were less likely to receive a brief intervention (50.0%) compared to White patients (70.8%; OR=0.4; 95% CI: 0.2-0.7). Hispanic/Latinx patients were also less likely to receive a brief intervention (50.8%; OR=0.4; 95% CI: 0.2-0.8) compared to White patients.
- Among the 428 patients who screened positive, 54.9% (n=225) received a referral to treatment. Black/African Americans were less likely to receive a referral to treatment (44.2%) compared to White patients (65.4%; OR=0.4; 95% CI: 0.2-0.7). Hispanic/Latinx patients were also less likely to receive a referral to treatment (41.3%) compared to White patients (OR=0.4; 95% CI: 0.2-0.7). Additionally, patients categorized as Other Person of Color were less likely to receive a referral to treatment (40.7%) compared to White patients (OR=0.4; 95% CI: 0.2-0.8).

Table 1. Screening, Brief Intervention, and Referral to Treatment among n=944 Firearm Injury Patients Discharged Alive, by Race and Ethnicity

Patient Race and Ethnicity	Screenings				Logistic Regression Models	
	Yes (n=880)		No (n=61)		Bivariable	Multivariable*
	n	%	n	%	OR (95% CI)	aOR (95% CI)
Black/African American	161	95.3	8	4.7	1.2 (0.6, 2.9)	1.4 (0.6, 3.5)
Hispanic/Latinx	131	89.1	16	10.9	0.5 (0.3, 1.0)	0.6 (0.3, 1.2)
Other Person of Color	52	94.6	3	5.4	1.1 (0.4, 4.5)	1.3 (0.4, 5.4)
White	476	94.3	29	5.7	Referent	Referent
Missing/Not Disclosed	60	92.3	5	7.7	0.7 (0.3, 2.2)	0.9 (0.3, 2.6)
Patient Race and Ethnicity	Brief Intervention (Among the 428 patients who Screened Positive)**				Logistic Regression Models	
	Yes (n=257)		No (n=158)		Bivariable	Multivariable*
	n	%	n	%	OR (95% CI)	aOR (95% CI)
Black/African American	39	50.0	39	50.0	0.4 (0.2, 0.7)	0.4 (0.2, 0.7)
Hispanic/Latinx	32	50.8	31	49.2	0.4 (0.2, 0.8)	0.5 (0.3, 0.8)
Other Person of Color	15	53.6	13	46.4	0.5 (0.2, 1.1)	0.5 (0.2, 1.2)
White	153	70.8	63	28.2	Referent	Referent
Missing/Not Disclosed	18	60.0	12	40.0	0.6 (0.3, 1.4)	0.6 (0.3, 1.5)
Patient Race and Ethnicity	Referral to Treatment (Among the 428 patients who Screened Positive)***				Logistic Regression Models	
	Yes (n=225)		No (n=185)		Bivariable	Multivariable*
	n	%	n	%	OR (95% CI)	aOR (95% CI)
Black/African American	34	44.2	43	55.8	0.4 (0.2, 0.7)	0.5 (0.3, 0.8)
Hispanic/Latinx	26	41.3	37	58.7	0.4 (0.2, 0.7)	0.4 (0.2, 0.8)
Other Person of Color	11	40.7	16	59.3	0.4 (0.2, 0.8)	0.4 (0.2, 1.0)
White	140	65.4	74	34.6	Referent	Referent
Missing/Not Disclosed	14	48.3	15	51.7	0.5 (0.2, 1.1)	0.5 (0.2, 1.2)

\*Multivariable models include sex and age.  
\*\*N=13 missing data on brief intervention.  
\*\*\*N=18 missing data on referral to treatment.

CONCLUSIONS

- Among the 944 patients who received treatment for firearm injuries from 01/2017 to 01/2025, disparities in screening, brief intervention, and referral to treatment (SBIRT) were observed with respect to patients' race and ethnicity.
- These disparities were observed most starkly for patients who were Black/African American, Hispanic/Latinx, or Other Person of Color, compared to their White counterparts.
- Future research will dive deeper into the potential causes of these disparities and explore interventions to ensure equitable access to behavioral health services for all firearm injury survivors.

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