



Recovery of Pediatric Patients After Firearm Injury: Can Health Systems Do More?



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BACKGROUND

- Firearm-related injuries are the second leading cause of death among children and adolescents ages 0-17 years, accounting for over 1,800 deaths and 7,800 nonfatal injuries in 2017¹.
- Black and Latinx adolescent boys from urban communities carry a disproportionate burden of both fatal and nonfatal violent injuries².
- Few studies have focused on the recovery process and post-injury needs of pediatric patients after nonfatal injury^{2,3}.
- Beyond addressing physical impairments experienced by patient's post-injury, hospitals are an important access point to initiate multidisciplinary, longitudinal care for youth needing support to fulfill their full potential³.

OBJECTIVE

- To evaluate current health system support for pediatric firearm survivors from initial emergency department (ED) presentation through outpatient referral.

METHODS

- Retrospective chart review of patients <18 years who presented to an urban level 1 trauma center between 2014-2019.
- 115 patients identified
- Cases were categorized as accidental or intentional (stratified as assault-related or "crossfire" injuries).
- Outcomes included biopsychosocial assessment (BA) utilization, trauma psychology service consultation, and linkage to outpatient services.
- IRB Approved (#18CR-32081-01)

RESULTS

Table 1. Demographic and Clinical Characteristics of Pediatric Patients Treated for Firearm Injuries

Age group, (y)	
1 - 4	4 (3)
5 - 9	16 (14)
10 - 14	29 (25)
15 - 16	66 (67)
*Age, (y)	15 (13-16)
Gender	
Male	82 (71)
Female	33 (29)
Race/Ethnicity	
African American	58 (50)
Latinx	51 (44)
White	1 (1)
Asian	1 (1)
Other	3 (3)
Unknown	1 (1)
Insurance Status	
Public	91 (79)
Private	13 (11)
Uninsured	11 (10)
*ISS	8 (4-14.5)
Mortality	9 (8)
Mechanism of Injury	
Unintentional	7 (8)
Intentional	108 (94)
Assault-related	43 (37)
Crossfire	65 (57)

n (%) for categorical variables
Median (IQR)

Figure 1. Inpatient Utilization of Biopsychosocial Screening and Trauma Psychological Support Services

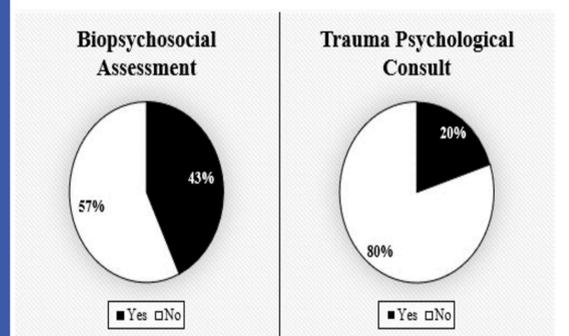
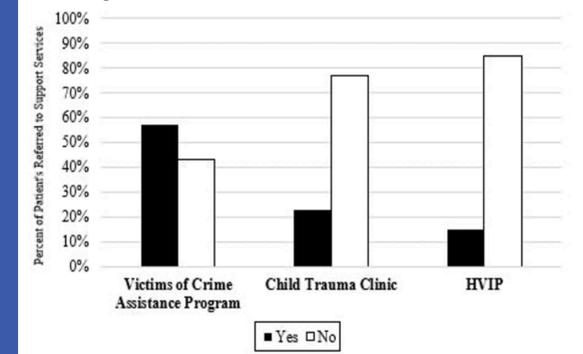


Table 2. Demographic Characteristics of Pediatric Patients Treated for Firearm Injuries by Injury Intent

Variable	Intentional (n = 108)		Unintentional (n = 7)	P-value
	Assault-Related (n = 43)	"Crossfire" (n = 65)		
Age group, (y)				0.32
1 - 4	0(0)	3(5)	0(0)	
5 - 9	3(7)	12(18)	1(14)	
10 - 14	8(19)	19(29)	2(29)	
15 - 16	30(70)	31(48)	4(57)	
Gender, n (%)				0.17
Male	35(81)	42(65)	5(71)	
Female	8(19)	23(35)	2(29)	
Race/Ethnicity, n (%)				0.02
African American	18(42)	36(55)	3(43)	
Latinx	20(47)	28(43)	3(43)	
White	1(2)	0(0)	0(0)	
Asian	1(2)	0(0)	0(0)	
Other	2(5)	0(0)	1(14)	
Unknown	1(2)	0(0)	0(0)	
Insurance Status, n (%)				0.97
Public	35(81)	51(78)	5(71)	
Private	4(9)	8(12)	1(14)	
Uninsured	4(9)	6(9)	1(14)	
Injury Severity Score (ISS) ≥ 16	14(34)	11(17)	0(0)	0.07
Mortality, n (%)	7(16)	2(3)	0(0)	0.03
Drive-By Shooting, n (%)	7(16)	38(58)	0(0)	<0.01
Gang-Affiliated, n (%)	9(21)	4(6)	0(0)	0.04
Carceral System, n (%)	7(16)	4(6)	1(14)	0.23

P-value <0.05 were considered statistically significant

Figure 3. Linkages to Outpatient Financial Support and Recovery Services



CONCLUSIONS

CONCLUSIONS:

- An overwhelming majority of pediatric patients were victims of community violence (94%) with public insurance status (79%).
- Drive-by shootings were common, accounting for 57% of "crossfire" injuries and a third of total injuries.
- A gap exists between delivery of behavioral and mental health assessments (43%, 20%) and outpatient referrals to social support services (71%)
- The most commonly identified areas of support needed were for counseling, gang intervention, and help with the carceral system.

FUTURE DIRECTIONS:

- There is significant need for health systems to support the long-term recovery of pediatric patients after firearm injury, particularly in regard to social and structural determinants of health.
- Formal inpatient-to-outpatient linkages should be strengthened and funded, and prospective long-term follow-up is needed.

REFERENCES

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