

# Single-dose intravenous ketamine or intramuscular naltrexone for high-utilization inpatients with alcohol use disorder: pilot trial feasibility and readmission rates

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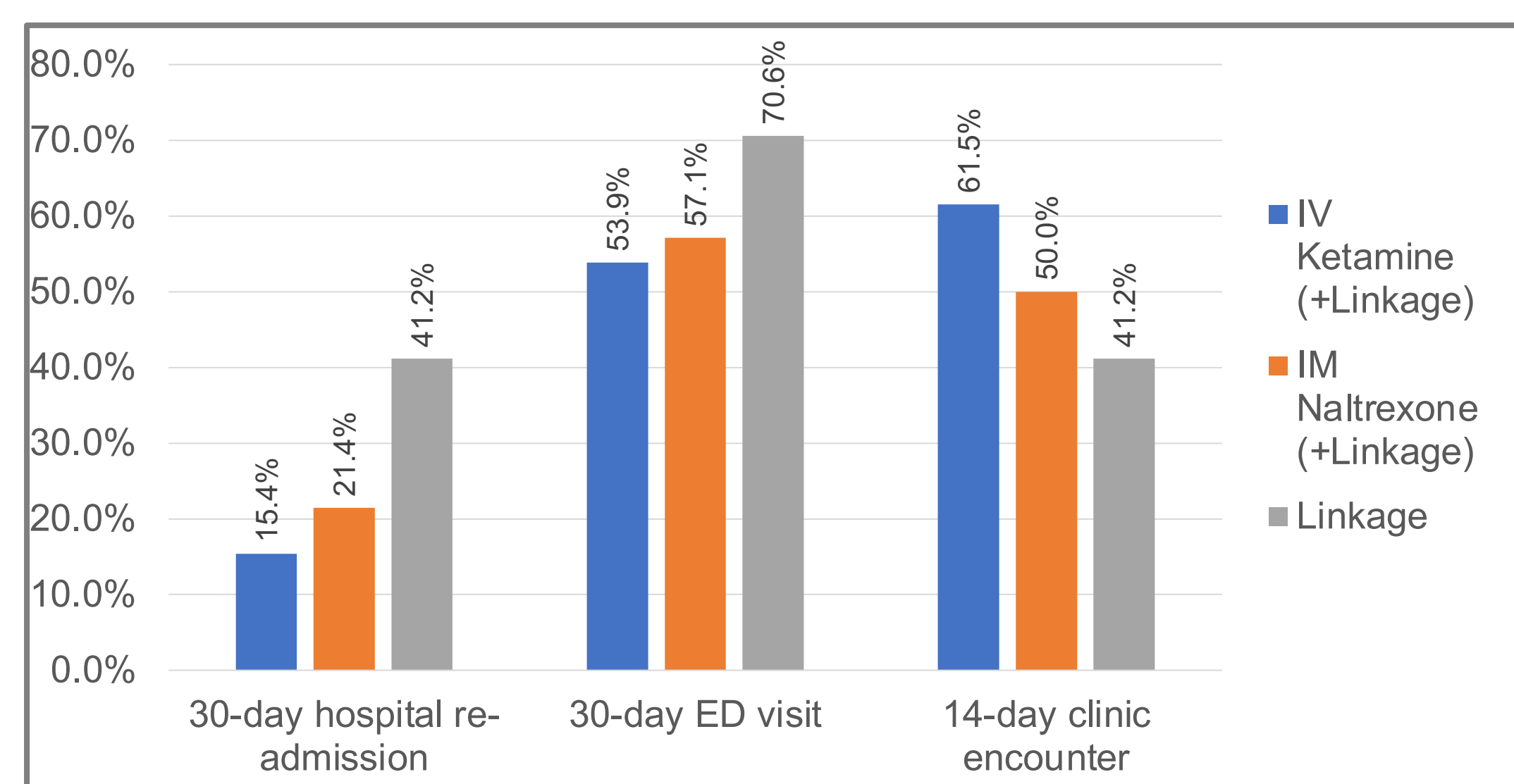
## BACKGROUND

Alcohol use disorder (AUD) impacts 15 million Americans leading to 5 million annual emergency department (ED) visits and 2 million admissions. AUD poses a burden on the healthcare system, yet hospitalization provides a prime opportunity to intervene. We set out to assess two pharmacologic interventions at reducing ED visits and readmissions along with characterizing this population.

## METHODS

1. Adult hospitalized patients with severe AUD recruited into one of three trial groups: **extended-release naltrexone injection**, **intravenous ketamine infusion**, or enhanced linkage alone
2. Demographics, adverse childhood experiences (ACE), Timeline Follow Back drinking history (TLFB), and depressive symptoms (PHQ-9), are recorded at baseline
3. Initiate treatment based on group before discharge
4. 30-day chart review for ED visits and hospital admissions
5. Data analysis for correlations and significance performed (Pearson r correlations, Means, T- test)

## RESULTS



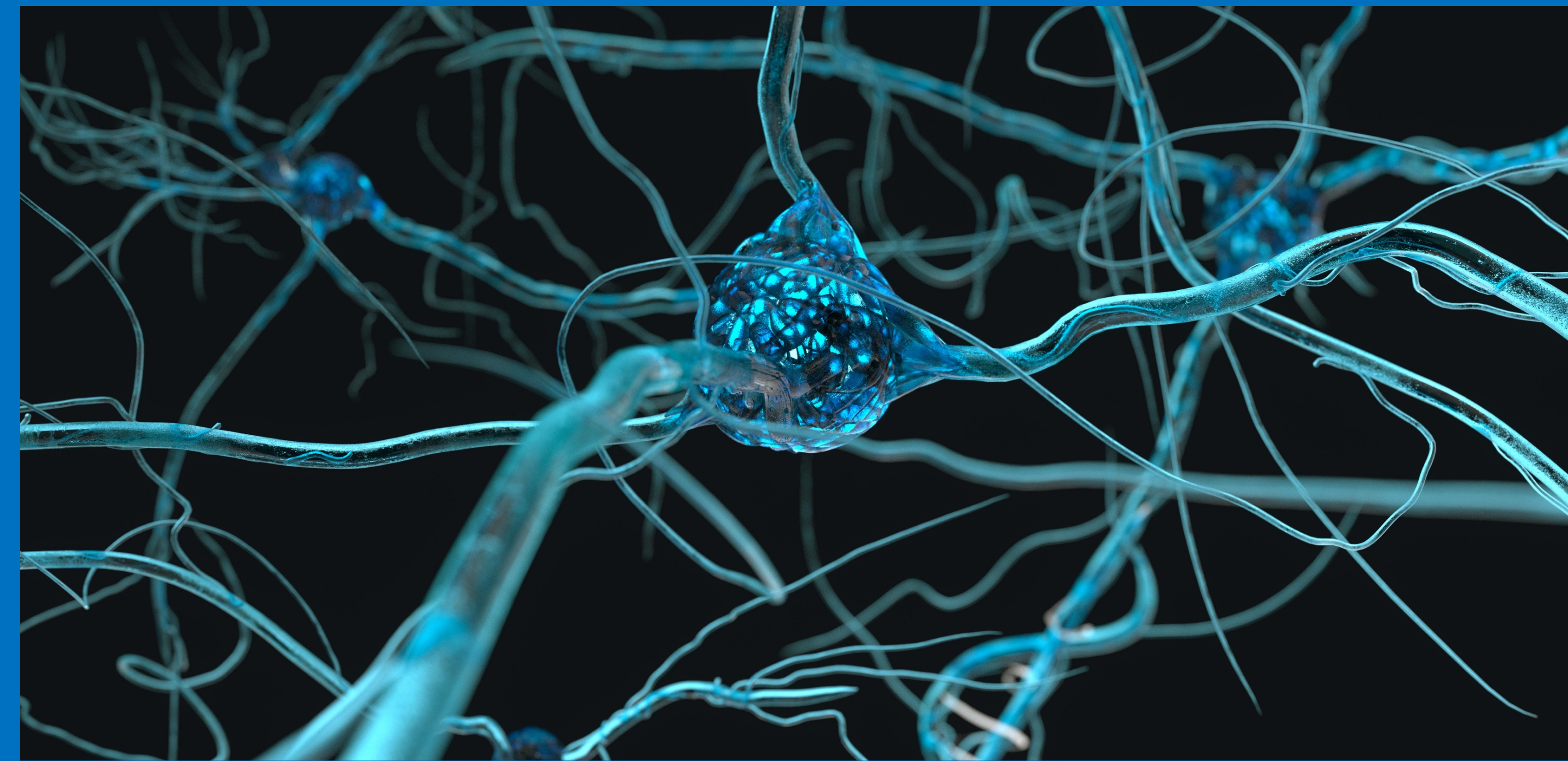
- Ketamine vs LA Re-admit RR 0.37, \* $p=0.17$
- Naltrexone vs LA Re-admit RR 0.52, \* $p=0.27$

### Demographics:

- Race: 63.6% non-Hispanic, 56.8% white/Caucasian
- 79.6% male
- 38.6% without stable housing

### Clinical Characteristics:

- Mean Past year ED visits: 10.9
- Mean Past year Hospital Admissions: 3.2
- Mean Daily Drinks: 12.14



Participants with AUD who received one dose of **IV ketamine** or **IM naltrexone** pre-discharge had **lower\*** 30-day hospital re-admission risks and **ED visits** than controls.

\*not statistically significant

## Discussion

- Hospital administration feasible
- Acceptable treatment by patients
- Only known study using ketamine for AUD
- Linkage arm with higher baseline care utilization and less housed
- Ketamine arm with lower baseline drinking
- Limitations: underpowered, no blinding

## Conclusion

- Both treatments show promise in combating AUD
- Hospitalization treatment is opportune and feasible
- More research needed for these intriguing new therapies

## Future Directions

- Ketamine dose could be optimized
- Include oral naltrexone
- Larger scale

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### References:

- [1] SAMHSA, Center for Behavioral Health Statistics and Quality. "2019 National Survey on Drug Use and Health. Table 5.4A - Alcohol Use Disorder in Past Year among Persons Aged 12 or Older, by Age Group and Demographic Characteristics: Numbers in Thousands, 2018 and 2019." Accessed: Sep. 11, 2021. [Online].
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	Arm 1 KET n=13	Arm 2 NTX n=14	Arm 3 LA n=17	All Arms N=44
Age (mean, sd)	43.92 (11.48)	44.93 (12.52)	46.17 (9.53)	45.11 (10.90)
Gender, n (%)				
Female	4 (30.8%)	3 (21.4%)	2 (11.8%)	9 (20.5%)
Male	9 (69.2%)	11 (78.6%)	15 (88.2%)	35 (79.6%)
Non-Binary	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Other Response	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Race, n (% of column)				
White/Caucasian	9 (69.2%)	4 (28.6%)	12 (70.6%)	25 (56.8%)
Black/African-American	0 (0.0%)	2 (14.3%)	1 (5.9%)	3 (6.8%)
Asian/Pacific-Islander	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
American Indian/Alaska-Native	1 (7.7%)	4 (28.6%)	2 (11.8%)	7 (15.9%)
Multiple	1 (7.7%)	0 (0.0%)	0 (0.0%)	1 (2.3%)
Unknown / Other	2 (15.4%)	4 (28.6%)	2 (11.8%)	8 (18.2%)
Ethnicity, n (% of column)				
Non-Hispanic/Latinx	6 (61.5%)	8 (57.1%)	12 (70.6%)	28 (63.6%)
Hispanic/Latinx	4 (30.8%)	6 (42.9%)	5 (29.4%)	15 (34.1%)
Unknown / Other	1 (7.7%)	0 (0.0%)	0 (0.0%)	1 (2.3%)
Housing Status, n (% of column)				
Stable housing	9 (69.2%)	10 (71.4%)	8 (47.1%)	27 (61.4%)
Briefly homeless	0 (0.0%)	1 (7.1%)	4 (23.5%)	5 (11.4%)
Chronically homeless	4 (30.8%)	1 (7.1%)	4 (23.5%)	9 (20.5%)
Unknown / Other	0 (0.0%)	2 (14.3%)	1 (5.9%)	3 (6.8%)
Highest education completed, n (% of column)				
No high school	1 (7.7%)	2 (14.3%)	2 (11.8%)	5 (11.4%)
High school / GED	6 (46.2%)	9 (64.3%)	9 (64.3%)	24 (54.6%)
Vocational	2 (15.4%)	1 (7.1%)	1 (5.9%)	4 (9.1%)
College degree	2 (15.4%)	1 (7.1%)	4 (23.5%)	7 (15.9%)
Advanced degree	2 (15.4%)	0 (0.0%)	1 (5.9%)	3 (6.8%)
Unknown / Other	0 (0.0%)	1 (7.1%)	0 (0.0%)	1 (2.3%)
12-month past care utilization				
ED visits (mean, sd)	8.46 (7.78)	9.64 (7.62)	13.82 (8.76)	10.91 (8.29)
Hosp admits (mean, sd)	2.77 (2.59)	2.86 (2.80)	3.88 (5.33)	3.23 (3.88)
Baseline behavioral / psychological characteristics, n (%) unless specified				
Typical daily drinks (mean, sd)	9.15 (7.04)	14.68 (11.52)	12.13 (9.86)	12.0 (9.69)
PHQ-9 (mean, sd)	14.08 (7.30)	13.50 (5.71)	13.18 (6.42)	13.55 (6.34)
ACE score (mean, sd)	3.85 (2.34)	4.41 (3.07)	4.21 (2.65)	4.18 (2.65)
Dx "PTSD" in chart	1 (7.7%)	3 (21.4%)	1 (5.9%)	5 (11.4%)
Dx "Bipolar" in chart	1 (7.7%)	3 (21.4%)	2 (11.8%)	6 (13.6%)
Dx "Schizoaffective" or "Schizophrenia" in chart	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Index primary admission diagnosis, n (%)				
Encephalopathy / Intoxication / Withdrawal	8 (61.5%)	6 (42.9%)	11 (64.7%)	25 (56.8)
Infection / Sepsis	0 (0.0%)	1 (7.1%)	1 (5.9%)	2 (4.5%)
Gastrointestinal	2 (15.4%)	2 (14.3%)	1 (5.9%)	5 (11.3%)
Cardiopulmonary	2 (15.4%)	3 (21.4%)	2 (11.8%)	7 (15.9%)
Electrolytes / renal	1 (7.7%)	2 (14.3%)	2 (11.8%)	5 (11.3%)
Physical injury	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Psychiatric	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)