



What happened to patients with a 1st hospitalization for a psychosis at Cambridge Health Alliance 1/1/2019 – 12/31/2020

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Background & Hypotheses

- A 1st psychotic episode historically led to permanent disability and lifetime schizophrenia
- New psychosocial & pharmacologic treatments combined with early detection may change this course of illness.
- State-of-the Art disposition subsequent to a 1st hospitalization for psychosis is CSC (a Coordinated Specialty Care Clinic-RISE) (Kane & Robinson, et al.)
- Racial & Ethnic minoritized people may not to receive the newest standards of care
- CHA as a safety-net system serves all people regardless of ability to pay

Objectives & Hypotheses

- Examine inpatient treatment and disposition for 1st Episode Psychotic patients with diverse ethnic and racial backgrounds.
- Examine changes pre and during the COVID pandemic.
- Determine whether inpatient units were adequately providing follow-up with a CSC Clinic.
- What is the status of these hospitalized patients 3 years later?
- Of these, do the treatments they receive differ by race and ethnicity? (hypothesis 1)
- Were there differences during the COVID Pandemic compared with pre-pandemic times? (hypothesis 2)

Methods

- Data:** Epic Electronic Medical Record chart review of individuals with a first hospitalization for psychosis within the timespan of Jan 2019-Dec 2020.
- Sample population:** Individuals aged 15-35 with a first hospitalization for a first episode of psychosis within the timespan of Jan 2019-Dec 2020 (n=275).
- Primary Predictor:** Race & Ethnic Group (Hispanic).
- Other Descriptive Characteristics:** Age, gender, and residential zip code
- Key Outcomes:** : Discharge prescription, inpatient restraint, substance abuse, inpatient length of stay and referral to and participate in a CSC.
- Statistical Analysis:** Fisher's Exact Test, Kruskal-Wallis, Analysis of Pearson Standardized Residuals.

Results

Table 1. Demographic and Clinical Characteristics

Characteristics	Aggregate	White	Black	Hispanic	Asian	Portuguese	Other/Unknown
Demographics N (%)	275 (100.00)	123 (44.73)	91 (33.09)	37 (13.45)	12 (4.36)	8 (2.91)	4 (1.45)
Age							
Mean (SD), years	24.98 (5.75)	24.72 (5.82)	25.36 (5.58)	24.68 (6.05)	26.92 (5.45)	24.13 (6.66)	23.25 (5.06)
Sex N (%)							
Male	193 (70.18)	94 (48.70)	60 (31.09)	25 (12.95)	9 (4.66)	3 (1.55)	2 (1.04)
Female	82 (29.82)	29 (35.37)	31 (37.80)	12 (14.63)	3 (3.66)	5 (6.10)	2 (2.44)
Prescribed Medications							
Antipsychotics N (%)							
1st Generation	17 (6.18)	9 (52.94)	4 (23.53)	3 (17.65)	0 (0.00)	0 (0.00)	1 (5.88)
2nd Generation	176 (64.00)	77 (43.75)	58 (32.95)	23 (13.07)	9 (5.11)	7 (3.98)	2 (1.14)
Clozapine/Clozaril	4 (1.45)	3 (75.00)	1 (25.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Two or More Different Gens	5 (1.82)	1 (20.00)	4 (80.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
None	73 (26.55)	33 (45.21)	24 (32.88)	11 (15.07)	3 (4.11)	1 (1.37)	1 (1.37)
Mood Stabilizers N (%)							
Depakote/Divalproex	18 (6.55)	11 (61.11)	5 (27.78)	1 (5.56)	1 (5.56)	0 (0.00)	0 (0.00)
All Other	30 (10.91)	20 (66.67)	6 (20.00)	1 (3.33)	0 (0.00)	2 (6.67)	1 (3.33)
None	227 (82.55)	92 (40.53)	80 (35.24)	35 (15.42)	11 (4.85)	6 (2.64)	3 (1.32)
Benzodiazepines N (%)							
Yes	35 (12.73)	22 (62.86)	11 (31.43)	0 (0.00)	2 (5.71)	0 (0.00)	0 (0.00)
No	240 (87.27)	101 (42.08)	80 (33.33)	37 (15.42)	10 (4.17)	8 (3.33)	4 (1.67)
Inpatient Restraints N (%)							
Yes	66 (24.00)	28 (42.42)	23 (34.85)	9 (13.64)	4 (6.06)	1 (1.52)	1 (1.52)
No	209 (76.00)	95 (45.45)	68 (32.54)	28 (13.40)	8 (3.83)	7 (3.35)	3 (1.44)
Substance Abuse N (%)							
Cannabis	63 (22.91)	29 (46.03)	15 (23.81)	15 (23.81)	2 (3.17)	1 (1.59)	1 (1.59)
Cannabis/Other Substance(s)	84 (30.55)	36 (42.86)	34 (40.48)	9 (10.71)	1 (1.19)	3 (3.57)	1 (1.19)
Tobacco	15 (5.45)	7 (46.67)	5 (33.33)	1 (6.67)	1 (6.67)	0 (0.00)	1 (6.67)
Other Substance	18 (6.55)	5 (27.78)	5 (27.78)	6 (33.33)	1 (5.56)	1 (5.56)	0 (0.00)
Polysubstance/No Cannabis	20 (7.27)	15 (75.00)	4 (20.00)	1 (5.00)	0 (0.00)	0 (0.00)	0 (0.00)
None	75 (27.27)	31 (41.33)	28 (37.33)	5 (6.67)	7 (9.33)	3 (4.00)	1 (1.33)
Qualified for RISE N (%)							
Yes	202 (73.45)	85 (42.08)	66 (32.67)	32 (15.84)	9 (4.46)	8 (3.96)	2 (0.99)
No	73 (26.55)	38 (52.05)	25 (34.25)	5 (6.85)	3 (4.11)	0 (0.00)	2 (2.74)
Referred to RISE (Percent of Qualified) N (%)							
Yes	41 (20.30)	15 (36.59)	17 (41.46)	7 (17.07)	1 (2.44)	1 (2.44)	0 (0.00)
No	161 (79.70)	70 (43.48)	49 (30.43)	25 (15.53)	8 (4.97)	7 (4.35)	2 (1.24)
Length of Stay							
Mean (SD), days	9.07 (7.89)	8.67 (7.54)	9.37 (8.86)	9.32 (6.95)	10.25 (7.52)	11.25 (8.41)	4.50 (2.08)

Note 1. Percentages in the aggregate column are based on a total sample size of 275.

Note 2. Percentages in race and ethnicity columns are calculated based on row totals.

Table 2. Substance Abuse by Race and Ethnic Group

Substance Abuse N (%)	Aggregate	White	Black	Hispanic	Asian	Portuguese	Other/Unknown
Cannabis	63 (22.91)	29 (23.58)	15 (16.48)	15 (40.54)	2 (16.67)	1 (12.50)	1 (25.00)
Cannabis/Other Substance(s)	84 (30.55)	36 (29.27)	34 (37.36)	9 (24.32)	1 (8.33)	3 (37.50)	1 (25.00)
Tobacco	15 (5.45)	7 (5.69)	5 (5.49)	1 (2.70)	1 (8.33)	0 (0.00)	1 (25.00)
Other Substance	18 (6.55)	5 (4.07)	5 (5.49)	6 (16.22)	1 (8.33)	1 (12.50)	0 (0.00)
Polysubstance/No Cannabis	20 (7.27)	15 (12.20)	4 (4.40)	1 (2.70)	0 (0.00)	0 (0.00)	0 (0.00)
None	75 (27.27)	31 (25.20)	28 (30.77)	5 (13.51)	7 (58.33)	3 (37.50)	1 (25.00)
Total	275 (100.00)	123 (100.00)	91 (100.00)	37 (100.00)	12 (100.00)	8 (100.00)	4 (100.00)

Pearson Chi-Squared P-Value = **0.044**

Note 1. Bold values indicate statistically significant p-value for chi-squared (Bonferroni-adjusted p<0.049).

Note 2. Red values indicate relative contribution of each group to the significant chi-squared (|Std Resid|>2).

Note 3. Percentages in the aggregate column are based on a total sample size of 275.

Note 4. Percentages in race and ethnicity columns are calculated based on column totals.

- Hispanic patients showed significantly higher rates of cannabis and other substance use (standardized residual=2.24 & 2.30).
- White patients had significantly higher rates of polysubstance use without cannabis (standardized residual=2.02).
- Asian patients were significantly more likely to abstain from substance use (standardized residual=2.06).

Results

Table 3. Clinical Characteristics Pre- and During COVID-19 Pandemic (01/01/2019 – 12/31/2019) - (01/01/2020 – 12/31/2020)		
Clinical Characteristics	Pre-COVID-19	During COVID-19
Benzodiazepines N (%)		
Yes	26 (16.99)	9 (7.38)
No	127 (83.01)	113 (92.62)
Overall Fisher's Exact P-Value	0.018	
Inpatient Restraints N (%)		
Yes	24 (15.69)	42 (34.43)
No	129 (84.31)	80 (65.57)
Overall Fisher's Exact P-Value	0.000	
Qualified for RISE N (%)		
Yes	42 (27.45)	31 (25.41)
No	111 (72.55)	91 (74.59)
Overall Fisher's Exact P-Value	0.784	
Referred to Rise N (%)		
Yes	23 (15.03)	18 (14.75)
No	130 (84.97)	104 (85.25)
Overall Fisher's Exact P-Value	1.000	
Note. Bold values indicate statistically significant results (Bonferroni-corrected p<0.049).		

- Benzodiazepine prescription at discharge reduced significantly during COVID-19 Pandemic (p=0.018) for all race and ethnic groups.
- The use of inpatient restraints increased significantly at 1st Psychosis Hospitalization (p=0.0001) for all race and ethnic groups during COVID.

Conclusions

- Contrary to our hypotheses that racial and ethnic differences would exist in treatment and disposition, no major differences were found.
- No ethnic and racial differences existed during COVID
- However, the COVID period resulted in more restraint use during hospitalization, and less discharge benzodiazepine prescriptions.
- Referrals to RISE, the CHA CSC clinic, were remarkably low before and during the pandemic.
- Educating inpatient staff about CSC is necessary
- In process:** A 3-year follow-up of # of rehospitalizations, continuation in psychiatric care and use of medications.

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