

The Impact of a Mental Health-Related Diagnosis on Readmission Rates for Heart Failure

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The Impact of a Mental Health-related Diagnosis on Readmission Rates for Heart Failure

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Background

Mental illness is believed to be common and preclude accurate assessment of functional status in patients with heart failure (HF). Limited data exist on the role of mental illness and its impact on readmission rates in patients with heart failure. We sought to determine the prevalence of a mental health-related diagnosis and its impact on readmission rates for those with a primary diagnosis of heart failure.

Methods

All discharges from one large tertiary referral hospital network between July 1 2007-June 30, 2009 were evaluated for the presence of a primary diagnosis of HF (ICD-9 codes 428, 425 and 674.5) as well as the presence of any primary or secondary mental health-related diagnosis during any hospitalization from this same period (codes 290-319). Mental retardation (codes 317-319 n=20 admissions for HF patients), child developmental diagnoses (n=3 admissions with disorder of written expression under code 315) as well as drug and alcohol diagnoses in remission (n=106 admissions) were excluded. Finally, tobacco use disorder (305.1) which constituted n=605 or 7.6% of all admissions for HF patients was also excluded.

Results

2423 patients with a primary diagnosis of HF were hospitalized during this 2 year period, accounting for a total of 7924 admissions (51% were male, 10.0% were minorities, and a mean age of 75.5, SD = 13.3). 1045 (43%) of these HF patients had either a concomitant primary or secondary mental health-related diagnosis for an admission during this same time period. Of the patients in this cohort who were readmitted for any reason within 7-, 30- and 60-days (N =573, 1126, and 1327, respectively), the presence of a mental health-

related diagnosis resulted in significantly (all p<.000) higher odds of a readmission (ORs: 2.6, 2.7, and 3.0, respectively for 7-, 30- and 60-day readmissions) relative to HF patients without a mental health-related diagnosis. The presence of a mental health-related diagnosis also increased the odds of HF-related readmissions (ORs: 1.9, 1.8, and 1.7, respectively for 7-, 30- and 60-day readmissions; all p<=.01). When we added some preliminary covariates (e.g., gender given more women were likely to have mental health-related diagnoses) to the model, these findings held. HF patients with a mental health-related diagnosis also had significantly more hospital days, whether totaled across all admissions (Median=19, Z =-15.9, p=.000) or just HF-related admissions (Median=6, Z = -8.3, p=.000), than HF patients without a mental health-related diagnosis (all admissions Median=10; HF-related admissions Median=5).

Table 1: Any Readmission of any Primary or Secondary Mental Health (MH) Diagnosis:

	No MH Diagnosis (N=1378)		Any MH Diagnosis (N=1045)		p-value	
	n	%	n	%		
Any readmission					χ^2	p
7-day readmission	224	16.3	349	33.4	96.7	.000
30-day readmission	498	36.1	628	60.1	137.1	.000
60-day readmission	599	43.5	728	69.7	164.6	.000
CHF-related Readmission						
7-day readmission	29	2.1	40	3.8	6.4	.01
30-day readmission	88	6.4	113	10.8	15.3	.000
60-day readmission	119	8.6	147	14.1	17.9	.000

Additional preliminary analyses were conducted by type of mental health diagnosis: whether classified as Depression, Anxiety, Other, or Mental health comorbid-dx, all patients with any of these types of mental health diagnoses had higher readmission rates than those who had no mental health-related diagnosis. Although for HF-related readmissions, these higher rates tended to hold only for Depression and Mental health comorbid diagnoses. There was also some suggestion that patients with a mental health comorbid diagnosis may have higher readmission rates than patients with other mental health diagnoses.

Table 2: Types of Mental Health Diagnoses

Type	N	%
None	1378	57.0
Dementia	34	1.4
Psychosis/schizophrenia	22	0.9
Depression	401	16.6
Anxiety	118	4.9
Alcohol/drug	41	1.7
Other	141	5.8
Mental health comorbid dx	282	11.7
Total	2417	100.0

Note. Other included delirium, bipolar, mood, adjustment, and personality disorders in addition to rarer diagnoses.

Conclusions

The presence of a mental health-related diagnosis in patients being admitted for heart failure significantly increases the odds of 7, 30 and 60 day readmission rates and is related to significantly more hospital days. Future work needs to determine if these findings hold for any comorbidity, different types of mental health-related diagnoses, or after adjusting for relevant covariates.