

Predictors of Homicide-Suicide Ideation in Acute and Chronic Pain Patients

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The objective of this study was to determine what variables are predictive homicide-suicide (H-S) ideation in rehabilitation acute pain patient (APP) and rehabilitation chronic pain patient (CPP) cohorts. To identify H-S, patients were asked if they were to commit suicide, would first kill someone else. This item was administered to 326 APPs, and 341 CPPs. Patients were assessed using the Battery for Health Improvement 2 (BHI 2), and data from this was used to develop logistic regression models to predict H-S ideation for these groups. Patients affirming the H-S item were compared to those not affirming the item on a wide range of demographic variables and BHI 2 scales. Significant variables ($p < 0.01$) were then utilized as independent variables in logistic regression models for APPs and CPPs, both of which were significant ($p < .001$). The above population groups affirmed the H-S item according to the following percentages: Rehabilitation APPs 3.99%, and rehabilitation CPPs 4.40%. For both APPs and CPPs, the H-S item was significantly correlated with some suicidality items and some homicide items. The model for APPs identified “having a suicide plan” as being predictive of H-S ideation. For CPPs, the items of having thoughts of revenge killing, being motivated to seek revenge without any verbal warning and the Doctor Dissatisfaction scale of the BHI 2 predicted H-S. The APPs model classified 96% of the APPs correctly while the CPPs model classified 97% of the correctly, although this was no better than the base rate. The prevalence of H-S ideation within APPs and CPPs is not insignificant. The APPS predictor model points to a close association between H-S and suicidality. The CPPs model indicates that there is a close association between H-S and anger/hostility and anger directed at the physician.

TABLE 1.
 Number, Percentage, and Relative Risk of Subjects Endorsing Suicidal/Homicidal Ideation

Category	Total n	Yes to Suicidal/Homicidal Ideation (n, %)	Relative Risk	Lower 95% CI	Upper 95% CI
Healthy Community (Reference Group)	1,329	25 (1.88%)	1.00	-	-
Community Patients	158	5 (3.16%)	1.68	0.65	4.33
Patients in Rehabilitation without Pain	110	4 (3.64%)	1.93	1.94	5.46
Patients in Rehabilitation with Acute Pain	326	13 (3.99%)	2.12	1.10	4.10
Patients in Rehabilitation with Chronic Pain	341	15 (4.40%)	2.34	1.25	4.39
Z score and p value between Community Patients and Acute Pain Patients		z = 0.47 p = 0.64			
Z score and p value between Community Patients and Chronic Pain Patients		z = 0.70 p = 0.49			

TABLE 2.
 Phi Correlation Coefficients

		Having a Suicide Plan	History of Wanting to Die	History of Suicide Attempt	Wanting to Die Because of Pain	Recent Frequent Suicide Ideation	Wanting to Die Because Life is Hard
APPs	Suicidal/Homicidal Ideation	0.311**	0.028	0.143**	0.144**	0.217**	0.141*
CPPs	Suicidal/Homicidal Ideation	0.043	0.053	0.068	0.078	0.274**	0.108*

Note: **p < 0.001 and *p < 0.01

TABLE 3.
 Significant Phi Correlation Coefficients with Suicidal/Homicidal Ideation and Selected Violence Behaviors

Violence Item	APPS	CPPS
	Suicidal/Homicidal Ideation	Suicidal/Homicidal Ideation
Seldom angry	NS	0.152
Explosive temper	NS	0.161
Anger with loss of control	NS	0.153
Angry fights with family	NS	0.143
Excessive anger	NS	0.159
Quick to anger	NS	0.231
Potential to kill and not feel guilty	NS	0.292
Violent ideation	0.195	NS
Thoughts of revenge killing	0.189	0.372
As dangerous as an injured animal	0.171	0.202
Motivated to seek revenge without any verbal warning	NS	0.220
Motivated to seek revenge	NS	0.250

Note: NS = non-significant and all correlations are $p < 0.01$

TABLE 4.
 Final Model Logistic Regression Results for Significant Independent Variables with Homicidal/Suicidal Ideation as the Dependent Variable for APPS and CPPS

Step χ^2 (df), p value	% of Cases Predicted Correctly by the Model	Step Nagelkerke R^2	Variable	Associated BHI-2 Scale	B	Wald, p value	Odds Ratio	Lower 95% CI for Odds Ratio	Upper 95% CI for Odds Ratio
ACUTE PAIN PATIENTS									
16.3 (1), <0.001	96.0	.171	Suicide Plan	Not applicable	2.7	19.7, <0.001	14.9	4.5	49.3
CHRONIC PAIN PATIENTS									
27.7 (1), <0.001	95.6	.258	Thoughts of Revenge Killing	Hostility	2.2	11.4, 0.001	8.7	2.5	30.8
12.5 (1), <0.001	95.6	.109	Motivated to Seek Revenge Without Any Verbal Warning	Borderline	2.1	10.9, 0.001	8.4	2.4	29.8
9.0 (1), 0.003	96.5	.077	Doctor Dissatisfaction Scale	Not applicable	0.10	7.6, 0.006	1.10	1.03	1.18