# Denial of Suicide Attempt Among Hospitalized Survivors of a Self-Inflicted Gunshot Wound

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**Objective:** Evidence suggests that suicide attempts by selfinflicted gunshot wound (GSW) are underreported and may in turn affect disposition following hospitalization. This study aimed to evaluate the clinical characteristics and use of services among individuals who do not disclose suicidal intent following a self-inflicted GSW.

**Methods:** Electronic medical record data from 128 survivors of self-inflicted GSWs at a level 1 trauma center were analyzed to identify factors associated with nondisclosure of a suicide attempt to medical staff.

**Results:** Results indicated that 29% of patients denied that a self-inflicted GSW was a suicide attempt, and 43% of patients who denied suicidal intent were identified by the psychiatric consultation and liaison service as presenting under circumstances suspicious of a suicide attempt. Logistic regression

Approximately 44,193 people die by suicide annually in the United States (1). Suicide attempts occur at an even greater rate, with an estimated 31:1 ratio of attempts to deaths by suicide (2). Each year, attempted suicides result in 316,572 hospital admissions and \$51 billion in combined costs of medical care and loss of work (1,3). Because survivors of suicide attempts are at high risk of recurrence (4), suicide prevention efforts tend to target these individuals (5). Unfortunately, about 60% of suicide decedents die in their first suicide attempt (6), with self-inflicted gunshot wounds (GSWs) accounting for 50% of suicides in the United States (3).

The percentage of suicide decedents with no prior suicide attempts is substantially higher among persons who die of self-inflicted GSWs (88%) than among decedents who use other methods of suicide (71%) (7). The high lethality of selfinflicted GSWs is at least partially responsible for this difference, but self-inflicted GSWs are not lethal in all cases (8). At least 54,115 nonfatal injuries from self-inflicted GSWs have been documented between 2001 and 2015 (3). This figure may be an underestimate because patients with selfinflicted, nonlethal GSWs sometimes choose not to disclose suicidal ideation, which limits the ability of trauma centers to determine whether a GSW was a suicide attempt. analyses indicated that patients who denied having attempted suicide were 10.86 times more likely to be discharged to home than patients who disclosed suicidal intent. In a multiple regression model, no clinical or demographic characteristics were significantly associated with nondisclosure of suicide intent.

**Conclusions:** Patients' nondisclosure of suicidal intent following a self-inflicted GSW may present a barrier to care for patients whose injuries are the result of a suicide attempt. Implications for reducing barriers to care for a high-risk population are discussed, including the impact of nondisclosure on future treatment and the potential utility of brief interventions for suicide risk reduction.

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It has been suggested that stigma and perceived negative consequences of disclosure may be responsible for patients' decisions not to disclose suicidal ideation in a primary care setting (9). Within acute care settings, the desire to avoid inpatient psychiatric hospitalization and documentation in the medical record may be barriers to reporting that a selfinflicted GSW was intentional.

Studying patients who deny that a self-inflicted GSW was a suicide attempt may have implications for efforts to reduce suicide risk during and after hospitalization. Risk of death by suicide is higher for patients treated for injuries in trauma centers compared with the general population (10,11). Recent policy advances highlight better identification of patients with suicidal thoughts or suicidal behavior as an important aspect in improving continuity of care in hospital settings (12).

Hospital admission data for self-inflicted GSWs reflect an overrepresentation of men (70%) (13), which is consistent with the percentage of suicides involving a self-inflicted GSW among men (20%) versus women (2%) (14). Additionally, 42% of male survivors of self-inflicted GSWs target bodily locations with higher lethality, such as the head or neck, compared with 18% of female survivors (13), which helps to explain the higher mortality of suicide attempts among men (14). To date, there is little research evaluating factors involved in a patient's decision to disclose or deny a suicide attempt to clinicians after being admitted to the hospital following a self-inflicted GSW. This study aimed to identify clinical and demographic correlates associated with survivors of selfinflicted GSWs who deny that their injuries are the result of a suicide attempt. Based on previous research, we hypothesized that patients who deny that a self-inflicted GSW was a suicide attempt were more likely to be male, to have no prior suicide attempts, and to be discharged to locations other than an inpatient psychiatric unit.

## METHODS

#### Sample

The sample consisted of 133 patients admitted to an emergency department (ED) in a medical center in Tennessee for injuries associated with a self-inflicted GSW between 2012 and 2015. Psychiatry consultations are ordered for all patients whose behavior is potentially classifiable as self-harm. Research assistants reviewed medical notes for all patients admitted to the hospital with GSW injuries but excluded patients whose injuries were not self-inflicted. Psychiatric consultations were typically conducted via face-to-face interviews with patients on medical or surgical floors and, in limited cases, in the ED. However, five patients were excluded from the sample because they died before psychiatric consultations were conducted. The final sample consisted of 128 patients between ages 16 and 80 (M±SD=42.0± 14.7); 118 (92%) identified as Caucasian, eight (6%) as African American, one (1%) as biracial, and one (1%) as South Asian, and most were males (N=97, 76%). Data were obtained in adherence to the guidelines of Vanderbilt University Medical Center's Human Subjects Review Board for use of pre-existing data.

# Measures

Data were abstracted from electronic medical records by research team members and double-coded by two research assistants. Reliability between coders was calculated for each variable of interest (average  $\kappa$ =.89). Coders revisited any items in which there was a discrepancy in coding and either reconciled the discrepancy or discussed it with a senior member of the research team.

Participants were assigned a code for either the denial group or the disclosure group based on denial or disclosure of suicidal intent associated with their injuries. Participants received the code for the denial group if they were directly quoted as denying that their injuries resulted from a suicide attempt or if the clinician responsible for psychiatric consultation and liaison noted in the medical records that the patient denied having made a suicide attempt. The medical record abstraction also included data obtained from interviews with family members of patients in the study, who provided information to the consulting psychiatrist about the injury and the state of the patient in the preceding days and weeks. However, only patient-reported denial was considered a sufficient reason to assign the code for the denial group. Data for general medical and psychiatric history were drawn from medical records maintained by hospital staff or consulting psychiatrists. Binary data (yes/no) for medical and psychiatric history were coded from medical record abstraction. Location of the GSW was abstracted from the medical record and coded into three categories: head, chest or abdomen, and other. Discharge location was abstracted from the medical record and coded as psychiatric inpatient unit, home, or other facility. The other-facility category included medical rehabilitation facilities, jail, and facilities for treatment of substance use disorders. Demographic data were abstracted from the medical record.

#### Analyses

Frequencies of all variables of interest were calculated for patients with complete psychiatric consultations. Data were missing from at least 1% of patients for all variables of interest and from up to 30% of patients for some variables, resulting in 49% of patients labeled as having incomplete data because of patient refusal to respond, unclear responses, and failure to assess by hospital staff. Because there were no patterns of missing data, a method known as multiple imputations with chained equations (MICE) was selected to impute missing values (14). MICE is widely used because of its flexibility to impute categorical data for missing values of multiple variables. In accordance with MICE procedure, the variance of the full available sample was used to impute values for patients with missing data. Descriptive statistics and individual logistic regression analyses were calculated and reported by using data from all available patients relevant to each analysis before imputation (15). Given the exploratory nature of this study, variables of interest were included in analyses on the basis of relevance to self-inflicted GSW and suicide research (8,16).

The multiple imputation estimate software in Stata 13 (17) was used to draw estimates from the imputed data set for all final analyses. Final analyses included individual logistic regression of denial of suicide attempt on all imputed predictors. These imputed results were consistent with those obtained by using pairwise deletion because no odds ratio changed by more than .01, which adds support to the MICE model. The exception was the predictor "abuse history," which was no longer a trend in the MICE model. That result is likely due to the comparatively large number of patients with missing data for this variable, which supports the use of MICE to more accurately represent the entire sample. Finally, a multivariate model was constructed to include all imputed predictor variables individually associated with denial of suicide attempt at a level of significance of  $p \le .10$  (18). By a process of backward elimination, the multivariate model was fit to retain only predictors accounting for an even greater amount variance compared with other predictors at a significance level of p < .05.

# RESULTS

Frequency calculations showed that 29% (N=37) of patients denied that their injuries from a self-inflicted GSW resulted from a suicide attempt (Table 1). For 43% of these patients,

TABLE 1.	Characteristics of 128 patients with a self-inflicted gunshot wound
(GSW), by	y disclosure or denial of a suicide attempt

	Disclosure (N=91; 71%)		Denial (N=37; 29%)		Total (N=128)	
Variable	N	%	N	%	N	%
Age (M±SD)	43.9±14.3		40.6±16.7		43.0±14.7	7
Sex						
Female	23	25	8	22	31	24
Male	68	75	29	78	97	76
Race						
White	85	93	33	89	118	92
African American	6	7	2	5	8	6
Biracial	0	0	1	3	1	1
South Asian	0	0	1	3	1	1
Year						
2012	22	24	7	19	29	23
2013	30	33	12	32	42	33
2014	16	18	9	24	25	20
2015	23	25	9	24	32	25
	25	23	5	21	52	25
Education	47	07			04	07
No high school	17	27	4	14	21	23
diploma					. –	
High school	27	44	16	57	43	48
diploma	10	~~~	0	~~	0.6	~~~
Associate degree	18	29	8	29	26	29
or higher						
Employment						
Employed/student	24	40	18	53	52	44
Unemployed	38	33	9	26	37	31
Retired	7	8	3	9	10	8
Disabled	16	19	4	12	20	17
Housing status						
Domiciled	89	99	34	92	123	97
Homeless	1	1	3	8	4	3
	-	-	0	0		0
Insurance	25	28	15	42	40	32
Insured	65	28 72	21	42 58	40 86	52 68
Uninsured	05	12	21	56	80	00
Marital status						
Single	33	36	10	27	43	34
Married	37	41	14	38	51	40
Divorced, widowed,	21	23	13	35	34	27
or separated						
Children in the						
home						
No	59	72	21	62	80	69
Yes	23	28	13	38	36	31
Psychiatric diagnosis						
No	20	23	16	43	36	29
Yes	68	77	21	57	89	71
				0,	00	
History of drug or						
alcohol use	24	27	10	20	74	27
No	24	27	10	28 72	34	27
Yes	64	73	26	72	90	73
Current drug use						
No	65	77	27	75	92	77
Yes	19	23	9	25	28	23
163						
Current alcohol use						
	41	50	16	44	57	48
Current alcohol use		50 50	16 20	44 56	57 61	48 52

psychiatric consultation determined that the GSW occurred under suspicious circumstances, and the denial of suicidal attempt was coded as a suspected false denial. For patients with complete data, 28% reported prior suicide attempts, 71% had a previously diagnosed psychiatric disorder, and 35% reported lifetime sexual, physical, or verbal abuse. Most injuries from self-inflicted GSWs were suffered to the head (44%), followed by the chest or abdomen (37%) and other body parts (20%). A majority of patients were discharged to inpatient psychiatric care (63%), but many were also discharged to their home (20%) or to other facilities (16%).

Table 2 presents the results of individual logistic regression of denial of suicide attempt on all variables of interest, with pairwise deletion used to handle missing data. Individual logistic regression using the MICE model indicated that patients with psychiatric diagnoses or prior suicide attempts were more likely than those without a similar history to be in the disclosure group (odds ratio [OR]=.40 and .32, respectively; p=.03 for both) (Table 3). Patients discharged to home and patients discharged to other facilities were more likely to be in the denial group (OR=10.86, p<.001, and OR=3.54, p=.02, respectively) compared with patients discharged to a psychiatric inpatient facility. In the multiple logistic regression model, the final model, only discharge location remained a significant predictor of group membership, indicating that patients discharged to home or to other facilities were more likely to be in the denial group compared with patients who were discharged to psychiatric inpatient facilities (OR=10.86, p<.001, and OR=3.54, p=.02, respectively).

Post hoc frequency calculations of raw data split by discharge location were conducted to describe differences between the characteristics of patients discharged to home (N=26) and those discharged to inpatient psychiatric facilities or other locations (N=102). Patients discharged to home were more likely than patients discharged to other locations to be employed (N=14, 61%, versus N=38, 40% [total N=119]), have children in the home (N=10, 40%, versus N=26, 29% [total N=127]), and to have suffered a GSW to the chest or abdomen (N=14, 54%, versus N=33, 23% [total N=128]). Patients discharged to home were less likely than patients discharged to other locations to have a psychiatric medication prescription (N=8, 31%, versus N=57, 56% [total N=128]), a prior psychiatric hospitalization (N=4, 15%,

#### TABLE 1, continued

	Disclosure (N=91; 71%)		Denial (N=37; 29%)		Total (N=128)	
Variable	Ν	%	Ν	%	Ν	%
Intoxicated at time						
of GSW						
No	28	40	15	52	43	43
Yes	42	60	15	48	56	57
Psychiatric						
medication						
No	42	46	21	57	63	49
Yes	49	54	16	43	65	51
Opiate prescription						
No	51	65	17	52	68	61
Yes	28	35	16	48	44	39
Benzodiazepine						
prescription						
No	49	58	24	69	73	61
Yes	35	42	11	31	46	39
ICU stay post-GSW <sup>a</sup>						
No	51	59	25	68	76	62
Yes	35	41	12	32	47	38
Chronic illness						
No	69	76	29	78	98	77
Yes	22	24	8	22	30	23
Chronic pain						
No	70	78	24	65	94	74
Yes	20	22	13	35	33	26
History of abuse <sup>b</sup>						
No	37	59	22	79	59	65
Yes	26	41	6	21	32	35
Prior suicide						
attempt						
No	58	67	31	86	89	72
Yes	29	33	5	14	34	28
Location of GSW						
Head	45	49	11	30	56	44
Chest or	30	33	17	46	47	37
abdomen						
Other	16	18	9	24	25	20
Prior psychiatric						
hospitalization						
No	56	65	28	80	84	69
Yes	30	35	7	20	37	31
Discharge location						
Psychiatric	69	76	12	32	81	63
inpatient facility						
Home	9	10	17	46	26	20
Other	13	14	8	22	21	16
Suspected false						
denial				_		
No	-	-	21	57	21	57
Yes	_	_	16	43	16	43

<sup>a</sup> ICU, intensive care unit

<sup>b</sup> Sexual, physical, or verbal

versus N=33, 35% [total N=121]), a prior suicide attempt (N=4, 16%, versus N=30, 31% [total N=123]), treatment in an intensive care unit following the GSW (N=7, 28%, versus N=40, 41% [N=123]), and GSW injuries to the head (N=6, 23%, versus

N=50, 49% [total N=128]). Patients discharged to home were less likely than patients discharged to other locations to be unemployed (N=5, 22%, versus N=32, 33% [total N=119]), but the groups were similarly likely to have health insurance (N=10, 62%, versus N=30, 70% [total N=126]).

# DISCUSSION

This study sought to identify characteristics of survivors of self-inflicted GSWs associated with an increased likelihood of denying that one's injuries resulted from a suicide attempt. These results demonstrate that a substantial portion of survivors of self-inflicted GSWs (29%) asserted-while being assessed in the hospital-that their self-inflicted GSWs resulted from circumstances other than a suicide attempt. Nearly half of the denial group's evaluations revealed information that suggested a false denial of suicide attempt. These findings are consistent with previous reports stating that approximately 22% of persons who are evaluated by a psychiatric consultation and liaison service following a self-inflicted GSW claim that their self-inflicted GSWs resulted from unintentional injuries (13).

Although it is impossible to definitively determine whether a patient is truthfully or falsely denying suicidal intent, contextual information provided by psychiatric consultations suggests false denial by a number of patients. Direct clinician quotations from medical transcripts suggesting false denial included "[former boyfriend] states he saw her put the gun in her mouth," "[patient] shot herself in bathtub at husband's house," "he shot himself when confronted by police," and "left voice mails on wife's phone saying goodbye." There were also multiple instances in which patients provided two or more conflicting stories about the circumstances of their injury. These injuries may represent undocumented suicide attempts, and they highlight the importance of increased assessment of suicidal intent or ideation and accurate identification of intentional or unintentional injury after patients are admitted to the medical floors of hospitals (4). For many individuals, the brief follow-up provided during the psychiatric consultation may be the only assessment of

current and prior suicidal intent that they receive following a traumatic injury. For some patients that may be adequate, but previous research suggests that some individuals with suicidal ideation may be prone to denying ideation when

TABLE 2. Association between characteristics of 128 patients with a self-inflicted gunshot wound (GSW) and denial of a suicide attempt

Variable	N <sup>a</sup>	OR	95% CI	р <sup>b</sup>
Age	128	.98	.96-1.01	.24
Male (reference: female) <sup>c</sup>	128	1.22	.49-3.06	.66
Race (reference: white)	126			
African American		.85	.16-4.47	.86
Biracial		_		
South Asian		-		
Education (reference: no high school diploma)	90			
High school diploma Associate degree or higher		2.51 1.89	.72–8.81 .48–7.44	.15 .36
Employment (reference: employed/ student) <sup>c</sup>	119			
Unemployed		.61	.24-1.56	.30
Retired		.81	.19-3.51	.79
Disabled		.47	.14-1.62	.23
Insurance (reference: no insurance) <sup>c</sup> Marital status (reference: single	126 128	.54	.24–1.21	.13
Married		1.25	.49-3.19	.64
Divorced, separated, or widowed		2.04	.76-5.49	.16
Children in the home (reference: no)	116	1.59	.68-3.69	.28
Psychiatric diagnosis (reference: no)	125	.39	.1788	.02
History of drug or alcohol use (reference: no)	124	.96	.41–2.32	.95
Current drug use (reference: no) <sup>c</sup>	120	1.14	.46-2.84	.78
Current alcohol use (reference: none)	118	1.25	.57-2.75	.58
Intoxication at time of attempt (reference: no) <sup>c</sup>	99	.62	.26–1.48	.49
Psychiatric medication (reference: no) <sup>c</sup>	128	.65	.30-1.41	.28
Opiate prescription (reference: none)	112	1.71	.75-3.91	.20
Benzodiazepine prescription (reference: no) <sup>c</sup>	119	.64	.28-1.48	.30
ICU stay post-GSW (reference: no) <sup>c,d</sup>	123	.70	.31-1.57	.39
Chronic illness (reference: no)	128	.87	.35-2.17	.76
Chronic pain (reference: no)	127	1.90	.82-4.39	.14
Abuse history (reference: no)	91	.39	.14-1.10	.07
Prior suicide attempt (reference: no)	123	.32	.1192	.03
Location of GSW (reference: head)	128			
Chest or abdomen		2.32	.95-5.96	.06
Other		2.30	.81–6.57	.12
Discharge location (reference: psychiatric inpatient facility)	128			
Home Other		10.86 3.54	3.94–29.95 1.21–10.35	<.001 .02
Prior psychiatric hospitalization (reference: no)	121	.47	.18–1.19	.11

<sup>a</sup> All missing data were handled by using pairwise deletion.

<sup>b</sup> Results are from individual logistic regression analyses. Variables associated with denial of suicide attempt at p<.10 were included in the final model by using multiple imputations with chained equations (MICE) (Table 3).

<sup>c</sup> The covariate was associated with predictors of denial of suicide attempt at p<.10. In the next set of analyses, these variables were included in the conditional specifications of imputed predictors in the MICE model (Table 3).

<sup>d</sup> ICU, intensive care unit

the consequences of disclosure (hospitalization) are more distressing than their current quality of life (9).

Data suggesting that nearly half of the denials of suicidal intent were false negatives are especially concerning when coupled with the finding that patients discharged to home were nearly 11 times more likely to be in the denial group compared with patients discharged to inpatient psychiatric care. Psychiatric consultations include a comprehensive evaluation of the circumstances surrounding potentially intentional self-inflicted injuries, but there are several sources that can hinder collection of these data (for example, family members not being present and severe patient injury). If accurate assessment of suicidal intent is obstructed for any reason, these undocumented GSW suicide attempts may account for the comparatively low number of GSW decedents with prior suicide attempts. Data from survivors of GSW suicide attempts may be less accurate because of increased severity of injury and believability of unintentional injury (due to cleaning or mishandling) compared with other methods of suicide attempt. However, this difference in prevalence of prior suicide attempts is also due to the high lethality of suicide attempts involving a GSW, and the rate of suspected false denials found in this study may not generalize to a sample of suicide decedents, who are not completely analogous to individuals who survived a suicide attempt.

It may be countertherapeutic to involuntarily hospitalize patients in psychiatric units if they deny having attempted suicide. Some may argue that even voluntary psychiatric hospitalizations are potentially iatrogenic if a patient does not wish to be admitted or perceives that the "cons" of being hospitalized outweigh the "pros" (19,20). One solution to treatment linkage barriers is the implementation of brief psychological interventions following potentially intentional, traumatic, and selfinflicted injuries. A number of empirically validated brief interventions have demonstrated efficacy to reduce suicidal thoughts and behaviors among survivors of suicide attempts (5), and these interventions can be implemented within the hospital while patients recover from physical injuries. Brief interventions during recovery may also be able to positively affect future disclosure of suicidal ideation or suicidal intent associated with the current injury, given the impact of prior mental health treatment on disclosure of suicidal ideation (9,21). However, future research is needed to determine

the efficacy of brief interventions for injury prevention and treatment seeking.

Results indicated that prior psychiatric diagnosis and prior suicide attempt were individually negatively associated with denial of suicide attempt. These individual associations are unsurprising because prior suicide attempts and psychiatric

TABLE 3. Final analysis of predictors of denial of a suicide attempt among 128 patients with a self-inflicted gunshot wound (GSW)<sup>a</sup>

Variable	OR	95% CI	р
Psychiatric diagnosis (reference: no)	.40	.1890	.03
Abuse history (reference: no)	.47	.17-1.24	.13
Prior suicide attempt (reference: no) Location of GSW (reference: head)	.32	.11–.91	.03
Chest or abdomen	2.31	.95-5.63	.06
Other	2.30	.81-6.51	.12
Discharge location (reference: psychiatric inpatient facility) <sup>b</sup>			
Home	10.86	3.94-29.95	<.001
Other facility	3.54	1.21-10.34	.02

<sup>a</sup> In order to include all relevant variables trending toward significance, all variables of interest associated with denial of suicide attempt at p<.10 during pairwise deletion analyses (Table 2) were included as predictors in the multiple imputations with chained equations (MICE) model (15,18). MICE allows for different predictors to be chosen to impute individual variables (conditional specifications), so each imputed predictor variable's conditional specifications include all variables of interest associated with that predictor at p<.10. MICE was conducted to produce 20 imputations by using the augment function to increase error in order to account for perfect predictors (15). Results were used to inform the final model in this table, the imputed multiple logistic regression model.

<sup>b</sup> Retained following backward elimination procedures in the imputed multiple logistic regression model because of association with denial of a suicide attempt at a significance level of p < .05

diagnoses are risk factors for suicide attempt (16,22). Results support previous research indicating that patients without prior experience with mental health care are less likely to disclose a suicide attempt (9). Alternatively, it may be that patients who falsely deny that their current injuries are the result of a suicide attempt are also more likely to falsely deny having made a previous suicide attempt and having one or more psychiatric diagnoses. Both of these explanations are concerning and indicate the need for increased intervention and psychoeducation about psychiatric services for survivors of self-inflicted GSWs.

It is worth noting that there was a trend indicating that patients who suffered self-inflicted GSWs to the chest or abdomen were more likely to be in the denial group compared with those with injuries to the head. Although these results were not significant, they are surprising because the head and the chest are similarly lethal locations, and without intent to injure oneself, there are few reasons why a firearm would be pointed directly at the head or chest. Unfortunately, there were not sufficient records on the type of weapon used by each patient to include these data, but future research should include these data because some firearms have a higher likelihood of injuring specific bodily locations in firearm suicides (23).

There were no significant associations between denial of suicide attempt and any demographic factor, despite the association of age and male sex with decreased mental health literacy and increased stigma toward mental illness and suicide (24,25). Specifically, our results did not replicate the findings of Williams et al. (13), who reported an increased likelihood among younger participants to claim that a self-inflicted GSW

6 ps.psychiatryonline.org

was an accident. Future research will need to directly incorporate scales assessing suicide stigma and mental health literacy in order to analyze interactions of these variables with demographic factors and denial or disclosure of suicidal intent.

Results of this study indicated that a substantial portion of individuals who survived a self-inflicted GSW were discharged directly to home, some of whom are likely to have falsely denied a suicide attempt. Frequency calculations indicated that patients who were discharged to home were more likely to have motivation to deny a suicide attempt compared with those discharged to a psychiatric inpatient or other facility (such as being employed and having children in the home). However, they were less likely to have prior psychiatric hospitalizations, psychiatric diagnoses, psychiatric medication prescriptions, and prior suicide attempts, indicating a somewhat better clinical picture as well as a potentially longstanding barrier to psychiatric care. Additionally, patients discharged to home were more likely to suffer a GSW to the chest or abdomen and were less likely to suffer a GSW to the head, indicating similar suicidal intent for individuals discharged home and those discharged to a psychiatric inpatient or other facility. Future research should assess the effects of clinical profile and motivation for denial on the likelihood of being discharged to home by employing formal assessment of motivation for denial.

There were a number of limitations of this study. Most important, the design precluded any ability to be certain about the legitimacy of suspected false denial. To determine clinical suspicion, research assistants reviewed brief notes by medical staff. Future research into denial of suicide attempt would benefit from semistructured interviews with patients and their support networks to verify suspicions about false denial of a suicide attempt. Additionally, the rate of intoxication among survivors of self-inflicted GSWs (57%) in this study was higher than the rate reported for suicide decedents (27%) (26). That may be due to the inclusion of individuals whose injuries truly were unintentional, and our sample may differ too much from suicide decedents to provide generalizable results. Additionally, more detailed injury severity data may provide insight into the way injury severity affects discharge. This study's analyses were limited by reliance on dichotomized, self-reported responses from patients. Future research should use dimensional measurement of lifetime suicidal behaviors and current suicidal intent as well as comprehensive suicide risk factor assessments. Longitudinal designs should be employed to assess future disclosure of previously denied suicidal intent. More diverse samples should be assessed. Females were well represented, but future research will benefit from assessment of greater diversity of racial-ethnic minority groups.

## CONCLUSIONS

A substantial portion of survivors of self-inflicted GSWs deny that their injuries are the result of a suicide attempt. Psychiatric consultation raised suspicion that more than one-third of these patients were falsely denying that a self-inflicted GSW resulted from a suicide attempt. Patients who denied a suicide attempt were nearly 11 times more likely to be discharged to home than to inpatient care. These results indicate that there are significant barriers to treatment for individuals who have made a suicide attempt using a self-inflicted GSW, and they highlight the need for improving assessment, intervention, and psychoeducation for survivors of self-inflicted GSWs, particularly while they are hospitalized on medical floors. Additionally, the results indicate a need for further reflection on ways in which usual care in health systems (such as inpatient hospitalization) may present a barrier for eliciting honest reports from suicide attempt survivors due to a fear of hospitalization.

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