Stigma predicts residential treatment length for substance use disorder

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Abstract

Background—Stigma has been suggested as a possible contributor to the high rates of treatment attrition in substance-dependent individuals, but no published empirical studies have examined this association.

Objectives—The present paper assessed the relationship between baseline stigma variables and length of treatment stay in a sample of patients in a residential addictions treatment unit.

Methods—The relationship between baseline stigma variables (self-stigma, enacted stigma, and shame) and length of stay for participants ($n = 103$) in a residential addictions treatment unit was examined.

Results—Higher self-stigma predicted longer stay in residential addictions treatment, even after controlling for age, marital status, race, overall mental health, social support, enacted stigma, and internalized shame. However, other stigma variables (i.e. internalized shame, stigma-related rejection) did not reliably predict length of treatment stay.

Conclusion—These results are consistent with other findings suggesting that people with higher self-stigma may have a lowered sense of self-efficacy and heightened fear of being stigmatized and therefore retreat into more protected settings such as residential treatment, potentially resulting in higher treatment costs. Specialized clinical interventions may be necessary to help participants cope with reduced self-efficacy and fear of being stigmatized.

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Introduction

Substance use disorders (SUDs) result in extremely high costs for those with the disorder, for their families, and for society as a whole. A recent large national survey estimated that 22.5 million people, or 9.4% of the US population, experience problems with SUDs (1). In 2009, at least 4.5 million Emergency Department (ED) visits were drug-related, and such visits have increased by over 80% since 2004 (2). Mortality from unintentional drug overdoses rose 68% between 1999 and 2004 (3). Hundreds of billions of dollars are spent each year to reduce the influx of drugs, to provide treatment, and to deal with consequences of substance abuse (4).

Treatment retention

Treatment retention and participation have been found to be positively related to post-discharge outcomes (5), with more days in treatment predicting higher likelihood of abstinence at post treatment (6,7). SUD samples typically suffer from high attrition, thus limiting the effectiveness of treatment (8). The following patient characteristics have been shown to predict attrition among individuals coping with cocaine abuse/dependence: female gender (9), racial minority status (10), lower socioeconomic status (SES) and education (10), lower levels of social support (9), lower psychological functioning (9), and marital status (11). Among adults in an intensive outpatient treatment program for SUDs, younger age has been shown to predict attrition (12). Unfortunately, few of these factors are modifiable and the search continues for changeable variables related to attrition. One possible variable of that kind is the stigma and self-stigma experienced by individuals with SUDs.

Definition of stigma

As with many other common language terms that have been adopted by social scientists, it has been difficult to arrive at a consensus definition of stigma. One of the most widely cited definitions comes from Goffman (13), who defined stigma as an "attribute that is deeply discrediting" and that impacts the perceiver's global evaluation of the person, reducing him or her "from a whole and usual person to a tainted, discounted one" (p. 3). Another influential definition can be found in the writings of Jones et al. (14) who suggest that a stigmatized person is "marked" as having a condition considered deviant by society. More recently, researchers have posited several types of stigma, including public, perceived, enacted, and self-stigma. *Public stigma* has been defined as the endorsement by the public of prejudice against a specific stigmatized group, which manifests in discrimination towards individuals belonging to that group (15). *Enacted stigma* refers to direct acts of discrimination and rejection by members of the larger society (16). People with SUDs frequently encounter enacted stigma (17,18). While enacted stigma has been clearly associated with a number of adverse outcomes in mentally ill populations (19,20), data directly demonstrating a link between encounters with enacted stigma and negative outcomes for those with SUDs is less available. Nevertheless, it seems likely that the effects of public and enacted stigma are severe given that public attitudes toward substance users are even more negative than attitudes toward people diagnosed with schizophrenia (21). *Perceived stigma* refers to the extent to which stigmatized individuals believe that others hold common negative stereotypes about individuals belonging to their stigmatized category

(22). Perceived stigma is important in that several studies have shown that fear of being stigmatized frequently serves as a barrier to treatment entry among those with SUDs (23,24). Finally, *self-stigma* refers to a process in which people who identify with a particular stigmatized group internalize the stereotypes and apply them to themselves (25). The resulting self-devaluation and fear of enacted stigma can then impede the pursuit of valued life goals, such as recovery from addiction (26).

The effects of stigma on treatment attrition

Regrettably, when they do seek help, patients with SUDs often experience discrimination in the healthcare setting and receive lesser quality care (27). Moreover, individuals with SUDs are often viewed as the most difficult, unpleasant, and unrewarding of patients (see 27 for review). These negative provider views may be partially due to a common view among treatment professionals that drug and alcohol misuse is a self-inflicted problem, that drug users have serious character flaws, and that treatment outcomes for these individuals are poor (28). The stigmatizing attitudes of the public and healthcare professionals serve as barriers to seeking treatment and affect treatment outcomes among users of illicit drugs (29), and, in the SUD area, stigma has been shown to be related to treatment delay or avoidance (1,30).

Public stigmatization of individuals with SUDs and resulting provision of lesser quality of care may partially explain the high attrition rates among individuals with SUDs as may stigma internalization or self-stigma (31). There is a surprising dearth of research that directly investigates the relationship between stigma and treatment attrition (32). The existing data on the issue is inconsistent and has focused on mental health samples. Rüsch and colleagues (33) found that among individuals with severe mental illness, after controlling for baseline sychopathology, higher self-stigma predicted *higher* levels of utilization of inpatient treatment. Conversely, Fung and colleagues (34) reported that among individuals diagnosed with schizophrenia, higher self-stigma was associated with *lower* levels of adherence to psychosocial treatment recommendations in mixed inpatient, day treatment, and outpatient samples. In an outpatient sample of patients with major depression, Sirey et al. (35) showed that higher levels of perceived stigma were associated with worse medication adherence.

Summary and hypotheses

Given that length of time spent in treatment for SUDs is a significant predictor of addiction treatment outcomes (6) and high attrition poses a significant problem in such treatment settings (7), investigating predictors of attrition is an important research question. More specifically, investigating different aspects of stigma (i.e. self-stigma, enacted stigma, and shame) and their respective effects on treatment attrition would fill an important gap in the stigma literature. This area is potentially of considerable applied importance since, contrary to the majority of variables previously found to predict attrition in SUD populations (i.e. demographics), stigma has been shown to be modifiable through treatment (36).

The present paper assessed the relationship between baseline stigma variables in a SUDs sample and length of treatment stay in a residential addictions treatment unit. Due to the

mixed pattern of associations found in previous studies, we had no specific predictions about the direction of the relationship between stigma and treatment attrition.

Materials and methods

Procedure

The present manuscript represents a secondary data analysis from a randomized controlled trial (36) aimed at investigating the efficacy of an Acceptance and Commitment Therapy (ACT) group intervention to reduce self-stigma and shame among individuals with SUDs. In the original study, participants were assigned randomly by cohorts to either receive treatment as usual (TAU) or the active treatment condition (ACT-based group intervention). TAU consisted of 6 hours of typical treatment groups in the residential setting where this data was collected, while the ACT-based group intervention consisted of three 2-h long group sessions, which took place in a single week. All participants also participated in the normal residential treatment program, which was typically preceded by a few days of on-site medical detox. Treatment lasted 28 days on average and could be extended according to assessed need. Participants provided informed consent, and the study was conducted in accordance with the standards of the Committee on Human Subjects Research of the institution in which this research was conducted. For additional detail, please refer to Luoma et al. (36). The present study used only the baseline self-report variables and length of stay in residential treatment, obtained from a chart review. Internal consistency from this study is reported at the beginning of each scale description.

Participants

Participants were 103 patients (61 men, 42 women) receiving residential substance abuse treatment with an average age of 35.5 years (SD = 9.62). Regarding race, 1% ($n = 1$) identified as American Indian/Alaskan Native, 5% ($n = 5$) as Black/African American, 85% ($n = 87$) as White, 8% ($n = 8$) as Other, and 2% ($n = 2$) provided no response. For ethnicity, 12% ($n = 12$) identified as Hispanic/Latino(a), 53% ($n = 55$) as Not of Hispanic Origin, and 35% ($n = 36$) gave no response. For marital status, 38% ($n = 39$) identified as never married, 18% ($n = 18$) as married, 17% ($n = 17$) as separated, 26% ($n = 27$) as divorced, and 2% ($n = 2$) gave no response. Approximately 54% ($n = 54$) of the sample were involved in criminal justice proceedings at the time of the study. Participants had used a broad range of substances, with the primary substances of addiction being alcohol, methamphetamines, and marijuana.

Measures

Demographics—A 32-item questionnaire was used to obtain basic participant demographic and background information related to drug use and functional status. Age was defined in terms of years. Marital status was dummy coded as 0 = not currently married and 1 = currently married. Race was dummy coded as 0 = White/Non-Hispanic and 1 = other.

Overall mental health—The General Health Questionnaire-12 (GHQ-12; α in the present sample = 0.89; 37) is a 12-item self-report scale designed to measure general mental health

and stress that has been widely used and well-validated. Higher scores indicate better general mental health.

Social support—The Multidimensional Scale of Perceived Social Support, (MSPSS; α in the present sample = 0.94; 38) is a 12-item self-report scale designed to assess the adequacy of the respondent's perceived social support. The measure has shown good reliability and validity in previous studies (39). Counter-intuitively, lower scores indicate *stronger* social support.

Internalized shame—The Internalized Shame Scale (ISS; α in the present sample = 0.96; 40) is a 24-item self-report measuring participants' levels of internalized shame. Due to a clerical error, the present study used a 7-point scale ranging from 1 (never) to 7 (always), rather than the 0 to 4 scale used in the original measure. The measure has shown good test-retest and construct validity in previous studies (41).

Stigma-related rejection—The Stigma-Related Rejection Scale (SRS; α in the present sample = 0.86; 18) is a nine-item survey of ongoing experiences of personal rejection related to enacted stigma adapted from a measure originally used in a mentally ill sample (42). Higher scores indicate higher rejection.

Self-stigma—The Internalized Stigma of Substance Abuse scale (ISSA; α in the present sample = 0.91) was adapted (22) from the Internalized Stigma of Mental Illness scale (ISMI; 44) by changing item mental health content to substance use content. The scale measures subjective experience of stigma related to substance abuse in areas such as alienation, stereotype endorsement, perceived discrimination, social withdrawal, and stigma resistance. The scale consists of 29 items, with higher scores indicating higher stigma.

Data analysis strategy

The charts of 30 participants from the Luoma et al. (36) study were destroyed during a flood at the treatment center. These cases were missing data on the primary dependent variable in these analyses – days in the residential unit – but they meet the assumptions of data missing completely at random (MCAR) and can be safely excluded from the analyses. Therefore analyses were conducted on the 103 cases that remained. Regression assumptions were tested using frequencies, histograms, measures of skewness and kurtosis, z-score distributions, and examining plots of residuals. Outliers were identified as scores >3 standard deviations from the mean. Two cases were outliers in terms of days in the residential unit and one on stigma-related rejection. These three values were replaced with the closest values less than three standard deviations below the mean. As an additional check, we repeated the analyses below with and without modified outliers and found that results were essentially unchanged. Of the variables in Table 1, only age (n = 16 missing), number of days on the residential program (n = 4 missing), and marital status (n = 2 missing) had missing values that needed to be imputed. Five datasets were imputed using the SPSS 20.0 multiple imputation procedure based on a Markov Chain Monte Carlo analysis. All analyses below are based on pooled estimates, unless otherwise indicated.

Results

Table 1 summarizes correlations between predictors, covariates, and the predicted variable. The correlations between variables were low enough to suggest sufficient independence for our analytic strategy. Only one correlation was high enough to warrant caution: specifically, between internalized shame and self-stigma ($r = 0.63$). As these constructs are fairly similar, it is not surprising that they are moderately correlated. These variables did show the lowest tolerance, suggesting some caution should be taken in interpretation, but the tolerance values were still above established cut-offs (>0.4). In addition, analyses conducted wherein only one or the other variable was included showed similar patterns of results, as described below. Thus, both variables were included in the final model. All variables in the equation showed good tolerances (>0.4).

Treatment effect on the length of stay

No differences were found in length of stay comparing groups that received the shame-focused intervention from Luoma et al. (36) and those in the control condition, $t(98) = 0.48$, $p = 0.63$. Thus, treatment condition was left out of the analyses.

Sequential multiple regression

A three-step linear regression was used to test the hypothesis that baseline stigma will predict time spent in residential treatment after controlling for demographic factors and general measures of functioning (Table 2). Demographic factors were entered as a block in the first step and measures of general functioning as a block in the second step. Stigma-related measures were entered in the third step to see if they accounted for variance in length of residential stay even after controlling for the earlier factors. In the first step, we regressed time in treatment on age, marital status, and race. Gender and criminal justice involvement were not included in this step because they were not correlated with time in treatment at the zero-order level. Demographic variables accounted for 13.7% of the variance in time spent in treatment, $F(3, 99) = 5.2612$, $p<0.01$. In Step 2 we added variables measuring general mental health and social support. After Step 2, the regression accounted for 18.7% of the variance in days spent in treatment. The addition of the variables in Step 2 did not significantly improve model fit over just adding the demographic variables in Step 1, $F(3, 96) = 2.173$, $p = 0.098$. In the third step, we added the stigma variables of internalized shame, stigma-related rejection, and self-stigma. After Step 3, the regression accounted for 29.3% of the variance in days spent in treatment, a significant improvement over Step 2, $F(3, 93) = 4.501$, $p<0.01$. As a group, stigma variables accounted for 10.6% of the variance after controlling for demographics and general functioning variables.

We also examined the significance of the beta coefficients of each variable as a way to assess their individual strength of prediction after controlling for all other variables. Of the demographic variables, older age, $\beta = 0.33$, $t(93) = 2.78$, $p<0.01$, and non-married status, $\beta = 0.6.21$, $t(93) = 2.91$, $p<0.05$, predicted longer time in treatment. Of the general functioning variables, better overall mental health predicted a longer stay, $\beta = 0.458$, $t(93) = 2.75$, $p<0.01$. Of the stigma variables, higher self-stigma was found to predict a longer length of stay in the residential unit, $\beta = 0.38$, $t(93) = 3.33$, $p<0.01$.

Discussion

Our aim was to add to the literature by investigating whether stigma would be a significant predictor of time spent in residential treatment over and above other predictors discussed in the extant literature. Stigma, in particular, is an important predictor to investigate, as unlike other predictors of attrition (i.e. gender, age, and SES status), the effects of stigma have been shown to be modifiable through treatment (36).

Our primary finding was that higher levels of self-stigma, in our sample of individuals with SUDs, predicted longer length of stay in residential treatment. This finding held even after controlling for relevant variables. The mechanisms through which this may have occurred have still to be elucidated. However, it has been reported by Schomerus and colleagues (43) that higher self-stigma has also been associated with lower drinking refusal self-efficacy. This suggests that patients with higher self-stigma may feel more disempowered and therefore stay longer in the relatively secure and protected confines of the residential treatment program. In addition, patients experiencing higher self-stigma tend to be more fearful of judgment from others and may retreat into settings, such as residential treatment, where they are protected from judgment due to their stigmatized status. While those reporting higher levels of stigma did report lower social support, our results suggest that the relationship between self-stigma and length of treatment stay was not merely due to a lack of social support, as social support was controlled for in regression analyses. Disentangling the means by which these effects occur and establishing a more consistent pattern of results will depend upon future research.

Our patterns of results were consistent with previous research on a sample identified as mentally ill, where higher levels of self-stigma predicted an increased tendency toward use of hospitalization (33). These results are also consistent with the only published results that we know of examining the association between stigma-related variables and attrition in patients with SUDs. That study, which analyzed different assessment points from the sample used in this study, found that an ACT treatment focused on self-stigma improved outpatient treatment attendance four months post-treatment and that this effect was mediated by post-treatment levels of internalized shame (36), where higher levels of shame at post-treatment were associated with higher treatment attendance at follow up. While internalized shame and self-stigma are not the same construct, they are highly correlated in our sample, and in both analyses higher levels of the stigma-related variables were related to more treatment attendance. Our finding that older age predicted longer stay in treatment was consistent with prior studies (9,10), while our finding that non-married status and better overall mental health predicted longer stay in treatment contrasted with previous studies (9,44).

Looking at the individual stigma variables, we were unsure why some were able to predict attrition, while others were not. Our measure of self-stigma was clearly the more powerful predictor. Self-stigma predicted attrition in both zero-order and partial correlations, while the other stigma variables did not. Perhaps the explanation lies somewhere in the fact that our measure of self-stigma was multidimensional in nature, purporting to measure alienation, stereotype endorsement, perceived discrimination, social withdrawal, and stigma resistance, while our other stigma-related measures (i.e. stigma-related rejection and internalized

shame) were much narrower in their focus. It could be that one or more of these dimensions of self-stigma are particularly influential in terms of treatment attendance. The answer awaits future studies which we hope will use more specific measures of different aspects of self-stigma.

These results add further support to the idea that the effects of stigma on health outcomes may vary across contexts (22). For example, while stigma toward drug use may deter initial drug use, it may promote continued drug use once a person has entered a drug-using culture due to tendency for stigma to reinforce in-group and out-group status (45). And while stigma appears to present a clear barrier to initial treatment seeking (30), the effects of stigma once a person has made contact with the healthcare system may vary depending upon the reaction of the healthcare system and the treatment setting. For example, in the Luoma et al. (36) study, participants in the TAU condition showed a rapid decrease in internalized shame, but then a later rebound. In contrast, shame went down more slowly in the ACT condition and continued to decline over time. Both of these results are consistent with the idea that higher levels of self-stigma and internalized shame during intensive inpatient treatment may result in longer stays in this relatively protected and relatively expensive treatment setting. Whether longer stays in this type of setting are ultimately helpful at a public health level awaits further study. For example, Rüsch et al. (33) found that some elements of stigma reduced attendance of outpatient treatment, which may result in a tendency toward more expensive inpatient treatment. Further studies are needed with different samples to see if stigma, for example, leads to less outpatient treatment, even as it leads to longer inpatient treatment.

These results are of particular significance to clinicians and researchers working with individuals with SUDs as they may allow for more indicated interventions to reduce treatment attrition. Given that individuals with higher self-stigma stayed longer in treatment, it is possible that they may have different clinical needs than those who experience less self-stigma. Patients with higher self-sigma may experience lower levels of self-efficacy and higher levels of fear of judgment that may need to be addressed in treatment. In contrast, since stigma tends to both result from and promote identification with a group (15), it may be that patients with lower levels of self-stigma resist identification as a person with addiction and may therefore lose out on peer support found in the recovery community. In considering how to intervene, it is also important to consider that while lengthier treatment stay has been associated with better long-term outcomes (7), residential treatment is expensive and longer stays for those with higher self-stigma may represent needless increased cost. It may be that targeted interventions for patients with higher self-stigma may be able to both improve longer-term treatment outcome and simultaneously encourage them to move on to less expensive outpatient care.

The results of this study should be interpreted in the context of study limitations. One limitation is the lack of substance use severity variables as a covariate in our analysis, given prior findings showing their significance in predicting treatment attrition (10,46). This weakness was mitigated somewhat by the fact that we did control for overall mental health indicator and social support variables. Another weakness is that our sample size is relatively small compared to the number of predictors, which leads to less reliable parameter estimates

and less power than would be obtained with a larger sample. A particular strength of this paper is the inclusion of perceived social support as a control variable, which helps rule out the alternative hypothesis that the longer residential treatment stay was simply due to a lack of social support.

Conclusions

Our data adds to the expanding stigma literature demonstrating that stigma is an important factor in recovery from SUD. Results showed that higher levels of self-stigma were related to longer stay in residential treatment setting for SUDs after controlling for other relevant predictors. These results could aid researchers and clinicians in having a better understanding of factors impacting attrition and, by extension, treatment outcomes. This study adds to a growing body of research that has just recently begun to study the impact of stigma on those attempting to recover from SUDs.

Acknowledgments

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Table 1

Zero order correlations between predictors, covariates, and predicted variables ($n = 103$).

Variable name	1	2	3	4	5	6	7	8	9
1. Number of days residential	1								
2. Age	0.28**	1							
3. Marital status	−0.23*	−0.02	1						
4. Race	−0.21*	−0.24*	0.23*	1					
5. General mental health	0.13	−0.16	0.02	0.08	1				
6. Social support	0.14	0.14	−0.01	−0.08	−0.09	1			
7. Internalized shame	0.10	0.15	0.04	−0.07	−0.37**	0.44**	1		
8. Stigma-related rejection	0.02	0.06	0.03	−0.13	−0.32**	0.44**	0.42**	1	
9. Self-stigma	0.28**	0.12	0.02	−0.05	−0.34**	0.51**	0.63**	0.42**	1

*
$p<0.05$,

**
$p<0.01$.

Table 2

Summary of sequential regression analysis by blocks of variables predicting the number of days in residential treatmen ($n = 103$).

Step/variable	β (SE)	Partial correlation	p Value	r^2	r^2	r^2
Step 1. Demographics				0.137	0.137	
Age	0.312 (0.122) *	0.256	0.01			
Marital status	−60.124 (30.036) *	0.205	0.04			
Race	−30.190 (30.235)	0.099	0.32			
Step 2. Functioning variables				0.187	0.050	
Age	0.334 (0.120) *	0.276	0.005			
Marital status	−60.214 (30.016) *	−0.213	0.04			
Race	−30.205 (30.185)	−0.103	0.31			
Overall mental health	0.313 (0.160) †	0.212	0.05			
Social support	10.016 (0.861)	0.125	0.24			
Step 3. Full model				0.293	0.106 †	
Age	0.331 (0.119) **	0.289	0.006			
Marital status	−60.427 (20.909) *	−0.235	0.03			
Race	−30.469 (30.041)	−0.118	0.25			
Overall mental health	0.458 (0.166) **	0.291	0.006			
Social support	−0.455 (0.994)	−0.048	0.65			
Internalized shame	−0.029 (0.061)	−0.055	0.64			
Stigma-related rejection	−0.059 (0.152)	−0.042	0.70			
Self-stigma	0.384 (0.116) **	0.344	0.001			

β = unstandarized regression coefficient; SE = standart error; r^2 = at each step; r^2 = change in r^2 at each step;

*
$p<0.05$,

**
$p<0.001$,

†
$p<0.06$.

Pooled standardized regression coefficients are not available for imputed data sets in SPSS 20.0 and therefore partial correlations are reported instead.