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Brief Communication

The relationship between rumination, depression and self-stigma in hazardous drinkers: an exploratory study

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Abstract

Background Self-stigma may have an important impact on people living with alcohol use disorders, however, few studies have explored the relationship between rumination and depression on self-stigma for people with hazardous drinking.
Objectives This study aimed to explore the relationship between rumination, self-stigma and depressive symptomatology for those with hazardous drinking levels and the relationship between these and alcohol use severity.
Method Participants were recruited online between February and May of 2019 through paid advertising on a page created on Facebook by the researcher. Two hundred and one participants completed the online survey questionnaires, with 114 (56.7%) meeting the Alcohol Use Disorders Identification Test (AUDIT) criteria with a score of 8 or above indicating hazardous drinking.
Results Step-wise regression analyses found that self-stigma and rumination were significant predictors of alcohol severity. Depression and rumination were found to be significant predictors of self-stigma. At Step 1 only rumination was significant, with this scale significantly predicting 26% of the variance of the internalised stigma.
Conclusion Although rumination was not a significant predictor of alcohol use severity in this study, it appeared to play an important part in the self-stigma for people engaged in hazardous drinking. More research is needed to determine the mediating factors in this relationship and the impact of these for people with hazardous drinking levels over time.

Keywords Self-stigma · Alcohol use disorder · Rumination · Depression

1 Introduction

Alcohol use disorder (AUD) is one of the most stigmatised mental disorders [1], with alcohol dependent individuals being held accountable for their disorder and viewed as not having a mental disorder at all [1]. By internalising negative public beliefs, individuals impacted by self-stigma may start to experience low self-esteem which leads to low self-efficacy and low confidence [2], with higher levels of self-stigma being found to be associated with depression, anxiety and lower quality of life in those with substance use disorders [3]. Internalised stigma may also play a role in treatment motivation for those with substance use disorders, with self-efficacy being found to decrease along with increasing levels of self-stigma [4].

Previous studies have suggested that mood disorders may directly or indirectly influence alcohol use and vice versa, for instance, excessive alcohol consumption may contribute to a diagnosis of depression whilst people experiencing depression may also engage in excessive alcohol use. For example, one study found that their participants who had a

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substance use disorder (SUD) were up to 40% more likely to be diagnosed with depression, while the participants who had been diagnosed with depression were 3.5% likely to be diagnosed with SUD [5].

A common feature of mood disorders is rumination, where this cognitive style can increase vulnerability to depressive symptoms such as low mood, feelings of sadness and diminished energy [5]. However, there is evidence that rumination may be a transdiagnostic feature, underlying a range of internalising disorders, such as eating disorders like bulimia nervosa, as well as an array of physical illnesses such as chronic pain [6]. Rumination is a negative cognitive style that also co-occurs with depression itself, where individuals engage in repetitive worry about the causes and consequences of depression [5].

Rumination can directly or indirectly cause the cognitive experiences of cravings as the individual uses alcohol to cease the rumination process [7], with the likelihood of a relapse increasing due to alcohol dependent individuals' engagement in rumination [8]. Studies have shown that rumination can also increase the risk of alcohol use and dependency, independently of depression [9] whilst recent research has further indicated that rumination specifically can account for the relationship between depression and alcohol use, rather than other negative thinking styles such worry [10].

Self-stigma and rumination may be associated with increased depression and alcohol use independently, however currently there is a lack of research exploring the relationship between rumination and self-stigma among hazardous drinkers. Previous research has demonstrated that those with a history of depression who reported greater stigma reported greater emotional dysregulation, which was then associated with the greater use of substances to cope [11]. However, rumination and self-stigma may potentially be closely associated as they may both reflect negative types of thinking. For example, thoughts that have been used to describe self-stigma such as "Why try: someone like me is not worthy or unable to work, live independently, have good health", [12] could be representative of an underlying thought process common to both depression and rumination, rather than self-stigma alone. In addition, these types of thoughts may also lead to the perception of greater consequences that may occur as a result of depression, thus also potentially leading to greater levels of rumination.

Although recent research has demonstrated that rumination accounts for the relationship between emotional disorders, such as depression, and alcohol use in non-hazardous drinking samples [10], and other studies have found that higher levels of self-stigma are associated with increased with depression in those with substance use disorders more broadly [3], no studies have explored the role that self-stigma may play in the relationship between alcohol use, depression and rumination for those who are engaged in hazardous drinking behaviours.

This study aimed to explore the relationship between rumination, self-stigma, and depressive symptomatology among hazardous drinkers. It is hypothesised that higher levels of self-stigma will be associated with greater rumination, greater alcohol severity, as well as higher depression scores. It is further hypothesised that rumination, and depression, will significantly predict self-stigma scores, with depression being the greatest predictor. It is also expected that self-stigma will be predicted by higher scores on rumination and depression scales. Additionally, it is expected that greater alcohol severity will be predicted by higher rumination scores.

2 Method

2.1 Participants

Participant recruitment occurred online through paid advertising on a page created on Facebook by the researcher. To qualify for inclusion in this study, participants confirmed they were age 18 years or over and could understand English and meeting the Alcohol Use Disorders Identification Test (AUDIT) [13] criteria with a score of 8 or above indicating hazardous drinking.

One hundred and fourteen participants' data were analysed with 35 males (30.7%), 78 females (68.9%), and one other gender identity (0.9%). Participants ages ranged between 18 and 70 years ($M = 33.5$, $SD = 12.35$). Table 1 displays demographic and clinical characteristics of the sample.

2.2 Measures

Demographic questions included age, gender, relationship status, education, occupational status, religious affiliation, psychiatric diagnosis, alcohol treatment history, medical history, and current medication use.

Table 1 Demographic characteristics of the sample (N = 114)

	N	%
Sex		
Male	35	17.4
Female	78	68.8
Other	1	0.5
Marital status		
Married/Defacto	28	13.9
Never married	60	29.9
Separated/divorced/widowed	26	12.9
Country of birth		
Australia/New Zealand	27	13.4
Europe	1	0.5
UK	6	3
Ireland	24	11.9
South Africa	43	21.4
Canada	9	4.5
Iran	1	0.5
USA	3	1.5
Occupational status		
Full-time	52	46
Part-time/Casual/Volunteer	30	26.5
Unemployed	31	27.4
Education		
Secondary/Completed Secondary	45	40.7
Bachelor or higher	38	33.6
Vocational qualification	29	25.7
Psychiatric diagnoses		
No diagnosis	56	49.1
Depression	21	18.4
Comorbid disorders	31	27.2
Other	6	5.3
Prior hospitalisation for psychiatric diagnoses		
Yes	21	10.5
Prescribed medication		
Yes	47	23.4
Non-prescribed drug use		
None	31	27.2
Marijuana	45	39.5
Other	38	33.3
Current alcohol treatment		
Some treatment	5	2.5
Prior alcohol treatment		
Some treatment	21	10.4

2.2.1 The alcohol use disorders identification test—self-report version (AUDIT) [14]

The AUDIT measure is a screening scale that measures hazardous and harmful drinking levels [13]. The self-report version is a 10-item scale ranging from "never" to "4 or more times a week", "1 or 2" to "10 or more" drinks per day and "never" to "daily or almost daily". The participants were asked to indicate how well each statement represented their level of alcohol intake at various times of their week, month and year. For example, "How often do you have a drink containing

alcohol?" with responses ranging from "never" to "4 or more times per week". The internal consistency for the AUDIT has been reported as high with a Cronbach's alpha α = 0.93 (N = 1888) [13]. The test–retest reliability for the AUDIT scale has been reported as 0.69 (N = 457) [15]. Participants with scores of 8–12 and above are considered to engage in risky drinking and scores 13 and above, high risk drinking [14].

2.2.2 Depression anxiety and stress scale (DASS 21) [16]

The DASS 21 scale is a self-report measure with three subscales which measure depression, anxiety and stress [16]. The participants rated each statement scored on a 4-point Likert scale, ranging from "0 = Never" to "3 = Almost always" based on their experience of depression, anxiety and stress over the past week. Example of items include, "I couldn't seem to experience any positive feeling at all". The internal consistency for the DASS 21 has been reported as excellent with high temporal stability [17]. Cronbach's alpha for the Depression subscale has been reported as α = 0.91, for the Anxiety subscale was reported as α = 0.84 and for the Stress subscale it was reported as α = 0.90 (N = 717) [16]. The test–retest reliability for the DASS 21 scale has been reported as 0.81 (N = 437, n = 241) [17]. The depression subscale was utilized for this study.

Ruminative responses scale (RRS) [18] The ruminative responses scale (RRS) is a 22-item scale was used to assess rumination [19]. Each item is listed as a statement that the participants indicated the actions they generally engage. For example, "Analyse your personality to try to understand why you are depressed" with responses ranging from "almost never" to "almost always". The internal consistency for the RRS was reported as high with Cronbach's alpha for the scale α = 0.90 (N = 1328) with a significant test–retest correlation of 0.67 [19].

Substance use stigma mechanism scale (SU-SMS) [20] The substance use stigma mechanism scale (SU-SMS) is a scale which measures self-stigma among a substance using population. The scale is an 18-item self-report measure with a standardised 5-point Likert response format. This scale consists of three subscales: Enacted Stigma (6 items), Anticipated Stigma (6 items) and Internalised Stigma (6 items) [20], with possible responses ranging from "never" to "very often". An example of items includes, "Family members have thought that I cannot be trusted". The internal consistency of the SU-SMS scale has been reported as significant with Cronbach's alpha α = 0.90 across all the subscales (N = 175) [20].

3 Procedure

Participants accessed the survey via a link that was advertised on Facebook and the researcher's social media pages. Participants viewed a Participants Information Statement, which included an explanation of the purpose of this study, requirements of participants, researcher's contact details, and information about confidentiality. Those who selected "I consent to participate in this study" were taken to the survey, which was estimated to take 20 min to complete.

Contact details for crisis and mental health support services were provided in the Participant Information Statement at the beginning and again at the conclusion of the survey in case participants experienced any distress as a result of completing the questionnaire. All data was collected anonymously by the researcher, with no identifying information being requested from participants. Participants could choose to discontinue the study at any time and were given the details of the researcher at the beginning of the study if they chose to have their data removed from the project at any stage prior to publication. The study was approved by Western Sydney University Human Research Ethics Committee (HREC Approval Number: H13034). The data that support the findings of this study are available from the corresponding author upon request.

3.1 Data analyses

The study was a planned cross-sectional survey design. A frequency analysis revealed that 114 participants met the AUDIT criteria of scoring 8 and above and were included in the analysis. T-tests were conducted to explore the impact of demographic characteristics (gender male/female; marital status—partnered/partnered; employed yes/no;) on scores on depression (DASS 21 depression subscale), internalised stigma (SU-SMS—internalised stigma subscale) and rumination (RRS) and to compare 'risky' and 'high risk' AUDIT drinking groups. Bonferroni adjustments were applied to correct for multiple testing where the p value was set at 0.007. Correlations were conducted on age and between key variables depression (DASS 21 depression subscale), internalised stigma (SU-SMS—internalised stigma subscale) and rumination (RRS).

A step wise regression analysis was conducted to assess the ability of self-stigma as measured by (SU-SMS-Internalised Stigma subscale), depression (DASS 21), and rumination (RRS) to predict the levels of total AUDIT scores and a further step-wise regression analysis was conducted to assess the ability of rumination as measured by (RRS) to significantly predict self-stigma scores as measured by (SU-SMS—internalised stigma subscale) total score, including depression.

Based on the statistical assumptions for the detection of a medium effect size utilising G-power analysis (f2 = 0.05) based upon a 0.90 power level at a significance level of 0.05, a minimum target sample of 173 participants were required for mediation analysis so this was not conducted as part of this study.

4 Results

Of the 114 participants who took part, 39 (34%) met the AUDIT cut off for 'Risky' drinking and 74 (66%) met the cut off for 'High risk' drinking. Means for the sample overall were: DASS-Depression subscale ($M = 10.59$, $SD = 5.56$), internalised stigma (SU-SMS) ($M = 14.60$, $SD = 7.27$) and rumination ($M = 54.72$, $SD = 15.47$). T-tests were conducted on demographics variables on gender (male/female), and education status (high school; higher qualification and above), employed (yes/no) and DASS depression, SU-SMS and rumination scales. No significant results were found. Table 1 displays further detailed demographic characteristics of the sample.

4.1 Correlation analyses

A Pearson product-moment correlation coefficient analysis was conducted to assess the relationship between AUDIT total score and age, internalised stigma (SU-SMS), rumination (RRS), and depression (DASS 21). A significant positive correlation was found between AUDIT total score and internalised stigma subscale (SU-SMS), DASS depression and rumination with higher scores on the scale being associated with higher scores on the AUDIT scale. Table 2 displays significant correlations found.

4.2 Alcohol use severity regression

A step-wise regression analysis was conducted on overall AUDIT scores with SU-SMS Internalised Stigma, depression (DASS 21), and rumination (RRS) included in the model. At Step 2, both internalised stigma (SU-SMS) and rumination (RRS) were significant in the model, with F (1,110) 15.601, $p < 0.001$, R^2 0.221. At Step 1 SU-SMS Internalised Stigma subscale was significant, with $F (1, 111) = 26.282$, $p < 0.001$, R^2 0.191, with this scale significantly predicting 19% of the variance of the AUDIT score. Depression was excluded from the model at both Step 1 and Step 2. See Table 3 for results.

4.3 Internalised stigma regression

A step-wise regression analysis was conducted on internalised stigma (SU-SMS) with significant correlations of rumination as measured by (RRS) and DASS depression included in the regression model. At Step 2, both DASS depression and rumination (RRS) were significant in the model, with F (1,110) 22.662, $p < 0.001$, R^2 0.292. At Step 1 rumination (RRS) was significant, with $F (1, 111) = 38.976$, $p < 0.001$, R^2 0.260, with this scale significantly predicting 26% of the variance of the internalised stigma (SU-SMS) score. Depression was excluded from the model at Step 1. See Table 3 for results.

Table 2 Significant Pearson correlations

	Rumination RRS	Internalised stigma (SU-SMS)	DASS depression	AUDIT
Rumination RRS		0.600[a]	0.674[a]	0.370[a]
Internalised stigma (SU-SMS)	0.600[a]		0.578[a]	0.572[a]
DASS depression	0.674[a]	0.578[a]		0.365[a]
AUDIT	0.370[a]	0.572[a]	0.365[a]	

[a]Correlation is significant at the 0.001 level (2-tailed)

Table 3 Step-wise regression for AUDIT scores and internalised stigma scores (SU-SMS)

Scales		Beta	t	95% Confidence Interval	
				Lower Bound	Upper Bound
AUDIT score					
Step 1	Internalised stigma scores (SU-SMS)	0.438	5.127	0.247	0.557
Step 2	Internalised stigma scores (SU-SMS)	0.317	3.603	0.143	0.491
	Rumination	0.083	2.042	0.002	0.164
Internalised stigma (SU-SMS)					
Step 1	DASS-depression	0.656	6.243	0.448	0.864
Step 2	DASS-depression	0.447	3.196	0.17	0.723
	Rumination	0.112	2.227	0.012	0.212

5 Discussion

This is one of the first studies to explore the relationship between rumination and self-stigma among a hazardous drinking population. Consistent with previous research [1] and with the hypothesis of this study, internalised stigma and rumination were found to be significant predictors of alcohol use severity. This study further hypothesised that high scores on the self-stigma scales would be associated with high scores on the rumination scale and that high scores on the self-stigma scales would be associated with greater depression scores.

In this study, rumination scores were found to be significantly correlated with depression scores, as has been found in previous research [21], and self-stigma was found to be associated with greater depression scores. As recent research has demonstrated that rumination accounts for the relationship between depression and alcohol use [10], and that higher levels of self-stigma are associated with increased with depression in those with substance use disorders [3], this current study supports the idea that self-stigma may play in role in the relationship between alcohol use, depression and rumination for those engaged in hazardous drinking behaviours. Rumination and depression were found to be significant predictors of self-stigma in the hazardous drinking sample, which is a novel finding of this study. This may indicate that rumination could potentially be addressed in psychological interventions targeting transdiagnostic features in alcohol use and depression and may potentially improve both depression and alcohol use outcomes.

However, it was further hypothesised that both rumination and depression, would significantly predict internalised stigma scores, with depression being the greatest predictor. Although both were found to predictors, the greatest predictor found in the model was rumination, not depression. This supports the idea that these negative types of thinking styles may be conceptually related to each other however more work is needed to understand the role of rumination in relation to internalised stigma. Given that previous research has found that there was a significant indirect effect for depression severity on alcohol use disorder severity via rumination [10], more research is need in a larger sample size to determine if self-stigma and rumination may mediate the relationship between alcohol use severity and depression in those with hazardous levels of drinking behaviour.

5.1 Limitations

Limitations of this study include the small sample size, the use of self-report data, whilst it is also possible that some may have under reported their diagnoses or alcohol usage due to the stigma surrounding mental illness. The sample size was also not large enough to conduct any type of path analyses, so the relationship between rumination, depression, self-stigma and alcohol use is still unexplored. Participants were asked to answer questions regarding any experiences of internalised stigma, however, it is possible that the participants did not deem their alcohol use as significant enough to report internalised stigma in relation to substance use. In addition, the sample was skewed towards a female sample, and it is unclear if these results would also apply to male and non-binary participants.

5.2 Future directions

More research is needed in a larger sample size that is more representative of the general population that consume alcohol given the gender skew in this sample being more towards female than male alcohol users in this study. It

may be that the relationship found here is primarily applicable to females engaged in risky alcohol use and more work is needed to understand how gender may impact rumination and self-stigma in a larger sample, particularly given that there are several gender differences noted in the literature in this area [22]. At this stage few studies have explored the role of internalised stigma in understanding alcohol use behaviours, and more research is needed using longitudinal designs to determine if rumination or internalised stigma may predict alcohol use over time, and if these may also predict the transition from risky to high-risk drinking requiring treatment.

5.3 Conclusions

Internalised stigma and rumination were found to be important for those engaged in hazardous drinking behaviours with both significantly predicting alcohol use severity. In addition, those who scored higher on the rumination scale also scored higher on the self-stigma scale, with rumination being found to predict internalised stigma in this sample. Depression was not found to be a significant predictor of alcohol use severity, suggesting that rumination and self-stigma may make unique contributions to alcohol use severity for this group.

More research is needed to the understand the impact of these on drinking behaviours over time and whether these rumination and internalised stigma should be targeted in transdiagnostic psychological interventions addressing hazardous drinking. It is recommended that clinicians assess negative thinking styles, particularly those regarding self-stigma, and determine if these may be impacting alcohol treatment outcomes.

References

1. Schomerus G, Lucht M, Holzinger A, Matschinger H, Carta MG, Angermeyer MC. The stigma of alcohol dependence compared with other mental disorders: a review of population studies. Alcohol Alcohol. 2010;46(2):105–12. https://doi.org/10.1093/alcalc/agq089.
2. Larson JE, Corrigan PW. Psychotherapy for self-stigma among rural clients. J Clin Psychol. 2010;66(5):524–36. https://doi.org/10.1002/jclp.20679.
3. Brown SA, Kramer K, Lewno B, Dumas L, Sacchetti G, Powell E. Correlates of self-stigma among individuals with substance use problems. Int J Ment Heal Addict. 2015;13(6):687–98. https://doi.org/10.1007/s11469-015-9559-9.
4. Bozdağ N, Çuhadar D. Internalized stigma, self-efficacy and treatment motivation in patients with substance use disorders. J Substance Use. 2021. https://doi.org/10.1080/14659891.2021.1916846.
5. Grant BF, Goldstein RB, Saha TD, Chou SP, Jung J, Zhang H, et al. Epidemiology of DSM-5 alcohol use disorder: results from the national epidemiologic survey on alcohol and related conditions III. JAMA Psychiat. 2015;72(8):757–66. https://doi.org/10.1001/jamapsychiatry.2015.0584.
6. Nolen-Hoeksema S, Morrow J. Effects of rumination and distraction on naturally occurring depressed mood. Cogn Emot. 1993;7(6):561–70. https://doi.org/10.1080/02699939308409206.
7. Sansone RA, Sansone LA. Rumination: relationships with physical health. Innovat Clin Neurosci. 2012;9(2):29. https://doi.org/10.1111/j.1360-0443.1993.tb02093.x.
8. Spada MM, Caselli G, Wells A. A triphasic metacognitive formulation of problem drinking. Clin Psychol Psychother. 2013;20(6):494–500. https://doi.org/10.1002/cpp.1791.

9. Caselli G, Gemelli A, Querci S, Lugli AM, Canfora F, Annovi C, et al. The effect of rumination on craving across the continuum of drinking behaviour. Addict Behav. 2013;38(12):2879–83. https://doi.org/10.1080/16066350802100822.
10. Caselli G, Bortolai C, Leoni M, Rovetto F, Spada MM. Rumination in problem drinkers. Addiction Res Theory. 2008;16(6):564–71. https://doi.org/10.1080/16066350802100822.
11. Wolitzky-Taylor K, et al. Rumination and worry as putative mediators explaining the association between emotional disorders and alcohol use disorder in a longitudinal study. Addict Behav. 2021;119:106915. https://doi.org/10.1016/j.addbeh.2021.106915.
12. Corrigan P, et al. Developing a research agenda for understanding the stigma of addictions Part I: lessons from the Mental Health Stigma Literature. Am J Addict. 2017;26(1):59–66. https://doi.org/10.1111/ajad.12458.
13. Saunders JB, Aasland OG, Babor TF, De La Fuente JR, Grant M. Development of the alcohol use disorders identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-II. Addiction. 1993;88(6):791–804. https://doi.org/10.1111/j.1360-0443.1993.tb02093.x.
14. Babor T, et al. The alcohol use disorders test: Guidelines for use in primary care. World Health Organization. http://www.talkingalcohol.com/files/pdfs/WHO_audit. Pdf. Accessed 13 Nov 13 2013; 2001.
15. Selin KH. Test-retest reliability of the alcohol use disorder identification test in a general population sample. Alcoholism Clin Exp Res. 2003;27(9):1428–35. https://doi.org/10.1097/01.ALC.0000085633.23230.4A.
16. Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the depression anxiety stress scales (DASS) with the beck depression and anxiety inventories. Behav Res Ther. 1995;33(3):335–43. https://doi.org/10.1016/0005-7967(94)00075-U.
17. Brown TA, et al. Psychometric properties of the Depression Anxiety Stress Scales (DASS) in clinical samples. Behav Res Ther. 1997;35(1):79–89.
18. Nolen-Hoeksema S. The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. J Abnorm Psychol. 2000;109(3):504–11. https://doi.org/10.1037/0021-843X.109.3.504.
19. Treynor W, Gonzalez R, Nolen-Hoeksema S. Rumination reconsidered: a psychometric analysis. Cogn Ther Res. 2003;27(3):247–59. https://doi.org/10.1023/a:1023910315561.
20. Smith LR, Earnshaw VA, Copenhaver MM, Cunningham CO. Substance use stigma: reliability and validity of a theory-based scale for substance-using populations. Drug Alcohol Depend. 2016;162:34–43. https://doi.org/10.1016/j.drugalcdep.2016.02.019.
21. Nolen-Hoeksema S, Stice E, Wade E, Bohon C. Reciprocal relations between rumination and bulimic, substance abuse, and depressive symptoms in female adolescents. J Abnorm Psychol. 2007;116(1):198–207. https://doi.org/10.1037/0021-843X.116.1.198.
22. Steingrímsson S, et al. The changing gender gap in substance use disorder: a total population-based study of psychiatric in-patients. Addiction. 2012;107(11):1957–62. https://doi.org/10.1111/j.1360-0443.2012.03954.x.