A Longitudinal Investigation on the Relation between Self-Compassion and Alcohol Use in a Treatment Sample: A Brief Report

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ABSTRACT: Alcohol misuse is often a chronic problem such that relapses following treatment are common. One potential protective factor for alcohol misuse is self-compassion, which includes self-kindness, feelings of common humanity, and mindfulness when faced with personal suffering and hardships. This study tested the hypothesis that self-compassion, and specifically self-compassion promoting facets including self-kindness, common humanity, and mindfulness, were longitudinally associated with reduced alcohol use among a sample of men and women in substance use disorder treatment ($N=62$). Results partially supported the hypothesis, in that only the mindfulness facet of self-compassion was associated with decreased alcohol use over time. Sex and age differences as they related to the positive facets of self-compassion and alcohol use emerged. These findings suggest that positive facets of self-compassion may be beneficial factors to cultivate in alcohol treatment programs.

KEYWORDS: alcohol-related disorders, alcohol deterrents, mindfulness

Alcohol misuse is often a chronic problem and multiple relapses are common among those who seek treatment.[1,2] Treatment outcome studies suggested that approximately 60% of patients relapse on alcohol following treatment.[3,4] Examination of protective factors that reduce the likelihood of relapse is needed given the high prevalence of alcohol relapse following treatment.

One potential protective factor for relapse is self-compassion. Self-compassion is defined as being open, empathic, nonjudgmental, and accepting of oneself and one's own hardships.[5] Self-compassion allows oneself to be aware of one's faults and not become overwhelmed by negative emotions, as individuals who are compassionate toward their failures are more likely to take healthy steps to address them.[6] In a prior studies, self-compassion had an inverse relation with shame[7,8] and depression,[8,9] both correlates of problematic drinking.[10-12] Emerging research suggested self-compassion negatively related to alcohol use in community and substance use disorders (SUD) treatment seeking samples.[13,14]

Self-compassion is a multi-faceted construct with mindfulness, self-kindness, and common humanity as factors that promote self-compassion. Mindfulness is the present-focused awareness of one's own reactions to life events.[5] Self-kindness involves having understanding and providing self-care to oneself when experiencing difficulty.[5] Common humanity suggests that all humans, including oneself, experience hardships, difficulties, and negative emotions.[5] Prior research suggested these individual facets significantly relate to SUD. Those in treatment for SUD had lower levels of mindfulness compared to a non-treatment seeking sample.[15] Increased self-kindness correlated with reduced alcohol use between baseline and a 15-week follow-up among adults in SUD treatment.[13] Common humanity was inversely related to substance use disorder risk[14] and may be beneficial for individuals in treatment by reducing feelings of isolation.[16] While these findings suggest self-compassion promoting facets may serve as protective factors for alcohol misuse, research examining these positive aspects as they relate to alcohol use over time following SUD treatment is still needed.

Prior research suggested age and gender differences in self-compassion. Men appeared to experience slightly higher levels of the overall self-compassion construct than women,[17-19] while women reported higher levels of self-kindness compared to men.[19] These findings suggest that men and women may differ in their experience of self-compassion and positive aspects of self-compassion such as self-kindness. Additionally, self-compassion appears to be greater in older adults compared to younger adults[20] and facets of self-compassion may also differ based on age.[13] Despite these prior findings, researchers have yet to examine the possible moderating effect of age and gender on the relation between self-compassion, or positive aspects of self-compassion, and alcohol use following treatment.

Purpose

We examined whether higher levels of self-compassion were longitudinally associated with reduced alcohol use among a sample of men and women in SUD treatment. Only one prior published study examined the relation between self-compassion and alcohol use over time in a treatment sample.[13] This prior study conducted a follow-up assessment 15-weeks after baseline regardless of participant's status in treatment. We sought to address this limitation by conducting two follow-up assessments 2- and 4-months following completion of treatment. We hypothesized that higher self-compassion, and the positive facets of self-compassion (mindfulness, self-kindness, and common humanity), would predict lower levels of alcohol use over time. Age and sex were included as covariates in analyses and interactive effects between self-compassion and time, sex, and age in predicting alcohol use were examined.

Method

Participants

Participants were 40 male and 22 female SUD treatment patients recruited from a 60-day Intensive Outpatient Program (IOP). The IOP follows a traditional 12-step philosophy and did not specifically focus on enhancing self-compassion or related constructs (eg, mindfulness). Most participants were non-Hispanic Caucasian (93.5%). Fifty-three percent of participants were unemployed or on disability prior to treatment, 38.7% were employed full time, and 8.1% part-time. Regarding education, 69.3% had some college education or a college degree, 22.6% had a high school degree, and 8.1% did not complete high school. The mean age of participants was 32.59 (SD = 10.07).

Measures

Alcohol use. The Alcohol Use Disorders Identification Test (AUDIT),[21] a 10-item self-report measure, was used at all three time points to assess alcohol use/problems (eg, quantity, frequency, and negative consequences related to alcohol use). The AUDIT measured alcohol use/problems in the past six months at baseline, and in the past 2 months at each of the follow-up assessments. Scores on the AUDIT range from 0 to 40, with higher scores indicating greater alcohol use/problems. The AUDIT is a reliable and valid measure[22] and demonstrated good internal consistency in the current study (α = .84-.96). In addition to the AUDIT, participants were asked at each time point to report the largest number of alcoholic drinks consumed on one occasion in the past six months, at baseline, and in the past two months during each follow-up.[23]

Self-compassion. The Self-Compassion Scale (SCS),[5] a 26-item self-report questionnaire, assessed self-compassion at all three time points. Participants rated items (eg, "I try to be understanding and patient toward aspects of my personality I don't

like") on a 5-point Likert scale ranging from "*Almost Never*" to "*Almost Always*," with higher scores indicating greater self-compassion. In addition to a total score, the SCS has six subscales, assessing three bipolar facets of self-compassion: self-kindness versus self-judgment, mindfulness versus over-identification, and common humanity versus isolation. The SCS is a reliable and valid measure of self-compassion,[5] and had good internal consistency in the current study (α = .87-.90).

Procedures

The current study's procedures were approved by the Institutional Review Board of the last author's institution. Participants were informed about the study by treatment providers during the IOP intake session and were instructed to discuss participation with a research team member if interested. Participants individually completed measures during their first week of IOP. They were asked to return at two- and four-months post-discharge to complete follow-up measures. Participants were paid $20 at each assessment.

Data analytic strategy

To examine the effects of self-compassion on alcohol use across time, repeated measure analyses were conducted using generalized estimating equations (GEEs)[24] with PROC GENMOD in SAS. GEE is an appropriate method for repeated measure analyses because it can handle correlated data that arises from multiple assessments from the same individuals.[25] Predictor variables were standardized to aid in the interpretation of effects and normal distributions were specified. When examining the three positive aspects of self-compassion (ie, mindfulness, self-kindness, common humanity) as they related to alcohol use over time, the three facets were entered into the model simultaneously. Sex and age were included as covariates in the model. We also examined interaction effects between self-compassion and time, sex, and age in predicting alcohol use.

Results

Retention rates were 74% at the two-month follow-up and 63% at the four-month follow-up, comparable to previous studies with IOP populations.[26] There were no differences in demographic or study variables between individuals who completed versus those who did not complete follow-up assessments. Table 1 includes a comparison of men and women's means and standard deviations across time points among study variables. Table 2 includes GEE analyses. Time significantly predicted alcohol use and self-compassion, such that AUDIT scores and largest number of drinks on one occasion decreased over time and SCS scores increased over time. No interaction effects between time and sex or age were found.

Self-compassion did not significantly relate to alcohol use over time nor were there any interaction effects between self-compassion and age, sex, or time. In regard to the three self-compassion

Table 1. Comparison of men and women's descriptive statistics among study variables.

	MEN			WOMEN		
	BASELINE M (SD)	2-MONTH M (SD)	4-MONTH M (SD)	BASELINE M (SD)	2-MONTH M (SD)	4-MONTH M (SD)
AUDIT	14.73 (13.19)	1.74 (5.31)	2.56 (5.93)	19.20 (13.36)	2.77 (4.77)	4.31 (7.60)
Largest # drinks	14.30 (15.24)	3.48 (9.87)	3.10 (6.97)	11.57 (7.35)	.89 (2.46)	1.67 (3.35)
SCS total	2.99 (.40)	2.89 (.64)	2.98 (.45)	3.07 (.46)	3.06 (.39)	3.10 (.51)
SCS mindfulness	2.73 (.85)	2.84 (.88)	2.97 (.76)	2.49 (.77)	2.95 (.61)	2.86 (.83)
SCS common humanity	2.56 (.94)	2.60 (.80)	2.70 (.78)	2.69 (.87)	2.77 (.55)	2.94 (1.02)
SCS self-kindness	2.33 (.90)	2.50 (.83)	2.77 (.91)	2.29 (.70)	2.63 (.55)	2.60 (.81)
SCS over-identification	2.71 (.91)	2.95 (1.07)	3.05 (.92)	2.28 (.66)	2.71 (.87)	2.48 (.94)
SCS isolate	2.57 (.91)	2.90 (1.02)	2.75 (.93)	2.44 (.88)	2.73 (.95)	2.65 (.99)
SCS self-judgment	2.33 (.84)	2.77 (.97)	2.70 (1.03)	2.27 (.90)	2.54 (.85)	2.48 (.96)

Note: AUDIT, Alcohol Use Disorders Identification Test; SCS, Self-Compassion Scale.

promoting facets (ie, mindfulness, self-kindness, and common humanity), only the mindfulness facet was significantly related to alcohol use over time. Specifically, mindfulness predicted a decrease in largest number of drinks on one occasion.

In regards to interaction effects between the three positive SCS subscales and time, sex, and age, sex and mindfulness interacted, such that mindfulness was associated with a decrease in largest number of drinks on one occasion for men (B =−6.45; 95% CI =−10.27 to −2.63, $P<.001$), but not women (B =−.69; 95% CI =−3.45 to 2.07, $P>.05$). Results revealed a two-way interaction between self-kindness and age, with self-kindness predicting a decrease in largest number of drinks on one occasion for participants older in age (B =−5.39; 95% CI =−9.84 to −.94, $P<.05$), but predicting an increase in largest number of drinks on one occasion for participants younger in age (B = 3.25; 95% CI = .43 to 6.07, $P<.05$).

Sex and mindfulness also interacted to predict AUDIT scores, such that mindfulness predicted lower AUDIT scores for men (B =−7.14; 95% CI =−11.27 to −3.01, $P=.005$) but predicted higher AUDIT scores for women (B = 6.21; 95% CI = 2.21 to 10.21, $P<.001$). The interaction between sex and self-kindness demonstrated that self-kindness predicted higher AUDIT scores for men (B = 4.74; 95% CI = 1.32 to 8.17, $P=.01$) and trended toward lower AUDIT scores for women (B =−2.39; 95% CI =−4.85 to .06, $P=.06$). Lastly, sex and common humanity interacted to predict AUDIT scores, such that common humanity predicted lower AUDIT scores for women (B =−5.12; 95% CI =−8.69 to −1.55, $P=.005$) but not men (B = 1.79; 95% CI =−4.02 to 7.61, $P=.54$).

Discussion

The current study examined the longitudinal relations between self-compassion and alcohol use within a sample of adults in SUD treatment. The overall construct of self-compassion did not significantly relate to alcohol use over time, possibly as a result of the small sample size and limited statistical power. Our results suggested that the mindfulness facet of self-compassion may aid in the reduction of alcohol use following treatment, particularly for men. Past research supported the efficacy of mindfulness-based interventions in addressing SUD.[27] The present findings that increased mindfulness resulted in reduced alcohol use particularly among men could be related to decreased cravings for use given prior findings that mindfulness training had a larger effect of reducing substance use craving among men compared to women.[28]

Self-kindness associated with decreased alcohol use in older, but not younger, participants. Research is lacking in the specific facets of self-compassion as they relate to age and gender; however, past research supported a positive relationship between age and self-compassion.[20] Neff suggested that maturity may positively relate to self-compassion; as such, it is possible that self-kindness is more prevalent in older populations.[5] Furthermore, in the present study, self-kindness associated with increased alcohol use in men and decreased alcohol use in women. It may be that women, who tend to be lower in self-compassion compared to men,[17] may benefit more from increased self-kindness. This could also account for our finding that greater common humanity associated with less alcohol use in women, but not men.

Self-kindness was associated with increased alcohol use among men. Previous research suggested that increased self-compassion among men may have a detrimental effect on outcomes, such as problem-solving, when men are low in conscientiousness.[29] While conscientiousness was not examined in the present study, it is possible that the presence of self-kindness among men who are low in conscientiousness lack the problem-solving skills needed to reduce their alcohol use. Future research is needed to examine if the relationship between

Table 2. Generalized estimation equations analyses predicting alcohol outcomes at two and four months after IOP treatment.

PREDICTOR VARIABLES	SELF-COMPASSION			AUDIT			LARGEST # DRINKS		
	B	95% CI	*P*	B	95% CI	*P*	B	95% CI	*P*
Time	.14	.04, .24	.006	−7.28	−9.02, −5.54	< .001	−6.13	−8.09, −4.18	< .001
Time × age	.06	−.00, .02	.23	−.02	−.19, .14	.76	−.08	−.31, .14	.47
Time × sex	−.00	−.19, .19	.99	.07	−3.46, 3.61	.96	−.24	−3.70, 3.20	.88
Self-compassion	—	—	—	−1.87	−4.02, .27	.08	−1.42	−4.68, 1.45	.33
Self-compassion × time	—	—	—	.97	−1.48, 3.43	.43	.01	−2.62, 2.64	.99
Self-compassion × age	—	—	—	−.00	−.19, .18	.96	−.07	−2.9, .15	.52
Self-compassion × sex	—	—	—	3.36	−1.03, 7.77	.13	.27	−4.54, 5.09	.91
Mindfulness	—	—	—	−3.05	−6.30, .19	.06	−3.93	−6.97, −.88	.01
Self-kindness	—	—	—	1.71	−.81, 4.24	.18	.177	−1.93, 5.48	.34
Common humanity	—	—	—	.09	−2.50, 4.47	.57	.98	−2.63, 4.61	.59
Mindfulness × time	—	—	—	1.17	−2.18, 4.52	.43	−.01	−2.85, 2.83	.99
Self-kindness × time	—	—	—	−2.42	−4.98, .14	.07	−1.44	−5.05, 2.12	.42
Common humanity × time	—	—	—	.74	−2.32, 3.82	.63	2.03	−1.02, 5.96	.31
Mindfulness × age	—	—	—	.18	−.08, .46	.18	.03	−.24, .31	.80
Self-kindness × age	—	—	—	−.11	−.31, .09	.28	−.45	−.73, −.18	< .001
Common humanity × age	—	—	—	−.16	−.44, .12	.26	.24	−.04, .55	.09
Mindfulness × sex	—	—	—	−12.50	−18.57, −6.44	< .001	−5.98	−10.98, −.99	.01
Self-kindness × sex	—	—	—	7.14	3.01, 11.27	< .001	3.16	−1.99, 8.32	.22
Common humanity × sex	—	—	—	6.91	.10, 13.72	.04	1.47	−3.77, 6.72	.58

Note: AUDIT, Alcohol Use Disorders Identification Test. All analyses controlled for the effects of time and all interaction analyses controlled for the main effects of each variable (not presented for clarity purposes).

self-kindness and increased alcohol use among men is explained by another factor such as low conscientiousness.

In sum, our results suggested that self-compassion promoting facets may be a protective factor against alcohol use after treatment and the effects these facets have on alcohol use may vary based on age and sex. These findings provided preliminary evidence that promoting facets related to self-compassion may be useful targets of intervention in alcohol use treatment programs. Specifically, incorporating interventions designed to increase the self-kindness and common humanity facets of self-compassion

such as Compassionate Mind training[30] into SUD treatment could be beneficial for older adults and women seeking treatment. Mindfulness-based interventions for substance use such as Mindfulness-Based Relapse Prevention[26,31] could improve men's treatment outcome.

Limitations and future directions

While this study offers potentially new insight into self-compassion facets related to alcohol use over time, the study had

limitations. First, no immediate post-treatment assessment of alcohol use or self-compassion were measured and thus initial reductions in alcohol use, and its relation to self-compassion, following completion of IOP are unknown. Future research would benefit from follow-up assessments that include post-treatment measurements. Given the small sample of women, interactive effects of sex on study constructs should be interpreted with caution. The small, primarily Caucasian sample limits generalizability of these findings. Future research should examine these factors in larger and more ethnically/racially and gender identity diverse samples. Also, data gathered relied solely on self-report of the participants, and there may have been underreporting of socially undesirable behavior such as alcohol use. Future research should consider using structured interviews and collateral reports to assess alcohol use. Given self-compassion's relationship to correlates of alcohol use such as shame, depression, and cravings, additional research is needed to examine if the relationship between self-compassion and alcohol use is explained by these psychosocial variables. Furthermore, future researchers should vigorously pursue participants at follow-up to reduce attrition from the study.

This is one of the first studies to examine longitudinal changes in self-compassion and its relation to alcohol use in a SUD treatment sample. Our results preliminarily suggest that positive facets of self-compassion, such as mindfulness, self-kindness, and common humanity, may be beneficial factors to cultivate for some patients in alcohol treatment programs. Our results suggest that mindfulness may be beneficial for addressing men's alcohol use, whereas self-kindness and common humanity may be more salient for women. Additionally, self-kindness appears to be a protective facet among older adults compared to younger adults. Further research is needed to elucidate the mechanisms through which self-compassion impacts alcohol use and for whom it will be most effective.

Authors' Contribution
All authors contributed to the conception of this brief report and were involved in revisions and drafts of the manuscript. All authors approved of the final version for publication.

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