ORIGINAL ARTICLE

The Mediating Role of Psychological Distress in the Relationship Between Self-Compassion and Problematic Alcohol Use

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Abstract

Background: Alcohol is a widely consumed psychoactive substance, with significant global prevalence and a major impact on public health. The World Health Organization estimates that approximately 2.6 million deaths occur annually due to alcohol-related causes, highlighting the urgent need to address alcohol use disorders. Self-compassion, defined as being kind and understanding toward oneself in times of suffering or failure, has been linked to better emotional regulation and coping strategies. Understanding the relationship between self-compassion and problematic alcohol use may offer insights into effective intervention strategies.

Methods: This cross-sectional study involved 142 participants aged 18 and older with a history of alcohol use, assessed through the Alcohol Use Disorders Identification Test (AUDIT), the Self-Compassion Scale-Short Form (SCS-SF), and the Patient Health Questionnaire-4 (PHQ-4).

Results: The analysis revealed that individuals with higher self-compassion reported significantly lower levels of psychological distress. Conversely, those experiencing greater psychological distress exhibited higher levels of problematic alcohol use, indicated by elevated AUDIT scores. Mediation analysis demonstrated that psychological distress serves as a significant mediator in the relationship between self-compassion and alcohol use.

Conclusion: The findings emphasize the protective role of self-compassion against psychological distress and maladaptive drinking patterns. This study highlights the potential benefits of integrating self-compassion-based interventions into therapeutic interventions for individuals with alcohol use disorders. Future research should consider longitudinal designs and a broader range of socio-psychological factors to deepen our understanding of these relationships and enhance the effectiveness of treatment strategies.

Key words: Alcohol consumption, Psychological distress, Self-compassion

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INTRODUCTION

Alcohol, a psychoactive and toxic substance, exerts a profound global impact, contributing to the health burden of millions and accounting for approximately 2.6 million deaths annually. According to the World Health Organization (WHO), 7% of individuals aged 15 years and older are affected by alcohol use disorder (1). A significant challenge in the diagnosis and treatment of alcohol-related conditions lies in the conceptual variability among terms such as alcohol use and alcohol use disorders, which complicates the accurate application of diagnostic criteria. The WHO has addressed this complexity through a three-dimensional model that encompasses dependence, harmful use, and risky consumption. In line with this framework, the Alcohol Use Disorders Identification Test (AUDIT) is a widely utilized tool for assessing the severity of individual's alcohol use disorder (2).

Alcohol consumption is influenced by a range of individual, social, and societal factors. Empirical evidence underscores that alcohol use often arises as a coping mechanism in response to stress, relaxation, or socialization pressures (3). Furthermore, motivations such as enhancing social confidence and pursuing pleasure are recognized as additional drivers of alcohol consumption (4). Notably, individuals who exhibit poor stress management skills are more susceptible to alcohol misuse, as highlighted by Demirden and Sarıkoç (5). Psychological distress has been identified as a key correlate of alcohol consumption, further emphasizing the complex interplay between emorional regulation and substance use behaviors (6,7).

In recent years, the concept of self-compassion has garnered considerable attention within the psychological literature, Neff et al. (8) define self-compassion as "*being kind and understanding towards oneself, recognizing that pain and failure are universal human experiences, and maintaining a balanced awareness of one's emotions.*" This construct, characterized by a non-judgmental attitude toward one's own shortcomings, has been identified as a protective factor against psychological distress (9,10). Self-compassion is inversely associated with conditions such as depression and shame, both of which are known contributors to problematic alcohol use (10). Emerging evidence suggest that self-compassion, may serve as a positive coping strategy, mitigating the risk of alcohol use and enhancing recovery outcomes in the treatment of alcohol use disorders (11).

The primary objective of this study is to investigate the relationship between alcohol consumption and self-compassion. The secondary aim of this study is to identify the mediating role of psychological distress in the relationship between alcohol consumption and self-compassion. A review of the literature reveals that in previous mediation analyses, the multifaceted construct of self-compassion has often been treated as an independent variable (12). However, when examining the effects of self-compassion on alcohol use, it is important to consider the possibility that these effects may occur indirectly through psychological distress. In this context, a study by Wisener and Khoury found that self-compassion was negatively associated with alcohol-related problems, particularly drinking to cope with anxiety. Specifically, self-compassion was linked to lower drinking motives for both depression and anxiety, with a stronger effect for depression (13). Self-compassion is known to have a negative relationship with components of psychological distress, such as depression, anxiety, and stress, while being positively associated with psychological well-being (14). In contrast, compassion-related therapies have been shown to reduce psychological distress and foster the development of adaptive coping strategies (14,15). Therefore, it can be hypothesized that interventions aimed at enhancing self-compassion may primarily exert their effects by reducing psychological distress and promoting emotional regulation, thereby preventing the activation of maladaptive coping mechanisms such as alcohol or substance use. Gaining an understanding of how psychological distress influences the interaction between self-compassion and alcohol consumption may offer valuable insights into the underlying mechanisms that connect these variables. Specifically, elucidating the role of psychological distress in this relationship holds potential to inform the development of more effective diagnostic and therapeutic strategies.

MATERIALS AND METHODS

Participants and Procedure

The cross-sectional research sample consists of 142 individuals aged 18 and over who consume alcohol, and were assessed through an online survey administered via social media between August 15, 2024, and September 15, 2024. Inclusion criteria are being 18 years of age or older, having a history of alcohol use, consenting to participate

by signing an informed consent form. Exclusion criteria include not having a history of alcohol use and having cognitive issues that would impede fulfilling the study requirements. Approval for the study was obtained from the Toros University Scientific Research and Publication Ethics Committee under decision number 119, dated June 25, 2024. All procedures adhered to the Helsinki Declaration and ethical standards. To prevent duplication, each participant was allowed to complete the survey only once using the same email address. Participants in the study first completed a sociodemographic data form. Following this, they responded to the AUDIT, which assesses alcohol consumption frequency and associated problems, the SCS-SF to determine levels of self-compassion, and the PHQ-4 to assess psychological distress levels. At the outset of the study, 151 participants were initially enrolled; however, 2 were excluded for not consuming alcohol, and 9 were excluded due to discontinuing the survey before completion.

Measures

Alcohol Use Disorders Identification Test (AUDIT), designed by researchers at the World Health Organization for use in primary health care settings was finalized by Babor et al. (16,17). It consists of 10 items rated on a 5-point Likert scale, with each item scored between 0 and 4, aimed at assessing drinking frequency, alcohol consumption, and associated problems. The first three items evaluate risky alcohol use, items 4 through 6 assess signs of dependence, and the last four items measure harmful alcohol use. The total possible score on the scale is 40, with a score of 8 or higher indicating the presence of alcohol-related problems (17). The Turkish validity and reliability study of the scale was conducted by Saatçioğlu et al. (2).

The Self-Compassion Scale-Short Form (SCS-SF) was developed a 12-item short version of the original scale, which includes six subscales: "self-kindness," "self-judgment," "common humanity," "isolation," "mindfulness," and "over-identification." The scale uses a 5-point Likert format, with each item rated from "1 = almost never" to "5 = almost always." The total score ranges from 12 to 60, with higher scores indicating a higher level of self-compassion (18). The Turkish validity and reliability study of the scale was conducted by Barutçu Yıldırım et al. (19).

Patient Health Questionnaire-4 (PHQ-4) developed by Kroenke et al. (20) consists of four items and is designed to briefly measure symptoms related to depression and anxiety. It uses a four-point Likert scale, with responses ranging from "0 = Not at all" to "3 = Nearly every day." The total score ranges from 0 to 12, with higher scores indicating the presence of psychological distress. The Turkish validity and reliability study of the scale was conducted by Demirci and Ekşi (21).

Statistical Analysis

Statistical analysis was conducted using the Jamovi v2.5 software package (22). Continuous variables are presented with means and standard deviations, while categorical variables are summarized as counts and percentages. Normality was evaluated through skewness and kurtosis values, in addition to a visual inspection of histogram plots. The literature suggests that a skewness value ranging from -2 to +2 and kurtosis values between -7 and +7 are indicative of a normal distribution (23). Correlations between variables were assessed using Pearson correlation analysis. Statistical significance was set at $p < .05$ for all tests. Finally, the mediating effect of psychological distress was tested using the Generalized Linear Model (GLM) mediation model of the medmod module within the Jamovi statistical software package (24). This analysis aimed to comprehensively investigate the total, direct, and indirect effects among the variables of interest. To enhance the robustness and reliability of the findings, a bootstrapping approach with 1000 replications was utilized, facilitating the computation of 95% confidence intervals for the mediated effect. This rigorous method not only strengthens the statistical inference but also provides deeper insights into the intricate relationships among the variables under consideration. Although it was considered that psychiatric diagnoses might be associated with the PHQ-4, they were not controlled for during the data analysis due to their categorical heterogeneity and the small sample size within each category.

RESULTS

The mean age of the 142 participants included in the study was 36.50 ± 12.71 years. Of the participants, 53.5% were female, and 85.2% were university graduates. The sociodemographic data of the participants are presented in Table 1.

Table 1. Sociodemographic data of the participants	
Variables	**Participants (n=142)**
Age (mean ± SD)	36.50 ± 12.71
Gender (n(%))	
Female	76 (53.5)
Male	66 (46.5)
Marital status (n(%))	
Single/Divorced	74 (52.1)
Married	68 (47.9)
Education level (n(%))	
University graduate	121 (85.2)
High school graduate	17 (12)
Other	4 (2.8)
Number of employees (n(%))	106 (74.6)
Presence of physical disease (n(%))	29 (20.4)
Presence of psychiatric history (n(%))	36 (25.4)
Presence of suicide attempts (n(%))	4 (2.8)
Cigarette use per day (n(%))	
0	66 (46.5)
1-10	26 (19.3)
10-20	34 (23.9)
>20	16 (11.3)
Presence of substance use (n(%))	5 (3.5)

The mean and standard deviation for the scales were computed, resulting in the following values: PHQ-4 was 6.18 ± 4.89, SFS-SF was 41.39 ± 8.33, and AUDIT was 6.18 ± 4.89. The correlation analysis data among the variables are presented in Table 2. A significant negative correlation was found between the PHQ-4 and SCS-SF scores (r = −0.521, p < .001), along with a negative correlation between the SFS-SF and AUDIT scores (r = −0.210, p < .05). Conversely, a significant positive correlation was identified between the PHQ-4 and AUDIT scores (r = 0.290, p < .001).

In order to examine the relationships among self-compassion, problematic alcohol use and the potential mediator role of psychological distress, a mediation analysis was conducted. The findings are presented in Figure 1. A significant negative correlation was identified between self-compassion and psychological distress (β = -.521, b=

-.185, 95% CI [-.233, -.138], p < .001). Additionally, a statistically significant positive correlation was found between psychological distress and problematic alcohol use (β = .248, b = .409, 95% CI [.109, .717], p = .008). The total effect of self-compassion on problematic alcohol use was significant (β = -.210, b = -.123, 95% CI [-.228, -0.037], p =

.011). Nonetheless, the direct effect did not attain statistical significance (β = -.081, b = -.047, 95% CI [-.148, .048], p = .389). Importantly, the indirect effect of self-compassion on problematic alcohol use, as mediated by psychological distress, was statistically significant (β = -.129, b = -.076, 95% CI [-.147, -.019], p = .013).

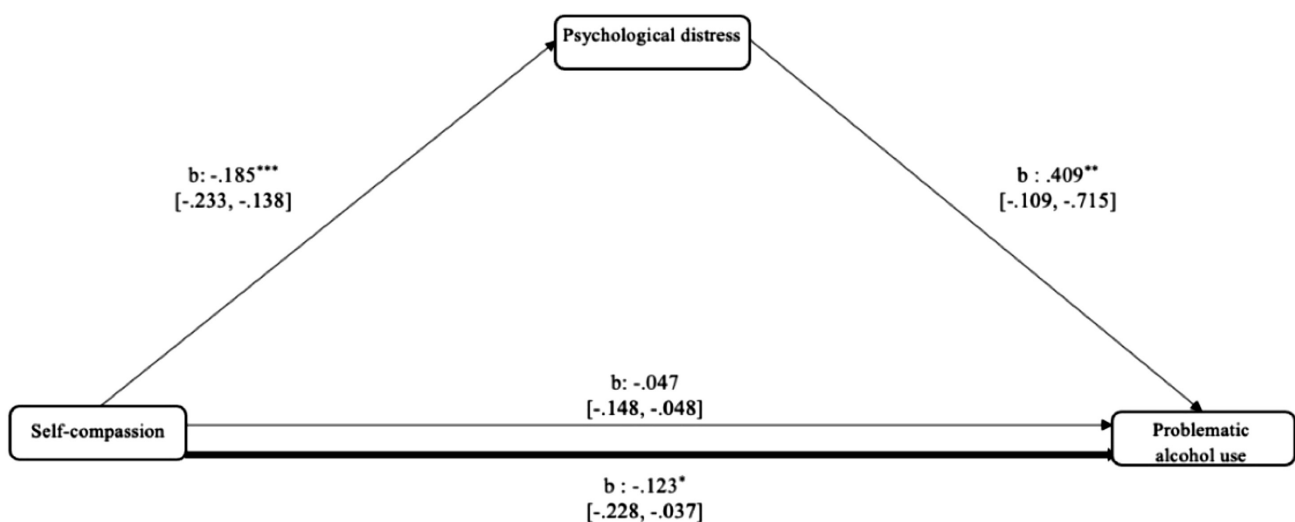| Table 2. Correlation analysis and Cronbach alpha values of the scales				
Variables	1	2	3	α
1. Patient Health Questionnaire-4	—			.879
2. Self-Compassion Scale-Short Form	-.521**	—		.809
3. Alcohol Use Disorders Identification Test	.290**	-.210*	—	.827

*p < .05, **p < .001

Figure 1: Mediation model of psychological distress in between self-compassion and problematic alcohol use (The unstandardized coefficients were reported, the dark-colored arrow represents the total path, *p<.05, **p<.01, **p<.001)

DISCUSSION

In this study, we investigated the association between self-compassion and problematic alcohol use, with a particular focus on exploring the mediating effects of psychological distress. The findings revealed a statistically significant negative correlation between self-compassion and problematic alcohol use, indicating that individuals with higher levels of self-compassion tend to report lower levels of problematic alcohol consumption.

Furthermore, this relationship was mediated by psychological distress, underscoring its role as a significant intermediary in this association.

Psychological distress broadly conceptualized as a state of emotional suffering, encompasses symptoms of depression such as anhedonia, dysphoria, and hopelessness-and symptoms of anxiety, including restlessness and

tension (25). Previous research has firmly established a link between alcohol use disorder and psychological distress, highlighting the critical role of stress the initiation, maintenance and relapse of alcohol consumption (26,27). Self-medication theory suggest that alcohol use serves as a coping mechanism to mitigate psychological stress (28). This theory is particularly relevant in high-stress contexts, such as during the COVID-19 pandemic, where alcohol consumption has been shown to increase as a response to elevated stress levels (29). Consistent with the existing literature, our study identified a significant positive association between psychological distress and alcohol consumption. These findings suggest that heightened psychological distress may predispose individuals to engage in more problematic alcohol use, potentially as a maladaptive coping strategy. This correlation emphasizes the need to address psychological distress in both the prevention and treatment of alcohol use disorders, as it may play a pivotal role in the development and perpetuation of problematic drinking behaviors.

Adopting an attitude aligned with self-compassion is hypothesized to support individual well-being, reduce distress and foster adaptive functioning (27). Numerous studies in both clinical and non-clinical populations have demonstrated a significant negative correlation between self-compassion and various psychopathologies (9). Additionally, self-compassion-focused interventions have been shown to improve psychological outcomes and enhance quality of life, particularly in individuals with chronic illness (30). Consistent with these findings, our study identified a similar negative correlation between self-compassion and psychological distress, indicating that higher levels of self-compassion are associated with lower levels of distress. This reinforces the notion that cultivating self-compassion may serve as a protective factor against emotional suffering.

A growing body of literature has examined the relationship between self-compassion and problematic alcohol use, a maladaptive coping behavior. In a systematic review by Berg et al. (11), which analyzed 18 studies, individuals with higher levels of self-compassion and self-forgiveness demonstrated lower levels of problematic alcohol consumption. Additionally, self-compassion and self-forgiveness were associated with coping-motivated drinking and increased social support. Rendon (31) explored the relationships among alcohol use, self-compassion, mindfulness, and self-esteem in a cohort of 300 psychology students. This study found

a negative correlation between alcohol use and both self-compassion and self-esteem, with psychological symptoms partially mediating these relationships. Notably, self-compassion emerged as a stronger predictor of psychological health than mindfulness. Janicki (32) further examined these constructs among individuals in sober recovery and those undergoing treatment for alcohol use disorders. Results indicated that individuals in recovery exhibited higher levels of self-compassion and lower levels of depression and anxiety. It was posited that integrating self-compassion training into alcohol use disorder treatment programs could yield significant benefits. In our study, we obtained findings that align with existing research, revealing a significant relationship between self-compassion and problematic alcohol use. Specifically, individuals with lower levels of self-compassion were more likely to engage in problematic drinking behaviors. These findings suggest that fostering self-compassion may serve as a valuable target for interventions aimed at reducing problematic alcohol consumption.

Upon reviewing the literature, it appears that studies modeling self-compassion as an independent variable are relatively less common, with most research focusing on examining mediating factors in the relationship between self-compassion and psychological distress. For instance, in this context, one study explored the role of perceived stress in the relationships between self-compassion and anxiety as well as depression, demonstrating a partial mediating effect (33). In another study, it was found that rumination had a stronger effect in the relationship between self-compassion and depression, while worry played a more significant role in the relationship between self-compassion and anxiety (34). Additionally, in the relationship between self-compassion and depressive symptoms, the mediating effects of avoidance and activation processes have been identified, with an emphasis on the behavioral model of depression (35). In this study, psychological distress appears to mediate the relationship between self-compassion and alcohol use, indicating that interventions to enhance self-compassion may not only directly reduce alcohol-related behaviors but also alleviate the psychological distress frequently associated with alcohol misuse. The lack of a significant direct effect of self-compassion on problematic alcohol use highlights the multidimensional and complex nature of this relationship. This suggests that mediating factors, such as psychological distress, play a critical role

in shaping a mechanism through which self-compassion indirectly influences alcohol consumption. Therefore, understanding the relationship between self-compassion and alcohol use should not be limited to direct effects, but should also consider how individuals cope with emotional distress and stress. Ultimately, conceptualizing self-compassion as an independent variable provides a novel perspective for a deeper understanding of behavioral issues such as alcohol use, thus holding the potential to enhance the effectiveness of intervention strategies.

It is important to consider the potential influence of socio-cultural factors on these observed relationships. Socio-cultural context plays a crucial role in shaping individuals' emotional regulation, coping strategies, and substance use behaviors. As an example, cultural norms may encourage alcohol use as a social activity or a coping mechanism, while simultaneously influencing how individuals express and cope with their emotional distress (36, 37). In certain cultures, the expression of emotional suffering or personal weaknesses may be stigmatized (38). On the other hand, in cultures where social support systems are more robust, psychological distress is more likely to be met with understanding, and stigma is comparatively lower, the practice of self-compassion may be more readily embraced, which could mitigate psychological distress and reduce the risk of problematic alcohol use.

Exploring the role of socio-cultural factors in how individuals cope with psychological distress and engage in alcohol use would enhance our understanding of these relationships and inform more personalized and contextually relevant treatment approaches. For instance, the effectiveness of self-compassion-based interventions may vary depending on cultural values and the strength of social support networks. Future research should, therefore, take these factors into account, aiming to develop culturally sensitive therapeutic strategies that can improve treatment outcomes across diverse populations.

In conclusion, this study highlights the critical role of self-compassion as an effective coping mechanism that mitigates psychological distress and promotes positive affect, thereby offering protection against problematic alcohol use. These findings underscore the potential value of incorporating self-compassion training into therapeutic interventions for individuals with alcohol use disorders, suggesting that such approaches may play a

crucial role in reducing symptoms and improving outcomes in this population.

This study offers valuable insights and contributes to the growing body of literature on the complex association between self-compassion and problematic alcohol use. Nonetheless, several limitations should be acknowledged. First, the cross-sectional design limits the ability to infer longitudinal or causal relationships between the variables of interest. Second, the relatively modest sample size may constrain the generalizability of the findings to broader populations. In the post-hoc evaluation of the sample size for the study, the calculation method proposed by Fritz and MacKinnon (39) was employed, which indicated that approximately 400 participants should have been included in the study. However, due to constraints related to the data collection period and conditions, the sample size obtained in this study was limited to 142 participants. This limitation should be acknowledged as a constraint that may have compromised the statistical power of the study and, consequently, the reliability of the results. Although psychological distress was examined, the study did not account for various socio-psychological factors—such as social support, childhood trauma, or personality traits—that may influence the relationship between self-compassion and problematic alcohol use. The exclusion of these factors could potentially overlook significant variables affecting this association. Furthermore, the homogeneity of the participant demographic may restrict the applicability of the findings to diverse populations or cultural contexts. Finally, the use of self-reported measures, which are susceptible to social desirability bias, and the online participation method are factors that limit the diversity of the sample and affect the generalizability of the findings.

Future research should consider employing longitudinal designs to elucidate the causal relationships between self-compassion, psychological distress, and problematic alcohol use over time. Increasing sample size and enhancing participant diversity would improve the generalizability of the results. Moreover, the inclusion of qualitative methodologies could offer a more nuanced understanding of individuals' experiences with self-compassion and alcohol use. Finally, clinical intervention studies that focus on enhancing self-compassion as a therapeutic strategy may provide critical evidence regarding its efficacy in reducing alcohol misuse in clinical populations.

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Abbreviations list

AUDIT: Alcohol Use Disorders Identification Test
GLM: Generalized Linear Model
PHQ-4: Patient Health Questionnaire-4
SCS-SF: Self-Compassion Scale-Short Form
WHO: World Health Organization

Ethics approval and consent to participate

Permission was obtained from the Toros University Scientific Research and Publication Ethics Committee (Approval no: 25.06.2024/119), and Helsinki Declaration rules were followed to conduct this study. All participants provided informed consent.

Consent for publication

Not applicable

Availability of data and materials

The data supporting this study's findings are available from the corresponding author upon reasonable request.

Competing interests

The authors report no conflict of interest.

Authors' contributions

CÜ and MKM contributed to the study conception and design. Material preparation, data collection, and analysis were performed by CÜ and MKM. The first draft of the manuscript was written by CÜ and MKM commented on previous versions. All authors read and approved the final manuscript.