

## Depression as a Bridge: How Difficulties in Emotion Regulation Fuel Alcohol Use

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The current study has utilised mediation analysis to examine the relationship between difficulties in emotion regulation and alcohol use in young adult females with mediating effects of depression. The sample included young adult females (N = 100) of the age of 18 to 40 years. The measures used to collect data were Difficulties in Emotion Regulation Scale – short form (DERS-SF), Alcohol Use Disorders Identification Test (AUDIT), and Beck Depression Inventory-II (BDI-II). Correlation analysis have reported a significant positive relationship between difficulties in emotion regulation, alcohol use and depression. Mediation analysis results reported a significant indirect effect ( $IE = .341$ ). However, the direct effect was not significant. The study found that the relationship between difficulties in emotion regulation and alcohol use is entirely accounted for by depression. It was also reported that five out of six subscales of difficulties in emotion regulation (i.e. Strategies, Non-acceptance, Impulse, Goals, and Clarity) had a significant indirect effect on alcohol use via depression.

**Keywords:** young adult, difficulties in emotion regulation, alcohol use, depression, mediation.

Alcohol use pertains to the intake of ethanol-containing beverages. In research, it is typically assessed based on the frequency of consumption, the quantity consumed per occasion, and drinking patterns, including binge drinking, which is characterized by consuming significant amounts of alcohol in a short timeframe (National Institute on Alcohol Abuse and Alcoholism, n.d.). The “Magnitude of Substance Use in India 2019” report by the Ministry of Social Justice and Empowerment unveiled that Sikkim had one of the highest rates of alcohol use in the country where 39.6% of individuals aged 10-75 used alcohol frequently, and 8.9% were alcohol dependent. In terms of females, approximately 8.2% were regular users, significantly higher than the national average for female alcohol consumption, which stood at 1.6%. Furthermore, the prevalence of alcohol use among young adults aged 15-29 years in Sikkim was 36.9%. These

statistics highlight the urgent need for targeted study to find the causes of alcohol use in Sikkim (NISD, 2019).

Studies have shown that there is high prevalence of usage of alcohol among women in Sikkim (Benegal, 2011). Alcohol use in women of Sikkim has been found to be significantly higher than the national average usage of alcohol among women in Indian society as in accordance to censuses conducted in India (NFHS-4, 2015; NFHS-5, 2019). Alcohol uses in women have prolonged effects on their well being and mental health, wherein they become prone to depression and even suicidal ideation (Nelson-Zlupko et al., 1995). Women are vulnerable to various negative states as well. Studies from India have reported that there have been various problems in diagnosis, treatment and their subsequent failures when dealing with alcohol use in women (Grover, 2005; Murthy et al., 2010).

Difficulties in emotion regulation particularly have been associated with higher tendency of problematic alcohol use (Dvorak et al., 2014). Emotion regulation can be considered as one's effortful ability to control felt and displayed emotions through various processes (Rothermund et al., 2008). It has also been reported that, alcohol users feel that its use relieve symptoms of depression which actually trigger the people to frequently seek an intoxicated state so as to not feel depressed (Hasin et al., 2002). This can also be understood from the lens of affective processing model (Baker et al., 2004) and tension reduction hypothesis (Conger, 1956). Individuals suffering from diagnosable negative affect states like anxiety or depression are likely to indulge in drinking to mentally escape, even though for a limited time to dull the pain as a form of self-medication (Robinson, 2007). It has also been seen in various studies that individuals who drink alcohol have a motive of self-medicating themselves to reduce emotional stress (Grant et al., 2009). Alcohol use disorders and major depression have significant association and people usually are at risk of having either or even both of them coexisting (Angold et al., 1999). The association of alcohol use disorder and major depression is such that the presence of either disorder doubled the risk of having the other (Boden et al., 2011). Ineffective emotion regulation strategies are a critical component in the development and maintenance of depression and anxiety (Barlow et al., 2004; Campbell-Sills et al., 2006; Kashdan et al., 2006) which in turn may lead to alcohol use (Hasin et al., 2002). Difficulties in emotion regulation are positively associated with frequency of alcohol use, amount of alcohol consumed, and binge drinking (Hitch, 2019). Mediation analyses have found the association of anxiety sensitivity and alcohol dependence was mediated by depression. A dual mediator model also reported that both depression and problematic coping uniquely

mediated the relationship between anxiety sensitivity and alcohol dependence (Lechner et al., 2014).

A number of theories contend to difficulties in emotion regulation and problematic alcohol use like affective processing model (Baker et al., 2004) which states that the primary motivation for alcohol use is not just to achieve positive effects but to escape or avoid negative emotional states. The motivational model of alcohol use (Cox & Klinger, 1988; Cooper et al., 1995) also explains that individuals drink to achieve either positive outcomes (enhancement and social motives) or to avoid negative experiences (coping and conformity motives), with the specific motivations influencing their drinking patterns and potential for alcohol-related problems. The tension reduction hypothesis (Conger, 1956) in the similar line suggests that individuals consume alcohol primarily to reduce stress and anxiety, as the calming effects of alcohol provide relief from tension and negative emotions, thereby reinforcing the drinking behavior. Similarly, a relapse prevention model by Marlatt & Witkiewitz (2005) suggests that relapse is likely to occur in high risk situations where there are difficulties in emotion regulation, thus making it harder for individuals to cope up.

Past researchers have studied emotion regulation in terms of problematic alcohol use. Messman et al (2014) found that emotion regulation problems predicted coping drinking motives and had an indirect association with heavy alcohol use and negative alcohol-related consequences via the impact of coping drinking motives. Berking et al (2011) established that an inability to tolerate negative emotions, negatively predicted subsequent alcohol consumption. Alcohol-dependent people showcased more deficits in emotion regulation skills. Impairment in emotion regulation resulted in

poor recovery among patients with problematic alcohol use.

Thus, the research objective of the current paper is:

- To examine the mediating effect of depression on the relationship between difficulties in emotion regulation and alcohol use.

### **Method**

The current research takes difficulties in emotion regulation as the independent variable, alcohol use as the dependent variable, and depression as the mediating variable. The sample consisted of young adult women of the age of 18 to 40 years from East Sikkim.

### **Participants**

The study consisted of 100 female participants between the ages of 18 and 40 years. The mean age of the sample was 27.68 years (SD = 6.64). Participants were recruited through convenience and snowball sampling. Efforts were made to ensure that all respondents participated voluntarily and were able to provide clear and meaningful responses.

### **Instruments**

*The Alcohol Use Disorders Identification Test (AUDIT; Babor et al., 2001)*: AUDIT is a screening instrument designed to assess excessive drinking behavior. The scale consists of 10 items, each scored on a 0 to 4 response scale. The AUDIT has demonstrated good reliability, with a test-retest reliability coefficient of  $r = .86$ .

*Difficulties in Emotion Regulation Scale – Short Form (Kaufman et al., 2015)*: DERS – SF is a widely used self-report measure that assesses problems in emotion regulation among adults. It consists of 18 items, each rated on a 5-point scale ranging from 1 to 5. The DERS-SF is a shortened version of the

original 36-item scale developed by Gratz and Roemer (2004). Scores are calculated by summing the item responses, with higher scores indicating greater difficulties in emotion regulation. The scale has demonstrated strong internal consistency, with Cronbach's alpha for the total scale exceeding .70. The DERS-SF comprises six subscales: Strategies, Non-acceptance, Impulse, Goals, Awareness, and Clarity.

*Beck Depression Inventory-II (Beck, Steer & Brown; 1996)* BDI-II is a widely used self-report measure that assesses problems in emotion regulation among adults. It consists of 18 items, each rated on a 5-point scale ranging from 1 to 5. The DERS-SF is a shortened version of the original 36-item scale developed by Gratz and Roemer (2004). Scores are calculated by summing the item responses, with higher scores indicating greater difficulties in emotion regulation. The scale has demonstrated strong internal consistency, with Cronbach's alpha for the total scale exceeding .70. The DERS-SF comprises six subscales: Strategies, Non-acceptance, Impulse, Goals, Awareness, and Clarity.

### **Results**

#### **Descriptive Statistics**

As presented in Table 1, difficulties in emotion regulation showed a significant positive relationship with alcohol use. Alcohol use also demonstrated a significant positive correlation with depression. Similarly, depression was found to be positively and significantly correlated with difficulties in emotion regulation. Regarding the subscales of the DERS-SF, the Strategies, Impulse, and Awareness subscales showed significant positive correlations with alcohol use. In relation to depression, the subscales of Strategies, Impulse, and Awareness were also found to be significantly correlated.

### Mediating Effects of Depression

Difficulties in emotion regulation was treated as the independent variable, and alcohol use as the dependent variable, with depression serving as the mediating variable. A simple mediation analysis was conducted using ordinary least squares path analysis via the PROCESS macro for SPSS (Hayes, 2022). The results supported the hypothesis that depression significantly mediated the relationship between difficulties in emotion regulation and alcohol use among young adult females.

As shown in Figure 1 and Table 1, difficulties in emotion regulation was positively

associated with depression ( $a = .524$ ), and depression was positively associated with alcohol use ( $b = .651$ ). As reported in Table 2, the indirect effect ( $ab = .341$ ), based on 5,000 bootstrap resamples, produced a confidence interval (.208 to .487) that did not include zero, indicating a significant mediating effect of depression in this relationship.

Furthermore, as presented in Table 3, five of the six DERS-SF subscales (Strategies, Non-acceptance, Impulse, Goals, and Clarity) demonstrated full mediation through depression in relation to alcohol use. The Awareness subscale did not show a mediation effect. Overall, these findings align with and successfully address the research objectives.

Table 1: Descriptive Statistics and Correlations among the variables

Sl. No	Variables Used	M	SD	1	2	3	4	5	6	7	8	9
1	AUDIT	9.27	12.68	1								
2	DERS-SF	46.33	13.26	.267**	1							
3	BDI-II	17.52	12.68	.602**	.548**	1						
4	Strategies	7.87	3.11	.270**	-	.518**	1					
5	Non-acceptance	7.84	2.84	.191	-	.493**	-	1				
6	Impulse	7.23	3.32	.227*	-	.457**	-	-	1			
7	Goals	8.45	3.31	.071	-	.316**	-	-	-	1		
8	Awareness	8.04	2.83	.243**	-	.142	-	-	-	-	1	
9	Clarity	7.26	3.06	.158	-	.421**	-	-	-	-	-	1

\*Correlation is significant at the 0.05 level \*\*Correlation is significant at the 0.01 level

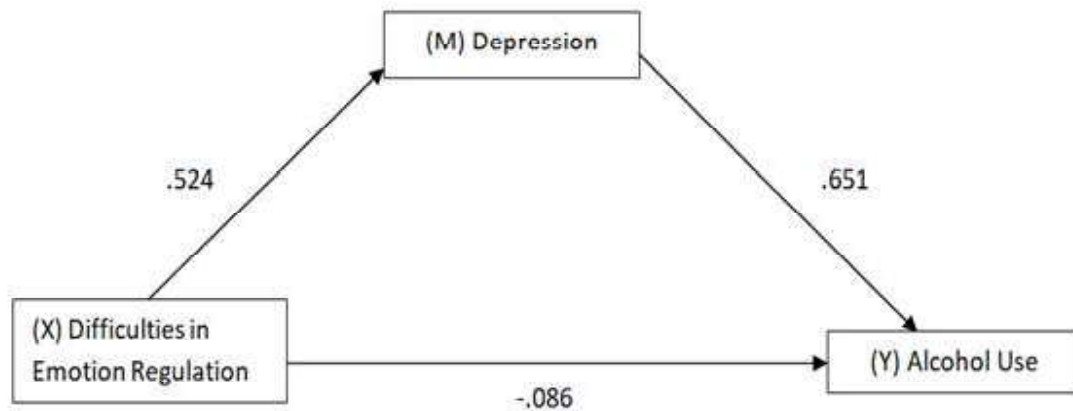
Table 2: Results of Main Mediation Model

Antecedent	BDI-II				AUDIT					
	B	SE	p	B	B	SE	P	$\beta$		
(X) DERS-SF	<i>a</i>	.524	.08	.000	.548	<i>c'</i>	-.086	.09	.354	-.090
(M) BDI-II	-	-	-	-	<i>B</i>	.651	.096	.000	.651	
	$R^2 = .300$				$R^2 = .368$					
	$F(1, 100) = 42.068$				$F(2, 99) = 28.254$ $p < .001$					
	$p < .001$									

Table 3: Total Effect, Direct Effect and Indirect Effect values as derived from Mediation analysis of DERS-SF and its Subscales predicting AUDIT via mediating effects of BDI-II

Relationship	Total Effect	Direct Effect	Indirect Effect	Confidence Interval		t-statistics	Conclusion
				Lower bound	Upper bound		
DERS-SF ->BDI-II -> AUDIT	.255(p<.01)	-.086(p=.35)	.341	.208	.487	4.80	Full Mediation (Competitive)
Strategies ->BDI-II -> AUDIT	1.100(p<.01)	-.231(p=.54)	1.322	.770	1.956	4.36	Full Mediation (Competitive)
Non Acceptance ->BDI-II -> AUDIT	.850(p=.05)	-.625(p=.130)	1.475	.859	2.194	4.38	Full Mediation (Competitive)
Impulse ->BDI-II -> AUDIT	.865(p<.05)	-.234(p=.501)	1.098	.595	1.702	3.86	Full Mediation (Competitive)
Goals ->BDI-II -> AUDIT	.271(p=.484)	-.507(p=.114)	.779	.336	1.356	2.99	Full Mediation (Competitive)
Awareness ->BDI-II -> AUDIT	1.087(p<.05)	.718(p<.05)	.368	-.167	.889	1.39	No Mediation
Clarity ->BDI-II -> AUDIT	.655(p=.116)	-.480(p=.194)	1.134	.633	1.704	4.10	Full Mediation (Competitive)

Figure 1: Mediation model of 'Difficulties in Emotion Regulation' and 'Alcohol use' with mediating effects of 'Depression'



**Discussion**

The mediation model illustrated in Figure 1 shows the mediating effect of depression on the relationship between difficulties in emotion regulation and alcohol use. The total effect of difficulties in emotion regulation on alcohol use was found to be significant, whereas the direct effect became non-

significant when depression was included in the model. Only the indirect effect was significant, indicating a full mediation. Thus, the association between difficulties in emotion regulation and alcohol use can be explained entirely through the mediating role of depression.

Specifically, five of the six DERS-SF subscales (Strategies, Non-acceptance, Impulse, Goals, and Clarity) demonstrated significant indirect effects on alcohol use through depression, suggesting full mediation for these dimensions. The Awareness subscale, however, did not show a significant indirect effect, indicating no mediation through depression for this subscale.

The association between emotion regulation and alcohol use has been justified by theories like the affective processing model (Baker et al., 2004), the motivational model of alcohol use (Cooper et al., 1995; Cox & Klinger, 1988), and tension reduction hypothesis (Conger, 1956). The consumption of alcohol has been seen to be initiated as a cope up strategy to counter negative emotions and often used as a form of self-medication by women. It has been seen in studies that individuals who drink alcohol have a motive of self-medicating themselves to reduce emotional stress (Grant et al., 2009). Young adult women have sought to find comfort in using alcohol in times of difficulties in emotion regulation. The failure to regulate emotions has led to frequent drinking for self-medication purposes (Fischer et al., 2006).

Relapse in alcohol abstinence is highly likely to occur in high-risk situations where emotion regulation fails, thus making it hard for individuals to cope difficult situations (Marlatt & Witkiewitz, 2005). When faced by depression provoking situations and emotions, people with low emotion regulation may succumb to use alcohol as a means to reduce the negative feelings. Evidence suggests that alcohol may reduce negative emotions in individuals which might act as reinforcement for regular usage (Armeli et al., 2003). Alcohol use is often perceived to temporarily alleviate symptoms of depression. This short-term relief may encourage individuals to repeatedly seek intoxication as

a way to avoid or numb depressive feelings. This explains many cases of relapse in recovered heavy alcohol users even after treatment (Hasin et al., 2002). Individuals suffering from diagnosable negative affect states like anxiety or depression are reported to likely indulge in drinking to mentally escape, even though for a limited time to dull the pain (Robinson, 2007). Resilience towards tolerating negative emotions has been found to negatively predict alcohol consumption. Impairment in emotion regulation would result to poor recovery among people with problematic alcohol use (Berking et al., 2011).

Difficulties in regulating emotions have also been positively associated with the likelihood of experiencing alcohol-related consequences (Dvorak et al., 2014). Studies have also reported that emotion dysregulation predicted coping drinking motives and had an indirect association with heavy alcohol use and negative alcohol-related consequences (Messman et al., 2014). Abstinence from alcohol use has been associated with more adaptive emotion regulation patterns. In contrast, difficulties in employing effective emotion regulation strategies may contribute to increased craving and the continued maintenance of alcohol use. Thus, impairment in emotion regulation has been a major motive for alcohol consumption together with emotional disturbance in people with problematic alcohol use (Petit et al., 2016). Difficulties in regulating emotions have been found to have a positive association with the severity of greater problematic alcohol use and heavy alcohol consumption (Hitch, 2019). Depression has also been found in early studies to play a mediating role in case of alcohol dependence (Lechner et al., 2014).

### **Limitations**

The present study offers valuable insights into the association between emotion

regulation difficulties, depression, and alcohol use among women; however, several considerations should be noted when interpreting the findings. Although it does not allow for inferences regarding causal direction or temporal sequencing, the cross-sectional research design offers an insightful summary of the relationships among variables. Even though the sample was adequate to meet the study's objectives, it was drawn from East Sikkim using convenience and snowball sampling, which might have limited the results' broader relevance to other areas or demographics. Furthermore, the study only used standardized self-report tools, which may be impacted by self-presentation issues despite being extensively validated, especially considering the social sensitivity linked to alcohol consumption in women. Additionally, clinical status cannot be conclusively inferred because screening measures are used instead of diagnostic interviews. These elements define the parameters within which the findings should be interpreted rather than diminishing their significance.

### **Future Directions**

Future research may employ longitudinal designs to clearly establish temporal pathways and potential reciprocal influences between emotion regulation, depressive symptoms, and alcohol use. Expanding sampling to include more diverse demographic groups across different regions would support the examination of cultural, social, and developmental variations in these associations. Incorporating multi-method assessment techniques such as clinical interviews, qualitative exploration, behavioural tasks, or biological indicators of alcohol use would further enhance the robustness of measurement. Additionally, examining other potentially relevant mediators and moderators, including coping motives, perceived stress, social support, trauma exposure, or family history, could yield

a more nuanced understanding of individual differences in vulnerability. Finally, intervention-based studies targeting emotion regulation and mood management would be valuable in determining whether strengthening these psychological capacities may effectively reduce alcohol use among women in similar contexts.

### **Conclusion**

The present study examined the relationship between difficulties in emotion regulation and alcohol use, with depression serving as a mediating variable. Although the direct effect was not found to be significant in the mediation model, both the total effect and the indirect effect were significant, indicating that depression plays a key mediating role in this relationship. These findings are consistent with previous research suggesting that alcohol use in young adult females is often associated with difficulties in regulating emotions across a range of life situations. The study explored the use of alcohol in young adult female of East Sikkim, India thus providing valuable literature for future studies to come. Future research may conduct comparative studies across different districts of Sikkim using the same variables examined in the present study. Additionally, other psychological variables such as anxiety, self-regulation, and stress may be incorporated to further explore alcohol use among women. This paper shall be valuable for the policy makers, government and non-government bodies as well as mental health professionals to better understand alcohol use in females. Academically, the present study contributes to the literature by providing empirical evidence for the mediating role of depression in the relationship between difficulties in emotion regulation and alcohol use.

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