JOURNAL FOR SOCIAL SCIENCE STUDIES
An International Peer-Reviewed Open Access Journal

ISSN (Online): 3006-2071 | ISSN (Print): 3006-2063
Volume 4 • Issue 5 • September 2026

THE ROLE OF ADAPTIVE AND MALADAPTIVE EMOTION REGULATION IN PREDICTING POLYSUBSTANCE USE SEVERITY: A STUDY OF ADULT MALES IN PAKISTANI REHAB CENTERS

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DOI: https://doi.org/10.5281/zenodo.23036314

Keywords
Polysubstance use, emotion regulation, adaptive strategies, maladaptive strategies, substance use disorder, self-medication hypothesis, Pakistan
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Article History
Received: 01 June 2026
Accepted: 23 August 2026
Published: 29 September 2026

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Abstract

The aim of this study was to explore the predictive relationship between emotion regulation strategies (adaptive and maladaptive) and severity of substance use among adult males in rehabilitation centers of Pakistan. The method used was quantitative, cross sectional, correlational, and a purposive sampling method was used, with a sample size of 70 adult males diagnosed with polysubstance use disorder, mainly between the ages of 36–45. The participants filled out an Emotion Regulation Questionnaire, which included five adaptive strategies (cognitive reappraisal, problem solving, acceptance, positive refocusing, and putting into perspective), five maladaptive strategies (self-blame, rumination, catastrophizing, other-blame, suppression), and a scale of polysubstance use. The reliability of both instruments was acceptable ($\alpha > .70$). Results: There was a strong positive correlation between maladaptive emotion regulation and polysubstance severity ($r = .82$, $p < .01$) and maladaptive emotion regulation significantly predicted polysubstance severity ($R^2 = .57$, $\beta = 0.95$, $p < .001$). Adaptive regulation was found to be moderately negatively correlated with severity ($r = -.57$, $p < .01$), but did not independently predict severity ($R^2 = .001$, $p = .76$). The males using polysubstance use reported significantly more reliance on maladaptive rather than adaptive strategies. In conclusion, findings are consistent with the self-medication hypothesis, suggesting that maladaptive emotion regulation is a strong risk factor for polysubstance abuse severity. This is because interventions to reduce maladaptive strategies rather than just promoting adaptive skills might be more effective in this population.

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1. INTRODUCTION

1.1 Background

Substance use is increasingly a public health problem in Pakistan. UNODC (2020) estimated that today 7.6 million people have substance use disorders, regardless of their socio-economic status, level of education, age, and/or location. Cannabis and heroin are the most historically abused drugs, but recent surveillance indicates that the abuse of synthetic drugs such as methamphetamine, misuse of pharmaceutical opioids, and the abuse of alcohol, which is prohibited by religious and legal means, has been increasing (Ahmad et al., 2018; Khalily, 2011). This has led to an increase in rehabilitation services provided by the government and private sector, especially in Lahore, Karachi, Islamabad, Rawalpindi, and Peshawar (Iqbal et al., 2023).

Despite their increase, the clinical picture is more complicated than a single-substance dependence. The polysubstance abuse pattern (concurrent and/or sequential use of 2 or more psychoactive substances resulting in clinically significant impairment; American Psychiatric Association, 2022) is a growing, more serious type. Substance use disorder (SUD) involving multiple substances is generally more severe than single-substance use disorder (SSUD), as evidenced by the following: onset earlier, higher rates of trauma exposure, more psychiatric comorbidities, lower treatment retention and higher rates of relapse (Connor et al., 2009; Bhui et al., 2011; Hakansson et al., 2011). This indicates that polysubstance use could be a unique syndrome characterized by more emotional dysregulation and social dysfunction than would be a more extreme end of the SSUD continuum (Aldao et al., 2010; Wilcox et al., 2016).

The use of multiple drugs is a common practice in Pakistan. Opiates are frequently mixed with other drugs, such as heroin with cannabis to reduce heroin's effects, alcohol with benzodiazepines to enhance their sedative properties, and/or stimulants in specific proportions (Khalily et al., 2008; Iqbal et al., 2023). These patterns make it difficult to detox or increase the risk of withdrawal. However, Pakistani research is limited to detoxification, abstinence, and relapse prevention (Khalily, 2011; Iqbal et al., 2023), and the literature from the international literature points to emotional dysregulation as a significant maintaining factor in addiction, with problematic emotion regulation accounting for more severe, treatment-resistant presentations (Gratz & Roemer, 2004; Aldao et al., 2010; Wilcox et al., 2016).

1.2 Conceptual basis of Emotion Regulation.

Emotion regulation is how people are involved in shaping which emotions come up, when, and how they feel and express them (Gross, 1998). There is a continuum of strategies, ranging from adaptive to maladaptive (Aldao et al., 2010). Maladaptive strategies can provide temporary alleviation of distress and psychopathology, while adaptive strategies can help to modify emotion and promote long-term wellbeing and goal attainment (Aldao et al., 2010; Garnefski et al., 2001). Maladaptive strategies (rumination, suppression, catastrophizing, self-blame, other-blame) have been shown to consistently be associated with increased symptom severity across depression, anxiety, and substance use disorders, whereas adaptive strategies (reappraisal, acceptance, problem solving, positive refocusing, perspective-taking) predict decreased symptom severity and better outcomes (Aldao et al., 2010).

Maladaptive regulation of self-mediation is the explanation given by Khantzian (1997) on how polysubstance use is learned: People learn, through negative reinforcement, which substances alleviate their emotional distress. When they are feeling the negative emotion too much, they can turn to sedating or numbing substances like alcohol, benzodiazepines and opioids (Koob & Le Moal, 2008; Khantzian, 1997). If adaptive strategies are not developed, and if the rumination-suppression response pattern

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dominates, chronic distress continues, substances provide immediate relief, and negative reinforcement increases the use of substances over time to increase polysubstance patterns (Koob & Le Moal, 2008).

1.3 Emotion Regulation in the Pakistani cultural context

Emotional expression and coping are influenced by collectivistic attitudes in Pakistan, which include a sense of social harmony, respect for hierarchy and social cohesion (Naeem et al., 2019). Negative emotions are not always encouraged to be expressed openly, particularly when in a differential relationship to others, and may be subject to criticism, disagreement or perceived as being volatile. As a result, maladaptive coping mechanisms like suppression, self-blame, other-blame can be socially reinforced, culturally normed coping mechanisms (Khalily, 2011). In other settings where culturally appropriate expression is limited and adaptive resources are low, substances can offer an alternative easily available, highly reinforcing outlet to relieve emotional distress, which is a pathway under-investigated in the Pakistani literature (Khantzian, 1997).

1.4 The Present Study

Pakistan is witnessing an increase in the prevalence and severity of polysubstance abuse but there is limited understanding of the mechanism of psychological reinforcement (Iqbal et al., 2023). The most stringent study conducted in Pakistan to date, Iqbal et al. (2023), revealed that shame and guilt are significant predictors of relapse for PSU; however, more comprehensive emotion regulation has not been systematically studied in PSU. The literature to date has not included a comprehensive evaluation of adaptive and maladaptive strategies specifically among Pakistani polysubstance users; most studies internationally (Mohajerin et al., 2013) study single substance users and cultural factors which reinforce maladaptive regulation in collectivist environments have not been considered.

This study aims to determine if there is a difference between severity of polysubstance abuse among adult males and associated adaptive and maladaptive emotion-regulation strategies, including five adaptive (cognitive reappraisal, problem solving, acceptance, positive refocusing, putting into perspective) and five maladaptive (self-blame, rumination, catastrophizing, other-blame, suppression) emotion-regulation strategies.

1.5 Hypotheses

H^0: Adaptive emotion regulation negatively and significantly predicts severity of polysubstance abuse in adult males.

The more adaptive a person's emotion regulation, the lower the severity of the polysubstance abuse in him as an adult.

H^1: Maladaptive emotion regulation positively and significantly predicts severity of polysubstance abuse in adult males.

H^2: Females and males with more polysubstance use report significantly more maladaptive than adaptive emotion regulation strategies.

1.6 Significance of the Study

In theory, this study takes the self-medication hypothesis one step further by examining if the reason for use is more likely to be due to the lack of adaptive strategies rather than the presence of maladaptive ones. The current study provides an empirical comparison on an adaptive versus maladaptive level between polysubstance users in Pakistan for the first time in quantitative terms. On the practical front, discovery can help design specific emotion-regulation interventions for rehabilitation programmes in Pakistan.

2. Literature Review

2.1 : Polysubstance Abuse: Clinical Characteristics and Diagnostic Framework

Polysubstance abuse is the simultaneous or sequential use of two or more substances that

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results in clinically significant impairment in two or more functional domains, according to APA (2022). DSM-5-TR has 11 diagnostic criteria that are categorized into four clusters: impaired control, social impairment, risky use, and pharmacological criteria (tolerance, withdrawal). Severity is classified mild (2-3 criteria), moderate (4-5) or severe (6+), for endorsement within 12 months.

Polysubstance presentations are not additive, but rather lead to more severe clinical pictures due to drug interactions. Connor, et al. (2009) reported that the polysubstance users experienced more trauma and psychiatric comorbidities than the single-substance users. Bhui et al. (2011) have associated polysubstance use with increased common mental disorders and psychosocial impairment. Other studies have also reported worse prognosis and increased mortality (Hakansson et al., 2011) and psychiatric hospitalization and functional impairment were both found to be significant (Wilcox et al., 2016). Interactions also increase the difficulty of detoxification and heighten the risk of withdrawal (Koob & Le Moal, 2008) and worsen problems in family, work and legal services (Connor et al., 2009; Bhui et al., 2011).

2.2 Substance Use Disorder in Pakistan: Prevalence and Patterns

According to UNODC (2020) there are currently 7.6 million people in Pakistan with substance use disorders, mostly due to opiates, cannabis, and prescription drugs. The prevalence of adults was approximately 6% according to Ahmad et al. (2018) and varied significantly by region. In addition to traditional cannabis and heroin use, there has been an increase in synthetic drug use, misuse of prescription opioids and benzodiazepines, and alcohol use, said Khalily (2011). Historically marginalised populations have been joined by adolescents, middle and upper income groups, and women, an under-served group (Khalily, 2011; Ahmad et al., 2018). Treatment services have increased but are heavily centered on detoxification and abstinence and only slightly more on psychologic and social aspects (Khalily, 2011).

In Pakistan, polysubstance use is common with treatment-seekers, and they often mix and match drugs to achieve specific outcomes; that is, to get the desired effect (Khalily et al., 2008; Khalily, 2011). Mediating role of self-efficacy between polysubstance use and shame & guilt and relapse proneness was stronger in polysubstance users compared to single-substance users in the landmark study by Iqbal et al. (2023) involving 402 poly and 410 single substance users from across 11 rehabilitation centres in Lahore, Pakistan, indicating that polysubstance use is a distinct clinical syndrome with greater impact of these variables. The study did not explore emotion regulation strategies as a whole, however, so it is unknown if this population exhibits specific emotion regulation strategies (or lack thereof).

2.3 Adaptive and Maladaptive Emotion Regulation Strategies

Adaptive: Cognitive reappraisal reinterprets the meaning of a situation before strong emotion arises; associated with better wellbeing (Gross & John, 2003). Problem solving deals with the source of distress in an active way (Nezu, 2004). Acceptance is the feeling of emotions without avoidance or control and that is a way to decrease secondary distress (Hayes et al., 2006). Positive refocusing involves turning attention to positive aspects to counteract negative mood (Garnefski et al., 2001). Making an event less significant/perceived, which is accompanied by lower anxiety.

Maladaptive: Self-blame is characterized by over attribution of negative events and relates to depression and anxiety (Garnefski et al., 2001). Rumination is a repetitive passive thinking about distress that enhances negative affect (Nolen-Hoeksema et al., 2008). Catastrophizing is a negative expectation for the worst to happen,

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which further exacerbates distress (Garnefski et al., 2001). Other-blame blames the negative events outside of themselves, which causes harm to their relationships (Garnefski et al., 2001). Suppression doesn't lessen the internal experience but raises physiological arousal and hinders communication (Gross & John, 2003).

2.4 Emotion Regulation and Substance Use

A study by Mohajerin et al. (2013) revealed that opioid-dependent individuals responded to the use of expressive suppression significantly higher than healthy controls. The meta-analysis by Aldao et al. (2010) supported the findings that maladaptive strategies are associated with higher symptom levels across all three of the disorders (depression, anxiety, and substance use) and adaptive strategies with lower symptom levels, lending support to the importance of emotion regulation across the various disorders. In veterans with PTSD and co-occurring addiction, Saraiya et al. (2023) reported the decrease in guilt and anger in the trauma-focused treatment, and the decrease in PTSD symptoms mediated the decrease in anger. There is limited evidence in Pakistan: Iqbal et al. (2023) found evidence for shame and guilt in relapse but there is no study that correlates adaptive/maladaptive emotion regulation with the severity of polysubstances in Pakistan.

2.5 Rationale of the Study

To date, no study has directly investigated if there is a pattern of high maladaptive and low adaptive emotion regulation among Pakistani adults with polysubstance use disorder, and if this pattern predicts severity. Iqbal et al. (2023) only investigated self-evaluative emotions; international studies have investigated single-substance users or narrow measures; and cultural factors that support maladaptive regulation in collectivist contexts have not been explored. This study goes to the heart of this issue.

2.6 Conceptual Framework

This study combines the self-medication hypothesis (Khantzian, 1997) and the process model of emotion regulation (Gross & John, 2003). Unresolved emotional activation is maintained through repetitive use of maladaptive strategies (self-blame, rumination, catastrophizing, other-blame, suppression). If they do not find adaptive strategies to manage this dysregulation (reappraisal, problem solving, acceptance, positive refocusing or perspective taking), one attempts to regulate oneself externally (e.g. through substances that provide rapid relief, often in combination). Over time, negative reinforcement escalates to polysubstance abuse. Cultural context matters, however; in collectivist environments such as Pakistan, norms that discourage adaptive expression and promote the suppression and self-blame of substance use may exacerbate regulatory deficits that lead to substance use.

3. Method

3.1 Research Design

A quantitative, cross-sectional, predictive research design was used to investigate the prediction of the relationship between emotion regulation strategies and the severity of polysubstance abuse (Creswell & Creswell, 2018). The study aimed to evaluate the association and prediction between the independent variables – adaptive and maladaptive emotion regulation – and the dependent variable – polysubstance abuse severity – without manipulation of the independent variables, which made this design suitable for the study. While cross-sectional designs cannot be used to make causal claims, they are frequently used in exploratory research and hypothesis testing to discover existing empirical relationships that then can be examined longitudinally and/or in intervention studies (Gravetter & Forzano, 2018).

3.2 Participants

This study includes polysubstance users in Pakistan that participated in the study and

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included adult males who were diagnosed as having substance use disorders. A purposive sampling method (non-probability sampling technique) was used and the subjects were those that met the set inclusion criteria. The inclusion criteria were: (1) Biological male gender; (2) Age between 25-55 years; (3) Diagnosed with DSM-5-TR substance use disorder through a diagnostic interview with treating clinician in the drug rehabilitation centre; (4) Current enrollment in a drug rehabilitation centre or completed a drug rehabilitation programme in the last 6 months; (5) Capable of understanding and filling the study questionnaires in english language; and (6) Voluntary informed written consent to participate in the study. The exclusion criteria were: (a) active psychotic disorder (schizophrenia, schizoaffective disorder, substance-induced psychotic disorder); (b) severe cognitive impairment or diagnosed intellectual disability which would limit the ability to comprehend the study instruments; (c) current acute intoxication or severe substance withdrawal state at the time of data collection. Data for this study were collected from Ali Rehabilitation Centre, Niyaat Rehabilitation Centre, and Khyber Rehabilitation Centre. Of the sample, the majority were aged 25–35 years (68.6%), had secondary-level education (54.3%), were unmarried (54.3%), and reported some form of occupational functioning (90.0%); full demographic characteristics are reported in Table 1.

3.3 Instruments

There were three standardized tools used for this study including Demographic Information Sheet, Emotion Regulation Questionnaire (ERQ-30) and Alcohol, Smoking and Substance Involvement Screening Test (ASSIST).

Demographic Information Sheet.

Systematic data collection regarding participants' characteristics was conducted on a demographic and clinical information sheet which was created by the researcher and included information on age, years of formal education, marital status, employment status, duration of polysubstance use (in years), type and number of psychoactive substances used, age at first use, and number of previous admissions to rehabilitation.

Emotion Regulation Questionnaire (ERQ)

The Emotion Regulation Questionnaire (ERQ) is a brief measure with two subscales measuring adaptive and maladaptive emotion regulation. An adapted and extended version of the Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) was used to measure emotion regulation. This study has a focus on five adaptive and five maladaptive strategies, so the instrument was extended to include these five strategies. The Adaptive Emotion Regulation scale includes 15 items that reflect the following 5 strategies: (1) Cognitive Reappraisal (reinterpreting an emotion provoking situation to change the way it provokes emotions); (2) Problem Solving (actively identifying and implementing solutions to problems that are causing distress); (3) Acceptance (allowing an emotion without trying to change or control it); (4) Positive Refocusing (redirecting attention to positive elements to counter the negative mood); (5) Putting into Perspective (placing events in a broader context to reduce their emotional impact). The Maladaptive Emotion Regulation subscale consists of 15 items that reflect five different strategies: (1) Self-Blame (excessive and broad attribution of negative events to the self); (2) Rumination (recurrent thinking about causes of and consequences of negative events); (3) Catastrophizing (hyperextended thinking about negative events); (4) Other-Blame (thinking about negative events in terms of other people); and (5) Suppression (actively suppressing emotional feelings). All have a 7 point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Higher scores on the Adaptive subscale are indicative of a more frequent use of adaptive strategies, and higher scores on the Maladaptive subscale are indicative of a more frequent use of

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maladaptive strategies. The internal consistency of the subscales was satisfactory with Cronbach's α = 0.80 for both Adaptive and Maladaptive ERQ.

Alcohol, Smoking and Substance Involvement Screening Test (ASSIST).

The ASSIST (Humeniuk et al., 2008; WHO ASSIST Working Group, 2002) was used to measure the severity of polysubstance abuse. The ASSIST is a standardised screening tool that was developed by the World Health Organisation that determines the level of risk and severity of multiple drug use. It looks at substance use in 10 domains: tobacco, alcohol, marijuana, cocaine, amphetamine-type stimulants, inhalants, sedatives/sleeping pills, hallucinogens, opioids, and other drugs. Questions in the ASSIST measure lifetime use, frequency of use in the preceding three months, strong desire/urge to use, health and social problems associated with drug use, failure to fulfill role obligations, concerns expressed by others, failure to stop using, and injection drug use. The ASSIST was selected as it is specifically designed to evaluate multi-substance patterns, and thus was the only instrument that was appropriate for a polysubstance abuse study. This instrument was found to have acceptable reliability Cronbach alpha value of 0.9.

3.4 Procedure

The study was carried out in a systematic manner. Data collection was carried out within the substance use rehabilitations centres in which the permission is secured for the research. Ethical Approval and Institutional Permission. Step 1: The relevant institutional ethics review committee gave ethical approval before any data collection activities began. Following ethical approval, formal written consent from the administration of the rehabilitation centres in which the study was carried out was sought. Step Two: Identification and screening of participants. The potential participants were identified and the inclusion/exclusion criteria were applied to filter the identified potential participants. Diagnosis of DSM-5-TR substance use disorder were confirmed by treating clinicians and all individuals fulfilled the criteria of the study. Step 3: Informed Consent. Eligible participants were given a detailed informational sheet and consent form, in English language. These documents included an explanation of the purpose and nature of the research, that participation was voluntary, that withdrawal at any time did not impact treatment, and that the responses were confidential and anonymous.Prior to data collection, all participants signed written informed consent. Step 4: Administration of Instruments. The study instruments were filled out by participants in a quiet and private atmosphere in the rehabilitation center. The demographic and clinical information sheet was first followed by the ERQ Adaptive and Maladaptive subscales and then the ASSIST. Step 5: Debriefing. After the questionnaires have been completed, the participants have been debriefed about the goals of the study. They were complimented for their participation and any questions or concerns were addressed. Step 6: Data Management All questionnaires were completed anonymously by using unique codes for identification of the participants. The instruments were not kept with any personally identifying information.

3.5 Ethical Considerations

Ethical guidelines for research activities were adhered to according to the APA (2017) Psychologists' ethical principles and code of conduct. Informed consent was obtained from all participants and informed consent was clearly communicated that this was a voluntary process and that all participants could withdraw at any point without penalty. Confidentiality and anonymity were scrupulously maintained, anonymisation using identification codes was ensured and all records were kept securely. Special precautions were made to protect this vulnerable population: the research did not alter the way in

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which the patients were being treated and the researcher was vigilant for any indication of the participant's distress. Research ethics with regard to the academic ethics committee and the rehabilitation centers involved.

3.6 Data Analysis

SPSS 26 was used to analyse the data. Descriptive data were analysed for description of the sample and the distribution of the scores of the study variables. Cronbach's alpha was used to determine the internal consistency for each scale. All continuous variables were assessed for the assumption of normality by visual inspection of histograms, and by the skewness and kurtosis values. Given the severe non-normality of Adaptive ERQ scores, Spearman's rank-order correlation was used for bivariate relationships. Simple linear regression was conducted on each emotion regulation subscale to evaluate each subscale as an individual predictor of ASSIST total scores. Linearity and independence of errors and the normality of the residuals were tested. The alpha level of 0.05 (two-tailed) was used for all inferential statistics.

4. Results

4.1 Demographic Characteristics of the Sample

Table 1 presents the demographic characteristics of the participants (N = 70).

Table 1 Demographic Characteristics of the Sample (N = 70)

Variable	Category	% (n)
Age	25–35 years	68.6% (48)
	36–45 years	25.7% (18)
	46–55 years	5.7% (4)
Education	Secondary level	54.3% (38)
	Primary / Higher level (combined)	45.7% (32)
Marital status	Unmarried	54.3% (38)
	Married or divorced (combined)	45.7% (32)
Occupational functioning	Some occupational functioning	90.0% (63)

4.2 Descriptive Statistics

Table 2 shows descriptive statistics of the study variables. The mean score for the Adaptive ERQ subscale was 92.57 (SD = 129.31) showing there was a lot of variation between the scores. The Maladaptive ERQ subscale had a mean of 80.43 (SD = 13.96). The ASSIST total score had a mean of 75.70 (SD = 17.58).

Table 2 Psychometric Statistics of the study variables (N = 70):

Variable	Items	M	SD	Skewness	Kurtosis	α
Adaptive ERQ	15	92.57	129.31	5.89	35.73	.80
Maladaptive ERQ	15	80.43	13.96	–	–	.80
ASSIST Total	18	75.70	17.58	–	–	.79

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Significant positive skewness (5.89) and high kurtosis (35.73) were noted for the Adaptive ERQ scores, suggesting a considerable concentration of scores at the lower end with a few high extreme scores toward the right side of the curve. The pattern is characteristic of adaptive strategy use restriction of range for this high risk clinical sample.

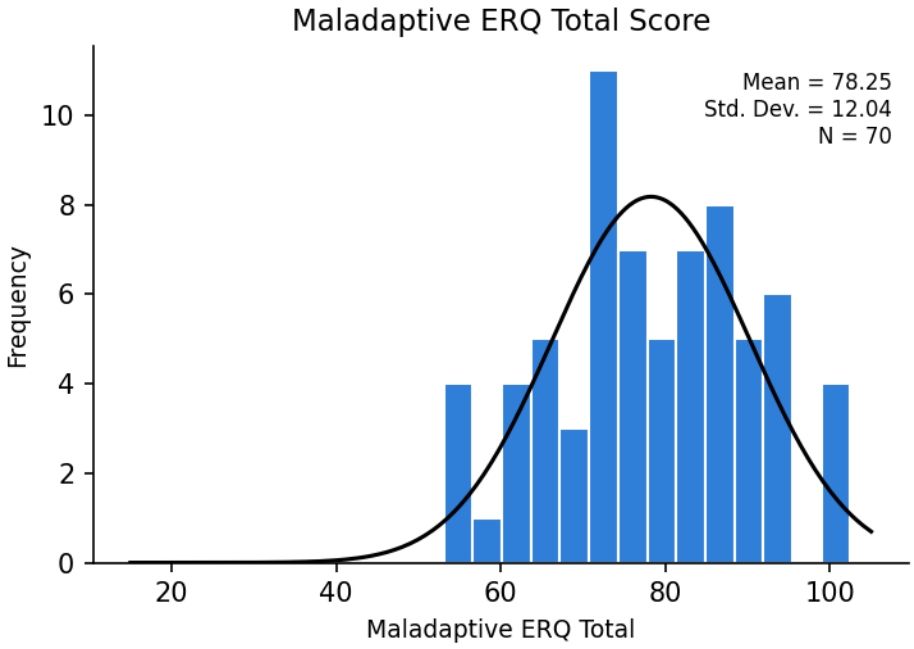

Figure 1. Distribution of Maladaptive ERQ Total Scores

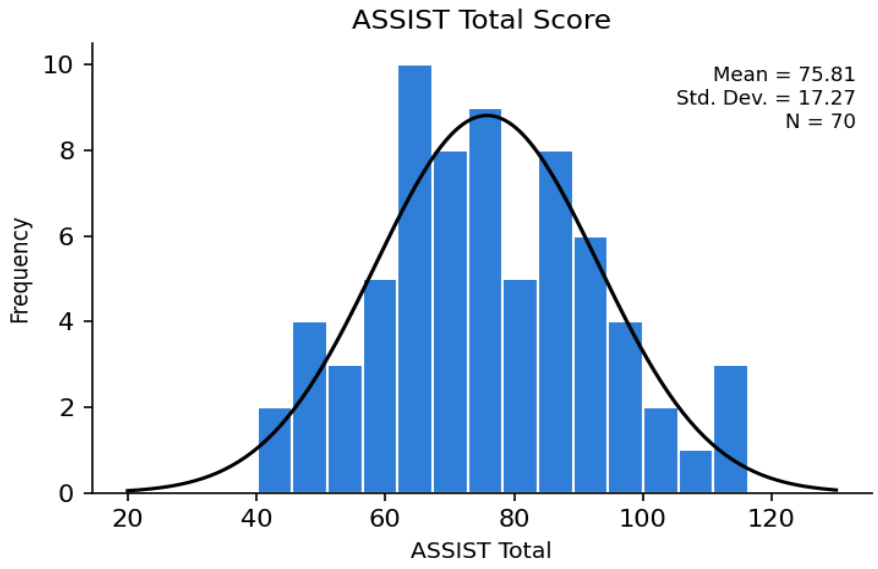

Figure 2. Distribution of ASSIST Total Scores

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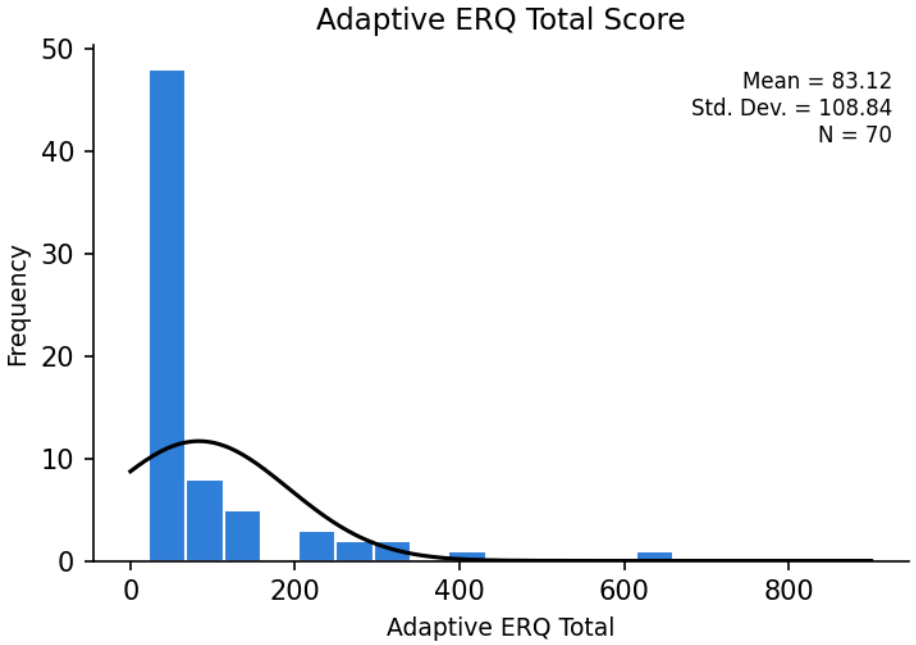

Figure 3. Distribution of Adaptive ERQ Total Scores

Cronbach's alpha coefficients showed excellent internal consistency for Adaptive ERQ (α = .80) and Maladaptive ERQ (α = .80) and good reliability for ASSIST (α = .79). All of the values were above the .70 cut score, indicating acceptable reliability for the instruments and the validity of further analyses

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Table 3 Spearman correlations between the study variables.

Variable	1	2	3
1. Adaptive ERQ	—	–.561**	–.568**
2. Maladaptive ERQ		—	.818**
3. ASSIST Total			—

Note. ** *p* < .01 *(two-tailed).*

Maladaptive ERQ was positively and strongly correlated with ASSIST scores (r = .818, p < .01), with higher scores for maladaptive ERQ linked to higher scores on the ASSIST. The adaptive regulation score, adaptive ERQ, was moderately negatively correlated with severity, as measured by ASSIST (r = –.568, p < .01). Adaptive ERQ and Maladaptive ERQ were statistically significantly negatively related (r = –.561, p < .01), supporting the inverse relationship between Adaptive ERQ and Maladaptive ERQ.

4.5 Regression Analysis: Maladaptive ERQ as Predictor

A simple linear regression was performed to check if Maladaptive ERQ predicted severity of polysubstance use. The model was statistically significant, F(1, 68) = 90.26, p < .001, explaining 57% of the variance in ASSIST scores (R^2 = .570).

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The more maladaptive ERQs participants had, the higher their ASSIST score, with a correlation of $\beta = .755$ ($t = 9.50$, $p < .001$). Table 4 summarises the regression results.

Table 4

Simple Linear Regression Between Maladaptive Emotional Regulation and Polysubstance Use Severity

4.6 Regression Analysis: Adaptive ERQ as Predictor

Simple linear regression was performed to assess the prediction of severity of polysubstance abuse by Adaptive ERQ. The model was not statistically significant, $F(1, 68) = 0.093$, $p = .762$, explaining only 0.1% of the variance in ASSIST scores ($R^2 = .001$). The regression coefficient was not significant ($\beta = -.036$, $t = -0.305$, $p = .762$). Table 5 summarises the results.

Table 5

Simple Linear Regression Between Adaptive Emotional Regulation and Polysubstance Use Severity

The lack of regression for Adaptive ERQ, in spite of the significant (negative) correlation, may be related to the marked skewness of scores on the Adaptive ERQ. The regression was constrained by the limited range and thus was unable to detect a linear predictive effect. The consistency of the negative relationship between adaptive and severity suggests that this association is not only real but could be non-linear or could be caused by the common variance with maladaptive regulation.

4.7 Hypothesis Testing Summary

H^0 (Adaptive ERQ negatively predicts severity) was not found to be a linear predictor. Although the negative correlation was significant, the regression was not significant. This could be due to the highly skewed distribution of Adaptive ERQ scores, which could limit the range and power to detect the effect of the regression.

There was support for H^1 (Maladaptive ERQ positively predicts severity). The factor of maladaptive regulation accounted for a significant and large amount of variance (57%) in polysubstance severity.

H^2 (Males with more maladaptive than adaptive strategies had higher polysubstance use) was supported. This pattern was confirmed among males, with strong positive correlations between Maladaptive ERQ and ASSIST, and a negative correlation between Adaptive ERQ and ASSIST. Since females had low numbers in the sample, they were not included in this analysis.

5. Discussion

5.1 Overview of Findings

The current study investigated the association of Emotion Regulation Strategies and severity of Polysubstance use among adult males in Rawalpindi Pakistan. The results offer robust and consistent evidence supporting the role of maladaptive emotion regulation as a major and robust predictor of polysubstance severity, but also suggest that adaptive emotion regulation, though significantly negatively correlated with severity, is not a unique predictor of severity in this population. The findings are consistent with the self-medication theory and add to the little known field of polysubstance use in Pakistan. This pattern is also consistent with demographic trends observed in this sample, where the majority of participants were male and concentrated in the 25–35 year age group; prior literature similarly indicates that polysubstance use tends to be more prevalent among younger adult males (Ahmad et al., 2018; UNODC, 2020).

5.2 Interpretation of Findings

The strong positive correlation between maladaptive emotion regulation and polysubstance severity is congruent with the self-medication hypothesis (Khantzian, 1997). People who tend to blame themselves, ruminate, catastrophize, blame others, and suppress their feelings suffer from chronic and unresolved emotional suffering. These coping mechanisms

JOURNAL FOR SOCIAL SCIENCE STUDIES
An International Peer-Reviewed Open Access Journal

ISSN (Online): 3006-2071 | ISSN (Print): 3006-2063
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exacerbate negative emotions, instead of alleviating them. Self-blame leads to guilt and worthlessness; rumination maintains negative mood; catastrophizing heightens anxiety; other-blame arouses anger and resentment; suppression tampers with the awareness of distress, and raises internal physiological arousal. These strategies combine to produce a chronic emotional instability, which people might try to remedy with drugs. Psychoactive substances provide a fast, intense and frequent pharmacological relief from this suffering and the use of such substances is reinforced over time through negative reinforcement. This process can become vicious over time as people take on more and more drugs or alcohol at the same time to get the feeling of being numb.

The present study builds on the work of Mohajerin et al. (2013) who reported that individuals who use substances tend to prefer expressive suppression over cognitive reappraisal, finding that it is strongly correlated with the severity of substance use in a polysubstance sample from Pakistan. It also conforms with meta-analytic evidence that maladaptive strategies are strongly correlated with psychopathology across a variety of disorders (Aldao et al., 2010).

The large negative correlation between adaptive regulation and severity is congruent with the overall literature showing adaptive strategies with reduced psychopathology. The non-significant regression on Adaptive ERQ is interesting and should be interpreted with caution. Adaptive ERQ scores are highly skewed (5.89) and have high kurtosis (35.73), suggesting that most participants also had very low scores on adaptive strategies with a few extreme high scores. This narrow range prevented this regression from detecting any linear predictive effect. Given the high risk clinical sample, lack of adaptive strategies might not be as much of an indicator of severity as the presence of maladaptive strategies. This can be seen in the light of the idea that, in a deeply entrenched addiction, using emotional habits that are harmful is more tightly linked to severity than the relative lack of emotional habits that are helpful . Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010)

This is especially relevant to the finding that males with higher polysubstance use exhibited significantly greater reliance on the maladaptive than on the adaptive strategies. Maladaptive internal strategies may be more common and harmful in the Pakistani cultural context where emotional expression and maintaining emotional restraint are often encouraged. Such a culturally-driven pattern should be addressed in rehabilitation programs.

ldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010)

Burgkart et al. (2022)

5.3 Comparison with Literature

The current results corroborate Aldao et al. (2010), who found that maladaptive strategies have strong relationships with psychopathology, and Mohajerin and colleagues (2013), who found that suppression was more correlated with substance-dependent individuals. This study builds upon the study conducted by Iqbal et al. (2023) which focused on self-evaluative emotions and expands to include the full range of emotion regulation strategies. The results also corroborate the process model of Gross and John (2003) that suggests that response-focused maladaptive strategies have detrimental effects.

5.4 Theoretical Implications

The findings complement the self-medication hypothesis by suggesting that it is the maladaptive, not the adaptive, aspects of emotion regulation that underlie poly substance use severity. This indicates a need for interventions to focus on decreasing maladaptive strategies as a main goal of treatment. The findings also add to the cross-culturalism literature on emotion regulation, underscoring the significance of culture in emotion regulation and the associated outcomes.

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5.5 Practical Applications

The study has practical applications for rehabilitation practices. Emotion Regulation profiles can be screened at intake to identify high-risk patients. Interventions should focus on decreasing the use of maladaptive strategies, e.g., self-blame, rumination and suppression, using cognitive-behavioural strategies that challenge these patterns. Conversely, developing adaptive skills (cognitive reappraisal, problem solving and acceptance) could be protective. With respect to the Pakistani context culturally adapted interventions would be relevant as suggested by Naeem and colleagues (2019). Stress management at work and therapy that involves family members may also be helpful for the majority who are working and educated.

5.6 Limitations

There are several limitations of this study. Because of the cross-sectional design, causal inferences are not possible, and it may be that chronic substance use negatively affects emotion regulation, or that some third variable is involved. The number of samples was sufficient for simple regression but not for more complicated analyses. This all male sample is limiting in generalisability to women. The self-report measures may suffer from social desirability bias, and the very skewed scores on the Adaptive ERQ scores may have masked the regression analysis of H1.

5.7 Recommendations

Longitudinal study designs should be used to determine temporal precedence, and future studies could test whether emotion regulation strategies predict changes in polysubstance use over time. Subgroup analyses would be possible if there were larger and more gender balanced studies. Qualitative research would give deeper understanding to researchers of the cultural significance of certain strategies and the impact of these on substance use. The need for intervention trials to assess whether intervention targeting the decrease of maladaptive strategies and increase of adaptive skills can result in decreases in severity of polysubstance abuse is crucial. Lastly, culturally appropriate emotion regulation assessment tools in Pakistan would solve the problem of measurement of emotion regulation that was found in the present study.

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ISSN (Online): 3006-2071 | ISSN (Print): 3006-2063
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