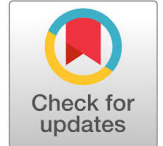


Mediating Role of Depression between Emotion Regulation Strategies and Suicide Proneness among Male Patients with Substance Use Disorder

-   **Hasnain Hyder**
Institute of Clinical Psychology
University of Karachi, Karachi, Pakistan
-   **Salman Shahzad (Ph.D)** (*corresponding author*)
Institute of Clinical Psychology
University of Karachi, Karachi, Pakistan
-   **Ibarat Ali Laghari**
College of Clinical Psychology
Ziauddin University, Sukkur, Pakistan
-   **Salim Ullah**
Institute of Clinical Psychology
University of Karachi, Karachi, Pakistan
-   **Suhail Ahmed**
Institute of Clinical Psychology
University of Karachi, Karachi, Pakistan
-  **Nasreen Begum**
Institute of Clinical Psychology
University of Karachi, Karachi, Pakistan
-   **Muzaffar Ali (Ph.D)**
Department of Social Sciences
SZABIST University, Karachi, Pakistan



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Abstract

This paper was set out to explore the mediating factor of depression in the interrelationship between emotional regulation (i.e. affective suppression and cognitive reappraisal) and suicide-proneness among males with Substance Use Disorder (SUD). It used a cross-sectional quantitative design and recruited 180 male participants who were recruited through a purposive sampling technique in Karachi in rehabilitation centres that are located in urban areas. The tools that were used to obtain the data include the Emotion Regulation Questionnaire (ERQ), the Siddiqui Shah Depression Scale (SSDS), and the Life Attitude Schedule Short Form (LAS-SF), which are standardised tools. It was analysed with the help of mediation analyses with the help of the PROCESS Macro (Model 4), Pearson correlations, and descriptive statistics. Findings indicated that affective suppression positively correlated with depression and suicide proneness, but no positive correlation was found between cognitive reappraisal and depression and suicide proneness. Mediation analysis showed that depression mediated the correlation between both the affective suppression and suicide proneness, and the cognitive reappraisal and suicide proneness. The research concludes that depression is a very important psychological process connecting emotion regulation and suicidal risk. These results support the importance of culturally specific cognitive-behavioural and emotion-focused interventions in enhancing the process of emotion control and mental well-being of patients with SUD.

Keywords

*Affective suppression
Cognitive reappraisal
Emotion regulation
Male patients
Substance use disorder
Suicide proneness*

INTRODUCTION

There is a high burden of Substance Use Disorder (SUD) in Pakistan, 6.7 million adults annually use illicit drugs, 4.25 depends on drugs and treatment coverage is less than 1% (Citaristi, 2022). Most frequent are cannabis and opioids, and prescription sedatives are highly non-medically used. Substance misuse and suicide have been disproportionately impacting male youths who are below the age of 30 (Shekhani, et al., 2018). The scientific community demonstrates that depression and SUD often co-exist, significantly increasing the risk of suicide. Sixty-two percent to ninety percent of suicides are linked to a mental or substance use disorder that is diagnosable. Suicide is a major cause of death in the world, and over 700,000 deaths each year, and it is the third leading cause of death in ages between 15 and 29 (World Health Organization, 2025). Almost three-quarters of them take place in the Low and Middle-Income Countries (LMICs) such as Pakistan, where they are underreported and this situation hides the real figures.

The estimated suicide rate in Pakistan is 4.4 per 100,000, and young men who are below 30 years are most susceptible (Osama, et al., 2014). Depression is always the most common psychiatric correlate of suicide in Pakistan, but there is a paucity of literature that attempts to test how emotion regulation, particularly maladaptive cognitive appraisal and affective suppression are contributors to suicide proneness. Emotion regulation (ER) is a kind of process of how people are able to cope with their emotions and their manifestations. The higher-order variables of maladaptive appraisal styles (catastrophizing, rumination, self-blame) and expressive suppression are correlated with the increased levels of depression and suicidality but not adaptive reappraisal brings about resilience. Maladaptive appraisal and suppression could be likely to occur in both populations with SUD, which exacerbates vulnerability. Research evidence has found that emotion regulation was significantly related to suicide.

Mukhtar and Shahzad (2025) recently discovered that metacognitive beliefs are linked to emotion regulation strategies that mediate the association between them and suicide proneness in the youth. Mental health depends heavily on the way people think. Researchers have identified the factors contributed in wellbeing among patients with SUD. A study conducted by researchers Ali and Shahzad (2019) found that self-esteem and social support also contributed well-being among patients with SUD. Another study conducted by Shahzad et al. (2023) found the significant association of self-esteem, depression, anxiety and stress with wellbeing among patients with SUD. Most suicides in the world are attributed to mental health issues and SUDs and hence there is a need to investigate how they interact with other psychological factors including depression and emotion regulation. Individual who are using drugs are not affected in isolation but also their families are also negatively affected by their SUD use.

There is research evidence which shows that children of patient with SUD, children of fathers using drugs perceived their attachment with fathers, mothers and peers collectively has link with depression and attachment with mother and fathers have significantly prediction value with depression among adolescents.

These risk factors should be identified and detected in dealing with both substance use and mental health problems. The detection of mental health problems in patients with SUD is not easy; the professionals should have adequate training in clinical diagnosis of the conditions and they should be capable of effectively eliminating such conditions. However, they end up with under or over diagnosis of most conditions because of the absence of the professional training and credentials, which impacts the treatment outcome. The study fills this important gap since it focuses on the question of whether depression mediates the relationship between ER strategies and suicide proneness of male SUD patients in Pakistani rehabilitation centres.

Rationale for Current Study

Alcohol and drug abuse are quite common among males in Pakistan, and all cultural, social, and clinical aspects are unique determinants of emotional control and mental health. The proposed study aims to evaluate how depression mediates the relationship between emotion regulation strategies (i.e. cognitive reappraisal and affective suppression) and the suicide proneness. Reports on mediation models have been conducted around the world to determine the relationship between emotion control and suicide risk through depression; these models are yet to be tested on clinical population such as patients with SUD in Pakistan. The identification of these psychological processes can be used by the study to inform culturally-adjusted interventions, including cognitive behaviour therapy and emotion-oriented skills training, to decrease cases of depression, decrease suicidal risk, and enhance well-being among male patients with SUD.

LITERATURE REVIEW

The issue of suicide is becoming more of a concern among mental health professionals towards the general population and even amongst the patients with mental illness and comorbidities. Suicide cases are not reported and, therefore, determining the actual state of suicide is a complex task. This complication is attributed to families, social, cultural, and neighbourhood factors associated with mental health status and substance use. Individuals are reluctant to table their issues in an open manner. However, it is noteworthy to know the connection between these issues to work out. The maladaptive coping strategies are associated with depression and suicidality as research evidence confirms (Garnefski & Kraaij, 2006; Akbulut et al., 2025). On the same note, the researchers discovered that affective suppression is interconnected with psychological distress, poor memory, and depression (Gross & John, 2003; Larsen et al., 2012). The negative correlation of cognitive emotion regulation with depression, anxiety, and stress and positive with self-esteem was also significant and was identified by other researchers (Shahzad et al., 2023; Shahzad, et al., 2022). The researchers also achieved similar results (Shahzad et al., 2020), as they established that cognitive appraisal and affective suppression were significantly linked to depression among patients with SUD. The significant relationship between cognitive reappraisal and affective suppression and suicide proneness was discovered by other researchers (Ong & Thompson, 2019; Forkmann et al., 2014).

A study conducted by Shahzad et al. (2013) found the significant association of emotional intelligence with the variable of psychological wellbeing (i.e., autonomy, environmental mastery, personal growth, & positive relationship with others) among patients with SUD. Other researchers have also found role of social support in wellbeing among patients with SUD (Bint-e-Saif & Shahzad, 2024). Substance use comorbidity with depression is associated with the risk of suicide in all parts of the world (Forray & Yonkers, 2021; Rihmer, 2011) and more than 90 percent of the risks of suicide are related to depression, SUD, or both. The lack of emotion regulation is typical of patients with SUD, patients use substances to cope with distress and this leads to a reinforcing loop of emotional dysregulation and drug use (Khantzian,

1997). The tripartite model (Clark & Watson, 1991) assumes that only low positive affect is a characteristic of depression which in SUD patients are frequently in the form of emotional blunting and hopelessness (Anderson & Hope, 2008). The cross-sectional and longitudinal studies indicate that ER challenges may result in depression, which further predicts the risk of suicide (Larsen et al., 2012; Akbulut et al., 2025). This is the mediation route that is not formally verified among Pakistani SUD populations.

Hypotheses

H₁: Depression is the mediator in the relationship between affective suppression and suicide proneness in patients with SUD.

H₂: Depression is the mediator in the relationship between cognitive reappraisal and suicide proneness in patients with SUD.

METHODOLOGY

The research paper has a quantitative, cross-sectional design when examining the mediating effect of depression between emotion regulation (i.e., cognitive appraisal and affective suppression) and suicide proneness among SUD male patients in Pakistan. The sample size was 180 male SUD patients (M = 27.78, SD = 7.70). The sample participants were selected in the various SUD treatment and rehab centres in various locations within Karachi, Pakistan. Purposive method of sampling was used to get the participants who had to satisfy the prerequisites to join the study.

Inclusion Criteria

- Male individuals aged 18 years and above
- Currently receiving treatment for SUD
- Ability to comprehend and respond to the questionnaire in Urdu.
- Willingness to provide informed consent

Exclusion Criteria

- Individuals with severe cognitive impairments or psychiatric conditions that hinder comprehension
- Participants who had relapsed or were not in a stable phase of rehabilitation

Instruments

Life Attitude Schedule Short Form

The Life Attitude Schedule Short Form (LAS-SF) is a self-report measure employed to determine risk-taking and suicide-prone actions, thoughts, and feelings is the life attitude schedule- short form (Rohde et al., 1996). It is made up of 24 items which are in the form of true and false. The 12 positive items (i.e., I look forward to a long life) are inverted and added to the 12 negative items (i.e., I wish that I was someone else) to provide an LAS-SF total score value that may range between 0 (i.e., no adoption of any negative item, and adoption of all positive item) and 24 (i.e., adoption of all negative item, and no adoption of all positive item). It was concluded that the LAS-SF possesses good psychometric properties ($\alpha=.78$) in the case of adolescent samples. On the same note, the item-wise alpha coefficient of 24 LAS-SF was .75 (Langhinrichsen-Rohling, & Lamis, 2008).

Emotional Regulation Questionnaire

The Emotional Regulation Questionnaire (ERQ) is a self-report instrument that has been in use since Gross and John (2003) developed it to estimate how an individual normally employs two major categories of emotion regulation strategies: cognitive reappraisal and expressive suppression. A process of reinterpreting a situation to alter its emotional effect is called cognitive reappraisal, whereas the process of consciously suppressing the expression of emotions is known as expressive suppression. The ERQ is a

scale of 10 items, six of which measure reappraisal and the other 4 measure suppression. Respondents provide ratings on the 7-point Likert scale, which is strongly disagree to strongly agree. The reliability and validity of the ERQ have been reported in many studies. A strength of reliability is internal consistency where coefficients of $\alpha=.79$ on reappraisal subscale and $\alpha=.73$ on suppression subscale were found. The scale is also well constructed in terms of validity; reappraisal is always associated with positive reaction such as increased life satisfaction, increased interpersonal relationships, and suppression is always related to negative affect and lower social support. The ERQ is a powerful and useful tool in both research and clinical life due to its validity proved in various cultures and age groups.

Siddiqui Shah Depression Scale

The Siddiqui-Shah Depression Scale (SSDS) is a special form of self-report scale designed by Siddiqui and Shah (1997) to estimate the depressive symptoms among Pakistani communities. The SSDS was also formulated in Urdu unlike many other Western instruments to consider the peculiarity of language and cultural manifestation of depression in this situation. The scale has 36 items that were chosen out of a preliminary number of 72 statements collected through the students of universities and culled by professionals in the field of mental health. Psychometric tests are used to affirm high reliability and validity of the SSDS. The scale demonstrates great internal consistency with Cronbach alpha of 0.91 in clinical and 0.89 in non-clinical samples. Split-half reliability is also very high with coefficients of 0.79 to 0.89. The scale is also suitable in distinguishing between the depressed and non-depressed people, and the recommended cut-off point is 26. The emotional, cognitive, and somatic factors of depression are represented by sample items, i.e., I feel hopeless about the future and I cry more than usual.

Procedure

Ethical permission was first received through the Institutional Review board (IRB) of the associated university and the consent of the chosen rehabilitation facilities was received. Families were contacted and the sample of the eligible participants in the rehabilitation centres was chosen. The reason why it was a brief study was also explained to the participants prior to their informed consent. The self-report questionnaires were then administered in a private and quiet environment to provide confidentiality. Upon the process, the questionnaires obtained were coded in order to preserve anonymity and the data were kept in a safe place.

Ethical Considerations

The consent form contained all the details needed by the participants prior to their participation in the study such as the goal of the research, confidentiality, voluntary participation, and the right to withdraw. In addition, the form also incorporates the characteristics of the participants such as age, education, family background and the general health status. This was done by giving the participants information concerning the study in a detailed manner and the participants signed a consent form. All the data were anonymized and personal identifiers were excluded. Data was kept in a safe place and only the authorized personnel accessed it. The participants were made aware of whether they have the freedom to pull out of the study at any time with no consequences. Subjects with the worst in the depressive symptoms or Suicide Prone were referred to mental health professionals to receive the relevant intervention.

Data Analysis

Statistical Package of the Social Sciences (SPSS) was used in the analysis of data. The analysis was carried out in the following steps: a) means, standard deviations, frequencies to describe the sample characteristics and study variables, b) Pearson correlation to test the relationships between the variables and c) use of Hayes PROCESS macro (Model 4) to test the mediating role of depression in the relationship between emotion regulation strategies and suicide proneness.

RESULTS & FINDINGS

The participants were mainly male (66.7%), and most of them were living in joint families (81.7%). The majority of the participants belonged to the lower socioeconomic category (60.6%). It is worth noting that 66.1% of them did not have children, which represents the high age distribution of the sample. More than a half of the sample (51.1) identified as living in households with 6-10 family members, which is the reflection of extended family system produced by urban Pakistani backgrounds (Table 1).

Table 1
Frequency Distribution of Demographic Variables (N = 180)

| Demographic Variables | Frequency (n) | Percentage (%) | |
|--------------------------|----------------|----------------|-------|
| Marital Status | Single | 120 | 66.7% |
| | Married | 60 | 33.3% |
| Family System | Joint Family | 147 | 81.7% |
| | Nuclear Family | 33 | 18.3% |
| Socioeconomic Status | Lower | 109 | 60.6% |
| | Middle | 71 | 39.4% |
| Number of Children | 0 | 119 | 66.1% |
| | 1-2 | 34 | 18.9% |
| | 3-4 | 27 | 15.0% |
| | ≤5 | 40 | 22.2% |
| Number of Family Members | 6-10 | 92 | 51.1% |
| | >10 | 48 | 26.7% |

There was a significant correlation between the key study variables (Table 2). Suicide proneness ($r = .57, p = .01$) and affective suppression ($r = .54, p = .01$) were significantly positively correlated with depression, which means that increased levels of depression and emotional suppression are linked to suicide proneness. On the other hand, cognitive appraisal had a negative relationship with depression ($r = -.24, p < .01$) and suicide proneness ($r = -.30, p < .01$). Moreover, the affective suppression and suicide proneness have a high correlation ($r = .97, p < .01$), which means that the importance of emotion regulation processes in this group of people cannot be underestimated. These results are a good rationale to delve into depression as an intermediate in the correlation between emotion regulation approaches and suicidal ideations.

Table 2
Pearson Correlation Matrix Between Study Variables

| Variable | Depression | Cognitive Appraisal | Suicide Proneness | Affective Suppression |
|-----------------------|------------|---------------------|-------------------|-----------------------|
| Depression | 1.00 | | | |
| Cognitive Appraisal | -.24** | 1.00 | | |
| Suicide Proneness | .57** | -.30** | 1.00 | |
| Affective Suppression | .54** | -.31** | .97** | 1.00 |

N = 180 for all variables

$p < .01$ for all significant correlations

To establish whether depression (SD) mediates the investigation between affective suppression (AS) and suicide proneness (SP), a mediation analysis was performed based on the PROCESS Model 4 (Hayes & Rockwood, 2020). In addition, to examine the mediation by depression (SD) in the association between cognitive appraisal (CA) and suicide proneness (SP). The regression analysis was used to test the impact of AS on SD. The findings revealed that there was a strong positive predictive correlation ($B = 3.44, SE = 0.40, p < .001$), that is, the more the affective suppression was used the more the depression it was. The direct influence of affective suppression on suicide proneness retained its significance and strength ($B = 0.95, p < .001$), but the indirect one via depression was insignificant, though the effect was statistically

supported ($B = 0.03$, 95% CI [0.00,0.07]).

In the subsequent step, the cognitive appraisal was a major predictor of depression ($B = -0.72$, $SE = 0.22$, $p < .001$), as more adaptive cognitive appraisal was related to the lesser levels of the depressive symptoms. Cognitive appraisal had a significant direct effect on suicide proneness ($B = -0.08$, $p = .007$) and an indirect effect through depression was also significant ($B = -0.06$, 95% CI [-0.10, -0.02]). This helps to support a partial mediation, that is, adaptive cognitive appraisal indirectly and directly reduces suicide proneness through depression reduction (Table 3).

Table 3

Analysis of Affective Suppression and Cognitive Appraisal on Suicide Proneness through Depression by Mediation

| Paths | B | SE | 95% CI |
|--|-------|------|--------------|
| Affective Suppression Model | | | |
| Direct Effect: AS → Depression | 3.44 | 0.40 | 2.65, 4.22 |
| Direct Effect: AS → Suicide Proneness | 0.95 | 0.02 | 0.91, 0.99 |
| Indirect Effect: AS → Depression → Suicide Proneness | 0.03 | 0.02 | 0.00, 0.07 |
| Cognitive Appraisal Model | | | |
| Direct Effect: CA → Depression | -0.72 | 0.22 | -1.14, -0.29 |
| Direct Effect: CA → Suicide Proneness | -0.08 | 0.03 | -0.14, -0.02 |
| Indirect Effect: CA → Depression → Suicide Proneness | -0.06 | 0.02 | -0.10, -0.02 |

In the former, affective suppression and suicide proneness are partially intermediated by depression. Persons who repress emotions will tend to have more depressive symptoms, and this will lead to high suicide proneness. However, Affective suppression has also a significant direct impact on Suicide Proneness, which implies that both the emotion regulation and underlying depressive symptoms should also be addressed in the intervention. The second model underlines the protective functions of cognitive appraisal processes in the alleviation of depressive symptoms and the risk of suicide.

Discussion

This research illuminates the importance of depression in the explanation of why certain people become more likely to think of suicide. The results indicate that depression as a mental linkage between the way individuals deal with their feelings and their susceptibility to committing suicide. This trend is similar to earlier studies that identified depression as one of the strongest risk factors of suicide, especially in young adults and students (Rotenstein et al., 2016; Shekhani, et al., 2018). The understanding of these ideas indicates the need to identify and treat the signs of depression at an earlier stage, preferably via accessible and culturally sensitive mental health initiatives. In this regard, it is the affective suppression that seems to be maladaptive as a coping mechanism. In the case when individuals regularly suppress their feelings, they can feel more psychologically strained and internalized distress. Previous researches have demonstrated that the repression of emotions leads to increase in the negative feelings as well as the inability of the individual to process difficult experiences in a healthy manner (Gross & John, 2003). Most of the people in the Pakistani culture suppress their negative feelings. To some it is their indicator of strength and to others the expression of their negative feelings can get them to avoid negative comment in being mentally ill hence they will not express their feelings to avoid stigmatizing their mental health and SUD. Their negative emotions might be best left in holding because they are able to get a temporary relief but in the long run it would be very detrimental on both physical and mental health. This suppression can also lead one to engage in maladaptive coping mechanisms that lead to the taking of risk so that he can end his or her life.

Cognitive appraisal on the other hand appears to act as a buffer to depression and suicide risk. Individuals that are able to make sense of the situation by not subjecting themselves to unhelpful thinking patterns that promote the development of healthy emotions and leads to positive behaviour patterns. It implies

that the people who apply cognitive reappraisal experience stable emotions that minimize chances of extreme behaviours such as suicide. That is, what we perceive to be the case, the people within our circle, and the world where we exist have a lot of influence on our feelings, our actions, and our character in general. This opinion has also been reinforced by Beck (1967) who concurs that the mental health of an individual is strongly affected by their mode of thinking concerning the events in their lives. Substance users possess complicated and adverse life experiences. The experiences made them think in a particular manner and this affects their lives negatively. Not only assisting them to alter their attitudes towards the situation but also assisting them in the way to scrutinize the situation without being so much judgmental towards themselves, others and their environment they live in would surely save them in having healthy emotions and behaviour patterns, which would eventually prove helpful in their positive personality growth and development.

The outcomes of the mediation support the view that the depression is at the core of the correlation between emotional regulation and suicide proneness. In rather easy terms, emotional problems in their regulation may cause a chain reaction i.e., emotional suppression leads to more depression, which, in turn, precondition more suicide. Positive cognitive appraisal on the other hand interferes with this cycle by reducing the symptoms of depression (Rotenstein, et al., 2016; Shahzad, et al., 2020; Rihmer, 2011). Educating individuals about the importance of identifying, describing, and rewording their emotions in a more adaptive way can thus be a key to breaking this connection in order to lead a smooth and prosperous life. Another relevant layer of knowledge is the cultural context of the current study. The majority of the participants belonged to joint family systems and less privileged socioeconomic backgrounds, the environment where the emotional expression is frequently constrained, and the social roles are strictly determined. In a group such as this, the need of group harmony might be accorded priority over personal emotional needs. Although such a collectivist orientation offers social assistance, it may as well complicate the process by which men can seek assistance or articulate distress. The need to tackle these dynamics of culture in intervention development is critical; intervention programs must be understanding of local norms and promoting healthier emotional expression. Moreover, when people are taught to question and re-frame their own negative thinking patterns, they have their depressive symptoms relieved as well as a reduction in the possibility of suicide. Indeed, the integration of culturally tailored cognitive behavioural models that recognize the beliefs of the individuals without imparting skills of processing a cognitive restructuring may, hence, be an effective approach to suicide prevention in Pakistan and other related environments.

CONCLUSION

The research provides important information to the body of knowledge regarding suicide risk in Pakistani men with SUD, where depression is an important catalyst between cognitive appraisal and affective suppression and suicide proneness. Evidences of current research confirm the international empirically proposed evidences in the past and reiterate the importance of early psycho-social interventions. The study provides prevention care and culturally relevant theoretical models by determining the role of maladaptive emotion regulation and cognitive processes in mental health outcomes. Finally, this study reinforces the claim about the holistic approach to mental health in Pakistan, which should consider the cognitive, emotional, and sociocultural origins of suicide.

Implications of the Study

The results of the research present a number of valuable theoretical and practical implications. In theory, it empirically substantiates suicide models that concentrate on the mediating effect of depression on the correlation between negative affective processes, affective suppression and negative cognitive appraisal, and suicide propensity. It contributes to the accumulated literature on psychology by validating depression as not only a predictor of suicidal ideation but a mediator of dysfunctional patterns of cognition and emotion into suicidal danger. This supports the viability of cognitive and emotion regulation in a high-risk culturally specific population.

In practice, these lessons are especially useful in clinical and rehabilitation practices in Pakistan, where male substance users continue to receive minimal attention. Establishing emotional regulation training and cognitive restructuring within the current intervention models can be beneficial to mental health practitioners in substance use rehabilitation programs. Treatment of people at a high degree of affective suppression or negative appraisal can be identified earlier which might have avoided the severe development of depression or even suicidal tendencies. In addition, it may be possible to achieve culturally sensitive adaptation of the evidence-based interventions to facilitate the treatment to be adjusted to the specific emotional and cognitive problems experienced by this population.

Limitations of the Study

Although the research has made important contributions, it has had its limitations. The most conspicuous one is the cross-sectional design, where it is impossible to infer even the possibility of a certain causality between variables. Even though the mediation effects were found to be significant, longitudinal research would be needed to verify the directional impact of cognitive appraisal and affective suppression to depression and proneness to suicide. Also, self-report tools have the implication of response biases such as social desirability or underreporting of sensitive behaviour such as suicidal thoughts, particularly in stigmatized environments. The other weakness is the composition of the sample that was only limited to male in the urban rehabilitation centres. This restricts the application of results to female groups, people in rural areas or those who are not already undergoing treatment. Besides, cultural variables, including religious values or family support network, were not directly quantified and might have a strong moderating effect on the influence of emotional regulation on mental health outcomes among SUD Pakistani society patients. These dimensions should be taken into consideration in future research so as to provide a more holistic picture of suicide risk among different subgroups.

Competing Interest

The authors declare no conflict of interest.

Authors' Biography

- ¹ **Hasnain Hyder** is a Research Scholar at the Institute of Clinical Psychology, University of Karachi, Karachi, Pakistan. He completed his MPhil Degree in Clinical Psychology from the Institute of Clinical Psychology, University of Karachi, Karachi, Pakistan.
- ² **Salman Shahzad (Ph.D)** is a Professor at the Institute of Clinical Psychology, University of Karachi, Karachi, Pakistan. He obtained his Doctorate in Clinical Psychology from the Institute of Clinical Psychology, University of Karachi, Karachi, Pakistan.
- ³ **Ibarat Ali Laghari** is serving as a Vice Principal and Lecturer at the College of Clinical Psychology, Ziauddin University, Sukkur, Pakistan. He is currently pursuing a PhD in Psychology and holds an MPhil degree in Psychology from the University of Karachi, Karachi, Pakistan.
- ⁴ **Salim Ullah** is a Research Scholar at the Institute of Clinical Psychology, University of Karachi, Karachi, Pakistan. He completed his MPhil Degree in Clinical Psychology from University of Karachi, Karachi, Pakistan.
- ⁵ **Suhail Ahmed** is a Research Scholar at the Institute of Clinical Psychology, University of Karachi, Karachi, Pakistan. He completed his MPhil Degree in Clinical Psychology from University of Karachi, Karachi, Pakistan.
- ⁶ **Nasreen Begum** is a Research Scholar at the Institute of Clinical Psychology, University of Karachi, Karachi, Pakistan. She completed her Masters of Clinical Psychology from the Virtual University, Karachi Campus, Pakistan.

⁷ **Muzaffar Ali (Ph.D)** is a Student Counsellor and Faculty Member at the Department of Social Sciences, SZABIST University, Karachi, Pakistan. He holds a Doctorate in Clinical Psychology from the Institute of Clinical Psychology, University of Karachi, Pakistan.

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