



CORRELATION BETWEEN IMPULSIVITY AND ITS CONSTRUCTS, SUICIDE ATTEMPTS, AND LETHALITY: A PROSPECTIVE OBSERVATIONAL STUDY.

Psychiatry

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ABSTRACT

Suicide is a major public health concern and one of the leading causes of death worldwide. Impulsivity has been implicated as a critical risk factor for suicidal behaviours, yet its precise role in facilitating suicide attempts remains unclear. This study aimed to explore the relationship between impulsivity constructs, suicide attempts, and lethality among patients presenting with suicidal ideation or attempts in a psychiatric outpatient setting. A total of 50 participants aged 18–65 years were assessed using validated tools, including the Barratt Impulsiveness Scale (BIS-11), the Columbia Suicide Severity Rating Scale (C-SSRS), and the Beck Lethality Scale (BLS). Results revealed a significant positive correlation between negative urgency and suicide attempts ($r = 0.79$, $p < 0.05$), indicating that higher levels of impulsivity strongly correlate with the frequency of attempts. However, no significant relationship was observed between impulsivity and lethality of attempts. Younger participants (18–24 years) displayed the highest impulsivity and acquired capability for suicide. These findings highlight the need for targeted interventions to address impulsivity in suicide prevention strategies.

KEYWORDS

impulsivity, suicide attempts, lethality, psychiatric comorbidities, negative urgency, suicide prevention

INTRODUCTION:-

Suicide is a complex phenomenon influenced by biological, psychological, and sociocultural factors. Globally, over 800,000 individuals die by suicide each year, with many more engaging in non-lethal attempts. Impulsivity has been identified as a key factor contributing to the transition from suicidal ideation to action, yet the underlying mechanisms remain poorly understood.

It is reported that compared with the overall public, individuals with high impulsivity will more easily act on their suicidal thoughts and make a suicide attempt. Elevated impulsivity is assumed to facilitate the transition from suicidal thoughts to suicidal behavior^{2,3}. Indeed, we've learned from previous studies that there are strong links between impulsivity and suicidal behavior^{4,5,6}. Other studies have suggested that future research should still distinguish impulsivity-related traits that predict suicide, which models of suicide risk should be revised accordingly^{1,7,8}.

Previous research has suggested that impulsivity may play a role in facilitating suicidal behaviour, particularly through constructs such as negative urgency (acting rashly under distress) and the inability to delay rewards. However, findings remain inconsistent, with some studies reporting strong associations while others highlight a limited role of impulsivity in suicide attempts. This study aims to clarify these relationships by examining the correlation between impulsivity constructs, suicide attempts, and lethality in a clinical population.

MATERIALS AND METHODS:-

Study Design and Participants:-

This prospective observational study was conducted over 18 months in the Psychiatry Department of Muzaffarnagar Medical College & Hospital, India. Fifty patients aged 18–65 years presenting with suicidal ideation or attempts were recruited. Participants with neurological disorders, substance abuse, or legal histories were excluded.

Measures

- Barratt Impulsiveness Scale (BIS-11):** Assesses impulsivity across attention, motor, and non-planning domains.
- Columbia Suicide Severity Rating Scale (C-SSRS):** Evaluates suicidal ideation and attempts.
- Beck Lethality Scale (BLS):** Measures the medical severity of past suicide attempts.

Procedure:-

Participants were assessed through structured interviews and psychometric tools. Data were analysed using descriptive statistics, correlation analysis, and regression models to explore relationships between impulsivity constructs, suicide attempts, and lethality.

RESULTS:-

Demographic Characteristics:-

Participants ($N = 50$) had a mean age of 31.02 ± 11.31 years. The sample included 54% males and 46% females, with 64% residing in rural areas.

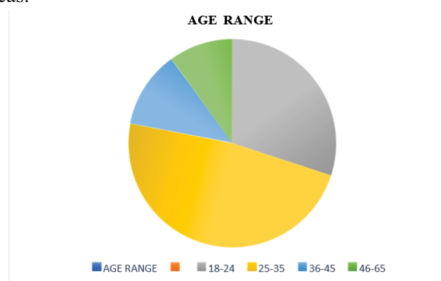


Figure 1

The study sample size is $N=50$ with the age range of 18-65, the mean for the age is 31.02 and the $SD = 11.314$. The total were Male $N=27$, out of 50, Percentage=54%, Female $N=23$, out of 50, Percentage = 46%, Hindu $N=25$, out of 50, percentage=50%, Muslim $N=23$, out of 50, percentage = 46%, Sikh $N=2$, out of 50, percentage = 4%. The socioeconomic data is as follows $N=18$, UMC $N=12$, UC $N=2$, ULC $N=11$, LC $N=7$

Correlation Between Impulsivity And Suicide Attempts:-

A significant positive correlation was observed between negative urgency and suicide attempts ($r = 0.79$, $p < 0.05$). This suggests that individuals with higher levels of impulsivity are more likely to engage in repeated suicide attempts. However, there was no significant association between impulsivity and lethality of attempts ($r = 0.33$, $p = 0.42$).

Table 1. Negative Urgency Vs. Suicide Attempts. (acquired Capability):-

X - Mx	Y - My	(X - Mx) ²	(Y - My) ²	(X - Mx)(Y - My)	(Y - R)	p Value	Remarks
Mx: 2.731	My: 2.777	sum:29.12	sum:26.49	Sum: 21	.968	0.79091	Significant (At $p < 0.5$)

Age-Related Trends:-

Impulsivity: The youngest age group (18–24 years) displayed the highest impulsivity scores (mean BIS = 2.62).

Lethality: Older participants (36–45 years) demonstrated higher lethality scores for their suicide attempts (mean BLS = 0.48).

Regression Analysis:-

Negative urgency was a significant predictor of suicide attempts ($p < 0.05$), while the inability to delay rewards did not show a significant effect on attempts or lethality.

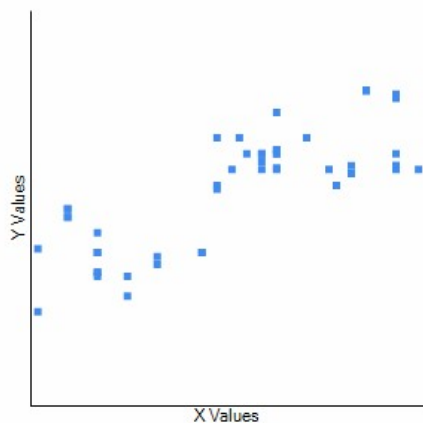


Figure 2. Scatter Dot Plot

DISCUSSION:-

The findings of this study align with prior research highlighting the role of impulsivity, particularly negative urgency, in driving suicidal behaviour. Younger individuals exhibited greater impulsivity and acquired capability for suicide, emphasizing the need for early intervention in this population.

Contrary to some theoretical models, impulsivity was not significantly associated with the lethality of suicide attempts. This suggests that while impulsivity may increase the likelihood of an attempt, lethality may be influenced by other factors such as planning and intent.

Previous research has identified relationships between impulsivity and suicidal behavior (Anestis et al., 2014⁷; Mann et al., 1999¹⁰); however, the exact nature of these associations is unclear, potentially due to variegated conceptualization and operationalization of impulsivity (Chalker, Comtois, & Kerbrat, 2015¹¹; Chamberlain, Redden, & Grant, 2017¹²). Some researchers advocate for a strong direct relationship between impulsivity and suicidal behavior (Mann et al., 1996, 1999¹³), whereas others theorize that capability for suicide may mediate this relation (Anestis et al., 2014; Bender et al., 2011¹⁴).

The present study aimed to clarify the nature of the relationship between impulsivity and suicidal behavior by investigating the relationships between two characterizations of impulsivity—negative urgency and inability to delay reward—and past number of suicide attempts and the medical lethality of those attempts in an undergraduate sample recruited specifically for a history of suicidal ideation and/or attempts.

Contrary to our hypotheses, there was a strong direct effect between negative urgency and number of past suicide attempts, and the acquired capability for suicide did not account for this association. This is consistent with previous research demonstrating positive associations between negative urgency and past suicide attempts (Anestis & Joiner, 2011¹⁵; Klonsky & May, 2010¹⁶; Lynam, Miller, Miller, Bornovalova, & Lejuez, 2011¹⁷); however, a meta-analysis of the relation between trait impulsivity and suicidal behavior demonstrated only a small effect (Anestis et al., 2014). As mentioned previously, differences in the measurement of trait impulsivity may have accounted for this differential finding.

Although some have theorized that acquired capability may account for the relation between negative urgency and suicidal behavior through increased engagement in painful and provocative events (Anestis, Bagge, Tull, & Joiner, 2011¹⁸; Anestis & Joiner, 2011), other studies have, similarly, found non-significant relationships between negative urgency and acquired capability (Bender et al., 2011).

The study contributes to understanding the multifaceted nature of impulsivity and its constructs in the context of suicide risk. However, the small sample size and exclusion of individuals with substance use disorders limit generalizability. Future research should explore the

interaction between impulsivity, psychiatric comorbidities, and sociocultural variables.

CONCLUSION:-

Impulsivity, particularly negative urgency, plays a critical role in the frequency of suicide attempts but not their lethality. These findings underscore the importance of addressing impulsivity in suicide prevention efforts, particularly among younger individuals at risk.

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