

A Correlational Study Of Rumination Reflection ,Suicide Thoughts And Behavior Among University Students.

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ABSTRACT

The purpose of this study was to investigate the extent to which students engage in suicidal thoughts and behaviors in relation to rumination and contemplation. There were two groups of students who participated in this study: those who were at risk for suicide and those who did not have suicidal thoughts or behaviors. One of the goals of this study was to investigate the association between suicidal thoughts and behaviors and rumination reflection. The investigation was carried out in two distinct stages. During the initial part of the study, a screening test known as the Suicide Behaviour Questionnaire –Revised (SBQ-R) was given to a total of one thousand college students in order to evaluate their thoughts and actions toward suicide. Many different types of courses, both professional and non-professional, were being taken by students. As a result of this, 130 students who had scores that were higher than the threshold (≥ 7) were chosen to participate in the study, with consideration given to the inclusion and exclusion criteria. An equal number of individuals, 129 students, were chosen to participate in the study as non-suicidal participants. These students had minimal scores on the suicide ideation scale. In this study, there were two instruments that were utilized, one for measuring rumination and contemplation, and the other for measuring suicidal behavior. The findings indicated that rumination had a positive correlation with suicide thoughts and conduct in both of the groups included in the study

Keywords: *Rumination Reflection, Suicide Thoughts and Behavior& University Students.*

INTRODUCTION

According to Pathare, Vijayakumar, Fernandes, Shastri, Kapoor, Pandit, and Korde (2020), India has been experiencing a rising tendency in suicide, particularly during the pandemic, which is comparable to the pattern globally. According to Kumar, Verma, Bhattacharya, and Rathore (2013), India is responsible for twenty percent of the world's suicide population. Given that India is home to seventeen percent of the world's population, this finding is very noteworthy.

The suicide rate increased by 8.7 percent over 2019, with student suicides having the largest percentage rise at 21.20 percent-

(NCRB 2021). In 2020, a total of 1,53,052 suicides were reported in the country, which is equivalent to 418 suicides per day. This represents an increase. It was the highest increase in suicide rate since 1967, which is the oldest period for which data is available (Sharma, 2021). This increase was the greatest since 1982, when it increased by 11.15 percent to 44,732 from 1981 levels.

National Crime Records Bureau (NCRB) is the organization that is responsible for providing statistics on suicides in India. From 1978 to 1990, the suicide rate in India climbed by 41.3%, with an annual compound growth rate of 4.1 percent from 1980 to 1990. This increase occurred between different time periods. To put it another way, the suicide rate rose from an average of 6.3 for every 100,000 people to 8.9 for every 100,000 people between the years 1978 and 1990. The data that is now available, on the other hand, presents a different image. From 1999 to 2002, there was a decreasing trend, then from 2003 to 2006, there was a mixed pattern of upward and downward trend, and finally, from 2006 to 2010, there was just an upward trend. Radhakrishnan and Andrade (2012) Stated that.

Records kept by the police are the source of the NCRB's data. As a result, it is a stigmatized subject, and for this reason, some individuals try to conceal the truth and avoid reporting it to the authorities. According to Radhakrishnan and Andrade (2012), the credibility of NCRB records may be diminished as a result of these variables. According to the Indian Penal Code (IPC Section 309), attempting suicide was a chargeable offense. Despite the fact that this offense was decriminalized by the Mental Health Care Act of 2017, it still resulted in under-reporting (Ranjan., Kumar., Pattanayak., Dhawan., & Sagar, 2014). Arya., Page., River., Armstrong., & Mayer (2018) revealed that the Global Burden of Disease Study discovered that the suicide rates in 2016 for various states were proportionately higher (to variable degrees) than those calculated using data from the National Center for Biotechnology Information (NCRB). Because of the differences between these accounts, it is more likely that there was an underreporting of the situation. Numerous academics have criticized the National Central Recording Board (NCRB) for the incomplete records, citing this reason as the explanation (for example, Vijayakumar, Chandra, Kumar, Pathare, Banerjee, Goswami, and Dandona, 2021). There is a significant disparity in the suicide rates between the states in India (NCRB 2020).

CAUSES OF SUICIDE

Suicide is a complicated issue to deal with. Reddy (2010) found that impulsiveness is a significant risk factor for suicide in Asian countries, while mental health problems, notably alcohol use disorders and depression, constitute a significant risk factor for suicide in western countries. Under-diagnosis may be a concern in poor countries, according to Snowdon (2019). Mental disorders are more prevalent among persons who commit suicide in developed regions of the world than they are in developing regions.

Psychological Risk factors and correlates of suicide

According to Nock et al. (2009), the probable routes that lead to suicide carry the least amount of knowledge. As a type of risk factors, its alteration leads and results in suicidal thoughts and actions at times, according to Cha et al (2018), who have discussed the probable etiology of suicide and structured these elements into emotional, cognitive, and social processes. Cha et al (2018) conducted their research in 2018.

Affective processes are emotional valanced psychological processes that link to negative consequences such as helplessness, low self-esteem, worthlessness, neuroticism, and other negative self-referential thinking (Cha et al (2018)). It is important to note that affective processes are associated with negative outcomes. When these circumstances are present for an extended period of time, they will further reduce the psychological capital of the person, which will ultimately lead to a miserable disposition. Several studies conducted in the past have conclusively shown that there is a correlation between depression and an increased risk of suicide (Reddy, 2010).

Biochemical and neurological signs of suicide:

Dopamine: Tyrosine hydroxylase, the rate-limiting enzyme in DA production, converts tyrosine into L-DOPA in two steps (Nagatsu, 1991). Several recent studies have linked dopaminergic dysfunction to suicide. In suicide, the dopamine transporter (DAT) and dopamine receptors D1 and D2 were imbalanced in the dorsal striatum compared to controls, and DAT and D1 decreased with age. However, suicide and control striatum receptor binding was similar (Fitzgerald et al., 2017). Dorsal striatal gray matter was reduced in suicidal teenagers, suggesting that the dorsal dopaminergic system plays a role in suicide susceptibility (Ho et al., 2018).

Serotonin: The monoamine serotonin is produced by the rate-limiting enzymes tryptophan hydroxylase (TPH1 and TPH2) from tryptophan (Walther et al., 2003). Among other nervous system activities, it affects mood, anxiety, sleep, aggression, circadian rhythm, nutrition, and social behavior. The serotonergic deficiency is linked to depression, compulsivity, and suicidal behavior in adolescents and adults (Oquendo in 2014; Picouto in 2015). Suicide is linked to the serotonin transporter (SERT) by clinical and genetic data. PET imaging in depressed and suicidal people showed reduced midbrain SERT and high raphe nuclei serotonin1A receptor. Postmortem brain tissue biochemical research has showed a decline in SERT in the frontal cortex, hippocampus, and putamen, although results vary, depending on brain region. Polymorphism at the transporter

gene, notably 5-HTTLPR, predicts three times greater suicide risk than other alleles regardless of age and sex.

Norepinephrine: Norepinephrine (NE) is a catecholamine generated from tyrosine by TH and DDC enzymes, and produced by dopamine β -hydroxylase (DBH) after DA hydroxylation (Gonzalez-Lopez and Vrana, 2020). NE, a neurotransmitter in the central and peripheral nerve systems, regulates cognition, motivation, and impulsivity. The monoamine theory supports noradrenergic neurotransmission disruption, which causes depression and suicide like serotonin (Benn and Robinson, 2017; Sasamori et al., 2019). Polymorphisms in key noradrenergic system components, including DBH, norepinephrine transporter, and NE receptors, have been linked to depression, addiction, and suicide through insertions, deletions, or amino acid changes (Cao et al., 2018; Gonzalez-Lopez and Vrana, 2020).

Hormone fluctuations:

Hormone changes are important for certain suicidal people, particularly women. The menstrual cycle is studied in detail to see how hormonal changes impact female behavior and suicide risk (Owens and Eisenlohr-Moul, 2018). Shams-Alizadeh et al. (2018) found a link between premenstrual dysphoric disorder and suicide, and various female reproductive hormones are risk factors for suicide. High-progesterone women attempt suicide more often (Mousavi et al., 2014). Hormonal contraception was linked to suicide in adolescents. Several studies found that teenage girls using hormonal contraception had the greatest suicide risk.

Rumination Reflection

According to Smith and Alloy (2009), ruminating is a significant construct in the study of depression-related cognitions. This concept has been the subject of a significant amount of research. Nevertheless, the word "rumination" has been used in a variety of diverse settings.

Rumination has been characterized as a kind of cognitive emotion control, according to Garnefski, Kraaij, and Spinhoven's (2001) research. The negative results of ruminating have been related to the fact that it exacerbates psychopathology, such as anxiety and depression (Watkins & Roberts, 2020; Takano & Tanno, 2009).

Research conducted by Yamakoshi and Tsuchiya (2016) suggests that the reason that trait rumination and reflection have opposing impacts on mental health may be due to the fact that they have different effects on problem-solving. It is possible for individuals who have a high level of rumination to perceive events in a negative manner and fail to adopt effective coping strategies (Tang et al., 2021). This is due to the fact that they have a tendency to linger on negative information after experiencing stressful circumstances. According to Yamakoshi and Tsuchiya (2016), ruminating has been associated with adversely biased perceptions of challenging situations, gloomy forecasts of the future, and avoidant means of coping.

The positive impact that reflection has on an individual's ability to solve problems may contribute to an improvement in mental health. Individuals may be able to think about a situation in a number of different ways if they engage in reflection since it is a self-focus that is motivated by curiosity. Because of this, it may be of assistance to a person in actively striving to improve situations that are emotionally distressing. Based on prior study conducted by Burwell and Shirk (2007), it has been shown that reflection is associated with coping techniques that include making an effort to alter the situation. According to Crocker and Graham (1995), problem-focused coping strategies are connected with high levels of positive affect.

According to Treynor and colleagues (2003), reflection is defined as thinking about the causes of a negative mood, and it has been recommended as an adaptive technique that might help with problem-solving in the long term. On the other hand, brooding was defined as dwelling on the unpleasant consequences of bad emotions, and it has been shown to be a maladaptive behavior during the course of the study.

Rumination Reflection and suicide behavior

In recent years, rumination has been proposed as a potential cognitive factor that may be associated with suicide (Tang., Xiong., Shi., Chen., Liu., Zhang., & Yao, 2021). Ahrens & Linden (1996) reported that rumination is a fundamental indicator of "suicidal syndrome" among clinical populations that suffer from schizophrenia and mood disorder. In situations when there is a lack of hope or optimism, ruminative thinking may be more harmful, as stated by Tucker et al. (2013). Subsequently, continuous exposure to suicidal ideas and images may aid individuals in transitioning from considering suicide to actually committing suicide (Law & Tucker 2018). This is because repetitive negative thinking can lead to emotions of helplessness and temptation, both of which can lead to suicidal thoughts.

Rational of the study:

Despite the fact that it is still not fully understood, suicide is one of the issues that has received a lot of attention in the field of psychology. There is no one concept that can fully characterize the thoughts and actions of a person who is engaged in suicidal behavior. It is apparent that the reasons for suicide are complicated. Those who are suffering from mental or physical diseases are not the only people who may commit suicide. The incidence of this condition is widespread throughout the whole population.

There is a very limited amount of research that has been done on the cognitive processes that underlie suicidal thoughts and

conduct. A researcher conducted this study with the objective of gaining an understanding of the potential interactions between the variables of "rumination reflection, intolerance to uncertainty, and purpose of life" in the context of individuals' thoughts and actions toward suicide.

The sick and non-pathological populations are both affected by these variables, which means that this study would be useful to both groups. Because of the trans-diagnostic value of these results, professionals would be able to provide assistance in the planning and execution of treatments as well as other care-oriented policies and programs that aim to lower the risk of suicidal behavior among individuals. The hypothesis and the many actions that were followed to carry out the current study are provided below, after a comprehensive evaluation of the existing literature on the target constructs.

Hypothesis: There would be relationship between suicide thoughts and behavior and rumination reflection among college students.

Participants:

The investigation was carried out in two distinct stages. During the first part of the study, a screening test known as the Suicide Behaviour Questionnaire –Revised (SBQ-R) was given to a total of one thousand college students in order to evaluate their thoughts and actions toward suicide. Many other types of courses, both professional and non-professional, were being taken by students. As a result of this, 130 students who had scores that were higher than the threshold (≥ 7) were chosen to participate in the study, with consideration given to the inclusion and exclusion criteria. An equal number of individuals, 129 students, were chosen to participate in the study as non-suicidal participants. These students had minimal scores on the suicide ideation scale.

Design:

Since the study a correlational design was used in the study. Suicidal group consists of one hundred thirty (130) participants who scored high on suicide behavior questionnaire (greater than or equal to 7) and on hundred twenty nine (129) participants in non-suicidal group (who scored minimum on SBQ R).

Measures:

There were two tools used in this research one each for measuring rumination reflection, and suicide behavior. The following tools were administered on the participants.

The Suicidal Behaviors Questionnaire–Revised (SBQ–R) is a self-report measure that was created by Osman and colleagues in 2001. Its purpose is to evaluate an individual's thoughts and behaviors, including those related to suicide. Initially, the instrument was longer and had a total of 34 elements. Subsequently, two variants were accepted, one of which contained four things and the other of which contained fourteen items. The scale is comprised of questions about suicidal thoughts and behaviors in the past as well as in the future situations. The Suicide Behavior Questionnaire-Revised (SBQ-R) is a questionnaire consisting of four items. These questions are of the Likert type and include topics such as the frequency with which suicidal ideation is presented, the manner in which suicidal ideas are expressed to others, as well as attitudes and expectations about the current attempt at suicide. There are a number of questions that may be asked, such as "Have you ever considered or attempted to kill yourself?" with a score range of 1 to 4 points, and "How frequently have you thought about killing yourself in the past year?" "Have you ever told anyone that you were going to commit suicide or that you might do it?" is a question that can be scored anywhere from one to five points. "How likely is it that you will attempt to kill yourself at some point in the future?" with a score of one to three points. using a score range of 0 to 6. A higher score on the scale indicates a larger risk of suicide (Osman et al., 2001). The total score may vary anywhere from three to eighteen, with higher scores indicating a higher risk. The completion of the scale takes around five minutes.

They found that scores of seven had a sensitivity of 0.93 and a specificity of 0.95, which indicated that they might potentially predict the likelihood of suicide in the overall adult population population. (Osman and colleagues, 2001).

Rumination–Reflection Questionnaire:

The Rumination–Reflection Questionnaire is a Likert scale with five points, and participants are asked to rate themselves on it (for example, 1 indicates that they strongly disagree, and 5 indicates that they "strongly agree"). This 24-item scale was designed by Trapnell and Campbell (1999), and it had separate components for two subscales, namely Rumination and Reflection. Additionally, it had a respectable coefficient alpha that was in the low 90s. The propensity to continually self-focus on one's earlier actions is determined by the Rumination subscale, which assesses this inclination. A maladaptive kind of recurrent self-thinking that is related with neuroticism and motivated by a feeling of danger, loss, or injustice is evaluated by the rumination subscale, which consists of twelve questions. For instance, one of the items on the subscale is "Sometimes it is hard for me to shut off thoughts about myself." The other twelve questions make up the reflection subscale. These items are designed to evaluate a more adaptable kind of repetitive self-thinking that is connected to openness to experience and is motivated by "epistemic curiosity in the self." For instance, "I love exploring my 'inner' self."

Following the completion of a principal-components oblique rotation factor analysis, the authors came to the conclusion that the factor structure provided enough evidence for the concept of two separate factors. As an additional point of interest, the coefficient alpha for both of the subscales was rather high (Rumination =.90, and Reflection =.91). When it came to the internal consistency of the two subscales, both of them reported good and exceptional results (reflection α =.89 and rumination α =.93).

Results:

Table :1

Coefficient of correlation between the score on suicide thoughts and behavior and rumination reflection for the suicide risk group (N=130).

Variables	Rumination	Reflection	RRQ
Suicide ideation	.128	-.233**	.246**
Frequency	.372**	-.225*	.068
Threat	.173*	-.090	.171
Likelihood	.186*	-.148	.008
Overall suicide thoughts and behaviour	.168	-.254**	.079
**.Significant at 0.01 level			
*. Significant at 0.05 level			

Table 1 shows the results of correlation between suicide thoughts and behavior and its dimensions and rumination reflection and its dimensions of the suicidal risk group (N 130). The relationship between the suicide thoughts and behavior and rumination reflection was found non-significant ($r= .0.79$) similarly on the dimensions of suicide thoughts and behaviour, the dimension responsible for suicide ideation and attempt in past were seen significantly correlated in a positive direction ($r= .246**$).

As a separate dimension rumination was found to be positively correlated with all the dimensions of suicide thoughts and behaviour, among them the relationship with frequency of suicide thoughts in past ($r= .372**$), and communicating threat of suicide ($r= .173*$) and likelihood of suicide in future ($r=.186*$) were seen to be significant with rumination.

whereas, reflection was found to be negatively correlated with all the dimensions of suicide thoughts and behaviour. It was reported with r -.233** with suicide ideation and r -.225* with frequency of suicidal thoughts. Both these values demonstrated a significant correlation at 0.01 level and 0.05 level respectively. The suicide thoughts and behaviour was also found to be negative and statistically significant at 0.01 level ($r= -.254**$).

Table 2

Coefficient of correlation between the score on suicide thoughts and behaviour and rumination reflection for the non-suicidal group (N=129).

Variables	Rumination	Reflection	RRQ
Suicide ideation	.015	.076	.058
Frequency	.157*	.148*	.207**
Threat	-.006	-.024	-.019
Likelihood	.112	-.038	.058
Overall suicide thoughts and behaviour	.119	.073	.132*

** .Significant at 0.01 level

* . Significant at 0.05 level

The result from the table 2 shows the relationship between suicide behaviour and thoughts and rumination reflection with its dimensions among the non-suicidal participants. From the results it has been clear that the suicidal thoughts and behaviour is having a positive correlation with rumination reflection. As it is reported with $r = .132^*$, which is significant at 0.05 level of significance.

In terms of dimensions, frequencies of suicidal thought and behaviour has been found to be significantly correlated with rumination reflection ($r = .207^{**}$) at 0.01 level. In the same way, as separate dimensions, rumination and reflection were also reported significantly positive correlation. It has been scored as $r = .157^*$ and $r = .148^*$ respectively. Both these values were significant at 0.05 level.

DISCUSSION:

Hypothesis : There would be relationship between suicide thoughts and behavior and rumination reflection scores.

Using the coefficient of correlation between the suicide thoughts and behavior and rumination reflection, the above hypothesis, which assumed a relationship between scores on suicide thoughts and behavior and rumination reflection for students in the suicide risk group and students in the non-suicidal group, was tested. The coefficient of correlation was computed between the scores of two variables, and the results were presented in the tables that were given in the chapter before this one (table 1 and table 2). Rumination and reflection were shown to have a direct correlation with suicidal thoughts and behavior ($r = 0.79$), according to the findings presented in table 15, which pertains to the group of individuals who are at risk of committing suicide. On the other hand, the component that evaluates rumination has been shown to have a positive correlation with attitudes and behaviors connected to suicide ($r = .168$). These two numbers, on the other hand, were nominal, and the statistical significance of either of them was not determined. While it was revealed that the accounting reflection dimension had a substantially negative connection with suicidal thoughts and conduct ($r = -.254^{**}$), the other dimension did not. In terms of the dimensions of suicidal thoughts and behavior, it has been shown that suicidal ideation throughout one's lifetime has a negative correlation with rumination reflection ($r = -.246^{**}$). Furthermore, it was discovered that the correlation value between rumination and reflection was $-.128$ and $-.233$, respectively, across all dimensions. Nevertheless, the link with rumination was not determined to be statistically significant, although the correlation with reflection was discovered to be statistically significant at the 0.01 rate. It was discovered that there is a nominal association between the rumination reflection and the dimension that accounts for the frequency of suicidal thoughts ($r = .068$) This was discovered. Regarding the dimensions, it was revealed that there was a considerably positive link with rumination ($r = .372^{**}$), while a significantly negative correlation was discovered with reflection ($r = -.225^*$). Rumination ($r = -.173^*$) and contemplation ($r = -.090$) were shown to have a negative link with the dimension of tapering the threat of suicide attempt. Additionally, a statistically positive association was found between rumination and the self-reported chance of engaging in suicidal conduct in the future ($r = .186$ or higher). Comparatively, it was shown to have a negative correlation with reflection ($r = -.148$). A positive link between suicidal thoughts and conduct and rumination reflection was shown to exist via analysis among the group of those who did not engage in suicidal activity ($r = .132^*$). The rumination received a score of $r = .119$ on the dimension, whereas the reflection received a score of $r = .073$. After doing more research on the many aspects of suicidal thoughts and behaviors, the findings indicated significant connections in accordance with the findings. With a correlation coefficient of $.058$, it was discovered that the rumination reflection had a negligible relationship with the dimension that measured lifetime suicidal thought or attempt. Similar to the previous example, the scores for rumination and reflection as distinct dimensions were $r = .015$ and $r = .076$ respectively. The rumination reflection was shown to have a substantially positive association with $r = .207^{**}$ on the dimension that evaluated the frequency of suicidal thoughts over the course of the previous year. On the other hand, rumination ($r = .157^*$) and reflection ($r = .148^*$) were also revealed to have substantially positive connections as dimensions. On the other hand, it was discovered that there was a negative correlation between the risk of attempting suicide and rumination reflection ($r = -.019$). According to the findings, rumination ($r = -.006$) and reflection ($r = -.024$), both of which are separate dimensions, also indicated a negative correlation. Rumination and reflection were shown to have an inverse connection with the risk of suicidal behavior in the future, while rumination and reflection were found to have a positive inclined association with the likelihood of suicidal behavior in the future. The level of correlation between rumination and reflection was found to be positive ($r = .112$), whereas the level of correlation between reflection and $r = .038$ was found to be negative. It is possible to deduce from these findings that rumination and reflection each have a distinct impact on the symptoms that are associated with suicidal thoughts and behaviors. The number of studies that investigated rumination and reflection among people who were at risk of suicide was very limited (Tucker et al., 2013). On the other hand, it is widely accepted that rumination may increase the risk of developing suicidal thoughts among young pupils, while reflection may serve as a protective factor in these cases.

A negative correlation between reflection and suicidal thoughts was shown to exist, according to Crane et al. (2007) researchers. In the current investigation, the aspects of suicidal ideation were shown to have a direct link with rumination.

Based on the findings, which indicate that there is a negative association between the danger of suicide and rumination, it is reasonable to expect that persons who are experiencing neurotic self-focused thoughts that are prompted by the fear of ruminating may have reluctance to discuss their suicidal feelings with other people. Since suicide is still considered a taboo subject in society and a stigmatized subject, the reason for this reluctance might be interpreted in a number of different ways. The frequency of suicidal thoughts was shown to have a positive correlation with rumination reflection ($r= .207^{**}$) among the people who did not have suicidal thoughts. The findings of this study may be supported by a number of other studies that have shown a somewhat favorable connection between introspection and suicidal thoughts (Rogers & Joiner 2017). It was stated by Miranda and Nolen-Hoeksema (2007) that the contradictory results regarding the probable association between reflection and suicidal ideation might be due to the fact that there is a possibility that reflection has a stronger connection with suicidal ideation in specific situations. According to them, people may have suicidal thoughts as a result of their attempts to grasp the origins of their sad mood. This occurs when individuals are unable to effectively establish solutions during their efforts to solve problems, or when their attempts at introspection escalate into brooding. In their 2018 study, Holdaway and colleagues recognized the potential of a connection between contemplation and suicidal thoughts in situations when the ability to solve problems or cope with stress is reduced. It should also be noted that Tucker et al. (2016) provided support for this observation. In addition, Surrence et al. (2009) found that there was a correlation between contemplation and suicidal thoughts among college students who had a history of attempting suicide, but this link was not seen among students who had no history of an attempt on their own. As a result, the hypothesis, which postulated that there is a connection between rumination and contemplation and suicidal thoughts and actions, was shown to be verified.

CONCLUSION:

Present study aimed to examine the prevalence of suicide thoughts and behavior among male and female students in relation to rumination reflection. The one of the objectives of this study was to see the relationship of suicide thoughts and behavior, rumination reflection, intolerance of uncertainty, purpose in life in the students belong to suicide risk group and non-suicidal group. It was found that rumination was positively related with suicidal thoughts and behavior among both groups

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