A Correlation Study of Suicide Probability and Stress among Youth

Sara Tirmizi
Roll No- 16BLS063
Pandit Deendayal Petroleum University
Gandhinagar, Gujarat

ISSN No:-2456-2165

INDEX

Sr.No.	HEADINGS	Page No.
1.	**Abstract**	**455**
2.	**INTRODUCTION**	**456-457**
3.	**LITERATURE REVIEW**	**458-459**
4.	**Objectives**	**459**
5.	**Hypothesis**	**459**
6.	**METHODOLOGY**	**460-461**
7.	**DEMOGRAPHIC DETAILS**	**462**
8.	**FINDINGS**	**463-465**
9.	**DISCUSSIONS AND CONCLUSION**	**466-467**
10.	**LIMITATIONS**	**468**
11.	**RECOMMENDATIONS**	**469**
12.	**REFERENCES**	**470-471**

ABSTRACT

Stress and Suicide has a significant correlation with each other. A large body of research shows consistent relationship between socio-demographic characteristics and suicide risk. Clinical and psychological autopsies have led to development of clinical signs and symptoms in assessing suicide potential (Murphy 1974; Pokorny 1960; Schneidman & Farberow 1957). Suicide **is the act of killing yourself, most often as a result of depression or other mental illness (American Psychological Association) Stress is a physical response that our body gives to any particular event or a problematic situation. When the body experiences stress, it undergoes a fight or flight situation (Lazarus,1984).**

The main objective of this research paper is - Comparative analysis of male and female in terms of suicide probability and stress. Among all over the world, 8 lakhs suicidal deaths take place, which means in every 40 seconds 1 suicidal death occurs. Therefore, the rationale of this study was to co-relate Stress and Suicide because stress proves as a beginning stage which later turns into depression and ultimately suicide. The sample size comprised of 100 males and 100 female's college going students from colleges in Ahmedabad and Gandhinagar. The age of the subjects ranges from 17-20 and 21-24. The tools used include Perceived Stress Scale by Sheldon Cohen and Suicide Probability Scale by John G. Cull and Wayne S. Gill.

Keywords*:- Stress, Suicide, Co-Relation, Suicide Probability Scale, Perceived Stress Scale.*

CHAPTER 1
INTRODUCTION

Suicide is one of the most common public health problems all over the world. Among the age group of 10-24, suicide has proven to be the third leading cause of death which results in 4,600 lives lost every year. According to a survey conducted in the United states, 16% of students reported seriously considering suicide, 13% reported creating a plan, and 8% reported to actually taking their lives in the 12 months preceding the survey. Suicide risk among youth and teenagers have increased after 1940s. Several factors are responsible for suicide ideation i.e. family history of suicide, childhood past experiences, depression or other mental health problems, alcohol and drug use, etc. On an average, adolescents aged from 15-19 years of age have a high suicide rate of about 1 in 10,000 people. Teenagers and young adolescents are the evolving generation of this era; hence the amount of interaction and socialization broadens. This kind of interaction may prove to be harmful if there are some conflicting issues. Apart from the most common causes of suicide, some factors such as extraneous factors like divorce, moving to a different community, physical or sexual abuse, alcoholism and substance abuse at home proves to be a cause of suicide ideation.

Depression is one of the main causes of suicide. The beginning stage of depression is ‘stress’. Whenever a person faces any kind of stress, it creates a chemical imbalance in the body, which evokes hormones like adrenaline, cortisol, norepinephrine to react to a particular situation. If stress is not managed at the beginning stage, it later converts into depression where a person does not speak or interact with people. People suffering from depression prefers being aloof and they might consume a lot of food (over-eating) or does not eat at all (under-eating). During the stage of depression, the cognitive processes of an individual are at the maximum level. An individual think about the things that triggers him the most and they try to find their way out but at the end they prefer being isolated. If this thought goes on for more than a month, it can lead to suicide ideation. Hence, depression is proven to be the most common factor for suicide if it is not taken care of in the initial stage.

The term ‘Stress’ emerged in the late 1930s but it did not appear to be as meaningful in a layman’s language till 1970s. We often use the word stress in our day to day life when we experience something unpleasant or a problematic situation. Stress is a well-known contributor to mood, mental disorder and suicide risk. A moderate stress can be of everyday life routine or environmental surroundings but a chronic stress can be of social or cognitive stress. For example- death of any family member or termination from the job. Major depression (MD) is a serious and life-threatening psychiatric disorder. MD ranks fifth among the leading causes of global disease burden including developing countries and it is predicted that by the year

2030 it will be the third leading cause of suicide ideation. Suicidal rated increased during the period of 1970-1990 among the age group of 15-19 years. Such suicidal rates are the causes of rising rate of depression, increased availability of firearms, and other means among adolescents. A survey conducted by National Crime Bureau says that around one lakh person lost their lives by committing suicide in the year 2006.However, the suicide rates are lower in some of the Asian countries. In Taiwan, the suicide rate was 20 per 1,00,000 which reduced to 5 per 1,00,000 in the year 1988. Similarly, it was 1.8 per 1,00,000 in Hongkong in the year 1982-1986 and 3.3 per 1,00,000 in Singapore in the year 1986. This shows that there has been an improvement in the living conditions of people in Hongkong and Singapore. Adolescents are less prone towards committing suicide as a means of coping with stress in other Asian countries.

Kessler, Borges and Walters (1999) reported that the suicide rates rise very speedily during adolescence. Borst, Noam and Bartok (1991) hypothesize that with the beginning of puberty, social-cognitive changes affect more internal than external provenance of unhappiness. Similarly, maladaptive cognitive processes play a significant role in suicide attempts. Even though several studies have portrayed a relation between hopelessness and suicide ideation, hopelessness does not predict suicide ideation once depression is controlled.

CHAPTER 2
LITERATURE REVIEW

Suicidal behaviour in adolescents – A study conducted by T. Sidhartha and S.Jena infers that suicide ideation and suicide attempt are non-fatal suicidal behaviours (NFSB). NFSB has proved to be alarmingly high among adolescents. This study was conducted in Delhi to find the causes of NFSB and other suicidal ideation behaviours. The total sample size was 1205 adolescents from the age group of 12-19. The findings show that prevalence of suicide ideation (lifetime), suicide ideation (last year), suicide attempt (lifetime), suicide attempt (last year) were 21.7%, 11.7%, 8% and 3.5% respectively. The most significant factors for NFSB were Hindu religion, female sex, older adolescent, physical abuse by parents, deliberate self-harm (DSH), history of suicide by a friend, history of running away from school, etc.

Relationship between academic stress and suicide ideation: Testing for depression as a mediator using multiple regression – A study by P. Rebecca and S. Vivien in February 2006 was conducted wherein they examined academic stress and suicide ideation in 1,108 Asian adolescents 12-18 years from a secondary school in Singapore. This study was conducted in order to prove the hypothesis of whether depression acts as mediator in suicide ideation and academic stress. The previous studies show that suicide ideation and academic stress level was reduced in magnitude when depression was included in the model.

Physical punishment by parents: A risk factor in the epidemiology of depression, suicide, alcohol abuse, child abuse, and wife beating – A study conducted by Straus, Murray A. and G. Kaufman stated that the greater the use of physical punishment, the greater probability of depression, suicide ideation, alcohol abuse, etc. The results are based on 6,002 families who were studied as a part of 1985 National Family Violence Survey. The questionnaire was based on sub-factors like physical punishment in the family of origin, physical abuse measures, child abuse, wife assault and drinking index measures. The results suggest that physical punishment by parents does impact the risk factor of depression, suicide ideation, alcohol abuse, etc. in the later stage.

Mental status and suicide probability of young people: A cross-sectional study conducted by Akca SO, Yuncu O and Aydin Z suggest that one of the important factors which needs to be considered in suicide ideation is presence of mental disorders. The main objective of this study was to identify psychological symptom levels and suicide probability in young people. This cross-sectional study comprises of 15-24-year-old individuals (N=348) who have required a psychiatric clinic between February-June,2015. The tool used for this study was Suicide probability scale (SPS) and Brief symptom inventory (BSI). There was a

significant difference (p<0.05) between the mean SPS scores according to factors like education, psychiatric treatment, smoking, self-harm, drinking status of participants in the study. The study also depicted correlation between anxiety, negative self, depression and hostility according to SPS and BSI scales.

Perceived stress and suicidal behaviour in college students: conditional indirect effects of depressive symptoms and mental health stigma – a study conducted by H. Jameson, R. Jessica and R. Esther articulates that perceived stress, mental health stigma and depression are highly established risk factors in suicide ideation. The sample size was 913 collegiate housing residents (70.8% females, N=646). Depression symptoms were studied as a mediator of the relation between stress and suicidal behaviour, along with regulating effect of mental health stigma. Depressive symptoms partially mediated the correlation between suicide and stress, and mental health stigma was a substantial moderator of the linkage between stress and depression, depression and suicidal behaviour and stress and suicidal behaviour.

The impact of work environment on mood disorders and suicide: evidence and implications – a study conducted by W. Jong and P. Teodor represents the estimates evidencing the effects of mood disorders and suicide probability and efficacy of interventions. The main objective of this research was to establish relationship between occupational variables, mood disorders and suicide probability, rather than depressive symptoms. Low awareness and social stigma are one of the reasons which decreases workers access to treatment. Mental health professionals in accordance with employers need to make a creative system in order to take quality care of the more accessible to employers.

❖ *Objective*

1. To find out whether there is a relation between stress and suicide probability.
2. Comparative analysis of male and female in terms of stress level.
3. Comparative analysis of male and female in terms of suicide probability.

❖ *Hypothesis*

- H1: There exists a relation between stress and suicide.
- H0: There exists no relation between stress and suicide.
- H2: There exists a significant difference between male and female in terms of stress level.
- H0: There exists no significant difference between male and female in terms of stress level.
- H3: There exists a significant difference between male and female in terms of suicide probability.
- H0: There exists no significant difference between male and female in terms of suicide probability.

CHAPTER 3
METHODOLOGY

1. Tool description

Tool Description (A) – This research was conducted using Suicide Probability scale developed by John G. Cull, Ph.D. and Wayne S. Gill, Ph.D. SPS is designed to asses suicide risk in adolescents and adults. The scale consists of 36-item which are further sub-divided into 4 factors. Individuals are asked to rate their frequency of subjective experience and past-behaviours. SPS is a 4-point likert scale ranging from "None or little of the time" to "Most or all of the time".

Sub-factor	Item No.
Hopelessness	5, 12, 14, 15, 17, 19, 23, 28, 29, 31, 33 and 36
Suicide Ideation	4, 7, 20, 21, 24, 25, 30 and 32
Negative Self-Evaluation	2, 6, 10, 11, 18, 22, 26, 27 and 35
Hostility	1, 3, 8, 9, 13, 16 and 34.

Table 3.1

- *Factor 1: Hopelessness –*

This factor assesses an individual's overall dissatisfaction with life and generalized negative expectations about the future. Although this sub-scale includes some of the items of depression or dysphoric mood, it largely contains items related to hopelessness.

- *Factor 2: Suicide Ideation –*

This scale measures the extent to which an individual report his/her to be associated with suicide. Item content ranges from specific mention of suicide plans to more ambiguous statements that have been linked empirically with individuals who are seriously suicidal.

- *Factor 3: Negative Self- Evaluation –*

This scale reflects an individual's subjective appraisal that things are not going well, that others are distant and uncaring and that is difficult to do anything worthwhile. The items are divided into 2 groups: 1. Feeling of closeness with one's parents and mate, and 2. A sense of self-efficacy and self-worth.

➢ *Factor 4: Hostility –*

This factor measures the tendency to break or throw things when a person is angry or upset, and includes a cluster of items reflecting hostility, isolation and impulsivity. Although this relationship has not been established empirically, certain items may also suggest paranoid trends in some individuals.

Tool description (B) – Another tool used for this study was Perceived stress scale (PSS) by Sheldon Cohen. This tool was developed in 1983, and it remains a popular choice to understand how different situations affect our feelings and behaviour. PSS is a 5-point Likert scale which ranges from 0=never to 4= very often. The questions in this scale ask you about your thoughts and feelings during the last month. Although, some questions are similar, an individual should treat each question as a separate one. Individual scores can range from 0-40 with higher scores indicating high perceived stress.

- Scores ranging from 0-13 would be considered low stress.
- Scores ranging from 14-27 would be considered moderate stress.
- Scores ranging from 28-40 would be considered high stress.

2. *Sample size –*

A total of 200 college going students were asked to fill this questionnaire. Out of which 100 are females and 100 are males. The questionnaire took 20 minutes to fill. Students were asked to be as honest as possible with their responses and confidentiality of their responses was guaranteed.

3. *Sampling technique –*

The data in this study has been collected using Stratified sampling technique. In this method population is divided into smaller groups known as strata. Random samples are then selected from each stratum.

4. *Test applied – Chi-square test:*

This test is used to determine whether there is any significant difference between the expected frequencies and the observed frequencies in two or more variables. In the standard application of this test, the observations are classified into mutually exclusive classes and there is some theory or null hypothesis which gives the probability that any observations fall into the corresponding class. Chi-square with correlation is used in this study in order to determine the relation between suicide and stress.

CHAPTER 4
DEMOGRAPHIC DETAILS

The total population in this research is of 200 college going students aged from 17-24. These students are categorised on the base of gender and age group. The data is collected from various colleges in Ahmedabad and Gandhinagar.

Gender	Population
Male	100
Female	100

Table 4.1: Demographic details based on gender.

Age	Male	Female
17-20	77	62
21-24	23	38

Table 4.2: Demographic details based on age group.

ISSN No:-2456-2165

CHAPTER 5
FINDINGS

H1: There exists a relation between stress and suicide.

H0: There exists no relation between stress and suicide.

Descriptive analysis of Suicide Probability	
Mean	1.929292929
Standard Error	0.081539158
Median	2
Mode	2
Standard Deviation	0.811304383
Sample Variance	0.658214801
Kurtosis	0.590394194
Skewness	0.833097192
Range	3
Minimum	1
Maximum	4
Sum	191
Count	99

Table 5.1: Descriptive analysis: Suicide probability.

Descriptive analysis of Perceived Stress	
Mean	36.40704
Standard Error	0.467024
Median	37
Mode	40
Standard Deviation	6.588186
Sample Variance	43.40419
Kurtosis	1.602255
Skewness	-0.72747
Range	41
Minimum	10
Maximum	51
Sum	7245
Count	199

Table 5.2: Descriptive analysis of Perceived Stress.

ISSN No:-2456-2165

	SPS Total	*PSS Total*
SPS Total	1	0.99
PSS Total	0.99	1

Table 5.3: Correlation between Suicide probability and Perceived Stress

- *Interpretation*

The main result of correlation is called correlation co-efficient or r. It ranges from -1.0 to +1,0. The closer r is to -1.0 or +1.0, the more closely the two variables are related. As shown in Table 2.3, Suicide probability and Stress level has a perfect positive correlation (r = 0.99). Here r value is close to +1.0. Hence, we can interpret that stress level and suicide probability moves in the same direction. The results indicate that low stress level leads to low suicide probability and high stress level leads to high suicide probability. Therefore, there exists a relation between suicide and stress.

H2: There exists a significant difference between male and female in terms of stress level.

H0: There exists no significant difference between male and female in terms of stress level.

Stress level	Female	Male	Total
High	1%	1%	2%
Moderate	68%	77%	72.50%
Low	31%	22%	26.50%

Table 5.4: Chi-square test results- Comparison between male and female students in terms of stress level

- *Interpretation*

If p value is <0.05 then null hypothesis is rejected and alternate hypothesis is accepted. The two factors considered here are Gender and Stress level, which is measured by using chi-square test to analyse if there is any significant difference. Here the p value is 0.84 i.e. greater than 0.05. Hence, null hypothesis is accepted. Therefore, there is no significant difference between male and female in terms of stress level. This implies that gender does not play an important role in stress level faced by adolescents.

H3: There exists a significant difference between male and female in terms of suicide probability.

H0: There exists no significant difference between male and female in terms of suicide probability.

Suicide Probability	Female	Male	Total
Sub-clinical	0%	0%	0%
Mild	15%	7%	11%
Moderate	67%	68%	67.50%
Severe	18%	25%	21.50%

Table 5.5: Chi-square test results – Comparison between male and female students in terms of suicide probability.

➢ *Interpretation*

If p value is <0.05 then null hypothesis is rejected and alternate hypothesis is accepted. The two factors considered here are Gender and Suicide probability, which is measured by using chi-square test to analyse if there is any significant difference. Here p value is 0.54 i.e. greater than 0.05. Hence, null hypothesis is accepted. Therefore, there is no significant difference between male and female in terms of suicide probability. This implies that gender does not play an important role in suicide probability of adolescents.

CHAPTER 6
DISCUSSION AND CONCLUSION

From the findings it can be inferred that there exists no significant difference between males and females in terms of suicide probability and stress level.

This can be because males and females among the age group of 17-24 have similar surrounding environment. From the findings it can be inferred that there is no dissimilarity among the factors which assess stress level and suicide probability among males and females. This research indicates that college going males and females encounter similar kinds of extraneous factors which leads to stress and suicide probability. As the college going students come across a diversified kind of culture and the institutions also facilitates a similar kind of environment to males and females, significant difference in gender has not been noticed.

However, a minor difference has been seen among males and females in relation to stress level i.e. females faces 68% of moderate stress and males faces 77% of moderate stress. Hence, we can interpret that males faces high amount of moderate stress than females. It can be because of lack of emotional support from the peers or family members, careless attitude or because of heavy burden from academic, family or work field. Similarly, minor difference has also been noticed in terms of suicide probability among males and females i.e. females have 67% of severe suicide probability rate while men have 68% of suicide probability rate. The overall suicide probability rates are 11% mild, 67.50% moderate and 21.50% severe.

Gender	Hopelessness	Suicide ideation	Negative self-evaluation	Hostility
Male	24.88	14.15	14.15	13.35
Female	24	13.32	13.84	12.05

Table 6.1: Mean table for suicide probability

From Table 6.1, it can be inferred that males have higher risk of suicide probability based on the sub-factors i.e. hopelessness, suicide ideation, negative self-evaluation and hostility. In the above table mean score of males on hopeless is higher than females. Hence, it can be inferred that men are more dissatisfied with their lives and have generalized negative expectations about the future. However, depression in men is not easily in the early stages, rather it is seen as irritability, anger, abusive behaviour, etc. The mean on the factors Suicide ideation and Negative self-evaluation among males is 14.15. Therefore, males tend to think

that things are not going well and they feel that others are distant and uncaring. The mean score on hostility indicates that men tend to break or throw things when they are angry or upset, while on the other side females do not tend to portray their anger very easily.

Gender	Perceived stress
Male	17.32
Female	16.4

Table 6.2: Mean table for perceived stress

As mentioned in Table 6.2, the mean of perceived stress for males is 17.32 and for females is 16.4. Therefore, it can be interpreted that males have higher perceived stress than females. This can be because of various factors like high expectation from society or family, lack of self-awareness about how to deal with stressful situations, conflicting situations with peers or partner, heavy workload, etc. These are the factors which contribute greater amount of stress among male.

CHAPTER 7
LIMITATIONS

Despite intensive research and work gone behind this study, it has few limitations. The study was done among college students in Ahmedabad and Gandhinagar. Hence the geography can be broadened in order to get more results. It is been restricted only to the age group of 17-24. Therefore, more analysis can be done by taking different age groups. Also, it is measuring only gender for analysing suicide risks. The study can identify suicide risks on the basis of other demographic details like ethnicity, profession, age group, monthly income, family type, etc.

CHAPTER 8
RECOMMENDATIONS

From the findings, it has been inferred that suicide probability rate is 21.50% among adolescents. There are numerous ways that can reduced suicide rates. Institutions and organizations should spread awareness about the existing suicide rates and they should also organize Suicide Prevention programmes in their institutions.

Pharmacotherapy and psychotherapy can be effective in preventing suicide. Support groups should be organized internally among the colleges in order to provide a sense of affection and hope to the victims. This will help a person to deal with the changing environment and to cope up with the stressful situations. One of the important aspects which needs to be considered in order to reduce suicidal risk is peer support. The peer group should be sympathetic enough to make the victim aware about the existing situations and should be supportive to motivate him to deal with their problems effectively. The surrounding members i.e. friends, families and teachers should be cautious about any verbal threat of suicide given by the victim. In such cases all the associate members should try to be with him/her in order to make sure that they don't make a wrong move.

The researches done in this area indicates that the beginning stage of suicidal thought is depression. Therefore, if depression is taken care of in the initial stage it can prevent victims from taking their own lives. In order to make it possible, the associate members should notice any kind of behavioural changes which reflects stressful or depressive behaviour. Friends, family members and others should try to identify the cause behind their situations and they should try to give them a sense of supportive feeling so that the victim does not feel hopeless. Despite of all these ways, if the victim does not recover within 15 days, then the associates should consult a psychiatrist or a psychologist. Counselling sessions and therapies have proved to be an effective way in order to deal with suicidal thoughts. Psychologists advice the victims to get indulge in daily yoga and meditation. Yoga and meditation have proved to be one of the healing elements in order to reduce stress, overthinking, depression, suicidal thoughts and anger. Hence, people suffering from depression or suicidal thoughts should try to capture the positive things in life, rather than overthinking about the negative aspects.

REFERENCES

[1]. Centres for disease control and prevention. (n.d.). Suicide among youth. Retrieved from https://www.cdc.gov/healthcommunication/toolstemplates/entertainmented/tips/SuicideYouth.html

[2]. Rajiv Radhakrishnan & Chittaranjan Anrade. (Oct-Dec 2012). Suicide: An Indian perspective. Indian journal of psychiatry. doi: [10.4103/0019-5545.104793]

[3]. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3554961/

[4]. S. Rohtash & J. Hardeep Lal. (n.d.). Suicidal ideation in relation to depression, life stress and personality among college students. Paper presented at Kurukshetra University, Kurukshetra. Retrieved from

[5]. http://medind.nic.in/jak/t08/i2/jakt08i2p259.pdf

[6]. Perceived stress scale. (n.d.). Retrieved from

[7]. https://das.nh.gov/wellness/docs/percieved%20stress%20scale.pdf

[8]. T. Siddhartha & S. Jena. (n.d.). Suicidal behaviour in adolescents. Department of psychology, G.B. Pant hospital, New Delhi. Retrieved from

[9]. http://medind.nic.in/icb/t06/i9/icbt06i9p783.pdf

[10]. P. Rebecca & S. Vivien. (February 2006). Relationship between academic stress and suicide ideation: Testing for depression as mediator using multiple regression. Retrieved from https://www.researchgate.net/publication/6926696_Relationship_between_Academic_Stress_and_Suicidal_Ideation_Testing_for_Depression_as_a_Mediator_Using_Multiple_Regression

[11]. Institute of Education Sciences. (December,1991). Physical punishment by parents: A risk factor in epidemiology of depression, suicide, alcohol abuse, child abuse and wife beating. Retrieved from https://eric.ed.gov/?id=ED341907

[12]. Akca SO, Yuncu O & Aydin Z. (1991). Mental status and suicide probability of young people: A cross-sectional Study. doi: 10.1590/1806-9282.64.01.32. Retrieved from

[13]. https://www.ncbi.nlm.nih.gov/pubmed/29561940

[14]. H. Jameson, R. Jessica & R. Esther. (December 2017). Perceived stress and suicidal behaviour in students: Conditional indirect effects of depressive symptoms and mental health stigma. Retrieved from https://www.researchgate.net/publication/321893212_Perceived_Stress_and_Suicidal_Behaviors_in_College_Students_Conditional_Indirect_Effects_of_Depressive_Symptoms_and_Mental_Health_Stigma.

ISSN No:-2456-2165

[15]. W. Jong & P. Teodor. (October,2008). The impact of work environment on mood disorders and suicide: Evidence and implication. Retrieved from

[16]. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2559945/

[17]. Creative research systems. (n.d.). Correlation coefficient. Retrieved from https://www.surveysystem.com/correlation.htm