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Effectiveness of a Structured Teaching Programme on Knowledge regarding Risk Factors and Preventive Measures for Suicidal Behaviour among Adolescents Studying in a selected Pre-University College at Kudal

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Abstract: ***Background of the Study: The adolescent suicide rate has greatly increased in recent years being third leading cause of death among adolescents. Suicides in age group between 15-24 years accounted for 5% of all suicides but now it is increased to 14%. Hence the investigator felt the need to evaluate the "Effectiveness of a Structured Teaching Programme on Knowledge regarding Risk Factors and Preventive Measures for Suicidal Behaviour among Adolescents studying in a selected Pre-University College at Kudal." The Objectives of the Study: To evaluate the effectiveness of structured teaching programme on risk factors and preventive measures for suicidal behaviour among adolescents. Methods: An evaluative approach with pre-experimental one group pre-test post-test design was used for the study to accomplish the objectives. The researcher himself developed a structured teaching program and self-structured questionnaire on risk factors and preventive measures for suicidal behaviour. Reliability of the tool (r=0.902) was tested by split-half technique. A sample of 50 adolescents was selected by multi-stage random sampling technique. The data collected before and after the administration of STP were analyzed using descriptive and inferential statistics. Results: Assessment of pre-test knowledge revealed that majority (92%) of the respondents had an average knowledge on risk factors and preventive measures for suicidal behaviour. The total mean precentage of the pre-test knowledge score was 45.78% with mean and SD 16.48±2.73 and the mean percentage of post-test knowledge score was 83% with mean and SD 29.88±2.24. Significance of difference between the pre-test and post-test knowledge scores was statistically tested using paired 't' test and it was found to be highly significant [t= 32.9173, p<0.05]. Interpretation and Conclusion: The overall findings of the study revealed that there was highly significant increase in the knowledge of adolescents on risk factors and preventive measures for suicidal behaviour after the administration of structured teaching program. Hence it is concluded that the structured teaching program was highly effective in improving the knowledge of adolescents.***

Keywords: Effectiveness; Structured teaching programme; Knowledge; Risk factors; Preventive measures; Suicidal Behaviour; Adolescents

1. Introduction

It is a time proven fact that all the living organisms on this earth fight for survival and existence. What then makes the man to risk his own life? The tragedy of self-inflicted death has always attracted the attention of the medical as well as the legal fraternity. People who have committed suicide or have been thinking about committing suicide probably feel overwhelmed by their problems. They might not be able to handle that kind of pressure and feel that death would be the only way to escape from it.[1]

Bhagavath Geetha is against self torture and self killing. Islam asks men and women to wait for his or her destruction, rather than snatching it from the hands of God. Early Christians took recourse to suicide persecuted for their faith.[2]

Suicide is the paradoxical phenomenon which has been occurring throughout the human history since the dawn of civilization. The word "suicide" was first used by Sir Thomas Brown in 1642 in his "Religio Medici" has evoked a variety of reactions in public minds. But this word originated from Latin word "Sui" means one self and "Cudium" meaning the act of intentionally destroying one's own life.[3]

Suicidal behaviour is thus defined as "a preoccupation or act that is focused on causing one's own death voluntarily. Suicidal behaviour is usually divided into categories of suicidal ideation, suicide threats, suicide gesture, suicidal attempts, and completed suicide.[4]

Suicide risk factors vary with age, gender, and cultural and social influences and may change over time. Risk factors for suicide frequently occur in combination with each other[4].

Suicide awareness or prevention programmes can be delivered in a variety of settings such as schools, colleges, churches, or in the community as a whole.[6]

Need for the study

The World Health Organization estimates that each year approximately one million people die from suicide, which represents a global mortality rate of 16 people per 100,000 or one death for every 40 seconds. It is predicted that by 2020, the rate of death will increase to one every 20 seconds.[7]

In the last 45 years, suicide rates have increased by 60% worldwide. Suicide is now among the three leading causes of death among those aged between 15-44 years (male and female). Suicide attempts are up to 20 times more frequent than completed suicides. Although suicide rates have traditionally been highest among elderly males, rates among young people have been increasing to such an extent that

they are now the group at highest risk in all the countries. In Europe, particularly Eastern Europe, the highest suicide rates are reported for both men and women i.e. around 40 people per 100,000 die by suicide each year. Whereas nearly 30% of all suicides worldwide occur in India and China.[7]

Globally, 55 percent of suicides occur between the age group of 15-44 years and remaining 45 percent occur in the people aged 45 years and above. In the United States of America, the Centre of Disease Control and Prevention reports that, over all, suicide is the eleventh leading cause of death for all US Americans, and is the third leading cause of death for young people aged between 15-24 years.[7]

The suicidal rate in India is increasing constantly. India accounts for 10 percent of world's suicides. According to the latest National Crime Record Bureau Report, there are over 1.2 lakh suicides in 2006 and 1.3 lakh in 2007. Statistics available with the World Health Organization and the Bangalore Police shows that the capital of Karnataka is way ahead of the rest of the cities in India in terms of high suicidal rate. The Bangalore city Police say that till June 2008, 1,070 cases of suicide had been reported in Bangalore alone. It seems as though it is just a matter of time before Bangalore catches up with last year's statistics, where 2430 cases were reported. A report by the World Health Organization states that 17 out of every one lakh persons commit suicide in Bangalore. The figure has sure shot up when compared to the year 2007 where the number of persons committing suicide was 10 per every one lakh persons. Whereas in New Delhi, the suicide rate is at 10 per lakh while in Mumbai and Chennai, it is 12 and 11 per one lakh person's respectively.[8]

Problem Statement

A Study to Evaluate the Effectiveness of Structured Teaching Programme on Knowledge regarding Risk Factors and Preventive Measures for Suicidal Behaviour among Adolescents studying in a selected Pre – University College at Kudal.

Objectives

a) To assess the knowledge of adolescents regarding risk factors and preventive measures for suicidal behaviour.
b) To evaluate the effectiveness of structured teaching programme on risk factors and preventive measures for suicidal behaviour among adolescents.
c) To find out the association between the pre-test knowledge of adolescents regarding risk factors and preventive measures for suicidal behaviour and selected socio – demographic variables.

Assumptions

a) The adolescents will have some knowledge regarding risk factors and preventive measures for suicidal behaviour.
b) The adolescents will cooperate with the investigator in implementation of structured teaching programme.

Hypothesis

1) **H_1:** More than 50 percent of adolescents will have inadequate knowledge regarding risk factors and preventive measures for suicidal behaviour.
2) **H_2:** A significant difference will be found between post-test and pre-test knowledge scores of adolescents regarding risk factors and preventive measures for suicidal behaviour at 0.05 level of significance.
3) **H_3:** There will be significant association between the pre-test knowledge scores of adolescents regarding risk factors and preventive measures for suicidal behaviour and selected socio-demographic variables at 0.05 level of significance.

2. Methodology

Research Approach

An evaluative research approach was used in this study to assess the effectiveness of the structured teaching program on knowledge regarding risk factors and preventive measures for suicidal behavior among adolescents

Research Design

Pre – experimental one group pre-test post-test design was used in this study.

Setting of the study

Pre-university college at Kudal

Population

All adolescents between the age group of 16-18 years studying in Pre-University College, Kudal

Accessible Population

Adolescents studying in Pre-University College, Kudal

Sample

A total of 50 adolescents who met the criteria formed were selected as sample for the study.

Sampling Technique

Multistage Simple Random Sampling Technique

Criteria for Selection of Sample

Inclusive criteria: The study includes the adolescents, who are;

- Available at the time of data collection.
- Willing to participate in the study.

Exclusive criteria: The study excludes the adolescents;

- Who are on leave during the period of study
- Who are sick during the period of study
- Who are not able to cooperate throughout the period of study

Variables under the Study

- **Dependent Variable**

Knowledge of adolescents regarding risk factors and preventive measures for the suicidal behavior

- **Independent Variable**

Structured teaching programme

- **Socio-demographic Variables**

In this study socio-demographic variables refer to the selected variables of adolescents they are-, Age, Gender, Religion, Type of family, Father's educational status, Mother's educational status, Father's occupation, Monthly income of the family, Has any family member/ friend attempted/ committed suicide?, Have you attempted suicide ever?, Source of health information.

Data Collection Procedure

The structured questionnaire comprised of two parts.

Part I: Consists of items seeking information regarding socio-demographic characteristics of adolescents

Part II: Consists of 36 items pertaining to knowledge regarding risk factors and preventive measures for suicidal behaviour among adolescents. It has two sections as mentioned below.

Section A: Consists of 18 items on risk factors for suicidal behaviour.

Section B: Consists of 18 items on preventive measures for suicidal behaviour.

Scoring of the Items

The score for correct response to each item was "one" and for incorrect response was "zero". Thus for 36 items maximum obtainable scores were 36 and minimum was zero.

Score	Category
0 - 12	- Inadequate knowledge
13 - 24	- Average knowledge
25 - 36	- Adequate knowledge

Data Analysis

Descriptive and Inferential Statistics

3. Result

The collected information was organized and presented in four parts: Part I, Part II, Part III and Part IV.

Part I: Description of socio-demographic characteristics of sample.

This section deals with the description of sample characteristics and is explained in frequency and percentage and presented in Table 1.

Table 1: Frequency and percentage distribution of socio-demographic characteristics of sample, N=50

Sr. No.	Socio-demographic Variables	Frequency	Percentage (%)
1.	**Age**		
	16 years	22	44.00
	17 years	25	50.00
	18 years	3	6.00
2.	**Sex**		
	Male	30	60.00
	Female	20	40.00
3.	**Religion**		
	Hindu	44	88.00
	Muslim	6	12.00
	Christian	0	0.00
4.	**Type of family**		
	Nuclear	36	72.00
	Joint	14	28.00
5.	**Father's Educational status**		
	Primary education	4	8.00
	Secondary education	8	16.00
	PUC	6	12.00
	Degree	17	34.00
	Post graduate	11	22.00
	Illiterate/ No formal education	4	8.00
6.	**Mother's Educational status**		
	Primary education	5	10.00
	Secondary education	15	30.00
	PUC	10	20.00
	Degree	11	22.00
	Post graduate	2	4.00
	Illiterate/ No formal education	7	14.00
7.	**Father's occupation**		
	Employee	37	74.00
	Business	5	10.00
	Agriculture	8	16.00
8.	**Monthly Income of the Family**		
	Below Rs.2000	0	0.00
	Rs.2001-5000	2	4.00
	Rs.5001-8000	4	8.00
	Rs.8001 and above	44	88.00
9.	**Has any family member/ friend attempted or committed suicide?**		
	Yes	8	16.00
	No	42	84.00
10.	**Have you attempted suicide ever?**		
	Yes	0	0.00
	No	50	50.00
11.	**Source of health related information**		
	TV/ Radio	3	6.00
	Newspapers/Magazines/ Books/Journals	12	24.00
	Contact with health personnel	12	24.00
	Friends/Neighbors/ Parents/Relatives	23	46.00
Total		**50**	**100.00**

Part II: Assessment of knowledge of the adolescents regarding risk factors and preventive measures for suicidal behaviour.

Section A: Level of knowledge of adolescents regarding risk factors and preventive measures for suicidal behaviour.

Categorization of the adolescents on the basis of the level of knowledge was done as follows: scores 0-12 inadequate knowledge level, scores 13-24 average knowledge level, and scores 25-36 adequate knowledge level.

Table 2: Level of knowledge of adolescents regarding risk factors and preventive measures for suicidal behaviour. N=50

S.No.	Level of knowledge	Range of scores	Number of respondents	Percentage (%)
1.	Inadequate	0-12	4	8
2.	Average	13-24	46	92
3.	Adequate	25-36	0	0
Total			50	100

Assessment of the level of knowledge of the adolescents reveals that majority (92%) of the adolescents had average

knowledge, 8 percent of them had inadequate knowledge and there were no adolescents who had adequate knowledge regarding risk factors and preventive measures for suicidal behaviour. Thus the hypothesis **"more than 50 percent of adolescents will have inadequate knowledge regarding risk factors and preventive measures for suicidal behaviour"** stated is rejected.

Section B: Area wise mean, SD and mean percentage of pre-test knowledge scores of adolescents.

Table 3: Area wise mean, SD and mean percentage of knowledge scores of adolescents

Knowledge area	Max. score	Mean	SD	Mean %
Risk factors for suicidal behaviour among adolescents	18	8.22	1.46	45.67
Preventive measures for suicidal behaviour among adolescents	18	8.26	1.55	45.89
Total	36	16.48	2.73	45.78

The total mean percentage of the pre-test knowledge scores was 45.78 percent with mean and SD 16.48±2.73. Area wise mean percentage of knowledge scores was 45.67 percent in the area of 'risk factors for suicidal behaviour' with mean and SD 8.22 ± 1.46. In the area of 'preventive measures for suicidal behaviour', the mean percentage was 45.89 percent with mean and SD 8.26 ± 1.55. These findings reveal that adolescents had average knowledge in both the areas; risk factors for suicidal behaviour and preventive measures for suicidal behaviour.

Section C: Item-wise analysis of correct responses of adolescents regarding risk factors and preventive measures for suicidal behaviour.

Table 4 (a): Item-wise percentage of correct responses of adolescents regarding risk factors for suicidal behavior, N = 50

Sl. No	Items	No. of correct responses	Percentage (%)
1.	Suicidal attempts are more common among females.	23	46
2.	The risk of suicide is more among widowed persons.	13	26
3.	The risk of suicide and age among men are correlated positively.	28	56
4.	Factors like high risk behaviors and drug addiction increase the risk of suicide among adolescents.	29	58
5.	The risk of suicide is higher among people of both upper and lower social classes.	13	26

Findings reveal that the highest percentage (58%) of adolescents responded correctly to the item, 'factors like high risk behaviors and drug addiction increase the risk of suicide among adolescents'. The least percentage (26%) of correct responses was found for the items, 'the risk of suicide is more among widowed persons', and 'the risk of suicide is higher among people of both upper and lower social classes'.

Table 4b: Item-wise percentage of correct responses of adolescents regarding risk factors for suicidal behavior, N = 50

Sl. No	Items	No. of correct responses	Percentage (%)
6.	The risk of suicide among adolescents' increases with the condition like untreated mood disorders (depression).	39	78
7.	Suicidal risk is more in unemployed people.	31	62
8.	The commonest risk factor of death among depressed patients is committing suicide.	25	50
9.	Suicidal behaviour has been associated with the abnormalities in the function of serotonin (a neurotransmitter) in the body. Suicidal risk among adolescents is associated with parental alcoholism.	9	18
10	More than 90% of youth who committed suicide had at least one major psychiatric disorder.	37	74
11.	The risk of suicide among adolescents is associated with the history of aggressive behaviour.	34	68

Findings show that highest percentage (78%) of adolescents responded correctly to the item 'The risk of suicide among adolescents' increases with the condition like untreated mood disorders (depression).The least percentage (18%) of correct responses was found for the item 'Suicidal behaviour has been associated with the abnormalities in the function of serotonin (a neurotransmitter) in the body.'

Table 4c: Item-wise percentage of correct responses of adolescents regarding risk factors for suicidal behavior, N = 50

Sl. No	Items	No. of correct responses	Percentage (%)
12.	The risk of suicide among adolescents is associated with parental psychiatric disorders.	39	78
13.	The person with the history of previous suicidal attempt is at higher risk of completed suicide.	10	20
14.	The risk of suicide among adolescents is associated with childhood physical abuse.	13	26
15.	The risk of suicide among adolescents is associated with the history of aggressive behaviour.	22	44
16.	The risk of suicide is more among people who live alone.	7	14
17.	Among the causes of death in adolescents, suicide is 3rd leading cause.	30	60
18.	Among the following, the risk factor for suicide among adolescents is difficulties in school.	9	18

Findings reveal that the highest percentage (78%) of adolescents responded correctly for the item, 'the risk of suicide among adolescents is associated with parental psychiatric disorders' and only 14 percent of adolescents knew that 'among the following, the risk factor for suicide among adolescents is difficulties in school'.

Table 4d: Item-wise percentage of correct responses of adolescents regarding preventive measures for suicidal behavior, N = 50

Sl. No	Items	No. of correct responses	Percentage (%)
19.	An effective way to prevent suicide among drug addicts is early detection and treatment.	26	52
20.	Suicide can be prevented by treating the underlying psychiatric disorder. Warning signs of suicide are hopelessness and helplessness.	38	76
21.	Key intervention for suicidal plan is forming a no harm contract.	27	54
22.	Parents should routinely check their adolescents regarding the use of alcohol and drugs.	10	20
23.	The risk of suicide among adolescents is associated with parental psychiatric disorders.	32	64

Findings reveal that the highest percentage (76%) of adolescents responded correctly for the item 'suicide can be prevented by treating the underlying psychiatric disorder'. Least percentage (20%) of adolescents responded correctly to the item 'key intervention for suicidal plan is forming a no harm contract'.

Table 4e: Item-wise percentage of correct responses of adolescents regarding preventive measures for suicidal behavior,
N = 50

Sl. No	Items	No. of correct responses	Percentage (%)
24.	A trusting relationship with suicidal person will help him to improve his self-concept.	25	50
25.	Attention should be given on the persons with established suicidal risk factors.	14	28
26.	A person who has suicidal ideas should be asked about preparing s suicide note.	12	24
27.	A person with suicidal intent should be offered counseling.	29	58
28.	Family members of person with suicidal risk should be made aware of availability of mental health services.	36	72
29.	The primary objective of crisis intervention is to help an individual to cope with immediate life crises.	8	16
30.	Person with the history of suicidal attempt should be observed during the time of distress and emotional disturbance.	36	72

Findings reveal that the highest percentage (72%) of adolescents responded correctly to the items 'family members of person with suicidal risk should be made aware of availability of mental health services' and 'person with the history of suicidal attempt should be observed during the time of distress and emotional disturbance'. Least percentage (16%) of adolescents responded correctly to the item, 'the primary objective of crisis intervention is to help an individual to cope with immediate life crises'.

Table 4f: Item-wise percentage of correct responses of adolescents regarding preventive measures for suicidal behavior, N=50

Sl. No	Items	No. of correct responses	Percentage (%)
31.	The environment of the person with suicidal behaviour should be free from harmful articles.	45	90
32.	If a person tells that he is thinking about suicide, it should be taken seriously.	9	18
33.	Communication with suicidal person should be friendly. The suicidal ideas can be diverted by recreational activities.	23	46
34.	An essential measure in preventing future suicidal attempts after an episode of mental illness is continuation of treatment.	27	54
35.	Attempting to commit suicide is a punishable offense according to IPC (Indian Penal Code) section 309.	8	16
36.	If a person tells that he is thinking about suicide, it should be taken seriously.	5	10

Findings indicate that the highest percentage (90%) of adolescents responded correctly to the item 'the environment of the person with suicidal behaviour should be free from harmful articles'. Least percentage (10%) of correct responses was found for the item 'attempting to commit suicide is a punishable offense according to IPC (Indian Penal Code) section 309.'

Part III: Evaluation of the effectiveness of structured teaching programme.

Section A: Comparison of level of knowledge of adolescents in pre-test and post-test.

Table 5: Comparison of level of knowledge of adolescents in pre-test and post-test, N=50

Sr. No.	Level of knowledge	Pre - test		Post-test	
		No.of respondents	Percentage	No.of respondents	Percentage
1.	Inadequate	4	8.0	0	0.0
2.	Average	46	92.0	0	0.0
3.	Adequate	0	0.0	50	100.0
Total		50	100	50	100.0

In the pre-test knowledge scores the majority (92%) of adolescents had average knowledge, 4 percent of them had inadequate knowledge and there were no adolescents who had adequate knowledge. Whereas in post-test 100 percent of the adolescents had adequate knowledge.

Section B: Area- wise effectiveness of the STP on risk factors and preventive measures for suicidal behaviour.

Table 6: Area wise mean, SD and mean percentage of the knowledge scores in pre-test and post-test, N = 50

Sr. No.	Knowledge area	Max. score	Pre-test (O_1)		Post-test (O_2)		Effectiveness (O_2-O_1)	
			Mean ± SD	Mean %	Mean ± SD	Mean %	Mean ± SD	Mean %
1.	Risk factors for suicidal behaviour	18	8.22±1.46	45.67	15±1.54	83.33	6.78±1.93	37.66
2.	Preventive measures for suicidal behaviour	18	8.26±1.55	45.89	14.88±1.38	82.67	6.62±1.81	36.78
Total		36	16.48±2.73	45.78	29.88±2.24	83.00	13.4±2.88	37.22

Comparison of mean percentage of the knowledge scores of the pre-test and post-test reveals an increase of 37.22 percent in the mean knowledge score of the adolescents after STP. Comparison of area wise mean and SD of the knowledge scores in the area of 'risk factors for suicidal behaviour' shows that the pre-test mean percentage of knowledge score was 45.67 percent with mean and SD 8.22±1.46 where as post-test mean percentage of knowledge score was 83.33 percent with mean and SD 15±1.54. This shows an increase of 37.66 percent in the mean percentage of knowledge scores of the adolescents.

In the area of knowledge on 'preventive measures for suicidal behaviour', the pre-test mean percentage of knowledge score was 45.89 percent with mean and SD 8.26±1.55 where as post-test mean percentage of knowledge score was 82.67 percent with mean and SD 14.88±1.38, showing an effectiveness of 36.78 percent. The overall findings reveal that the percentage of post-test knowledge score was more when compared to the pre-test knowledge score. Hence it indicates that the STP was effective in enhancing the knowledge of adolescents on 'risk factors and preventive measures for suicidal behaviour'.

Section C: Item-wise effectiveness of STP on 'risk factors and preventive measures for suicidal behaviour'.

Table 7a: Item-wise effectiveness of STP with regard to percentage of correct responses by adolescents on 'risk factors for suicidal behaviour', N = 50

SI. No	Items	Pre-test (O_1)		Post-test (O_2)		Effectiveness (O_2- O_1) %
		No	%	No	%	
1.	Suicidal attempts are more common among females.	23	46	46	92	46
2.	The risk of suicide is more among widowed persons.	13	26	46	98	72
3.	The risk of suicide and age among men are correlated positively.	28	56	47	94	38
4.	Factors like high risk behaviours and drug addiction increase the risk of suicide among adolescents.	29	58	49	98	40
5.	The risk of suicide is higher among people of both upper and lower social classes.	13	26	44	88	62

Item-wise comparison reveals that the highest percentage (72%)of effectiveness was observed for the item 'the risk of suicide is more among widowed persons'. The least percentage (38%) of effectiveness was notedfor the item, 'the risk of suicide and age among men are correlated positively'.

Table 7b: Item-wise effectiveness of STP with regard to percentage of correct responses by adolescents on 'risk factors for suicidal behaviour', N = 50

SI. No	Items	Pre-test (O_1)		Post-test (O_2)		Effectiveness (O_2- O_1) %
		No	%	No	%	
6.	The risk of suicide among adolescents' increases with the condition like untreated mood disorders (depression).	39	78	46	92	14
7.	Suicidal risk is more in unemployed people.	31	62	46	92	30
8.	The commonest risk factor of death among depressed patients is committing suicide.	25	50	39	78	28
9.	Suicidal behaviour has been associated with the abnormalities in the function of serotonin (a neurotransmitter) in the body.	9	18	43	86	68
10	Suicidal risk among adolescents is associated with parental alcoholism.	37	74	39	78	4
11.	More than 90% of youth who committed suicide had at least one major psychiatric disorder.	34	68	44	88	20

Item-wise comparison reveals that highest percentage (68%)of effectiveness was observed for the item 'suicidal behaviour has been associated with the abnormalities in the function of serotonin (a neurotransmitter) in the body' and the least percentage (4%) of effectiveness was found for the item, 'suicidal risk among adolescents is associated with parental alcoholism'.

Table 7c: Item-wise effectiveness of STP with regard to percentage of correct responses by adolescents on 'risk factors for suicidal behaviour', N = 50

SI. No	Items	Pre-test (O_1)		Post-test (O_2)		Effectiveness (O_2- O_1) %
		No	%	No	%	
12.	The risk of suicide among adolescents is associated with parental psychiatric disorders.	39	78	40	80	2
13.	The person with the history of previous suicidal attempt is at higher risk of completed suicide.	10	20	26	52	32
14.	The risk of suicide among adolescents is associated with childhood physical abuse.	13	26	32	64	38
15.	The risk of suicide among adolescents is associated with the history of aggressive behaviour.	22	44	43	86	42

16.	Among the following, the risk factor for suicide among adolescents is difficulties in school.	7	14	42	84	70
17.	The risk of suicide is more among people who live alone.	30	60	42	84	24
18.	Among the causes of death in adolescents, suicide is 3rd leading cause.	9	18	42	84	66

Item-wise comparison reveals that highest percentage (70%) of effectiveness was observed in the item 'among the following, the risk factor for suicide among adolescents is difficulties in school'. Least percentage (2%) of effectiveness was found for the item, 'the risk of suicide among adolescents is associated with parental psychiatric disorders'.

Table 7d: Item-wise effectiveness of STP with regard to percentage of correct responses by adolescents on 'preventive measures for suicidal behaviour', N = 50

SI. No	Items	Pre-test (O_1)		Post-test (O_2)		Effectiveness (O_2- O_1) %
		No	%	No	%	
19.	An effective way to prevent suicide among drug addicts is early detection and treatment.	26	52	42	84	32
20.	Suicide can be prevented by treating the underlying psychiatric disorder.	38	76	48	96	20
21.	Warning signs of suicide are hopelessness and helplessness.	27	54	45	90	36
22.	Key intervention for suicidal plan is forming a no harm contract.	10	20	45	90	70
23.	Parents should routinely check their adolescents regarding the use of alcohol and drugs.	32	64	42	84	20

Item-wise comparison shows that highest percentage (70%) of effectiveness was observed for the item 'key intervention for suicidal plan is forming a no harm contract'. The least percentage (20%) of effectiveness was found for the items, 'suicide can be prevented by treating the underlying psychiatric disorder' and 'Parents should routinely check their adolescents regarding the use of alcohol and drugs'.

Table 7e: Item-wise effectiveness of STP with regard to percentage of correct responses by adolescents on 'preventive measures for suicidal behaviour', N = 50

SI. No	Items	Pre-test (O_1)		Post-test (O_2)		Effectiveness (O_2- O_1) %
		No	%	No	%	
24.	A trusting relationship with suicidal person will help him to improve his self concept.	25	50	31	62	12
25.	Attention should be given on the persons with established suicidal risk factors.	14	28	44	88	60
26.	A person who has suicidal ideas should be asked about preparing s suicide note. A person with suicidal intent should be offered counseling.	12	24	40	80	56
27.	Family members of person with suicidal risk should be made aware of availability of mental health services.	29	58	33	66	8
28.	The primary objective of crisis intervention is to help an individual to cope with immediate life crises.	36	72	37	74	2
29.	Person with the history of suicidal attempt should be observed during the time of distress and emotional disturbance.	8	16	40	80	64
30.	Family members of person with suicidal risk should be made aware of availability of mental health services.	36	72	42	84	12

Item-wise comparison reveals that highest percentage (64%)of effectiveness was observed for the item 'the primary objective of crisis intervention is to help an individual to cope with immediate life crises' and theleast percentage (2%) of effectiveness was found for the item, 'family members of person with suicidal risk should be made aware of availability of mental health services'.

Table 7f: Item-wise effectiveness of STP with regard to percentage of correct responses by adolescents on 'preventive measures for suicidal behaviour', N = 50

SI. No	Items	Pre-test (O_1)		Post-test (O_2)		Effectiveness (O_2- O_1) %
		No	%	No	%	
31	The environment of the person with suicidal behaviour should be free from harmful articles.	45	90	47	94	4
32.	If a person tells that he is thinking about suicide, it should be taken seriously.	9	18	44	88	70
33.	Communication with suicidal person should be friendly.	23	46	47	94	48
34.	The suicidal ideas can be diverted by recreational activities.	27	54	44	88	34
35.	An essential measure in preventing future suicidal attempts after an episode of mental illness is continuation of treatment.	8	16	33	66	50
36.	Attempting to commit suicide is a punishable offense according to IPC (Indian Penal Code) section 309.	5	10	46	92	82

Item-wise comparison shows that highest percentage (82%) of effectiveness was observed in the item 'attempting to commit suicide is a punishable offense according to IPC (Indian Penal Code) section 309' and the least percentage (4%) of effectiveness was found for the item, 'the environment of the person with suicidal behaviour should be free from harmful articles'.

Section D: Testing of Hypothesis
To evaluate the effectiveness of structured teaching programme a research hypothesis was formulated.

H_2: A significant difference will be found between post-test and pre-test knowledge scores of adolescents regarding risk factors and preventive measures for suicidal behaviour
The calculated values were much higher than table value (1.96). Hence the **H_2** stated is accepted.Findings reveal that the difference between mean pre-test (16.48±2.7273) and post-test (29.88±2.2373) knowledge scores of adolescents found to be statistically significant at 0.05 level of significance [t= 32.9173, p<0.05].

Similarly the area wise difference between pre-test and post-test knowledge scores on risk factors and preventive measures for suicidal behaviour were highly significant. Mean of post-test knowledge scores in the area 'risk factors for suicidal behaviour' (15±1.5386) is significantly higher than the mean of pre-test knowledge scores (8.22±1.4609) at 0.05 level of significance (t=24.8363, p<0.05). Similarly Mean of post-test knowledge scores in the area 'preventive measures for suicidal behaviour' (14.88±1.3797) is significantly higher than the mean of pre-test knowledge scores (8.26±1.5493) at 0.05level of significance (t=25.9227, p<0.05).

PART IV: Association between the pre-test knowledge scores of adolescents on risk factors and preventive measures for suicidal behaviour and selected socio-demographic variables.
To find out the association between the pre-test knowledge scores of adolescents regarding risk factors and preventive measures for suicidal behaviour with selected socio – demographic variables a research hypothesis was formulated.

H_3: There will be significant association between the pre-test knowledge scores of adolescents regarding risk factors and preventive measures for suicidal behaviour and selected socio - demographic variables.
Findings reveal that there is no significant association between pre-test knowledge scores of the adolescents and socio demographic variables such as age, gender, religion, type of family, father's educational status, mother's educational status, father's occupation, monthly income of family, the history of attempted/committed suicide among their family members or friends and source of health information. Thus **H_3**statedis rejected.

4. Discussion

Part I: Description of the socio-demographic characteristics of sample.
Findings revealed that Most (50%) of the adolescentswere 17 years old, 44 percent of adolescents were 16 years old, and Only 6 percent of them were 18 years old. In relation to the gender of the participants, majority of (60%) of adolescents were males and 40 percent of them were females. Distribution of adolescents according to their religion showed that Majority of adolescents (88%) were belonging to Hindu religion, and 12 percent of them were Muslims. There were no adolescents belonging to Christian religion.

Similar study was conducted by **Ji BT, Chow WH, Dai Q. (2007)** to determinethe knowledge about suicidal behaviour especially with reference to demographic variables among high school students at four different centers in Shanghai[61]. They found increasing age, female gender were important factors influencing the knowledge. Where as in the present study there was no significant association between these demographic variables with the knowledge.

Part II: Assessment of knowledge of adolescents on risk factors and preventive measures for suicidal behaviour.

A: Level of knowledge of adolescents on risk factors and preventive measures for suicidal behaviour.
Findings of the present study showed that majority (92%) of the adolescents had average knowledge,8 percent of them had inadequate knowledge and there were no adolescents who had adequate knowledge regarding risk factors and preventive measures for suicidal behaviour. The findings of the present study are consistent with the study conducted by **Beautrais AL, John Horwood L, Fergusson DM (2007)** to assess the knowledge and attitudes of young people about suicide in Christchurch, New Zealand[47]. A structured questionnaire was administered to a sample of 1265 young people. The results showed that young people had poor knowledge about youth suicide.

B: Area-wise analysis of knowledge scores of adolescents on risk factors and preventive measures for suicidal behaviour.
The total mean percentage of the knowledge scores was 45.78 percent with mean and SD 16.48±2.73. Area wise mean percentage of knowledge scores was 45.67 percent in the area of 'risk factors for suicidal behaviour among adolescents' with mean and SD 8.22 ± 1.46. In the area of 'preventive measures for suicidal behaviour among adolescents, the mean percentage was 45.89 percent with mean and SD 8.26 ± 1.55. These findings reveal that adolescents had only average knowledge in the areas of risk factors for suicidal behaviour and preventive measures for suicidal behaviour respectively.

C: Item-wise analysis of knowledge scores of adolescents on risk factors and preventive measures for suicidal behaviour.
a. Items related to knowledge on 'risk factors for suicidal behaviour'.

Analysis revealed that the highest percentage of (78%) of correct responses was observed for two items 'the risk of suicide among adolescents' increases with the condition like untreated mood disorders (depression)' and 'the risk of suicide among adolescents is associated with parental psychiatric disorders'. The least percentage (14%) of correct responses was noted for the item 'among the following, the risk factor for suicide among adolescents is difficulties in school' (Table 4c).

b. Items related to knowledge on 'preventive measures for suicidal behaviour'.

Findings showed that the highest percentage of (90%) of correct responses was observed for the item 'the environment of the person with suicidal behaviour should be free from harmful articles'. The least percentage (10%) of correct responses was observed for the item 'attempting to commit suicide is a punishable offense according to IPC (Indian Penal Code) section 309'.

Similar findings were observed by **MacDonald MG (2007)** in his study conducted to assess the knowledge of undergraduate students about suicide in Rochester, USA[48]. A sample of 71 students completed the 50-item Expanded Revised Facts on Suicide Quiz. The results indicated that overall knowledge was low for general information and for specific items concerning suicide among youth, knowledge was high on several items important for suicide prevention work.

Part III: Evaluation of the effectiveness of STP on risk factors and preventive measures for suicidal behaviour and testing of hypothesis.

Section A: Comparison of level of knowledge of adolescents in pre-test and post-test.

In the pre-test knowledge scores the majority (92%) of adolescents had average knowledge, 4 percent of them had inadequate knowledge and there were no adolescents who had adequate knowledge. Whereas in post-test 100 percent of the adolescents had adequate knowledge.

Section B: Area-wise effectiveness of STP on risk factors and preventive measures for suicidal behaviour.

Analysis of the knowledge scores in the pre-test and post-test revealed that the mean percentage in the pre-test was 45.78 percent and with mean and SD 16.48±2.73, whereas mean percentage in post-test was 83 percent with mean and SD 29.88±2.24. This showed the high effectiveness of STP. Area-wise analysis showed that 37.66 percent of effectiveness was found in the area of 'risk factors for suicidal behaviour' with mean and SD 6.78±1.93 and 36.78 percentof effectiveness was found in the area of 'preventive measures for suicidal behaviour' with mean and SD 6.62±1.81.

Section C: Item-wise effectiveness of STP on risk factors and preventive measures for suicidal behaviour

a. Items related to 'risk factors for suicidal behaviour'.

Item-wise analysis revealed that highest percentage (72%) of effectiveness was noted for the item 'the risk of suicide is more among widowed persons'. The least percentage (2%) of effectiveness was found for the item 'the risk of suicide among adolescents is associated with parental psychiatric disorders (Table 8c).

b. Items related 'preventive measures for suicidal behaviour.

Findings revealed that highest percentage (82%) of effectiveness was noted for the item 'attempting to commit suicide is a punishable offense according to IPC (Indian Penal Code) section 309'. The least percentage (2%) of effectiveness was found for the item 'family members of person with suicidal risk should be made aware of availability of mental health services'

5. Testing of Hypothesis

Significance of difference between pre-test and post-test knowledge scores of adolescents

Paired't' test was used to find out the significance of difference between pre-test and post-test knowledge scores of adolescents on risk factors and preventive measures for suicidal behaviour (Table 8). Findings revealed that the difference between mean pre-test (16.48±2.7273) and post-test (29.88±2.2373) knowledge scores of adolescents found to be statistically significant at 0.05 level of significance [t= 32.9173, $p<0.05$]. It indicated that STP was highly effective in improving the knowledge of adolescents on risk factors and preventive measures for suicidal behaviour.

Similar findings were observed in an experimental study conducted by **Kalafat J, Elias M (2007)** to evaluate the effectiveness of a school – based suicide awareness intervention among adolescents in Louisville, Kentucky[50]. The results revealed that, the experimental groups as compared with control groups showed significant gains in relevant knowledge about suicidal peers and significantly more positive attitudes toward help seeking and intervening with troubled peers.

Part IV: Association between Pre-test knowledge scores of adolescents and selected socio-demographic variables

Findings revealed that there was no significant association found between pre-test knowledge scores of the adolescents and socio demographic variables such as age, gender, religion, type of family, father's educational status, mother's educational status, father's occupation, monthly income of family, the history of attempted/committed suicide among their family members or friends and source of health related information.

Findings of the present study are consistent with the study conducted by **Eisenberg ME, Ackard DM, Resnick MD (2006)** to assess the knowledge of adolescents on correlates of suicidal behaviour in Minnesota, USA. They found that there was no significant association between the knowledge and family history of suicidal behaviour.

6. Conclusion

- Assessment of level of knowledge of adolescents on risk factors and preventive measures for suicidal behaviour showed that majority (92%) of them had average level of knowledge, 8 percent of them had inadequate level of knowledge and there were no adolescents who had adequate level of knowledge.
- A significant difference was found between the post-test and pre-test knowledge scores of adolescents. The study showed that the STP was highly effective in improving the knowledge of adolescents on risk factors and preventive measures for suicidal behaviour.
- There was no significant association found between pre-test knowledge scores of the adolescents and socio demographic variables such as age, gender, religion, type

of family, father's educational status, mother's educational status, father's occupation, monthly income of family, the history of attempted/committed suicide among their family members or friends and source of health related information.

7. Nursing Implication

1) Nursing Practice

a) Health education is an important tool of healthcare agency. It is one of the most cost effective interventions. It is concerned with promoting health as well as reducing stress. The extended and expanded roles of professional nurse have emphasized more about the preventive and promotive aspects of the health.

b) Primary prevention is one of the important components of psychiatric nursing. Nurses have a major role in preventive aspects than the curative aspects. STP developed for this study will help the nurses in organizing educational programmes.

2) Nursing Education

The curriculum is responsible for preparing the future nurses. There it should emphasize on preventive and promotive health practices. The learning experience of the students should give more emphasis on teaching the population who are at risk. Workshops, seminars and conferences can be conducted to educate the student nurses regarding risk factors and preventive measures for suicidal behaviour so that they could disseminate their knowledge to the adolescents The student nurses should be given opportunities during his/her training to plan and conduct health education for adolescents studying in different colleges regarding problem solving techniques and coping skills to meet the challenges of the transitional age.

3) Nursing Administration

a) The nursing administrator can take part in developing protocols, standing orders related to designing the health education programmes and strategies for college going adolescents regarding identifying risk factors for suicidal behaviour and its prevention as well as the teaching coping skills to manage the stress during the transitional age.

b) The nursing administrator can mobilize the available resource personnel towards the health education of pre-university college students regarding risk factors and preventive measures for suicidal behaviour.

4) Nursing Research

This study helps nurse researchers to develop appropriate health education tools for educating the pre-university college students regarding risk factors and preventive measures for suicidal behaviour according to their demographic, socio-economic, cultural and political characteristics.

8. Recommendations

a) A similar study can be undertaken with a large stratified sample including adolescents from pre-university science, arts and commerce colleges to generalize the findings.

b) A similar study can be undertaken with a control group design.

c) A study can be conducted to find out the prevalence of suicidal behaviour among adolescents.

d) Manuals, information booklets and self-instruction module may be developed on risk factors and preventive measures for suicidal behaviour among adolescents.

e) A study can be carried out to evaluate the efficiency of various teaching strategies like SIM, pamphlets, leaflets and computer-assisted instruction on risk factors and preventive measures for suicidal behaviour.

f) A study can be conducted to assess the impact of suicidal behaviour on quality of life.

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