Effectiveness of a Health Education Intervention on Prevention of Self-harm Amongst Adolescents in New Delhi

Abstract

Adolescents are vulnerable to various life stresses and often adapt to negative coping mechanisms in the form of self-harm.

We designed a study to assesses the comparative prevalence, social determinants and risk of self-harm among cohorts of adolescent school children. We investigated the impact of a health education intervention on the knowledge of prevention of self-harm among public and independent / private school adolescents in New Delhi, India.

Method: Questionnaire data was collected for phase - I from (n = 100 each) adolescents of government and private schools, to determine risk and prevalence. Phase II data was acquired following the provision of an education booklet on prevention of self-harm from adolescents (government n=39 and private schools n=40) reporting moderate risk.

Results: The prevalence of self-harm was 40% among government and 38% among private school adolescents. There were 4% adolescents in private and 1% in government schools who demonstrated moderate to high risk of self-harm. There was a significant association between self-harm and risk factors including impulsiveness, interpersonal relationships, academic, peer influence, abuse and media influence. Health Education was effective in increasing the knowledge of both cohorts on self-harm behavior, and its prevention.

Conclusion: Our study demonstrates the benefit a health education intervention regarding awareness of self-harm behavior.

Keywords
Self-harm, adolescent, risks of self-harm

Mushtari Shabbir[1], Prof Bimla Kapoor[2] & Mitali Biswas[3]

1.Nursing officer, VMMC and Safdarjung Hospital, New Delhi
2.Former Director of School of Health Sciences, I.G.N.O.U. New Delhi
3.Assistant Professor, R.A.K. College of Nursing, New Delhi

Introduction:

Everyone in life has some tasks to perform but during adolescence, there is own special task to perform. The World Health Organization (WHO) defines an adolescent, as any person between ages 10 and 19 years. Adolescence is the transition period in life when an individual is no longer a child, but not yet an adult. It is a period in which an individual undergoes enormous physical and psychological changes. In addition, adolescent experiences change in social expectations and perceptions. Physical growth and development are accompanied by sexual maturation, often leading to the new intimate relationships. The individual's capacity for abstract and critical thought also develops, along with a sense of self-awareness when social expectations require emotional maturity.[1]

Adolescence is a stressful period of physical growth and intellectual attainment at its peak, coupled with settling of personality attributes, the decision regarding the future, choice of professions, and extreme emotional instability. This can also be a period for an identity crisis

- physical, sexual, and spiritual. They may have strong feelings of stress, confusion, fear, and uncertainty, as well as a societal expectation to pressure to succeed or do something worthwhile.[2]

Self-harm, also known as self-injury, is defined as the intentional, direct injuring of one's own self/body, done without suicidal intentions. Other terms such as cutting and self-mutilation have been used for any self-harming behavior, regardless of suicidal intent. The most common form of self-harm is using a sharp object to cut one's skin. Other forms include behavior such as burning, scratching, or hitting body parts, ingestion of harmful substances- corrosive, pesticides, etc. The individual engages in such behavior either to get relief from negative feelings, to resolve interpersonal difficulties, or to induce a positive feeling.[3] In India, surveys amongst college students reveal widely variable lifetime prevalence of self-harm between 27%[4], to being as high as 80%[5] . Our study explores the prevalence and risk of self-harm amongst adolescents in schools (state/government and independent/private), and the effectiveness of an information booklet on knowledge of strategies to prevent self-harm.

Objectives
Phase I - Primary - To assess the prevalence and risk of self-harm behaviours amongst adolescents in Government and private schools
Secondary - To find the association between the self-harm behaviours and

- Sociodemographic variables; Age, Gender, Religion, Residential area, Academic performance in X[th] Standard, Type of Family, Socioeconomic status, Mother's education, Support person.
- Psychological factors, Interpersonal relationship, History of illness, Substance abuse, Academic issues, Peer influence, Abuse, Media influence, and fantasy.

Phase II - To develop and evaluate the effectiveness of an information booklet in knowledge on self-harm behavior and its prevention between Government and private schools

Materials and methods

This study received ethical approval from the concerned authority from selected schools of Delhi. The phase-I, used a non-experimental quantitative approach with a descriptive survey design and phase-II, used an experimental quantitative approach. A single cohort model with pre and post-test evaluation was utilized. Samples were selected by purposive sampling technique in phase-I and total enumeration technique in phase-II.

Data was collected for phase -I from (100) adolescents of government as well (100) adolescents from a private school by using self-structured questionnaire on sample characteristics, structured questionnaire for assessing prevalence of self-harm, structured questionnaire to assess the risk of self-harm. A self-structured questionnaire was used to assess the prevalence of self-harm based on the Cornell non-suicidal self-harm index (NSSI tool.[6] Associated risk factors in the study based on the self-structured 5-point rating scale which includes a significant association of self-harm with impulsiveness, interpersonal relationship issues, academic issues, peer influence, abuse which includes physical and sexual abuse, the influence of mass media and fantasy.

For phase-II, from (39) adolescents from government school and (40) adolescents from private school by using a structured questionnaire on sample characteristics, pre and post-test knowledge assessment on self-harm behavior and prevention.

The data was analyzed by using descriptive and inferential statistics according to the objective and hypothesis of the study.

Results
Our sample of 100 respondents from each cohort were majority in the 16-17 years age range (83-92%), male (83% in government schools vs 68% in private schools), Hindu (76% in government vs 90% in private schools), urban (91% vs 74%) and living at home (100% in government vs 98% in private schools) as seen in Table 1. The majority of respondents were from nuclear families (74% in government vs 65% in private schools) and living with both parents (95% in government vs 98% in private schools). There academic performance was skewed towards high achievement in the private schools (63% vs 22% achieving overall scores of >75% marks in Xth class examinations).

Majority of respondents from private schools had mothers with professional or postgraduate qualifications (44% vs 7%), yet there was no difference in the mothers' employment status between the groups (89 vs 85% were housewives). There was no difference in the number of siblings, majority had 1-2 siblings between the groups (73-84%). There was no difference in leisure activities or

hobbies between the groups, with 1/3 reporting sports or exercise as their primary interest.

When asked about regular or reliable friends, there was similarity between the 2 cohorts, except 13% of private school respondents reported having no friends. Respondents reported seeking help and support from their friends (41-42%) followed by their mothers (26-

31%). Eleven percent of private school respondents did not have anyone to call for support.

Majority of the private school respondents came from household in the upper-to-upper-middle class categories (82%) compared to 32% of the respondents from the government schools.

Table 1: Frequency and percentage distribution of sample characteristics in government and private school adolescent

S. NO.	Sample characteristic	Government school, n=100		Private school, n=100	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1.	AGE				
	14-15 Year	6	6.0	14	14.0
	16-17 Year	92	92.0	83	83.0
	18-19 Year	2	2.0	3	3.0
2.	GENDER				
	Male	83	83.0	68	68.0
	Female	17	17.0	32	32.0
	Transgender	0	0	0	0
3.	RELIGION				
	Hindu	76	76.0	90	90.0
	Muslim	12	12.0	7	7.0
	Christian	1	1.0	1	1.0
	Sikh	7	7.0	1	1.0
	Any other	0	0	0	0.0
	No religion	4	4.0	1	1.0

There was a marginally higher prevalence of reported incidents of self-harm in respondents from government schools (40% vs 38%) while moderate risk of self-harm was significantly higher in the private school respondents (4% vs 1%).

Our statistical analysis showed no correlation between the risk of self-harm behaviour and demographic, socio-

economic and support characteristics, table 2. Amongst psychological characteristics, impulsiveness was the only significant factor correlated with risk of self-harm. Academic issues and inter-personal relationships, peer influence, abuse and influence of media/ fantasy were also correlated with risk of self-harm (table 3).

Table 2: Association between self-harm behavior and selected demographic variables

S.no.	Sample characteristic	Prevalence		Df	Chi square	P value
		No self-harm	Self-harm			
1	Age					
	14-15 year	8 (6.6)	12 (15.4)	2	4.466	0.086 ns (fisher's Exact)
	16-17 year	110 (90.2)	65 (83.3)			
	18-19 year	4 (3.3)	1 (1.3)			
2	Gender					
	Male	91 (74.6)	60 (76.9)	1	1.4	0.708 ns
	Female	31 (25.4)	18 (23.1)			
3	Religion					
	Hindu	97 (79.5)	67 (85.9)	5	5.085	0.389 ns (fisher's exact)
	Muslim	13 (10.7)	6 (7.7)			
	Christian	1 (0.8)	1 (1.3)			
	Sikh	7 (5.7)	1 (1.3)			
	Any other	2 (1.6)	0 (0)			
	No religion	2 (1.6)	3 (3.8)			
4	Residential area					
	Urban	7 (5.7)	1 (1.3)	2	3.024	0.272 ns (fisher's exact)
	Semi -urban	2 (1.6)	0 (0)			
	Rural	2 (1.6)	3 (3.8)			

Table 3: Association between self-harm behavior and risk factor (psychological factors, interpersonal relationship, history of illness, substance abuse, academic issues, peer influence, abuse, media influence.

S. NO	RISK FACTORS	PREVALENCE		df	chi square	p value
		Self-harm	No self-harm			
1	Low self-esteem					
	None	8 (6.6)	5 (6.4)			0.078 [NS] (Fisher's exact)
	Mild	87 (71.3)	52 (66.7)	3	0.841	
	Moderate	25 (20.5)	19 (24.4)			
	Severe	2 (1.6)	2 (2.6)			
2	Hopelessness					
	None	4 (3.3)	3 (3.8)			0.057 [NS] (fisher's exact)
	Mild	84 (68.9)	48 (61.5)	3	0.63	
	Moderate	31 (25.4)	23 (29.5)			
	Severe	3 (2.5)	4 (5.1)			
3	Impulsiveness					
	None	4 (3.3)	0 (0)			0.006* (fisher's exact)
	Mild Impulsiveness	76 (62.3)	39 (50)			
	Moderate	38 (31.1)	35 (44.9)	3	0.087	
	Severe	4 (3.3)	4 (5.1)			
4	Interpersonal relationship issues					
	None	41 (33.6)	14 (17.9)			0.004* (fisher's exact)
	Mild	68 (55.7)	50 (64.1)			
	Moderate	11 (9)	11 (14.1)	3	0.062	
	Severe	2 (1.6)	3 (3.8)			
5	History of physical and mental illness					
	None	88 (72.1)	54 (69.2)			0.109 [NS] (fisher's exact)
	Mild	32 (26.2)	23 (29.5)	2	0.838	
	Moderate	2 (1.6)	1 (1.3)			
	Severe	0(0)	0(0)			
6	Substance use					
	None	85 (69.7)	48 (61.5)			0.065 [NS] (fisher's exact)
	Mild	36 (29.5)	29 (37.2)			
	Moderate	0 (0)	1 (1.3)	3	0.244	
	Severe	1 (0.8)	0 (0)			
7	Academic Issues					
	None	4 (3.3)	0 (0)			0.043* (fisher's exact)
	Mild	67 (54.9)	38 (48.7)	3	0.243	
	Moderate	43 (35.2)	36 (46.2)			
	Severe	8 (6.6)	4 (5.1)			
8	Peer influence					
	None	64 (52.5)	23 (29.5)			0.001* (fisher's exact)
	Mild	54 (44.3)	51 (65.4)	2	0.004	
	Moderate	4 (3.3)	4 (5.1)			
	Severe	0(0)	0(0)			
9	Abuse					
	None	85 (69.7)	41 (52.6)			0.018* (fisher's exact)
	Mild	34 (27.9)	36 (46.2)			
	Moderate	2 (1.6)	1 (1.3)	3	0.026	
	Severe	1 (0.8)	0 (0)			
10	Influence of media and fantasy					
	None	104(85.2)	57(73.1)			0.016*
	Mild	18(14.2)	21(26.9)			
	Moderate	0(0)	0(0)	1	0.034	
	Severe	0(0)	0(0)			

Provision of an information booklet was effective in increasing the knowledge of Government and private school adolescents on self-harm behavior and its prevention. There was a significantly higher level of knowledge on self-harm behavior and its prevention among Private school adolescents as compared to government school adolescents before and after the administration of information booklet, see figures 1 & 2.
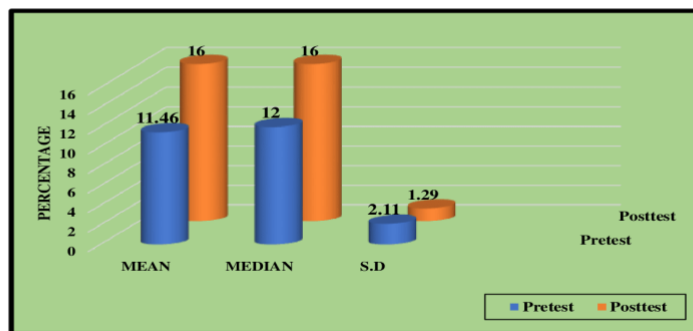

Figure No.1: Cylindrical diagram showing the mean, median, standard deviation of pre-test and post- test knowledge scores of adolescents in government school

Figure No.2: Cylindrical diagram showing the mean, median, standard deviation of pre-test and post- test knowledge scores of adolescents in Private school.

DISCUSSION

In our study, using the self-reporting structured questionnaire, prevalence of self-harm was consistent with the findings of a systematic literature review done by Cipriano et.al[7] (7.5–46.5% in adolescents, 38.9% in university students and 4–23% adults)[7], Saçarçelik et.al[8] (rates were higher in girls (57% vs 29% in boys)[8], Aggarwal et al.[9] (12 month prevalence rates of non-suicidal self-harm varied from 16% to 31%)[9] and Kharsati et.al.[10] (31% reported NSSI in the past year).[10]

Associated risk factors in our study showed a significant association of self-harm with impulsiveness, interpersonal relationship issues, academic issues, peer influence, abuse which includes physical and sexual abuse, the influence of mass media and fantasy. This is consistent with results reported by Aggarwal et al[9] which showed family conflict, peer groups with members indulging in self-harm, truancy and school absenteeism were significant correlates.[9] Similarly study conducted by Townsend et al.[11] for the development of the Card Sort Task for Self-harm (CaTS)) found pattern of thoughts, feelings, events, and behaviours likely to lead to self-harm were (negative emotions, impulsivity, and access to means).[11]

There is a lack of studies to assess knowledge amongst adolescents on self-harm behavior and its prevention.

In the present study, knowledge has been divided into 3 aspects: knowledge on self-harm behavior, prevention, and access or availability of help/ support services. In both government and private school respondents, our study demonstrates a lack of knowledge in the area of prevention, as well as availability or access to appropriate support/ help services.

Our study thus demonstrates a justification for intervention. The study could not be compared to any other studies as there were no studies to assess the effectiveness of information booklet in terms of knowledge of self-harm behavior and its prevention. Another limitation was the absence of a placebo group, or assessment of usual practice in this study.

Conclusion

Our findings indicate that the information booklet may be effective in improving knowledge among adolescents and that may be more effective amongst higher achieving respondents in private schools.

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