A PILOT STUDY TO FIND THE EFFECTIVENESS OF SOCIAL-EMOTIONAL LEARNING INTERVENTION ON AGGRESSION AND EMPATHY AMONG ADOLESCENTS.

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ABSTRACT Adolescence is a challenging and dynamic period due to hormonal, physical, emotional, cognitive and social changes. Aggression in any form, if present, or its manifestations is linked to various psychosocial maladjustments or mental disorders and are negatively associated with prosocial behavior and adaptive social functioning, especially during adolescence. It may also be a red flag sign for development of mental disorders. One factor that buffers against aggression during adolescence is empathy. Emotional intelligence and empathy are considered key components of emotional education by developing young people's capacity to successfully cope with the pressures of life and demands of their stressful environment. Social-emotional learning (SEL) is one such interventional program that focuses on these issues and helps in improving empathy and decreasing aggression in adolescents. The Collaborative for Academic, Social, and Emotional Learning (CASEL, 2012) defines SEL as "the process of acquiring the skills to recognize and manage emotions, develop caring and concern for others, make responsible decisions, establish positive relationships, and handle challenging situations effectively." In this pilot study 80 students from an English medium school were taken. Using three questionnaires, aggression and empathy of students were measured pre SEL intervention. After twelve sessions of SEL intervention, the aggression and empathy was again measured using the same questionnaires to find out if there is a difference between the pre and the post scores. Most of the aggression and anger came down post SEL intervention. It was also found to have significant difference in pre and post intervention ratings of empathy. The significant difference in pre and post intervention ratings of aggression as well as empathy led to conclude the efficacy and effectiveness of the SEL intervention.

KEYWORDS : *aggression, empathy, social emotional learning*

INTRODUCTION

Adolescents are young people between the ages of 10 and 19 years as defined by World Health Organization (WHO). According to UNICEF globally 1.2 billion adolescents aged 10-19 years today make up 16 per cent of the world's population. Children aged between 0-14 years of age contribute to 26% of the world population. According to WHO in India, adolescents form a major chunk of population (>20%) or approximately around 362 millions. The transition from a child to an adolescent is one of the most challenging and critical periods in any person's life.

A plethora of physical, hormonal, social, and emotional and neuro cognitive changes takes place during this transition period. Some refer to this stage as the period of physical and emotional turbulence as academic demands, peer pressure, parental expectations and demands, relationship issues, family issues all come into the forefront of an adolescent life. One has to adjust and adapt to these changes in life. Adolescents must learn certain ways of behavior or skills to cope with the situation. When adolescents believe they have the necessary resources to deal with difficulties, they are more likely to make wise choices. If, on the other hand, they feel that they cannot face a problem, they may make poor choices. When coping mechanism fails and an adolescent cannot adjust with the growing demands or challenges, emotional tension and stress creeps up in an adolescent's life. Anderson et al reported most common way to release tension from any stressors is anger. And anger is most often expressed by aggression. Glassman et al and Dinkes et al reported that aggression in any form, if present or its manifestations is linked to various psychosocial maladjustments and is negatively associated with pro social behavior and adaptive social functioning. It may also be a red flag sign for development of mental disorders. As reported by Furrer et al aggressive behavior and interpersonal conflicts continue to be common problems in educational systems and leads to a significant decline in education and, consequently, reduces the quality of teaching and learning.

David et al and Gini et al reported that one factor that buffers against aggression during adolescence is empathy, defined as both the cognitive and affective substrates of "sharing" others' negative experiences. It has been well documented that aggression can be well handled by or controlled by increasing empathy in a child or adolescent by the development of social emotional learning. Emotional intelligence and empathy are considered key components of emotional education by developing young people's capacity to successfully cope with the pressures of life and demands of their stressful environment.

Social-emotional learning (SEL) is one such interventional program that focuses on these issues and helps in improving empathy and decreasing aggression in adolescents.

Social-emotional learning (SEL) is strongly influenced by Daniel Goleman's theory on Emotional Intelligence (1995) which argues that in order to be successful in any given environment, humans need to be able to understand and effectively navigate social norms and networks.

The Collaborative for Academic, Social, and Emotional Learning (CASEL, 2012) defines SEL as "the process of acquiring the skills to recognize and manage emotions, develop caring and concern for others, make responsible decisions, establish positive relationships, and handle challenging situations effectively." According to CASEL social emotional learning consists of five core competencies self awareness, self management, social awareness, relationship skills and responsible decision making.

SEL is critical to developing competencies besides academic content knowledge that are necessary to succeed in school, college and in careers. SEL provide a foundation for better adjustment and academic performance as reflected in more positive social behaviors and peer relationships, fewer conduct problems, less emotional distress, improves the grades, improves caring and concern for others, establishes and maintain positive relationships, make responsible decisions, handle interpersonal situations effectively, increases empathy and improves emotional quotient in a student.

Pallegrino et al reported that although the primary mission of educational system has traditionally been perceived as promoting the development of academic skills, there is growing support and advocacy for the systemic inclusion of skills that may be considered non academic but are in fact key in supporting the overall growth of an adolescent or student.

Brackett et al states that social and emotional learning helps in the acquisition of these skills that plays a important key for the development of an adolescent. However, unfortunately, social and emotional learning is believed to be a "missing piece" in our educational system particularly in India more so in Assam.

To fill these important gaps in SEL initiatives, this study would aim to test the effectiveness of a SEL intervention in high school settings of Guwahati, Assam to reduce aggression and enhance empathy.

METHODOLOGY

Hypothesis:
The SEL intervention would contribute to the reduction of various indicators of aggression.

The SEL intervention would enhance the empathic abilities positively related to social competence (empathic concern and perspective taking), and reduce the abilities negatively associated with such competence (fantasy and personal distress).

OBJECTIVES:
1. To assess the various indicators of aggression prior to SEL intervention.
2. To assess the empathic abilities prior to SEL intervention.
3. To find out whether there exist a difference in pre intervention and post intervention ratings of aggression.
4. To find out whether there exist a difference in pre intervention and post intervention ratings of empathy.

Inclusion Criteria:
- Adolescents from class 8 to class 12 of both the sexes.
- Parents giving consent.

Exclusion Criteria:
- Adolescents having a serious physical illness.
- Adolescents undergoing treatment for any form of mental illness.
- Parents not giving consent.

Sample Size:
The pilot study was based on a sample of size eighty students collected from Srimanta Shankar Academy High School Guwahati, Assam.

Instruments:
Aggression:
The Aggression Questionnaire by Buss et al is a well-validated self-report technique for measuring aggression among adolescents. The physical and verbal aggression factors are composed of nine and five items. The anger factor composed of seven items. The hostility factor composed of eight items.

The Modified Overt Aggression Scale (MOAS) by Alderman et al and Yudofsky et al is a four-part behavior rating scale filled by parents regarding verbal aggression, aggression against property, measuring auto aggression, and concerning physical aggression.

Empathy:
The Interpersonal Reactivity Index by Davis et al measures empathy under a multidimensional perspective. The measure is composed of 28 items, two cognitive and two emotional scales. The two cognitive scales are perspective taking, which assesses the tendency to adopt others' point of views, and fantasy, which assesses the tendency to transport oneself imaginatively into fictitious characters and experience their emotions. The two emotional scales are empathic concern, which measures feelings of sympathy for others, and personal distress, which measures feelings of fear, apprehension and discomfort at witnessing the negative experiences of others.

Strong Teens:
A Social & Emotional Learning Curriculum by Merrell et al (*Strong Teens Program*) is a social-emotional learning program intended for use in schools to promote five cores areas of social and emotional competency including self-awareness, self-management, social awareness, relationship skills, and responsible decision making. *Strong Teens* is intended for use with students in grades nine through 12. The program consists of 12 intervention sessions.

1st session: About Strong Teens: Emotional Strength Training
An overview of the overall intervention program was presented, providing students with information regarding what they can expect over the course of the program

2nd and 3rd Session: Understanding your Emotions
Students learnt to identify different emotions and the physical feelings that occur with emotions and to distinguish feelings as being comfortable or uncomfortable. Students also learnt that thoughts and behaviours are linked to emotions, and by identifying thoughts and behaviours, one can better understand emotions and learn how to express oneself in a way that is helpful.

4th session: Understanding other people's emotions
In this session, students were introduced to the concept and practice of empathy.

5th session: Dealing with Anger
Students were taught to understand their anger through a multistep anger model and were taught anger management skills.

6th & 7th session: Clear Thinking
Students were taught strategies that are helpful in recognizing unhelpful or maladaptive thought patterns. Students were given techniques how to use evidence to proactively identify thinking traps and apply strategies to reframe unhelpful thoughts and attributions.

8th Session: Solving people Problems
Students were taught the use of problem solving model for managing day to day social conflicts.

9th session: Letting Go Of Stress
Students were taught a few relaxation techniques and ways of coping with stress.

10th session: Positive Living
Students were given strategies to incorporate positive habits to offset negative habits that affect health and emotion.

11th session: Creating Strong and Smart Goals
Students learnt the skill of goal setting and increasing positive activity as a means to a healthy life. Students were taught to set SMART goals (those that are specific, measurable, attainable, relevant and timely), develop plans for goal attainment learn strategies for monitoring their progress and persevering after setbacks.

12th session: Finishing Up!
This session provided the opportunity for students to review key points.

RESULTS AND OBSERVATIONS:
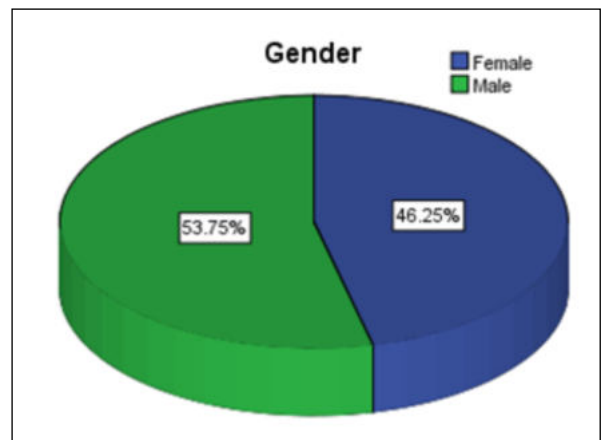
Figure 1. The pilot study was based on a sample of size eighty collected from SSA school out of which 37(46.3%) female and 43(53.8%) male. There were 20 students (25%) from each class viz. Class VIII, IX, X and Class XI.

Study Of Pre And Post Intervention Difference Ratings Of Aggression

Table 1 shows that physical aggression reduction was almost similar for male (10.28±3.44) and female (10.11±3.52) corresponding to aggregate reduction at 10.20±3.45. Reduction of verbal aggression of male (5.93±2.26) was little higher than female (5.35±2.75). In case of anger also, decrease of male anger (7.79±2.82) was higher than that of female (7.24±3.17). However hostility reduction in male (9.44±3.03) and female (8.62±3.75) was at par. All factors aggregate reduction of male (33.44±7.92) was higher than that of female (31.32±8.42).

Factor	Gender	Mean±SD		MD±SDD
		Pre Test	Post Test	
Factor 1 Physical Aggression	Female (n=37)	25.70±3.89	15.59±2.61	10.11±3.52
	Male (n=43)	25.7±4.20	15.42±2.8	10.28±3.44
	Total (n=80)	25.7±4.03	15.50±2.7	10.20±3.45

Factor 2 Verbal Aggression	Female (n=37)	13.27±2.80	7.92±1.34	5.35±2.75
	Male (n=43)	14.09±2.57	8.16±1.54	5.93±2.26
	Total (n=80)	13.71±2.69	8.05±1.45	5.66±2.50
Factor 3 Anger	Female (n=37)	18.78±3.71	11.54±2.36	7.24±3.17
	Male (n=43)	19.23±3.36	11.44±1.87	7.79±2.82
	Total (n=80)	19.03±3.51	11.49±2.10	7.54±2.98
Factor 4 Hostility	Female (n=37)	22.84±4.65	14.22±2.94	8.62±3.75
	Male (n=43)	22.84±3.88	13.4±2.65	9.44±3.03
	Total (n=80)	22.84±4.22	13.78±2.80	9.06±3.38
All Factors	Female (n=37)	80.59±9.19	49.27±6.57	31.32±8.42
	Male (n=43)	81.86±10.47	48.42±6.8	33.44±7.92
	Total (n=80)	81.28±9.85	48.81±6.66	32.46±8.17

Table 2: Factor Wise Average Reduction Of Aggression Score In Male Female And Aggregate.

It is evident from Table 2 that reduction of total weighted score of parents for their children was (3.13±4.02) out of which the reduction for female (3.54±4.8) was higher than that of male (2.77±3.23). The decline due to intervention in case of verbal aggression, parents score for their female child ((0.76±0.72)) was lower than that of male child (0.81±0.73). In case of aggression against property, decrease of score for female child (0.62±0.92) was higher than that of male child(0.58±0.73). Reduction of auto aggression of parents for female (0.41±0.86) was higher that of male child (0.23±0.61). The drop of physical aggression of parents for female child (0.08±0.28) was higher than that of male child (0.02±0.15).

Factor	Parents of	Mean±SD		MD±SDD
		Pre Test	Post Test	
Verbal Aggression	Female (n=37)	0.81±0.84	0.05±0.23	0.76±0.72
	Male (n=43)	0.98±0.71	0.16±0.37	0.81±0.73
	Total (n=80)	0.9±0.77	0.11±0.32	0.79±0.72
Aggression against Property	Female (n=37)	0.65±0.92	0.03±0.16	0.62±0.92
	Male (n=43)	0.6±0.76	0.02±0.15	0.58±0.73
	Total (n=80)	0.63±0.83	0.03±0.16	0.6±0.82
Autoaggression	Female (n=37)	0.41±0.86	0±0	0.41±0.86
	Male (n=43)	0.23±0.61	0±0	0.23±0.61
	Total (n=80)	0.31±0.74	0±0	0.31±0.74
Physical Aggression	Female (n=37)	0.08±0.28	0±0	0.08±0.28
	Male (n=43)	0.02±0.15	0±0	0.02±0.15
	Total (n=80)	0.05±0.22	0±0	0.05±0.22
Verbal Aggression x 1	Female (n=37)	0.81±0.84	0.05±0.23	0.76±0.72
	Male (n=43)	0.98±0.71	0.16±0.37	0.81±0.73
	Total (n=80)	0.9±0.77	0.11±0.32	0.79±0.72
Aggression against Property x 2	Female (n=37)	1.3±1.84	0.05±0.33	1.24±1.85
	Male (n=43)	1.21±1.52	0.05±0.3	1.16±1.46
	Total (n=80)	1.25±1.66	0.05±0.31	1.2±1.64
Autoaggression x 3	Female (n=37)	1.22±2.59	0±0	1.22±2.59
	Male (n=43)	0.70±1.83	0±0	0.7±1.83
	Total (n=80)	0.94±2.22	0±0	0.94±2.22
Physical Aggression x 4	Female (n=37)	0.32±1.11	0±0	0.32±1.11
	Male (n=43)	0.09±0.61	0±0	0.09±0.61
	Total (n=80)	0.2±0.88	0±0	0.2±0.88
Total Weighted Score	Female (n=37)	3.65±4.96	0.11±0.39	3.54±4.8
	Male (n=43)	2.98±3.43	0.21±0.56	2.77±3.23
	Total (n=80)	3.29±4.19	0.16±0.49	3.13±4.02

STUDY OF DIFFERENCE IN PRE AND POST INTERVENTION RATINGS OF EMPATHY

Average increase or decrease in empathic abilities (Mean ± SD) among male, female and their aggregate prior to SEL intervention in adolescents and post intervention was measured.

IRI Sl. NO	Areas	Mean±SD								
		Female (n=37)			Male (n=43)			Total(n=80)		
		Pre Test	Post Test	MD± SDD	Pre Test	Post Test	MD± SDD	Pre Test	Post Test	MD± SDD
1	FS 1	2.00± 1.20	2.54± 1.19	0.54± 1.61	1.60± 1.12	2.30± 0.96	0.70± 1.37	1.79± 1.66	2.41± 1.08	0.63± 1.49
2	EC 2	1.78± 0.95	2.68± 1.00	0.89± 1.24	1.98± 1.06	2.93± 0.91	0.95± 1.11	1.89± 1.01	2.81± 0.96	0.93± 1.17
3	PT (-) 3	2.3±1 .13	1.95± 0.91	0.35± 1.46	1.81± 1.26	1.88± 0.98	0.07± 1.8	2.04± 1.22	1.91± 0.94	0.13± 1.66
4	EC (-) 4	2.57± 1.04	1.62± 0.72	0.95± 1.03	2.72± 0.88	1.77± 0.81	0.95± 1.23	2.65± 0.96	1.7±0 .77	0.95± 1.14

5	FS 5	1.97± 1.24	2.65± 1.09	0.68± 1.20	2.19± 1.22	2.95± 0.92	0.77± 1.17	2.09± 1.22	2.81± 1.01	0.73± 1.18
6	PD 6	1.89± 1.2	2.73± 1.02	0.84± 1.3	2.3±1 .1	2.86± 0.97	0.56± 1.16	2.11± 1.16	2.8±0 .99	0.69± 1.23
7	FS (-) 7	1.86± 1.11	2.89± 0.88	1.03± 1.09	2.02± 1.01	2.93± 0.91	0.91± 1.17	1.95± 1.05	2.91± 0.89	0.96± 1.13
8	PT 8	2.03± 1.12	2.78± 0.98	0.76± 1.01	1.72± 1.1	2.86± 0.94	1.14± 1.04	1.86± 1.11	2.83± 0.95	0.96± 1.04
9	EC 9	2.05± 1.03	3.16± 0.87	1.11± 1.02	2.12± 1.03	3.02± 0.99	0.91± 0.92	2.09± 1.02	3.09± 0.93	1±0.9 7
10	PD 10	2.7±1 .18	1.68± 0.71	1.03± 1.24	2.67± 1.19	1.77± 0.72	0.91± 1.38	2.69± 1.18	1.73± 0.71	0.96± 1.31
11	PT 11	1.92± 1.19	2.78± 1	0.86± 1.32	1.86± 1.23	2.79± 1.04	0.93± 1.12	1.89± 1.2	2.79± 1.01	0.9±1 .21
12	FS(-) 12	2.05± 1.03	2.78± 0.92	0.73± 1.48	2.09± 1.11	2.23± 1.11	0.14± 1.67	2.08± 1.06	2.49± 1.06	0.41± 1.6
13	PD(-)13	2.78± 0.98	1.62± 0.64	1.16± 0.9	2.98± 0.91	1.72± 0.7	1.26± 0.95	2.89± 0.94	1.68± 0.67	1.21± 0.92
14	EC(-)14	1.73± 1.04	2.27± 0.99	0.54± 1.41	1.95± 1.05	2.4±1 .07	0.44± 1.37	1.85± 1.04	2.34± 1.03	0.49± 1.38
15	PT(-)15	2.59± 1.07	1.7±0 .62	0.89± 1.22	2.44± 1.08	1.81± 0.59	0.63± 1.22	2.51± 1.07	1.76± 0.6	0.75± 1.22
16	FS 16	1.92± 1.14	2.43± 1.01	0.51± 1.52	2.16± 1.04	2.77± 0.87	0.6±1 .24	2.05± 1.09	2.61± 0.95	0.56± 1.37
17	PD 17	2.35± 1.23	1.73± 0.65	0.62± 1.42	2.65± 1.04	1.81± 0.66	0.84± 1.04	2.51± 1.14	1.78± 0.66	0.74± 1.23
18	EC 18	2.08± 1.19	1.92± 0.86	0.16± 1.55	1.86± 1.34	1.88± 1.00	0.02± 1.49	1.96± 1.27	1.9±0 .94	0.06± 1.51
19	PD(-)19	2.03± 1.01	2.57± 0.93	0.54± 1.24	2.26± 0.86	2.6±0 .94	0.33± 1.3	2.15± 0.93	2.58± 0.93	0.43± 1.27
20	EC 20	2.11± 1.15	2.27± 1.04	0.16± 1.24	2.37± 1.25	2.42± 0.98	0.05± 1.38	2.25± 1.21	2.35± 1.01	0.10± 1.31
21	PT 21	2.43± 1.09	2.38± 1.11	0.05± 1.47	2.26± 1.14	2.3±0 .99	0.05± 1.34	2.34± 1.11	2.34± 1.04	0.001 ±1.4
22	EC 22	2.3±1 .27	2.16± 1.04	0.14± 1.49	2.65± 1.07	2.4±0 .95	0.26± 1.31	2.49± 1.17	2.29± 1	0.20± 1.39
23	FS 23	2±1.0 3	2.59± 0.96	0.59± 1.04	2.12± 0.91	2.58± 1.18	0.47± 0.83	2.06± 0.96	2.59± 1.08	0.53± 0.93
24	PD 24	1.81± 1.17	2.22± 0.82	0.41± 1.4	2.21± 1.32	2.56± 0.7	0.35± 1.56	2.03± 1.26	2.4±0 .77	0.38± 1.48
25	PT 25	2.65± 1.16	2.62± 0.95	0.03± 1.52	2.51± 1.24	2.67± 0.99	0.16± 1.6	2.58± 1.2	2.65± 0.97	0.07± 1.56
26	FS 26	1.68± 1.08	2.59± 1.12	0.92± 1.46	1.74± 1.11	2.67± 0.97	0.93± 0.99	1.71± 1.09	2.64± 1.03	0.93± 1.22
27	PD 27	2.59± 1.24	2±0.7 8	0.59± 1.54	2.67± 1.02	1.63± 0.69	1.05± 1.02	2.64± 1.12	1.8±0 .75	0.84± 1.3
28	PT 28	2.30± 1.15	2.32± 1.06	0.03± 1.67	2.19± 1.16	2.19± 1.03	0±1.4	2.24± 1.15	2.25± 1.04	0.01± 1.52

Table 4 : Sub Area Wise Empathy

Sub Areas	Pre Score	Post Score
EC = Empathic concern scale	2.17±1.13	2.35±1.04
FS = Fantasy scale	1.96±1.10	2.64±1.02
PD = Personal distress scale	2.43±1.15	2.11±0.9
PT = Perspective-taking scale	2.21±1.18	2.36±1.02

DISCUSSION

The study considered Social-emotional learning (SEL) intervention as a tool of acquiring the skills to recognize and manage emotions. It was found to have significant difference in pre intervention and post intervention ratings of aggression for adolescents. Most of the aggression and anger came down post SEL intervention. It also assessed empathic abilities by Interpersonal Reactivity Index among adolescents prior to SEL intervention. It was found to have significant difference in pre and post intervention ratings of empathy. The significant difference in pre and post intervention ratings of aggression as well as empathy led to conclude the efficacy and effectiveness of the SEL intervention. In other words the hypothesis considered in the study were statistically established with a conclusion that SEL intervention significantly contributed in reduction of various indicators of aggression, including instrumental, emotional and cognitive components of aggression for students. The intervention also significantly enhanced empathic abilities positively related to social competence (empathic concern perspective taking) and reduced the ability negatively associated with such competence (personal

distress). However the fantasy score which was hypothesized to decrease after the intervention did not decrease in this pilot study of 80 samples. The results found in this study have similar findings to various other SEL intervention studies done globally. Study done by Celene et al reports that social emotional learning reduces aggressive behaviors in school students and promotes positive behavior. Meta analysis done by Rebecca et al reported that School-based SEL represents an important set of approaches to promote the positive academic growth, behavior, and development of youth. A meta analysis was done by Merrel et al on SEL studies that used SEL as universal interventions in schools with students in kindergarten through high school. Findings of this study support the use of SEL interventions in schools to promote healthy development. Castro Olivo et al, Harlacher et al, Gueldner et al, Feuerborn et al, Isava et al , Marchant et al, Nakayama et al   reported that the Strong Kids curriculum program for SEL has consistently been found effective at increasing students' knowledge of healthy social-emotional behavior.

FUTURE DIRECTION FOR MAIN STUDY

Since the pilot study was confined to only eighty subjects from the intervention group where Social-emotional learning (SEL) was facilitated, the control group data is yet to be processed. With the current outcome of the study made on the basis of this eighty sample of the intervention group, it is hope that it would be feasible to establish the objectives of the study and that the final outcome would explore many more psychological correlatives hidden in the data set.

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