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PROMOTING POSITIVE EMOTIONS AMONG ADOLESCENTS THROUGH SCHOOL BASED GRATITUDE INTERVENTIONS: A PRELIMINARY STUDY

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Abstract

*Positive and negative emotions are key contributors to sustain health and well-being of an individual. A young person's ability to recognize, regulate, and express emotions appropriately and effectively plays a crucial role in determining his or her ability to achieve personal or academic goals, as well as to cope with environmental and social challenges. These emotions can be inculcated through positive psychology interventions like gratitude interventions. However cross cultural validation is required before application in different settings. A total of 60 adolescents randomly assigned in experimental group (31) and control group (29) with mean age of 16 years studying in different public schools of Rawalpindi, Pakistan served in this intervention based research. A modified version of three gratitude interventions (count your blessings, writing gratitude letters & LKM) was delivered for four weeks. Pre & post assessment were carried out with the help of Urdu version of GQ-6, GAC & mDES. One way ANCOVA shows a significant effect of modified gratitude interventions on positive emotions after controlling baseline assessment, $F(2, 57) = 10.98, p = .002, \text{partial } \eta^2 = .16$. Furthermore the regression analysis showed that State ($\beta = .34^{**}$) and Trait ($\beta = .337^{**}$) Gratitude are significantly positive predictors of positive emotions.*

Keywords: *Gratitude interventions, positive emotions, Pakistani adolescents, emotional wellbeing, psychological distress*

INTRODUCTION

In psychology negative emotions like anger, sadness, disgust and fear have been discussed extensively. There is sufficient literature on various aspects of these emotions in forms of neuropsychological mechanism, effects on wellbeing, development trajectory of negative emotions and management (Curci, Lanciano, Soleti, & Rimé, 2013; Ellsworth & Scherer, 2003; Singh & Jha, 2008). On the other hand, research on positive emotions like gratitude, love, amusement and serenity is limited in explaining the mechanism and enhancement. At the turn of 21st century, different theories have postulated the mechanism of positive emotions in connection to wellbeing model. One of the significant theories is *Broaden and Build Theory* by Barbara Fredrickson (2001). This theory is based upon a number of researches suggested that experience of positive emotions boost resources which in turn expand the cognitive process involving the problem solving, enhanced perceptual ability and innovative ideas (Bigdeli & Rahimi, 2014; Fredrickson & Branigan 2001; Fredrickson 2004; Park, Knörzer, Plass, & Brunken, 2015)

This theory advocates that experiencing three (03) positive emotions in relation to one negative emotion each day is a sign of good mental health in long-term and is known as *Positivity Ratio*. Although experiencing a high positivity ratio is important to every individual across the life cycle, it

is especially important for adolescents who may experience age-related difficulties in physical, psychological and social spheres of life. Some researchers suggested that positive emotions increase the capability of students for learning by increasing motivation, engagement, achievement and interest (Ouweneel, LeBlance & Schufeli, 2011; Valiente, Swanson, & Eisenberg, 2012; Zhang & Zhang, 2013). It is therefore important to study this phenomenon among students especially in context with their social environment and cultural backgrounds. In many Asian cultures, people who are emotionally and personally reserved are valued more and it is considered a sign of personal strength and keep social harmony (Kim et al., 2001; Matsmoto et al., 2008). It is therefore important to study whether or not the positive emotional experiences can be enhanced through certain psychological interventions. The previous literature is limited in assessing the positive emotions through positive psychology interventions among students (Layous, et.al. 2017; Watkins, et. al. 2004). Therefore the present research intends to address this gap in terms of population and combination of intervention.

Rationale

The present research intends to see the effectiveness of gratitude interventions in enhancing positive emotions and decreasing the negative ones in the group of Pakistani adolescents. Gratitude Interventions can be linked to *Broaden and Build Theory*. These interventions make people feel good about themselves, enhance their ability to help others, and generate positive reactions (Hutcherson, Seppala, & Gross, 2008; Lyubomirsky, King, & Diener, 2005). Gratitude operates both at the cognitive and emotional aspects. It is defined as the feeling and behavior to identify and return with grateful emotion to the actions of other's goodwill in the positive experiences and outcomes that one obtains through interaction. The emotional component is labeled as State gratitude and other is named as Trait gratitude. Some gratitude interventions like Count your blessings focus on self-related experiences while others like Gratitude letters and visits target the social interaction and trait gratitude. In present study both aspects of gratitude are catered by selecting three interventions including count your blessings, gratitude letter and loving kindness meditation.

Such interventions can be very helpful in developing countries like Pakistan where the infrastructure of mental health services is poor. In public schools no psychologist or counselor is appointed for handling student's mental and emotional health issues. Therefore it becomes important to focus on the preventive health care system so this situation can be managed effectively. This can be achieved through collaborative work of health and education sectors. The school environment has good potential for service provision related to stress management, mental health awareness and improving the wellbeing of the students.

Research Objectives

1. To assess the role of gratitude in increasing positive emotions among Pakistani Adolescents.
2. To assess the differences in emotional wellbeing of Experimental and Control groups after receiving gratitude interventions.

METHODS

Participants

A total of 60 high school students took part in this experimental research. The inclusion criteria were age (15-18), absence of any physical and mental illness, studying in same school for at least six months, and the ability to understand & comprehend Urdu language. A priori analysis using G-

power Software was used to determine sample size (Faul et al., 2007). Participants were randomly assigned into control and experimental groups. Initially 102 students were contacted, which later decreased to 60 after excluding cases on the basis of age, absence for more than one week during intervention phase, failure to get parental consent, incomplete questionnaires and activities. Pre and post tests were carried out with a difference of four weeks. Both groups were assessed at same time but in different classrooms. This process is explained in Annexure B

All of the participants were students of 10th grade from two government (gender segregated) schools of Rawalpindi city, Pakistan. Gratitude interventions were carried out in group setting (18-20 students per group) during the school timing & premises. Mean age of respondents was 16 years with 31 in experimental group and 29 in control group. There were 55% of girls and 45% of boys in both groups with 98% Muslim students and being middle child (45%). For family related variables all except one participant were living with both parents, high school completion was the most frequently reported education category for both parents. In terms of employment, 94% of mothers were homemakers and 96% of fathers were employed in different blue collar jobs and small business.

Instruments

This research is part of large study which analyzed effectiveness of gratitude interventions on emotional wellbeing, academic stress and social interaction. In this article one aspect of the research has been discussed. The instruments stated in the current article are demographic sheet, Urdu versions of modified Differential Emotions Scale, Gratitude Adjective Checklist and Gratitude Questionnaire-6. The details of instruments are as follows.

a. Demographic Sheet

A demographic sheet prepared in Urdu language and consisted of socio demographic variables including participant's name (optional), age, gender, religion, school name, what grade is he/she studying in, mother tongue, ethnicity, number of siblings, birth order, family system, mother's education, father's education, whether his/her father and mother are alive, and parent's occupation.

b. Modified Differential Emotions Scale, (mDES)

Modified Differential Emotions Scale is a reliable & valid instrument to assess positive and negative emotions separately. It was modified by Barbara Fredrickson in 2009. This scale includes a wide variety of positive emotions like gratitude, love, awe which is lacking in the other measures such as PANAS by Watson et.al. (1999). It is a twenty (20) items instrument with Five (05) points likert scoring from "Not at all" to "Extremely". Overall positive and negative emotions ratio can also be created by computing the mean of 10 positive emotions divided by mean of 10 negative emotions. The scale is suitable to be used with adolescents. The Urdu version has been used in present research which was previously translated & adapted by Sahar & Muzaffar (2017) and found to be suitable for Pakistani students. The cronbach alpha was .73 for negative emotions and .70 for positive emotions in current research.

c. Gratitude Adjectives Checklist (GAC)

This brief, reliable and valid instrument measures State gratitude efficiently (McCullough et.al. 2002). The three items gratefulness, thankfulness, and appreciativeness are scored on five points scoring from Not at all (01) to Extremely (05). This one-dimensional measure considers the affect component of gratitude, which is defined as the emotional experience of the individual (Froh, Sefick, & Emmons, 2008). In present research, this instrument has been translated into Urdu after securing permission from the author and followed World Health Organization guidelines for

translation and adaptation (WHO, 2016). The reliability value was found to be satisfactory for this translation ($\alpha = .74$).

d. Gratitude Questionnaire – (GQ-6)

Gratitude Questionnaire-6 is the most commonly used reliable and valid instrument for assessing gratitude as personal characteristic and grateful disposition (McCullough et al., 2002). It is defined as feeling and behavior to identify and return with grateful emotion to the actions of other's goodwill in the positive experiences and outcomes that one obtains. The questionnaire has seven points scoring from Strongly Agree (07) to Strongly Disagree (01), in which items 03 & 06 are reverse scored. The scale has been translated and validated into Urdu in current project.

e. Gratitude Interventions Protocol

For the present research, three gratitude interventions including Count your blessings (Sheldon & Lyubomirsky, 2006), Gratitude Letters (Seligman, et.al. 2005) and Loving Kindness Meditation (Baer, 2003) were modified and adapted for school related experiences. The self-reflective and interactive components of interventions are catered through these exercises. Furthermore the past researches with adolescents and young adults have applied these activities separately and found to be useful (Froh et al., 2009; Sheldon & Lyubomirsky, 2006).

In first exercise participants were instructed to identify & write about three good things related to school life, friends, studies and teachers on daily basis for next three weeks. They were encouraged to complete this record before going to bed or early in the morning after school assembly. Researcher contacted them for four times per week & collected this record for each individual. By the end of week two, reflection upon this particular exercise was obtained through some open ended questions. The second exercise was writing gratitude letter, in which participants were asked to write a gratitude letter to a teacher, mentor or coach who has played significant role in his/her life. This letter was later typed by the researcher with omitting personal details of student and handed over to that particular teacher indirectly. This was done to avoid any biasness for their future interaction. After week three reflections on this exercise was collected. The third exercise was LKM in which relaxation and imagery was used. Researcher herself conducted this. The instructions focused on thinking about a close friend/ classmate/teacher during LKM. By end of activity the reflection was conducted. A total of nine sessions were carried out with 1-4 exercises in different sessions. The interrater reliability has been established for finalization of these activities with the help of two psychologists who were serving as the academicians and clinicians. Further details about this modification can be provided later based upon request.

Procedure

In the first phase of this research, two scales, GQ-6 and GAC were translated. After that experiment has been conducted with students from two public schools of Rawalpindi city, Pakistan. Participants were randomly assigned into control and experimental groups. The process has been explained in the following figure. The gratitude interventions (stated above) were carried out for four weeks with experimental group. After that debriefing was carried out and interventions were repeated with control group so compensatory rivalry would not occur. At the end of research, appreciation certificates were presented to the participants. Ethical approval, administrative approval, parental consent and participant assent were secured before conducting the experiment (Ref: UM. TNC2/UMREC-621).

Table 2.1

Participants Allocation into Experimental & Control Groups

	R	O₁	X	O₂
60 Adolescents	Random assignment of 31 students in Experimental group	Pre test Gratitude & Emotional Experiences	Treatment Combined Gratitude interventions including Count your blessings, Gratitude Letter and Loving kindness meditation	Post test Gratitude & Emotional Experiences
	Random assignment of 29 students in Control group	Pre test Gratitude & Emotional Experiences	No treatment	Post test Gratitude & Emotional Experiences

Results

In order to assess the role of gratitude interventions in emotional well-being, statistical analysis through SPSS (version 22) has been carried out. Cross tabulation, and regression analysis have been carried out.

Table 3.1

Cross Tabulation for Level of Positive Emotions (N=60)

		<i>Experimental Group (n=31)</i>		<i>Control Group (n=29)</i>		<i>X²(p)</i>
		<i>f(%)</i>		<i>f(%)</i>		
		<i>Pretest</i>	<i>Posttest</i>	<i>Pretest</i>	<i>Posttest</i>	
<i>Level of Positive Emotions</i>	Low ($23 \leq$)	13(41.93)	08(25.81)	13(44.82)	18(62.07)	0.60(.74), 9.33(.01)
	Medium (24-25)	02(6.45)	04(12.90)	04(13.79)	04(13.79)	
	High (>25)	14(45.16)	19(61.29)	14(48.27)	07(24.14)	

Based on Galanakis (2016) validation study

The table above represents the frequency & percentage values for positive emotions in experimental and control groups at pretest and posttest levels. The results suggest decrease in the first category of positive emotions for experimental group from time one(42%) to time two (26%), whereas for control group an increase has been observed for this particular category ($T_1=45\%$ - $T_2=62\%$). Majority of participants from experimental group (61.29%) reported high level of positive emotional experiences in comparison of control group (24.14%). It is also important to note that in

the pre-test the number of participants experiencing high level of positive emotions were equal but it changed in the post-test. The value of chi-square for posttest is also significant in comparison to pretest where both groups statistically did not differ. This also signifies the importance of random selection and use of gratitude interventions.

Table 3.2

Pretest & Posttest comparison for Positive Emotions (N=60)

Positive Emotions	Test	Experimental		Control	
		Mean	SD	Mean	SD
<i>Amusement</i>	Pretest	1.86	1.51	2.24	1.62
	Posttest	2.53	1.43	2.76	1.24
Awe	Pretest	1.33	1.35	1.41	1.50
	Posttest	1.33	1.05	1.27	1.41
Contentment/ Serenity	Pretest	2.57	1.36	2.35	1.53
	Posttest	2.63	1.30	2.49	1.54
Happiness/Joy	Pretest	2.71	1.29	2.43	1.54
	Posttest	2.49	1.24	2.50	1.24
Gratitude	Pretest	3.02	1.93	2.67	1.51
	Posttest	2.88	1.21	2.63	1.44
Hope	Pretest	2.53	1.38	2.53	1.50
	Posttest	2.45	1.32	2.27	1.37
Inspiration	Pretest	2.98	1.12	2.16	1.36
	Posttest	2.55	1.22	2.47	1.26
Interest	Pretest	2.69	1.36	2.14	1.44
	Posttest	2.47	1.22	2.04	1.60
Love	Pretest	3.00	1.36	2.65	1.48
	Posttest	2.76	1.24	2.69	1.44
Pride	Pretest	2.69	1.35	2.65	1.21
	Posttest	2.86	1.02	2.47	1.26

The mean scores for majority of positive emotions are above 2.5 indicating presence of more positive emotional experiences by the adolescents. For experimental group the mean value increased for amusement, serenity and pride from pretest to posttest (1.86-2.53, 2.57-2.63, & 2.69-2.86). Amusement is linked to social bond, thus by practicing gratitude interventions like writing a gratitude letter and LKM strengthen this resource and the social bond as a resource strengthened.

Table 3.3

Pretest and Posttest Comparison for Negative Emotions (N=60)

Negative Emotions	Test	Experimental	Control
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		<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
<i>Anger</i>	Pretest	1.51	1.51	2.08	1.44
	Posttest	1.61	1.54	1.61	1.39
<i>Shame</i>	Pretest	0.98	1.33	0.86	1.44
	Posttest	0.65	1.09	0.90	1.30
<i>Fear</i>	Pretest	1.02	1.51	0.98	1.30
	Posttest	0.73	1.04	1.37	1.57
<i>Disgust</i>	Pretest	1.20	1.23	1.31	1.33
	Posttest	1.08	1.28	1.20	1.31
<i>Embarrassment</i>	Pretest	0.69	1.07	0.96	1.26
	Posttest	0.80	1.20	0.76	1.23
<i>Guilt</i>	Pretest	0.69	1.03	1.20	1.55
	Posttest	0.76	1.05	0.96	1.16
<i>Sadness</i>	Pretest	1.65	1.47	1.69	1.54
	Posttest	1.45	1.42	1.65	1.48
<i>Scornful</i>	Pretest	0.86	1.31	1.27	1.63
	Posttest	0.43	0.78	0.86	1.11
<i>Hate</i>	Pretest	0.92	1.29	0.76	1.05
	Posttest	0.98	1.36	0.98	1.32
<i>Stress</i>	Pretest	1.37	1.33	1.59	1.60
	Posttest	1.10	1.27	1.78	1.42

Table 3.3 showed that *Sadness* has the highest mean value in comparison to other emotions ($T_1=1.69$, $T_2= 1.47$) for experimental group and anger for control group ($T_1=2.08$, $T_2= 1.61$). For scores of *Stress*, it is interesting to note that scores from pretest decreased in posttest whereas the Stress scores for control group increased at second level.

Table 3.4

Linear Regression Analysis of Gratitude predicting Positive Emotions (N=60)

Variables	B	S.E	β	95%CI
State Gratitude	.93*	.44	.344	[0.02 – 1.83]
Trait Gratitude	.44*	.21	.337	[-.002 – 0.879]
R ²	.26			
F	4.94**			
ΔR^2	.26			
ΔF	4.93			

** $p < 0.01$, * $p < 0.05$

The values in the above table show that both state and trait gratitude are contributing a significant change in the outcome variable (positive emotions). This is demonstrated by the value of R^2 which is .26 which means that gratitude can account for 26% of variation in positive emotions. This means that 74% of the variation in positive emotions cannot be explained by gratitude alone. F value is 4.94 & significant at $p < .01$ therefore it can be concluded that this regression model results in significantly better prediction of positive emotions. State Gratitude ($\beta = .34$, $p < 0.01$) and Trait Gratitude ($\beta = .337$, $p < 0.01$) are significantly positive predictors of positive emotions; which means that state gratitude is causing 34% change and Trait Gratitude is causing 33% change in positive emotions. In order to control the effect of pretest, ANCOVA by controlling pretest scores was also conducted.

A one-way ANCOVA was carried out to see statistical significant differences between experimental and control groups positive emotions at posttest level after controlling scores on pretest. Table 5 shows a significant effect of modified gratitude interventions on positive emotions after controlling pretest scores, $F(2, 57) = 10.98$, $p = .002$. The effect size is between medium to large (partial $\eta^2 = .16$). These results suggest significant main effect of gratitude interventions on positive emotions.

Table 3.5

Unadjusted and Covariate Adjusted Descriptive Statistics for Positive Emotions

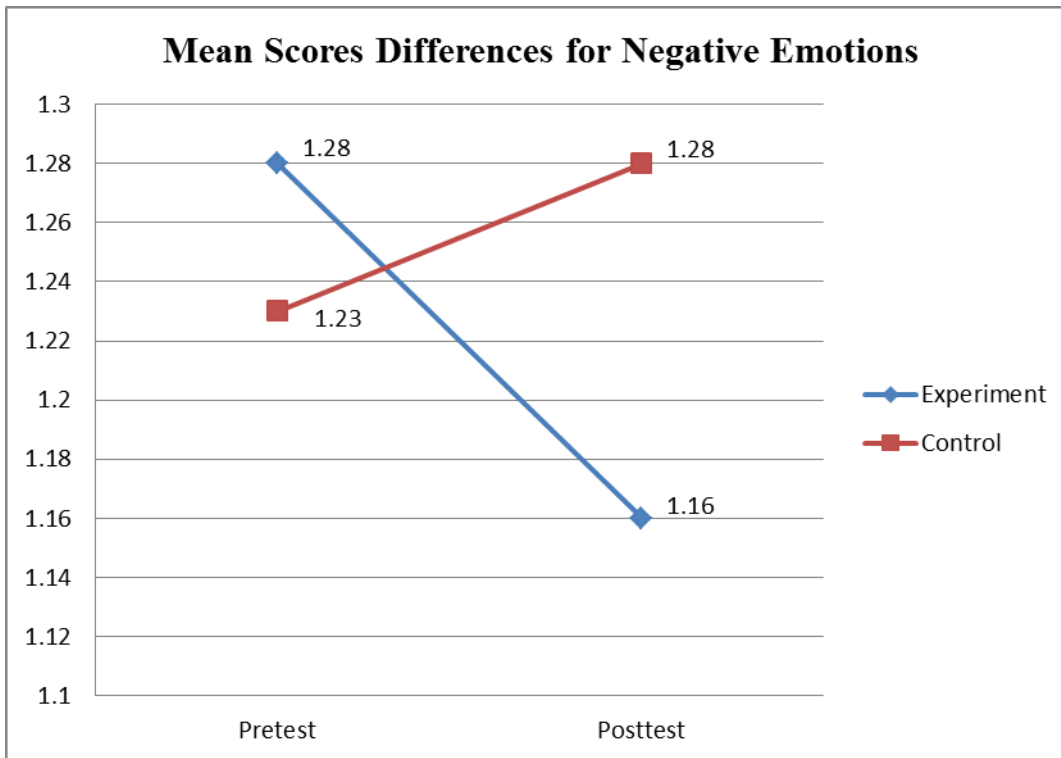
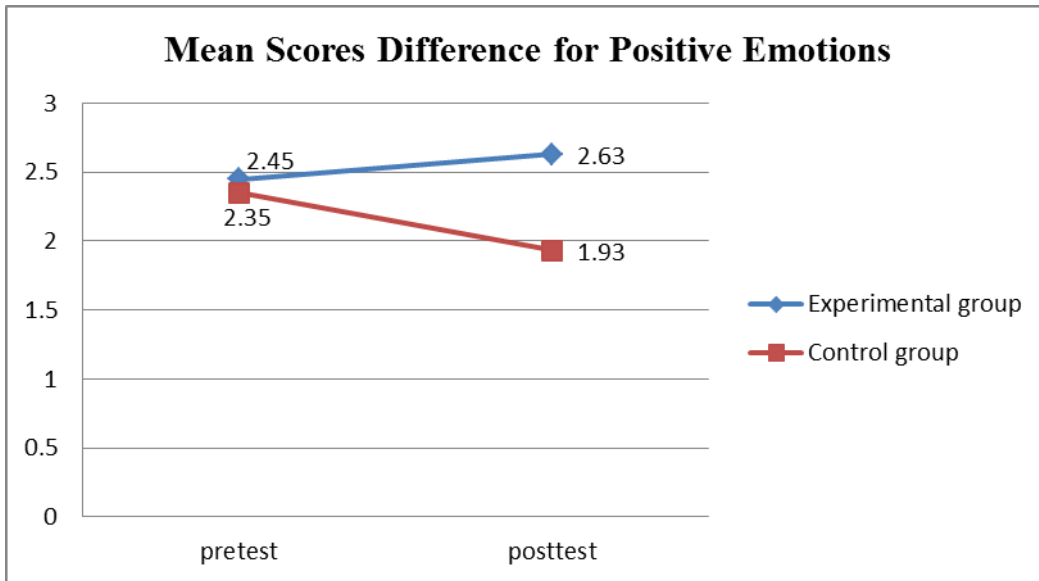
Treatment	Before Treatment		After Treatment (Unadjusted)		After Treatment (Adjusted)	
	Mean	SE mean	Mean	SE mean	Mean	SE mean
Experimental (n=31)	24.51	1.00	26.32	1.01	25.79	1.23
Control (n=29)	23.52	1.34	19.31	1.64	19.88	1.27

Table 3.6

Analysis of Covariance for Positive Emotions for Treatment by Pretreatment Positive Emotions as Covariate

Source	SS	df	MS	F	p	η^2
Positive Emotions before treatment (Covariate)	681.67	1	681.67	14.68	.000	.21
Treatment	509.63	1	506.63	10.98	.002	.16
Error	2645.31	57	46.41			

R-Squared = .35 (Adjusted R Square = .33)



The above figures present the mean scores differences in experimental and control groups at pretest and posttest levels. For experimental group there is significant increase for positive emotions and decrease in negative emotions, whereas for control group the results are reverse. The positive emotional experiences have decrease from pretest to posttest and negative emotional experiences have increased. This signifies the importance of gratitude interventions in increasing the well-being of the individual.

Discussion

The present research has been carried out to see the impact of gratitude interventions on emotional well-being of high school students. Through the experimental research, it was found that gratitude interventions are effective in reducing negative emotions and enhancing positive ones among 60

adolescents from Rawalpindi city. The demographic characteristics show that majority of participants were middle child with 4-6 siblings (48%). In terms of parental education and employment status, difference between mothers and fathers were observed. Ninety five percent of mothers were housewives and 60% have either not received education or just up to primary level. These demographic characteristics are in accordance to country profile (Pakistan Bureau of Statistics, 2018).

The first table presents the cross tabulation values for positive emotions. Significant change has been observed at posttest, thus reporting differences in experimental and control groups. These results can be supported by previous researches (Fredrickson, 2013; Lambert, et.al. 2012; Lyubomirsky & Layous, 2013). This has further been supported by ANCOVA results which showed increase in positive emotions for experimental group (Table 3.5). It is promising for developing country like Pakistan. Gratitude interventions like writing gratitude letter, keeping gratitude journal and grateful meditation can be helpful in improving the emotional wellbeing of the individual, since they focus on social, cognitive and emotional domains of life. The Broaden and Build theory sums up this interaction in a good way by stating that the experience of positive emotions leads to resource building and interconnectedness. These resources later expand cognitive processes especially problem solving. Once the individual learns to handle his/her problems, he/she feels happier, joyful, grateful, and contribute to wellbeing of individual. The three higher reported emotions were gratitude, love and happiness.

Table 3.4 presents the results of regression analysis of state and trait gratitude for positive emotional experiences. The model fit for gratitude suggesting 26% change in positive emotions. Both the state and trait gratitude increased by gratitude interventions, which later contribute to the positive emotional experiences of the individual. Some previous studies have also suggested significance of gratitude in humility (Kruse, et.al.2014), life satisfaction (Lambert, 2009) and happiness (Watkins, Woodward, Stone, & Kolts, 2003) as predictive variable. The present research not only assessed the role of gratitude as covariate but also measured influence of gratitude activities on emotional experiences. The figure one shows mean scores differences in positive emotions and figure two represents negative emotions differences. Decreased mean scores of negative emotions reflect that participants in experimental group benefited from the interventions. It is also interesting to note that negative emotions increased for control group, although both groups were similar at pretest level. Therefore this research signifies the importance of using positive psychology interventions for high school students.

Conclusion

In conclusion, this research signifies the use of gratitude interventions for reducing negative emotions and enhancing well-being. Gratitude works on cognitive, emotional and social aspects of well-being. Introducing these interventions at early stage of life helps in resource building, social connectedness and boosting the cognitive experiences. This notion can be connected with the *Upward Spiral* of Broaden and Build theory which suggest that exercising such practices (gratitude interventions) enhance resources (social connectedness) which later expand cognitive processes (problem solving skills). The other important contributions of this research are in terms of sample selection (data from developing country) and modification in gratitude interventions (school based interventions).

Limitations and Suggestions

The limitations of present research include small sample size, no follow ups and data collection from two schools only. For future, longitudinal research, inclusion of personality characteristics and use of gratitude interventions in mixed groups of teachers, parents and students are suggested.

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Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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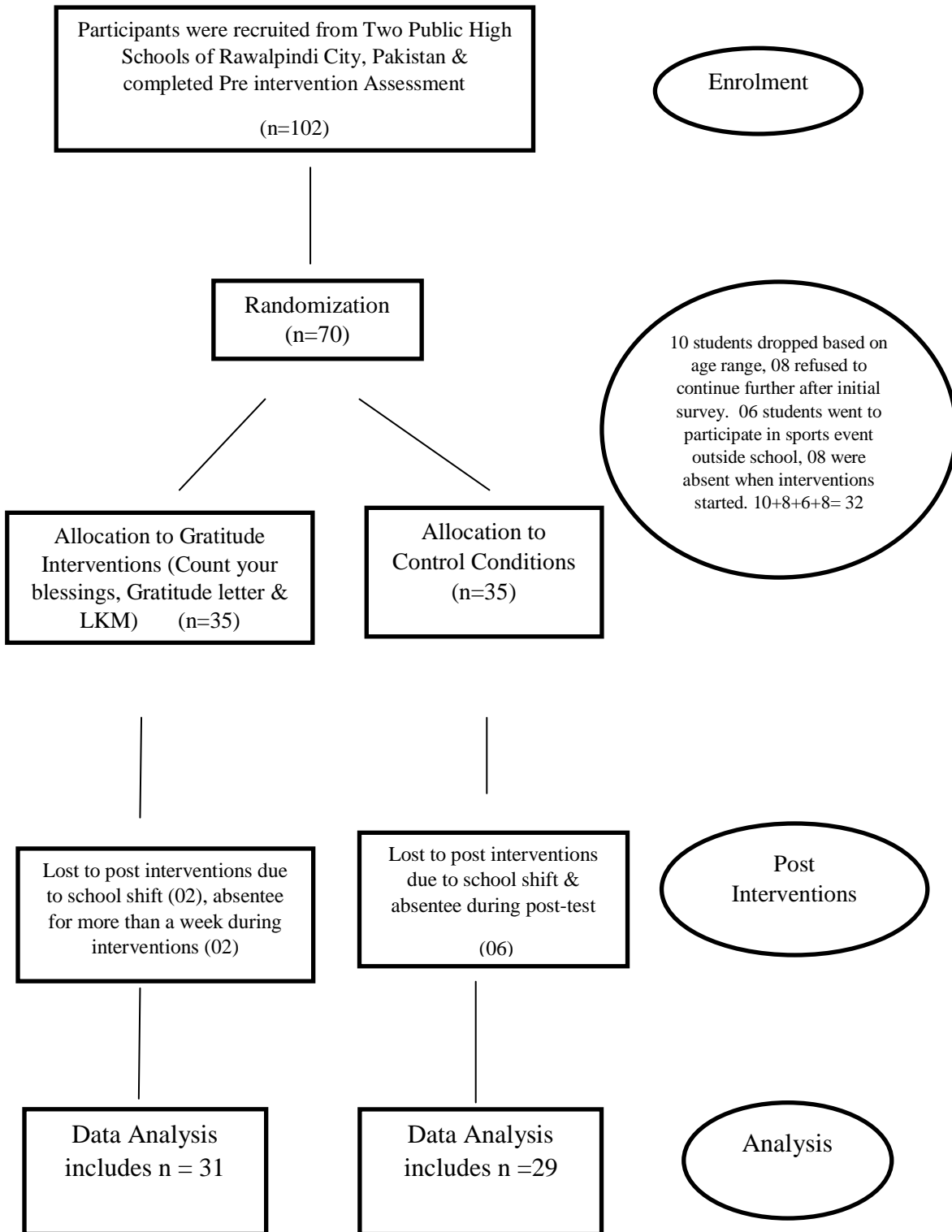
The current research is carried out as part of PhD Dissertation and is self-funded.

Annexure A

Sr. No.	Variables	Categories	Experimental Group(n=31) Frequency (%)	Control Group (n=29) Frequency (%)	Mean ±SD	$\chi^2 / F(p)$
1	AGE	15 years	09(29)	07(24.1)	16±0.86 16.17± 1.00	1.22(.88)
		16 years	15(48.4)	14(48.3)		
		17 years	05(16.1)	05(17.2)		
		18 years	02(6.5)	03(10.3)		
2	GENDER	Boys	13(41.9)	14(48.3)		.24(.62)
		Girls	18(58.1)	15(51.7)		
3	EDUCATION GRADE	10 th	31(100)	29(100)		n.a
4	RELIGION	Muslim	30(96.8)	28(96.6)		.002(.96)
		Non-Muslim	01(3.2)	01(3.4)		
5	NUMBER OF SIBLINGS	1-3	09(29.0)	11(37.9)		2.28(.52)
		4-6	15(48.4)	14(48.3)		
		7-9	05(16.1)	04(13.8)		
		> 9	02(6.5)	00(00)		
6	BIRTH ORDER	Eldest	06(19.4)	12(41.4)		3.94(.14)
		Middle	15(48.4)	12(41.4)		
		youngest	10(32.3)	05(17.2)		
7	MOTHERS'	No education	10(32.3)	06(20.7)		2.94(.40)

	EDUCATION		Up to grade 5	06(19.4)	06(20.7)	
			High school	07(22.6)	12(41.4)	
			Above high school	08(25.8)	05(17.2)	
8	FATHERS' EDUCATION		No education	09(29.0)	08(27.6)	.61(.89)
			Up to grade 5	04(12.9)	05(17.2)	
			High school	12(38.7)	09(31.0)	
			Above high school	06(19.4)	07(24.1)	
9	LIVING PARENTS	WITH	Both Parents	31(100)	29(100)	n.a
10	BOTH ALIVE	PARENTS	Yes	31 (100)	29(100)	n.a
			No	00(00)	00(00)	
11	MOTHER STATUS	WORK	Housewife	30(96.8)	27(93.1)	.42(.51)
			working	01(3.2)	02(6.9)	
12	FATHER STATUS	WORK	Working	30(96.8)	29(100)	.95(.33)
			Not working	01(3.2)	00(00)	
13	ETHNICITY		Punjabi	03(9.7)	05(17.2)	1.46(.48)
			Pathan	06(19.4)	03(10.3)	
			Others	22(71.0)	21(72.4)	
14	MOTHER TONGUE		Urdu	17(54.8)	16(55.2)	12.75(.013)
			Punjabi	03(9.7)	11(37.9)	
			Pashto	05(16.1)	00(00)	
			Kashmiri	03(9.7)	00(00)	
			Others	03(9.7)	02(6.9)	

Appendix B: Procedure of Data Collection



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