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Impact of Gratitude and Kindness on Self- Esteem, Subjective Well-Being and Family Relationships among University Students

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ABSTRACT

Aim of the Study: The aim of the present study was to explore the impact of gratitude and kindness-based interventions on self-esteem, subjective well-being and family relations among university students.

Methodology: It was a within and between-group experimental study. Positive Affect and Negative Affect Schedule (PANAS) (Watson, Clark & Tellegen, 1988) was used to measure subjective well-being. Rosenberg Self-esteem Scale (Rosenberg, 1965; Rizwan, Aftab, Shah, and Dharwarwala, 2012) was used to measure self-esteem and family relationship was measured by using Family System Apgar scale (Smilkstein, 1978). The sample consisted of university students (*N*=88) of the age range (18-27). Participants were divided into three groups i.e., experimental group I - gratitude group (*n*=27), experimental group II-kindness group (*n*=33) and control group (*n*=28). This study was carried out in three phases.

Findings: Findings revealed that for experimental group II family relation improved and negative affect decreased after conducting kindness-based meditation, while no change was observed in the control group.

Conclusion: This study explored how positive psychology-based interventions work in collectivistic culture. Moreover, this research has implications for therapists and psychologists working with young people.

Keywords: Positive Psychology based Interventions (PPIs), Gratitude, Kindness, Self Esteem.

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Introduction

Initial research in psychology focused on human deficiencies and disorders, but positive psychology introduced a more constructive approach to explore human nature. Positive psychology studies positive emotions and methods to elevate the (Compton & Hoffman, 2019). Positive psychology-based interventions (PPIs) have recently been used to enhance positive emotions among the normal population. Moreover, they are used in clinical settings as an additional therapeutic intervention. In these interventions individuals are trained to instill positive virtues and emotions to counter already existing negative energy emotions and

affect. Positive psychology-based interventions have an added advantage over other therapies, it can easily be performed unattended by the individual after proper guidance and training (Moskowitz et al., 2020; Donaldson et al., 2019). In certain PPIs, only one emotion is targeted for instance in kindness-based intervention, only kindness would be induced among individuals. There are various models of PPIs as well, some are designed to target the individual population others are carried out in group settings, some are self-guided and others are done via the internet. Positive emotions in PPIs are defined as subjective feelings that are positive in nature (Moskowitz et al., 2020; Donaldson et al., 2019).

In this study, positive psychology-based interventions related to gratitude and kindness were administered on university students and their impact on self-esteem, subjective well-being and family relations was studied.

Gratitude, Positive Emotions and Subjective Well-Being

Gratitude is categorized as an attitude, a moral virtue, a dispositional trait and a coping response. It is other-directed behavior, a person is either grateful to a person or any supernatural being such as God, the cosmos, etc. It is a feeling which arises when one realizes that any outcome in one's life is not earned but bestowed to a person by the action of any other being.

Gratitude expresses itself as a state and a trait depending on circumstances. When it comes to gratitude as a state it could easily be induced and manipulated. Hence, most experimental studies explore state-based gratitude and its effect. There are studies that also explore trait-based gratitude. For instance, study by Yang et al. (2020) explored the relationship between trait-based gratitude and subjective well-being. Findings indicated that there is a predictive relationship between trait-based gratitude and life satisfaction but no relation with negative affect was found.

Previous research indicated people belonging to collectivistic and individualistic culture manifest and understand gratitude differently. Goals and norms in individualistic cultures are more supportive of self-expression, self-improvement, and the pursuit of happiness. While collectivities cultures are different, what others think of you matters more. Gratitude-based interventions have yielded results across different population age groups and cultures (Unanue et al., 2019).

The scope of gratitude-based interventions is so wide that they are being used in almost all settings. For instance, Kerr et al. (2014) did an experimental study to check the impact of the positive psychology-based intervention on the clinical sample. Participants were randomly assigned to four groups. Participants in the gratitude-based group were told to list down things they are grateful for. Participants in the kindness-based intervention were told to list down acts of kindness they performed during that time period. Results showed an overall reduction in anxiety and improvement in life satisfaction after inducing kindness and gratitude among people.

Studies mentioned so far explored the impact of gratitude induced by different interventions on other variables. Gratitude has complex implications and dynamics in human behaviour. For instance, study by Jans-Beken (2019) stated that a dialectical relationship between gratitude, subjective well-being and psychopathology exist. Therefore, further studies on varied population and variables are required to completely understand its dynamics.

Moreover, studies such as by Schutte et al. (2021) has established a positive mediating relationship of emotional intelligence between mindfulness and gratitude after conducting a metanalytic study on more than 3130 participants. Furthermore, inculcating positive emotions and using PPIs not only improves behavioral indicators but also helps in improving biological variables of an individual’s such as sleep, blood pressure, and overall well-being (Jackowska et al., 2016).

Kindness-based Interventions and their Impact on Subjective Well- Being

Kindness is defined as any act that is done to benefit others. According to the evolutionary perspective human beings are social animals they live in groups and behaviors that showed cooperation meant better

survival chances. Due to this they are more likely to be practiced again and again. Therefore, kindness similar to gratitude is an adaptive emotion that evolved to promote human survival over the years. Being kind to people around you helps increase your status and secure favors for the future. Curry et al. (2018) did a systematic review and meta-analysis to explore the experimental evidence about kindness-based interventions. Search words such as kindness, altruism, prosocial and positive affect were used to search research papers. The final analysis indicated that kindness-based interventions did help in improving well-being.

Research suggested that happiness seekers and well-being interventionists consider recalling acts of kindness as a cost-effective practice to raise well-being. Such researches help in understanding the impact of recalling acts of kindness. It is suggested that even without engaging in deliberate extra acts of kindness, individuals can reap benefits from simply remembering their pro-sociality (Ko et al., 2019). Other than remembering kind deeds, pay it forward (PIF) is another technique used in kindness-based interventions to instill positive emotions. Conceptually, pay it forward means that a person receives a kind deed done by others and forwards it to someone else, other than the person from whom he or she has received a kind deed. Pay it Forward (PIF) is a culturally popular concept but is not been extensively researched. In general, findings indicated that PIF interventions did yield results as hypothesized. Givers and receivers both reported positive feelings after performing these acts. Hence, performing such acts may help individuals in increasing their well-being and in the modern era where technology has made life easy using an app and digital media PIF chain can easily benefit thousands of people. Moreover, Perkins et al. (2022) through a metanalytic study stated that the levels of stress, anxiety, inflammation and negative affect declined after conducting kindness and compassion-based interventions on individuals. This again asserts the effectiveness of kindness-based interventions for reducing negative emotions.

Subjective Well-being

Conceptually, subjective well-being is defined as absence of pain, others as the fulfillment of needs. Overall subjective well-being is an evaluation of one's own life, a subjective comprehension of life's own circumstances (Lopez & Snyder, 2011; Anglim et al., 2020). Several factors impact subjective well-being such as situational factors, types of measure used to measure it, order of items and mood of the respondents at the time of filling the form. Mostly it is measured through self-report measures, in which individuals are instructed to evaluate their whole life on different dimensions. Subjective well-being is linked to other variables as well. It has shown correlation with demographic variables, age, longevity and life events (Jamal, 2018).

Family Relationships and Positive Emotions

Another variable that will be explored in this study is family relations. There are various studies which explored its relationships with other variables. Such as, in this research impact of the positive psychology-based intervention on family and relationships is studied. Results of the study showed that family relationships did improve with the administration of positive psychology-based interventions. Especially, family communication improved which resulted in an overall increase in family harmony. A potential limitation of this study is that one-item self-report measures were used to measure family relations (Zhou et al., 2015).

Another study explored the relationship between positive psychology interventions with social relationships. For this purpose, kindness-based and gratitude- based interventions were used. It is a pre-post measure experimental study in which three different measurements were taken i.e. baseline, post-intervention and after six weeks. Other than that, measures related to relationship satisfaction, social support and happiness were used. The findings of this study indicated that individuals who participated in relationship-focused positive psychology-based intervention reported more satisfaction in the relationship than the other two groups (O'Connell et al., 2015). Erdinger (2019) stated that positive relationships are considered an essential part of a fulfilling life. Many positive-psychology-based interventions helped an individual in improving their relationships. They can help individuals in improving their relationships and

can increase their life satisfaction.

Self Esteem and Positive Emotions

Findings confirmed propositions of broaden and build theory of positive emotions, which was used in this study, that instilling positive emotion helps in managing negative emotions. Coffey and Warren (2020) carried out research to study how positive affect and self-esteem are correlated among adolescent and later on in their adulthood. During adolescent feeling positive emotions are directly linked to your self-esteem, when individuals feel positive emotions, they assume it as part of their identity and attribute it their identity hence they develop positive sense of self and it leads to increase in self-esteem in teenage and this also predicts higher self-esteem in later stages of development as well. From this it could be concluded that experiencing and inducing positive motion can have long term benefits. Findings of this research were supported by broaden and build theory of positive Emotions, which states that people tend to recreate and bring back actions that elicit positive emotions.

The Broaden and Build Theory of Positive Emotions

According to the broaden and build theory of positive emotions, when a person experiences positive emotions such as joy, love, gratitude, empathy, and contentment, they are more likely to experience an enhancement and broadening in their thought- action repertoire. For instance, if a person is experiencing joy, then they are more likely to experience a desire to celebrate. Hence, experiencing one positive emotion leads to experiencing other positive emotions and expansion in one's thought process. People who entertain more positive emotions are more open to novel ideas and options. The broadened mindsets arising from these positive emotions are contrasted with the narrowed mindsets sparked by many negative emotions. Now after experiencing positive emotions individuals are more likely to enhance their emotional, personal and intellectual capacities as they are more receptive. Due to this are m they ore likely to expand their personal, emotional and cognitive resources. According to the evolutionary perspective, our ancestor repeatedly practices positive emotions and due to this they are genetically encoded and become part of human universal nature. From this, it could be hypothetically being concluded that positive emotions are likely to increase an individual potential and negative emotions restrict and decrease inbuilt human potential (Fredrickson, 2001; Fredrickson & Joiner, 2018).

Evidence for the undo effect of positive emotions suggests that people might improve their psychological well-being, and perhaps also their physical health, by cultivating experiences of positive emotions at the right moments to manage negative emotions. It improves human functioning on all levels. It increases attention and the thinking process. It is likely to eliminate the presence of negative emotions and built resilience to fight negative events in one's life. It creates an urge to improve one’s well- being and functioning. It motivates humans to flourish and prosper. Inculcating positive emotions provides a human being with the right mindset and perspective emotionally, which in result helps individuals in improving their lives for the better (Fredrickson, 2001; Fredrickson & Joiner, 2018).

Further on, the presence of positive emotions over time can create a compound effect. Their presence can transform an individual completely, their accumulated impact can improve one's health, well-being, can make them resilient, more socially connected and responsive, knowledgeable and influential over time. While in absence of positive emotions, individuals are likely to feel stuck in life, they may feel frustrated and unable to perform at their best. Hence, cultivating positive emotions in one's life can lead to an upward spiral that all human needs (Fredrickson, 2001; Fredrickson & Joiner, 2018).

University students are known to go through various transitionary phases. During which they face issues with their self-esteem, family relationships and overall life satisfaction. It is considered as a crucial developmental period. Usually, young adults have various adjustment issues and resentments that arise from failures and challenges in education, social comparison with peer groups, societal pressure and expectations, relationship with parents and siblings, and early career challenges. Amidst all these challenges they are most likely to experience negative emotions. Sometimes they fail to acknowledge other blessings

in their life, that are equally valuable. If these negative emotions are not properly channeled and countered can lead to psychological issue as mentioned in various studies above (Kong et al., 2014). This study endeavors to instill and induce positive emotions that are kindness and gratitude among university students. The presence of these positive emotions would help them in countering any resentments and negativity that they have about their life or family. With the help of gratitude-based interventions they can become aware of blessings in their life that they failed to acknowledge before. Being grateful for their life would help them in increasing life satisfaction. Kindness-based activities will help them in building and improve their relationships.

Method

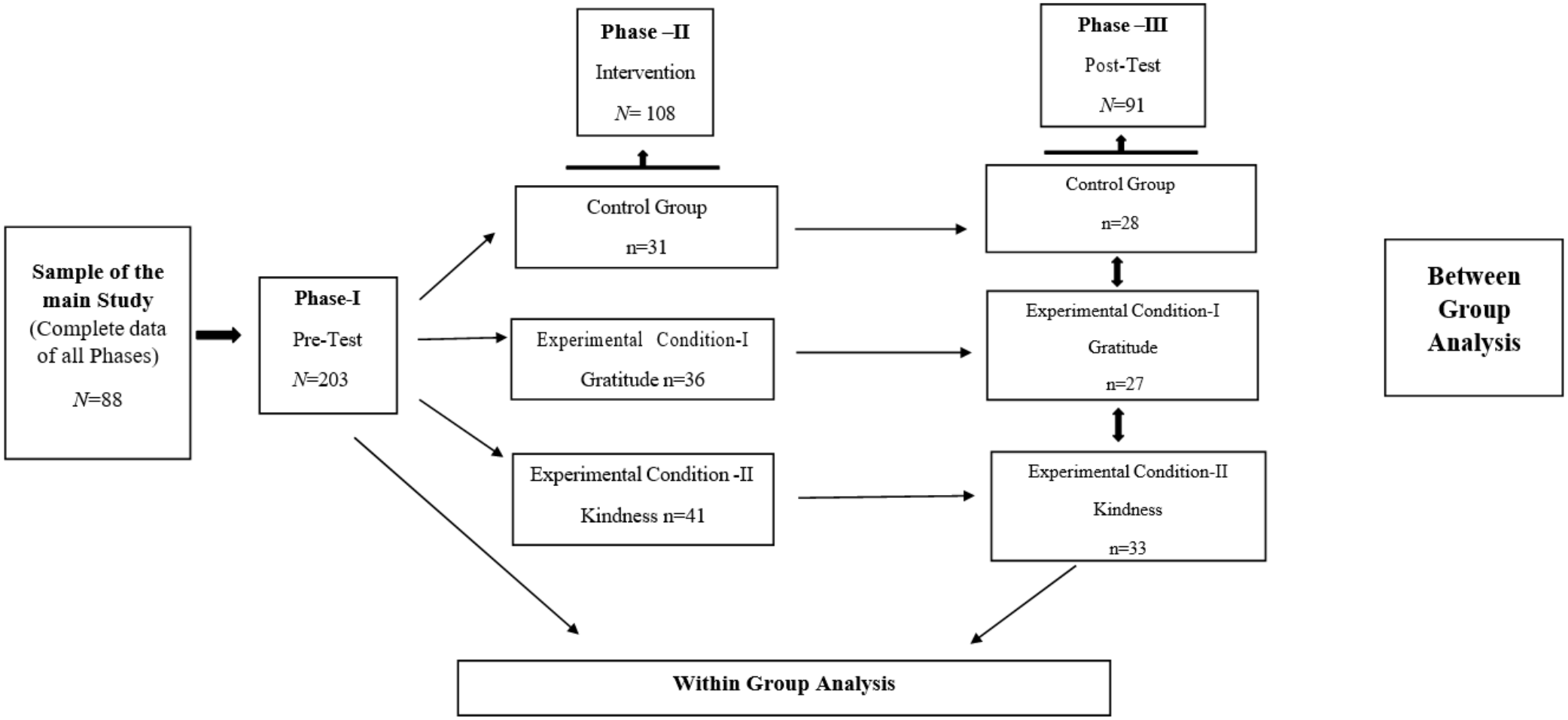
Research Design

This is experimental research carried out in three phases in a naturalistic setting. Phase I, was a pretest, in which the baseline level of dependent variables was measured. In Phase II intervention was given, where all three study groups i.e., experimental group I, experimental group II and control group were given journals containing activities targeting specific independent variables i.e., gratitude and kindness. Participants performed these activities for seven days. After that in Phase III post-test was administered, in which values of dependent variables were measured again to see the impact of the intervention.

There were three groups in this study; *1). Experimental group 1*: Gratitude-based intervention was provided to this group; 2). *Experimental group II:* Kindness-based intervention was provided to this group; 3) *Control group:* No intervention was provided to this group; they were instructed to write about their daily life. By using the control group along with two experimental groups in the pre-test and post-test experimental design, both within group and between group difference could be observed.

This control group can act as a comparison group for between group analysis. This research design gives a chance to analyze difference not only within groups by using pre and post testing but between-groups as well i.e., by comparing all three groups. Moreover, broaden and build theory of positive emotion was employed to provide theoretical support to the findings.

Figure 1: Within and Between Group Quasi-Experimental Research Design



In Table 1 O_1 represents the pretest condition, X_g is the condition where gratitude is manipulated, X_k is the condition where kindness is manipulated X_c is the control condition and O_2 is the post-test condition. There was a gap of two to three days after every phase, so that all participants can return back their responses on time and all participants can go to the next phase at the same time.

Table 1: *Pre-Test and Post-Test Experimental Research Design along with the timeline.*

Groups	Pre-test	Intervention	Post-test
	Day 1	***Day 5-11***	***Day 14***
Experimental Group I- Gratitude Based Intervention	O_1	X_g	O_2
Experimental Group II- Kindness Based Intervention	O_1	X_k	O_2
Control Group	O_1	X_c	O_2

Note: O_1 = Pre-test Condition. X_g = Gratitude-Based Intervention. X_k = Kindness-Based Intervention. X_c = Control Condition. O_2 = Post-Test Condition.

Self-report measures were used to measure dependent variables i.e., self-esteems, family relationships and subjective well-being in pre-test and post-test conditions.

Phases of Experimental Research Design Phase *I- Pre-Test*

All participants were given Phase I measures i.e., Positive Affect and Negative Affect Schedule (PANAS) (Watson et al., 1988; Wedderhoff et al., 2021) to measure subjective well-being Rosenberg Self-esteem scale (Rosenberg, 1965; García et al., 2019) to measure self-esteem and Family APGAR scale (Smilkstein, 1978; Campo-Arias & Caballero-Domínguez, 2021) to measure family relations. Demographic sheet, information sheet, and consent form were given along with these measures. After measuring baseline values of dependent variables participants were divided into three conditions equally. Participants were approached online. A google form was created, it contained information sheet, demographic sheet, consent form and all scales that were used to measure dependent variables. Its link was shared with the participant to fill out measures. A WhatsApp group was created to coordinate with participants and to send them daily reminders for phase II activities. Every day, two reminders were given to the participants.

Phase II – Intervention

i. Intervention for Gratitude Group – Experimental Group I

Experimental group - I was given a gratitude journal. Gratitude journals contained tasks like being grateful to your family members, listing things that one feels grateful for and along with that complete instructions for a gratitude-based meditation were given. Participants were requested to perform it daily and share their before and after feeling.

ii. Inducing kindness to close ties – Experimental group II

To induce kindness to close ties subjects of experimental group II were instructed to perform acts of kindness to their family members specifically to those with whom they have conflicted relationships.

iii. Control Group

The control group did not get any manipulation. They were requested to share their daily routine in a given journal.

Phase III – Post-Test

Participants of all three groups were requested to return their journals through email after seven days. After that they were requested to perform a post-test. Measures used for the dependent variable in phase I was

also used in the post-test. In order to avoid the recency effect, the order of items of the measures were changed in phase three. As participants are more likely to remember initial items more than the others. Recency affect participants remembers initial items of any scale and this impacts their response (Henne et al., 2020). To avoid this item of all scales were reshuffled to obtain correct measurements. In order to fulfill ethical standards at the end of the study all participants were debriefed about the experiment. They were told about the purpose and intent of manipulation.

Pilot Study

To test the procedure, reliabilities of scales and effectiveness of journals designed to manipulate two independent variables i.e., gratitude and kindness, a pilot study was carried out by following the proposed experimental procedure.

Sample

The sample of the pilot study (*N*=23) consisted of university students of age range (18-26) (*M*=21.73, *SD*=1.09) who were enrolled in any university program. Data were collected from both male (*N* = 01) and female (*N* = 22) students. In both experimental conditions there was no male participant and these groups entirely consisted of female participants. The majority of participants were students of masters (MSc) and were living in a nuclear family system. All participants reported Islam as a religion.

Table 2: *Number of participants in each condition in Pilot testing(N=23)*.

Experimental Conditions	**No of Participants (N)**
Experimental Condition I - Gratitude Based Intervention	09
Experimental Condition II - Kindness Based Intervention	08
Experimental Condition III - Control Group	06

Table 3: *Descriptive Statistics for Scales and Subscale for sample (N=23)*

Scales/ Sub-scales	**Pre-test**		**Post-Test**		**Pre – Test Range**		**Post –Test Range**		**Pre-Test**		**Post -Test**	
		D		D	ctual	otential	ctual	otential	kew	urt	kew	urt
PANAS – PA	5.43	.40	7.30	.32	7- 47	0-50	3-49	0-50	0.75	0.12	0.50	.50
PANAS – NA	4.73	.84	5.73	.98	6-38	0-50	1-39	0-50	.55	0.02	0.05	0.92
RSS	2.26	.80	4.56	.17	2-33	0-40	3-37	0-40	.08	0.89	.54	0.56
FSAS	.30	.13	.65	.58	-10	-10	-10	-10	0.95	0.36	1.21	0.79

Note: M= Mean, SD= Standard Deviation. Skew= Skewness, Kurt= Kurtosis. PANAS=Positive Negative Affect Schedule. PA =Positive Affect - Subscale of PANAS. NA= Negative Affect- Subscale of PANAS. RSS- Rosenberg Self- Esteem Scale. FSAS= Family System APGAR Scale.

Cronbach Alpha Reliability for Pre – Test and Post-Test

Table 4: *Alpha Coefficients of the Scales in Pre-test and Post-test Conditions for Pilot Testing (N=23).*

Scales/Subscales		**Pre-Test**	**Post-Test**
	K	**A**	**α**
PANAS-PA	10	.91	.84
PANAS-NA	10	.12	.86
RSS	10	.84	.87
FSAS	5	.87	.82

Note: PANAS=Positive Negative and Affect Schedule. PA =Positive Affect - Subscale of PANAS.NA= Negative Affect- Subscale of PANAS. RSS- Rosenberg Self- Esteem Scale. FSAS= Family System APGAR Scale. α = Cronbach's Alpha Reliability. K = number of items.

Results of Paired Sample *t*-Test for Pilot testing

Table 5: *Mean, Standard deviation and t values across pre-test and post-test conditions for variables self-esteem, family relations and subjective well-being for all groups (N=23).*

Groups	Scales/ subscales	Pre-test		Post-Test					95% CI	
		M	***SD***	***M***	***SD***	***t***	***df***	***P***	***LL***	***UL***
E-I (*n*=09)	PANAS-PA	38.77	7.90	40.66	4.60	-0.94	08	0.37	-6.49	2.71
	PANAS-NA	23.88	6.86	28.22	9.23	-1.34	08	0.21	-11.74	3.07
	RSS	21.33	4.69	23.33	8.74	-0.57	08	0.58	-10.01	6.01
	FSAS	7.77	3.11	8.22	2.63	-1.07	08	0.31	1.39	0.50
E-II (*n*=08)	PANAS-PA	33.25	9.89	37.87	4.51	-1.80	07	0.11	-10.68	1.43
	PANAS-NA	23.25	3.69	24.37	8.39	-0.49	07	0.63	-6.47	4.22
	RSS	19.75	5.31	24.87	6.64	-1.71	07	0.13	-12.21	1.96
	FSAS	8.00	2.39	8.37	1.40	-0.70	07	0.50	-1.63	0.88
C (*n*=06)	PANAS-PA	33.33	6.40	31.50	7.20	0.69	05	0.51	-4.91	8.58
	PANAS-NA	28.00	6.16	23.80	5.23	1.55	05	0.18	-2.71	11.04
	RSS	27.00	5.93	26.00	6.06	0.36	05	0.72	-6.02	8.02
	FSAS	5.66	3.93	5.83	3.10	-0.27	05	0.79	-1.71	1.37

Note: M=Mean. SD=Standard Deviation. CI=Confidence interval. RSS= Rosenberg Self-Esteem Scale. FSAS=Family System APGAR Scale. PANAS-PA= Positive Affect Negative Affect schedule - Positive Affect. PANAS-NA= Positive Affect Negative Affect Schedule - Negative Affect. LL= Lower Limit. UL=Upper Limit. E-I= Experimental group I- Gratitude Group. E-II= Experimental group II- Kindness Group. C = Control Group.

Results showed that all measures had above-average Cronbach's Alpha reliability (see Table 4) except negative affect which is a subscale of PANAS but it improved to above average level in the post-test. There were previous studies carried out in Pakistan in which good reliabilities were obtained for both scales of PANAS and due to which this measure is used (Karim et al. ,2011). As reliabilities were in good range so similar measures and journals were used in the main study. Within-group analysis was performed by using paired sample *t*-test (see Table 5). Non-significant results were obtained. Sample size was small which was considered as a possible reason for non-significant results. It was decided that after Phase-I participants will not be randomly assigned to study groups but their total scores for all subscales and scales would be calculated and those who had below the median total score would be placed evenly in all groups. This whole process was time taking due to which there was a three-day gap between phase I and phase II. In the main study cases with below median score would be analyzed separately. Moreover, it was decided that between-group analysis would be performed as well i.e., One-way ANOVA. In this way a comparison could be drawn between the experimental groups and the control group.

Ethical Considerations

All participants were given an information sheet which contained details of this research. Both verbal and written consent was obtained. Anonymity and confidentiality were ensured by the participants. At the end of this research participants were debriefed about the whole experiment.

Main Study

After pilot testing, a similar study design was carried out in the main study with a slight change after phase I. In the main study after collecting data for Phase-I and before allocating groups to participants their total scores for each measure or dependent variable were obtained. Then participants with a total score below median range, which was different for each scale, were equally distributed to three groups. Afterward those individuals were specifically analyzed to see the difference in pre and post-test scores.

Sample of Main Study

Sample of main study (*N*=88) consisted of university students of age range 18-27 (*M*=21.07, *SD*=2.08) who were enrolled in any university program. Data was collected from both male (*N* = 11) and female (*N* = 77) students. Sample mostly consisted of female participants. While in experimental group II – kindness group there were no male participants and it entirely consisted of female participants. Majority of participants were social science graduate. As far as marital status is concerned, most of the participants were single and in experimental group I all participants were single. Majority of participants reported living in a nuclear family and were enrolled in undergrad courses.

Procedure

Over 400 university students were approached to participate in the main study. In pilot testing response rate was low. Out of 40 participants only 23 completed all three phases, keeping that in mind for the main study maximum number of students were approached so that the targeted number of participants could be achieved i.e., around 120 in total and 40 for each group. 203 participants filled phase 1 forms and out of which only 88 completed all three phases. Figure 1 shows the number of participants in each phase. As per prediction attrition rate was high many individuals dropped out after phase I. Data of those participants are included in analysis who completed all three phases. Phase I and Phase III data was collected through Google forms while journals were emailed to each participant and they were requested to email those journals back after seven days. The WhatsApp group was created for coordination and constant reminders. It almost took three weeks to collect data for this experiment. To reduce the dropout rate and increase motivation for participants to complete this study certificates were promised at the end of this study to those participants who completed all three phases. In which their voluntary participation in an experimental study was acknowledged.

Quantitative analyses were performed by using SPSS 22. After data cleaning descriptive analyses of categorical variables and frequencies of demographic variables were calculated. As it is an experimental study with three groups and pre- and post-testing so both between-group and within-group analyses was performed. For within groups paired sample *t*-test were performed while for between groups ANOVA was performed.

Results

Table 6: *Descriptive Statistics of Scales and Subscale for main study (N=88)*

Scales/ Sub-scales					**Pre – test**		**Post –Test**					
	Pre-test		**Post-Test**		**Range**		**Range**		**Pre-Test**		**Post -Test**	
	M	SD	M	SD	Actual	Potential	Actual	Potential	Skew	Kurt	Skew	Kurt
PANAS – PA	36.54	6.96	36.45	7.40	20-50	10-50	10-50	10-50	-0.21	-0.70	-1.06	2.09
PANAS – NA	24.21	6.96	23.18	7.38	10-40	10-50	10-43	10-50	-0.23	-0.30	0.43	-0.34
RSS	21.18	5.68	20.73	6.06	10-33	10-40	10-36	10-40	0.03	-0.69	0.33	-0.43
FSAS	7.60	2.34	7.92	2.12	0-10	0-10	1-10	0-10	-1.17	0.95	-0.60	-0.33

Note: M= Mean. SD= Standard Deviation. Skew= Skewness. Kurt= Kurtosis. PANAS=Positive Negative Affect

Schedule. PA =Positive Affect - Subscale of PANAS. NA= Negative Affect- Subscale of PANAS. RSS- Rosenberg Self- Esteem Scale. FSAS= Family System APGAR Scale.

Potential range shows maximum and minimum possible score on a measure while actual range shows maximum and minimum score for each measure in this study. As can be seen in Table 6. for Family system Apgar Scale actual and potential range in both pre and posttest remained the same. While for other measures there was a variation. Skewness and kurtosis are calculated to assess the distribution of variables in the study. Values of skewness and kurtosis as shown in Table 8 are between the ranges of +2 to-2, indicating normal distribution of the data (Field, 2013).

In order to measure internal consistency of the measures used in this study, Cronbach's Alpha Reliability coefficient (α) was calculated for both pre and post-test conditions (see Table 7).

Table 7: *Alpha Coefficients of the Scales in Pre-test and Post-test Conditions for main study (N=88).*

Scales/Subscales		**Pre-Test**	**Post-Test**
	K	**α**	**α**
PANAS-PA	10	.86	.90
PANAS-NA	10	.80	.83
RSS	10	.80	.84
FSAS	5	.78	.74

Note: PANAS=Positive Negative Affect Schedule. PA =Positive Affect - Subscale of PANAS. NA= Negative Affect- Subscale of PANAS. RSS- Rosenberg Self- Esteem Scale. FSAS= Family System APGAR Scale. α = Cronbach's Alpha Reliability. K = number of items.

Within Group Analysis

Comparison between Experimental group I, II and Control group for both pre-test and posttest Conditions

Table 8: *Mean, Standard Deviation and t-values for experimental groups and control group for pre-test and post-test condition in the main study (N=88)*

Groups	**Scales/ subscales**	**Pre-test**		**Post-Test**					**95% CI**	
		M	***SD***	***M***	***SD***	***t***	***df***	***p***	***LL***	***UL***
E-I (*n*=27)	PANAS-PA	36.62	6.34	35.51	7.22	0.85	26	0.42	-1.72	3.94
	PANAS-NA	24.40	7.12	23.37	8.61	0.80	26	0.39	-1.44	3.52
	RSS	21.22	5.47	20.59	6.09	0.79	26	0.43	-0.99	2.25
	FSAS	7.62	2.45	8.25	2.31	-1.86	26	0.08	-1.34	0.08
E-II (*n*=33)	PANAS-PA	35.84	7.79	36.39	8.37	-0.43	32	0.66	2.03	-3.12
	PANAS-NA	24.66	7.76	21.93	5.94	2.64	32	0.13	0.62	4.82
	RSS	21.30	6.32	21.51	6.68	-0.21	32	0.83	-2.20	1.78
	FSAS	7.69	2.32	7.87	2.16	-0.53	32	0.59	-0.87	0.50
C (*n*=28)	PANAS-PA	37.28	6.65	37.42	6.43	-0.13	27	0.89	-2.36	2.07
	PANAS-NA	23.50	5.93	24.46	7.67	-0.71	27	0.48	-3.73	1.80
	RSS	21.00	5.27	19.96	5.35	1.00	27	0.32	-1.07	3.14
	FSAS	7.46	2.33	7.64	1.92	-0.58	27	0.56	-0.80	0.44

Note= PANAS-PA= Positive Affect Negative Affect Schedule - Positive Affect. PANAS-NA= Positive Affect Negative Affect Schedule – Negative Affect. RSS= Rosenberg Self Esteem Scale. FSAS= Family system APGAR scale. C=Control group. E-I = Gratitude group. E-II = Kindness group. M= Mean. SD= Standard Deviation. CI=Confidence Interval. UL=Upper Limit. LL=Lower Limit. *df*= Degree of freedom. *p*= significance value.

Comparison between Experimental group I, II and Control group for cases with below median score in pre-test.

Medium Ranges of all Scales

Table 9: *Maximum Score, minimum score and median score of Positive Affect Negative Affect Schedule, Family System APGAR Scale, Rosenberg Self-Esteem scale.*

Scales /Subscales	Minimum Score	Maximum Score	Median Score
PANAS - Positive Affect	10	50	30
PANS -Negative Affect	10	50	30
Family Relations Scale (APGAR)	0	10	5
Rosenberg Self-Esteem Scale	10	40	25

Table 10: *Mean, Standard Deviation and t-values for cases with below median score in experimental group I, Experimental group II and control group in main study.*

Variables	Scales/ Subscales	Pre-test		Post-Test					95% CI		Cohen's *d*
		M	***SD***	***M***	***SD***	***t***	***p***	***df***	***LL***	***UL***	
					E-I						
Positive Affect (*n*=03)	PANAS –PA	27.33	2.88	30.33	1.52	-1.73	0.22	02	-10.45	4.45	1.30
Negative Affect (*n*=06)	PANAS-NA	33.36	2.06	29.66	6.59	1.46	0.20	05	-3.02	11.02	0.87
Self-Esteem (*n*=22)	RSS	19.51	4.38	19.05	5.91	0.001	1.00	19	-2.04	2.04	0.09
Family Relations (*n*=04)	FSAS	03.00	1.41	5.25	2.21	-2.63	0.07	03	-4.96	0.46	0.68
					E-II						
Positive Affect (*n*=08)	PANAS –PA	25.25	1.03	28.62	10.45	-0.88	0.40	07	-12.41	10.80	0.55
Negative Affect (*n*=07)	PANAS-NA	34.71	5.40	26.57	5.68	4.11	0.00*	06	3.92	12.99	1.58
Self-Esteem (*n*= 23)	RSS	18.00	4.16	19.30	6.13	-1.16	0.27	22	-3.70	1.09	0.25
Family Relations (*n*=03)	FSAS	2.33	2.08	5.02	2.00	-8.00	0.01*	02	-4.10	-1.23	0.12
					C						
Positive Affect (*n*=03)	PANAS –PA	24.00	4.00	27.33	12.50	-0.51	0.65	02	-31.03	24.36	0.12
Negative Affect (*n*=04)	PANAS-NA	33.50	3.00	28.25	7.18	1.42	0.25	03	-6.47	16.97	0.48
Self-Esteem (*n*=18)	RSS	17.50	3.77	17.88	5.07	-0.27	0.78	17	-3.38	2.60	0.93
Family Relations (*n*=04)	FSAS	3.00	1.15	4.50	0.57	-2.32	0.10	03	-3.55	0.55	0.15

Note= PANAS-PA= Positive Affect Negative Affect Schedule - Positive Affect. PANAS-NA= Positive Affect Negative Affect Schedule – Negative Affect. RSS= Rosenberg Self-Esteem Scale. FSAS= Family system APGAR scale. E-I = Gratitude group, E-II = Kindness group. M= Mean. SD= Standard Deviation. CI=Confidence Interval. UL=Upper Limit. LL=Lower Limit. *df*= Degree of freedom. *p*= significance value. * p<0.05. C=Control group.

Between Group Analysis

Table 11: *One-way ANOVA to find difference between Experimental group I, Experimental group II and control group in pre and posttest conditions for main study (N=88).*

Scales/Subscales	**E-I (*n*=27)**		**E-II (*n*=33)**		**C (*n*=28)**		**F**	***p***
				Pre-Test				
	M	SD	M	SD	M	SD		
PANAS-PA	36.62	6.34	35.84	7.79	37.28	6.65	0.32	0.72
PANAS-NA	24.40	7.12	24.66	7.76	23.50	5.93	0.22	0.80
RSS	21.22	5.47	21.30	6.32	21.00	5.27	0.02	0.97
FSAS	7.62	2.45	7.69	2.32	7.46	2.33	0.07	0.92
				Post-test				
PANAS-PA	35.51	7.22	36.39	8.37	37.42	6.43	0.45	0.63
PANAS-NA	23.37	8.61	21.93	5.94	24.46	7.67	0.41	0.41
RSS	20.59	6.09	21.51	6.68	19.96	5.35	0.60	0.60
FSAS	8.25	2.31	7.87	2.16	7.64	1.92	0.58	0.62

Note= PANAS-PA= Positive Affect and Negative Affect Schedule - Positive Affect. PANAS-NA= Positive Affect Negative and Affect Schedule – Negative Affect. RSS= Rosenberg Self-Esteem Scale. FSAS= Family system APGAR scale. C=Control group, E-I = Gratitude group. E-II = Kindness group. M= Mean. SD= Standard Deviation.

Discussion

In order to assess the suitability and internal consistency of scales among the targeted population, a pilot study (*N*=23) was conducted. Cronbach's Alpha Reliability analysis was performed on pre- and post-measurements of all scales and subscales for all study groups i.e. experimental group I, experimental group II and control group. All scales and subscales other than negative affect, a subscale of PANAS, had above average reliability (α = .7 to .8) in both the pre-test and post-test (see Table 7). Due to these same measures were used in the main study without any alteration.

In the main study (*N*=88), again Cronbach's Alpha reliability analysis was performed for both pre-test and post-test scores. Results showed that all scales had above-average reliability in both pre and post-test. Negative affect subscale of PANAS containing 10-items, which had below average reliability in pre-testing when the pilot study was performed, improved in the main study and was in good range (α =.80). Most probably the reason for low-reliability score in pilot study was the small sample size (*N*=23). With increase in sample size (*N*= 88) in the main study the reliability of the subscale of PANAS - negative affect also improved. Previous researches indicate that Cronbach's Alpha reliability improves with an increase in sample size (Bujang et al., 2018).

Quantitative results showed kindness-based intervention improved family relations and also resulted in a decrease in negative affect for people who had below the median score range in family relations and negative affect in phase I. Hence, it could be deduced that kindness-based intervention could be used to improve the family environment and relations. It also helped in enhancing subjective well-being by decreasing negative affect. Saarinen et al (2019) did a longitudinal study and concluded that being compassionate and kind to others predict well-being, life satisfaction, higher positive affect and lower negative affect. These conclusions support the findings of this study. While qualitative results showed that both gratitude-based intervention and kindness-based intervention increased positive emotions among the participants. In the case of kindness-based intervention it also resulted in improvement in family relations.

Participants in the control group did not show any significant change in their pre and post-test score even in cases with below median score range levels remained unchanged. Sample size was small but future studies can explore these phenomena by using a larger sample size. Specifically, cases with below median score were few in number (see Table 10) in this study.

In order to see the mean difference between pre- and post-testing, paired sample t-test was performed between the pre-test and post-test by using the total score of all dependent variables i.e., Positive Affect, Negative Affect, Self-esteem and Family relations for participants in all three groups (i.e. Experimental group I, Experimental group II, and Control group). Non-significant results were obtained (see Table 8). Pre- and post-testing was performed for each variable and for all three groups. Although there was a slight mean difference but non- significant results were obtained. So, it could be deduced that overall, in quantitative research there is no marked difference between pre and post-test scores of dependent variables in all three groups. As most participants already had above-average scores. Individuals who already score above baseline are less likely to benefit from positive psychology-based interventions (Neff et al., 2018). In fact, those who score below the median are more likely to benefit from these interventions as is evident in next section. The mean difference in pre- and post-testing but non-significant results indicate a direction for future research. Using different and more sensitive measures and a larger sample size for each group might help in understanding how these interventions work in the Pakistani cultural context.

Results in previous studies showed that subjective well-being increases for those who already score below the median range. And those who already had higher levels of subjective well-being benefited less from positive psychology-based interventions (Magnani & Zhu, 2018). These findings corroborate the findings of previous research which states that individual who already have lower baseline score benefits more from positive psychology interventions (Froh et al., 2009). Similar results are obtained in this study where cases with below median score in kindness-based group – experimental group II showed improvement in family relations and decrease in negative affect (subjective well-being). Hence, from this it could be concluded that kindness-based intervention helped improving family environment and relations for those who are already struggling with these issues. Moreover, it also resulted in a decrease in negative emotions and improvement in overall subjective well-being. More research in this area can yield answers to how it actually works in the context of Pakistan with a larger sample size.

Non-significant results were obtained when it comes to self-esteem in pre- and post-testing for both experimental groups. Research mentioned in the literature review were carried out in other cultures. Self-esteem improved for those samples after performing positive psychology-based interventions. A possible explanation for the non-significant results in this study could be that people in collectivistic cultures usually have lower personal self-esteem and higher collective self-esteem. In collective cultures what a person does is not a projection of his/her self but that of his community. While self-esteem is a personal construct in which individuals evaluate his or herself based on their achievements. Individualistic cultures place more emphasis on self then collectivist culture, when someone is grateful to or kind to someone people of individualistic culture see it as a projection of their self and performing positive virtues such as kindness makes them feel good about themselves hence improving the overall evaluation of themselves. This results in an increase in self-esteem. While people of collectivistic culture value actions that benefit the whole community rather than themselves (Schmitt & Allik, 2005; Konrath, 2014). This different manifestation of self-esteem in different cultures could be a plausible reason for non-significant results in this sample. Moreover, the sample consisted of university students who associate their self-esteem with their academic performance more than other factors as indicated in various researches (Aryana, 2010).

In the case of the control group, it is evident that non-significant results would be obtained. In the control group participants were asked to report their daily routine. They were not given any manipulation.

In order to see if there is any meaningful difference between the control group and two experimental group i.e., kindness and gratitude- based group, Analysis of Variance (ANOVA) was performed. Results showed that there was a non-significant difference between the means of the three groups (see Table 11).

Experimental group I & II were given journals containing activities to instill gratitude and kindness. In the control group participants were also given a seven-day journal in which they were instructed to write about their daily routine. Although no specific emotion was induced infect the activity of journaling, writing about your life in itself makes an individual reflect and be mindful of their daily life. And most of the participants were not used to it and they were performing it for the very first time. Because of this it might have impacted dependent variables. Riddell et al (2020) stated that journaling is a self-reflective activity and can be used as a complementary therapeutic intervention. It could be a plausible reason to which a non-significant difference between the three groups was observed.

Broaden and build theory of positive emotions stated that instilling positive emotion can result in the enhancement of the cognitive and affective perspective of an individual. With the enhancement in positive emotions one can experience an improvement in other life areas as well. The findings of this study support these propositions. When positive emotions were instilled in participants through kindness-based and gratitude-based intervention, they experienced improvement in their relationships and family environment. The participants reported feeling more relaxed, aware and open about their experiences and overall life. Specifically, participants who already were struggling with these issues and scored less on dependent variables. Moreover, participants in gratitude-based group reported change in emotions immediately after performing gratitude-based mediation given in the gratitude journal. Similar findings were explored by Fredrickson et al (2008) stating that instilling positive emotions resulted in a decrease in depressive symptoms and an improvement in life satisfaction.

Since this study was carried out to see how positive psychology-based interventions work in terms of sociodemographic factors of Pakistan. Previous studies done in Pakistan have indicated a relationship between dispositional gratitude and life satisfaction by using broaden and build theory of positive emotions (Green et al., 2019). Asif et al (2018) studied gratitude by using measures designed for western or individualistic culture and concluded that there is a cultural difference in terms of how gratitude is perceived. In collectivistic cultures people define themselves and their self-worth in different ways than that in individualistic cultures. This could explain non-significant quantitative results.

Non-significant results were obtained with respect to self-esteem. Although most of the participants had below median score in self-esteem however, in post-testing non-significant results were obtained.

Conclusion

Results and discussion showed that kindness-based intervention did help in improving subjective well-being (decrease in negative affect) of participants. Other than that, being kind to close kin members did result in better relationship and in improving family environment. Moreover, non- significant results were obtained between self-esteem and gratitude and kindness-based intervention. This study has given insight into how positive psychology-based intervention works in sociodemographic setting of Pakistan. Being a collectivistic society with strong religious roots the results obtained are slightly different from western researches.

Findings of this study could be used by psychologist, therapist, wellness centers and university counselling center and policy makers to understand how university students responds to different positive psychology-based interventions.

Limitations and Suggestions

This study has made an important contribution to the advancement of knowledge in research on the impact of gratitude-based and kindness-based intervention. The following points should be considered while interpreting the results of this findings**.**

1. It is experimental research and was carried out in naturalistic setting, due to which control on confounding variables was less. Presence of confounding variable might have affected the results and findings.

2. Self-report measures were used for both pre and post-testing. This method of data collection is prone to inattentive responses and social desirability.
3. The sample consisted of university students, due to which further research is required to generalize its findings.
4. Due to Covid-19 restrictions larger sample size could not be collected. In future studies more understanding could be achieved by performing analysis on a larger sample size and by comparing scores of participants who fall in the category lowest scoring participants in the pre-test (bottom 33 %) and to the highest scoring participants (top 33%) from the entire sample. This could give an understanding of how these interventions impact the lowest and highest -scoring participants. In this way a comparison could be drawn between these two categories for more clarity.

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Conflict of Interest

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