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Efficacy of a Brief Gratitude Intervention on Psychological Well-being Among Male University Students in Sindh, Pakistan

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Abstract
This research aimed to determine whether the gratitude intervention may improve the level of psychological well-being (PWB) among male university students. A single-group, pretest-posttest quasi-experimental design was employed to test the hypothesis. The first phase involved screening of 80 participants (40 female, 40 male) aged 19 to 24 for gratitude and Psychological Well-being. Analysis of data revealed that male participants scored significantly lower on both gratitude and well-being as compared to their female counterparts. Afterward, twenty (20) male students were recruited for the gratitude intervention, which required them to write "three good things" every night for 10 days. Findings of the post-intervention confirmed a significant increase in both gratitude and psychological well-being scores within the cohort. This has specific implications in the collectivist-based culture of Sindh, Pakistan, and contributed to positive psychology in general.

Keywords: *Gratitude Intervention, Psychological Well-being, Male University Students, Sindh, Pakistan, Positive Psychology*

Introduction

The discipline of behavioral sciences and psychology has shifted its focus from the clinical or medical model of handling mental health or psychological concerns to wellness and enhancement of their functioning in all spheres of their lives, including personal well-being, relationship management, and high performance in their workplace. This modern development, recognized as Positive Psychology, promotes the proactive detection and cultivation of a person's durable aspects of personality, strong values for social wellbeing, and favorable regulation of emotional states

(Gable & Haidt, 2005; Park & Peterson, 2008) that ultimately help in the maintenance of social harmony.

Interventions of positive psychology are well-designed and empirically tested activities to advance desirable behaviors and positively regulate human emotions and feelings. Scientific studies have evidenced the effectiveness of these interventions through varied methods and research groups, including both the clinical and general populations. High-impact research like Meta-analyses and systematic reviews steadily affirms the robust experimental support for the positive psychology interventions in improving personal well-being and psychological/mental health (Komase et al., 2021; Sin & Lyubomirsky, 2009).

The gratitude intervention is positively documented among meticulously researched positive psychology interventions to regulate human emotions in favorable ways, as well as to enhance psychological health and mental well-being (Emmons & Stern, 2013; Froh et al., 2009). Gratitude is essentially described as a discrete positive feeling that arises from recognizing that one has earned a favorable and valuable outcome, often attributed to compassion towards another individual, situation, or a religiously supreme figure (Emmons, 2004). This emotion reflects a deep appreciation for the meaningful and beneficial aspects of one's life (Sansone & Sansone, 2010). Gratitude is identified as occurring both as a comparatively stable trait, i.e., dispositional gratitude, where a person maintains a usual perception of gratefulness (McCullough et al., 2002), and as state gratitude that depends on situation and is triggered by given positive encounters (Emmons et al., 2003). Formerly, research was not focused on gratitude as a positive emotional state due to psychologists' emphasis on studies related to mental disturbances (Linley et al., 2006); however, evidence from the field of positive psychology supported the factors like gratitude as a strong predictor of well-being (Fisher et al., 2023) and promoted positive aspects of human psychology for research to explore more and transform the practices.

The theoretical groundwork on gratitude's healing potential is often embedded in Fredrickson's Broaden-and-Build Theory of Positive Emotions (Fredrickson, 2001). This theory suggests that positive emotions, such as gratitude, help to expand one's existing repertoire of thoughts and actions, eventually boosting personal resources, including emotional state and coping strategies/mechanisms. Subsequently, this improved positive emotional state generated by gratitude associates impeccably with Ryff's (1989) multidimensional model of psychological well-being, which goes beyond the mere absence of illness to incorporate an inclusive and vigorous psychological state. In the same vein, gratitude precisely establishes the states required for succeeding in the significant and fulfilling aspects of one's life, which classifies an impactful level of well-being in Ryff's framework.

Evidence from empirical research indicates a positive relationship between gratitude and psychological well-being (Basit et al., 2024; Fisher et al., 2023; Hemarajarajeswari & Gupta, 2021; Panhwar & Malik, 2023; Wood et al., 2009). This positive inclination stands against the cognitive biases related to depression and negative perception of self, the world, and the future, which tend to converge on unfavorable events and negative circumstances related to one's life (Beck, 1976). Grateful people preserve a promising prospect for their daily experiences and available resources, which later on link to crucial positive aspects of one's well-being, such as acceptance of self the way it is, sense of being independent, and promising efforts to personal growth (McCullough et al., 2002; Park et al., 2004). Besides the psychological perspective, unconventional neuroimaging research work has provided empirical evidence that neurobiological changes are involved in the expression of gratitude and activate brain areas concerned in both social cognition and reward processing, highlighting its importance to socio-psychological well-being and emotional health (Kim & Lee, 2023). Gratitude exercise-based interventions have steadily relinquished reasonable to huge effect sizes, predominantly while they encompass systematic exercise over continuous periods, often proposed practice for several weeks (Cunha, Pellanda, & Reppold, 2019).

The present research utilizes the extensively recognized and empirically tested **"three good things"** journaling every day (Seligman et al., 2005). The gratitude intervention forces participants to write three helpful incidents or happy moments that happened during a normal day, in that way refining an attitude of attentiveness to positive aspects of daily living and amplifying the level of observed gratitude.

Whereas the typical application of the gratitude exercise intervention across cultures reflected that the paybacks of the intervention may vary across different social perspectives. Empirical research based on Asian inhabitant samples, including Indians, Taiwanese, and Asian Americans, has occasionally described mixed findings or less well-maintained well-being and life satisfaction compared to Western samples. This inconsistency is related to the underlying forces of **collectivist cultures**, where expressing gratitude can sometimes trigger multifaceted emotional reactions, such as feelings of guilt or indebtedness, instead of a positive emotional response.

The research gap indicates the need for context-specific endorsement of gratitude intervention in South-Asian, collectivistic cultural settings. Explicitly, there is an explicit lack of empirical research into the impact of gratitude interventions on young Pakistanis. Given that the study population comprises Muslim pupils, the framework of gratitude is also rooted in religious philosophies, such as *Shukr* (thanks to Allah), which has a link to emotional flexibility or resilience and psychological well-being among Muslims. Understanding how a secular positive psychology exercise

works within this exclusive cultural and religious framework is necessary for utilizing culturally responsive mental health exercises.

Hence, this research was conducted to explicitly assess the effectiveness of the 10-day "three good things" gratitude exercise on both the self-reported gratitude and the psychological well-being of young male university students in Sindh, Pakistan. Considering the theoretical framework, with the assumption that the practice of gratitude serves as an efficacious strategy in improving thinking and emotional aspects of daily life experiences. This experiment tested the hypothesis that the 10-day practice of the gratitude intervention of "three good things" would significantly increase the level of general gratitude practices and psychological well-being among male university students.

Methodology

Research design

The research was based on a pretest and posttest single-group, quasi-experimental research design.

Sample

The pretest assessment phase (Phase-I) of the study comprised samples of eighty (N=80) university students including girls (n=40) and boys (n=40), with an age range of 19-23 years. They belonged to different socio-economic classes and were enrolled in different degree programs. The samples were collected conveniently from different departments of University of Sindh. However, for posttest assessment phase (Phase-II), the samples of twenty (N=20) boys who agreed to participate in the gratitude intervention program were included.

Intervention Program

Positive psychology intervention of ***"three good things"*** (Seligman et al.2005) was used in this research to see its influence on the level of gratitude and psychological well-being of university students. The three good things" exercise involves asking individuals to write down (journaling) three good things that happen to them every day for a period of about one or two weeks (Seligman et al. 2005). This intervention helps participants to focus on the positive things that happen to them in a given day, which in turn raises their level of gratitude and psychological well-being. For the current study, the intervention was given to a sample of twenty (N=20) male students selected on their willingness to voluntarily participate in the intervention program from the sample of forty (n=40) male students collected at the pretest assessment (Phase-I). The intervention was given by the researcher for a time period of ten days, to measure the extent to which gratitude can be increased and also to ascertain its influence on psychological wellbeing.

Instruments

Gratitude Questionnaire (GQ-6; McCullough, Emmons & Tsang, 2002) was used to measure gratitude scores. It consists of six items, scored on a

Likert scale, ranging from 1-7. Item numbers 03 and 06 are reverse-scored to avoid response bias. The Gratitude Questionnaire (GQ-6) has good internal reliability.

Ryff Psychological Well-Being Scale (Ryff, 1989), was used to measure psychological well-being. It consists of 42 items. The scale was used to measure various aspects of psychological well-being, including self-acceptance, positive relationship with others, purpose in life, sense of autonomy, personal growth, and environmental mastery. All items are measured on a Likert scale ranging from 1-7. This scale is valid and reliable for the measurement of psychological well-being.

Procedure

This research was conducted in two phases. In Phase I, pretest assessment (baseline measurement) of two variables, which were gratitude and psychological well-being of the sample of eighty (N=80) university students consisting of an equal number of male (n=40) and female (n=40) students, was conducted, to observe their scores on the above variables. In Phase-II, the gratitude intervention of "three good things" was introduced to a sample of twenty (N=20) male students, selected from the Phase-I sample of forty (n=40) male students who participated in pretest assessment (Phase-I), on their willingness to be voluntarily included in the intervention program. The samples of male participants were selected for Phase-II of the study on the basis of their lower scores on gratitude and psychological well-being scales as assessed at the Phase-I (pretest assessment), as compared to their female counterparts. This intervention was given to them for a period of ten days. Researchers invited them to join a WhatsApp group to receive instructions related to the intervention. All voluntarily agreed male students (N=20) joined the WhatsApp group in which only the admin (corresponding author) can send messages. They were instructed to write down three good things every night before going to sleep. As the sleeping habits of students were different, the researcher sent the instruction message three times (at 10 pm; at 11 pm and at 11:59 pm) to make sure every participant completes the task before going to bed for sleep. This pattern was repeated every night at the exact same time for ten days of intervention. After ten days of the intervention, gratitude and psychological well-being of participants (male) was measured again to see the impact of the intervention on their level of gratitude and psychological well-being. Pretest and posttest design helped to analyze the impact of the intervention, by comparing pretest and posttest scores of participants on both variables. Since it was a single group design, therefore control group was not included.

Ethical Considerations

To collect responses from students, the heads/ directors of departments/institutes, University of Sindh, Jamshoro, were formally approached to seek their permission. During both phases of the research, the participants were provided with all information regarding the purpose

of study, volunteer and anonymous participation, confidentiality of responses, and their right to withdraw at any time without any consequences. All agreed students were signed a consent form before filling in the research questions.

Data Analysis

Descriptive statistics, Shapiro-Wilk test, Wilcoxon Signed-rank test and rank-biserial correlation (rrb) were utilized for the analysis of the data for this research.

Results

Screening for Participants

A total of 80 participants (male =40, female = 40) were screened for the assessment of their level of gratitude and psychological well-being at Phase I. Resultantly, twenty males were selected for the gratitude intervention based on their willingness to participate in the gratitude intervention program.

Table 1

Descriptive Statistics for the Screening of Participants at Phase-I

						Shapiro-Wilk	
Variable	Gender	*N*	*M*	*Mdn*	*SD*	*W*	*p*
Gratitude	Male	40	5.24	5.25	1.10	0.93	.011
	Female	40	5.43	5.75	1.14	0.94	.031
Psychological Wellbeing	Male	40	3.96	3.99	0.50	0.96	.172
	Female	40	4.12	4.08	0.56	0.98	.713

Application of Gratitude Intervention (Pretest -Posttest) results

The findings for the study variables, i.e., gratitude and psychological well-being, are presented in Table 2. Results indicated that for gratitude, the pretest mean was 5.20 (*SD* = 0.80), and the posttest mean was 6.38 (*SD* = 0.46), which shows a significant increase in gratitude level after the intervention. Similarly, for psychological well-being, the pretest mean was 4.08 (*SD* = 0.52), and posttest mean was 4.64 (*SD* = 0.44), which shows a significant increase in psychological well-being level after the intervention. The Shapiro-Wilk test results indicated that the difference scores for gratitude pretest and posttest phases were not significantly different from a normal distribution, with a test statistic of W = 0.94 and *p* = .272. The corresponding Q-Q plot showed points largely aligning with the diagonal line, suggesting approximate normality despite minor tail deviations. In contrast, the difference scores for psychological well-being pretest and

posttest phases showed a significant deviation from normality, with W = 0.72 and p = <.001. The Q-Q plot for well-being exhibited more pronounced curvature, in the middle and at the tails, confirming non-normality. Given these findings, especially the significant non-normality of well-being difference scores and the small sample size, parametric tests assuming normality were deemed less suitable. Consequently, non-parametric tests, which do not require the normality assumption, were employed and are detailed in the following section.

Table 2

Descriptive Statistics and Normality Testing of Intervention Effects at Phase-II

	Pretest (N = 20)		Posttest (N = 20)		Shapiro-Wilk	
	M	*SD*	*M*	*SD*	W	*P*
Gratitude	5.20	0.80	6.38	0.46	0.94	0.27
Psychological Wellbeing	4.08	0.52	4.64	0.44	0.72	<.001

Hypothesis Testing

Given the observed deviations from normality in the difference scores, as confirmed by the Shapiro-Wilk test and Q-Q plots, non-parametric analyses were conducted using the Wilcoxon signed-rank test to evaluate changes in gratitude and psychological well-being from pretest to posttest (Table 3). For gratitude, the Wilcoxon signed-rank test revealed a significant increase from pretest to posttest phases, with a test statistic of z = -3.83, p = <.001. The rank-biserial correlation was -0.99, with a standard error of 0.25, and a 95% confidence interval ranging from -∞ to -0.98, indicating a strong effect of the intervention on gratitude levels. Similarly, for psychological well-being, a significant increase was also observed, with a test statistic of z = -3.92, p = <.001. The rank-biserial correlation was -1.00, with a standard error of 0.25, and a 95% confidence interval from -∞ to -1.00, suggesting a very strong effect on wellbeing. These findings indicate that both gratitude and psychological well-being significantly improved from pretest to posttest phases of the study.

Table 3

Wilcoxon Signed-Rank Test Comparing Gratitude and Psychological Wellbeing Pretest vs. Posttest Phases

	Pre		Post				
Measure	*M*	*SD*	*M*	*SD*	*Z*	*p*	r_{rb}
Gratitude	5.20	0.80	6.38	0.46	-3.88	<.001	-0.99
Psychological Wellbeing	4.08	0.52	4.64	0.44	-3.92	<.001	-1.00

Note. r_{rb} = rank-biserial correlation, N = 20.

Figure 1

Raincloud plot depicting the mean difference of gratitude from pretest to posttest phases

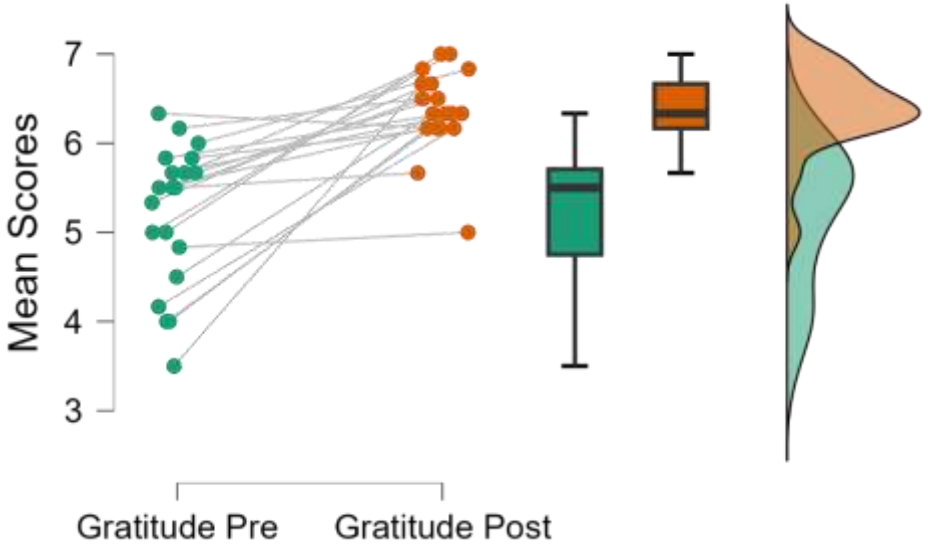

Figure 1 shows almost every participant reflecting positive changes in gratitude scores from pretest-posttest levels, verifying significant progress.

Figure 2

Raincloud plot depicting mean difference of psychological wellbeing from pretest to posttest

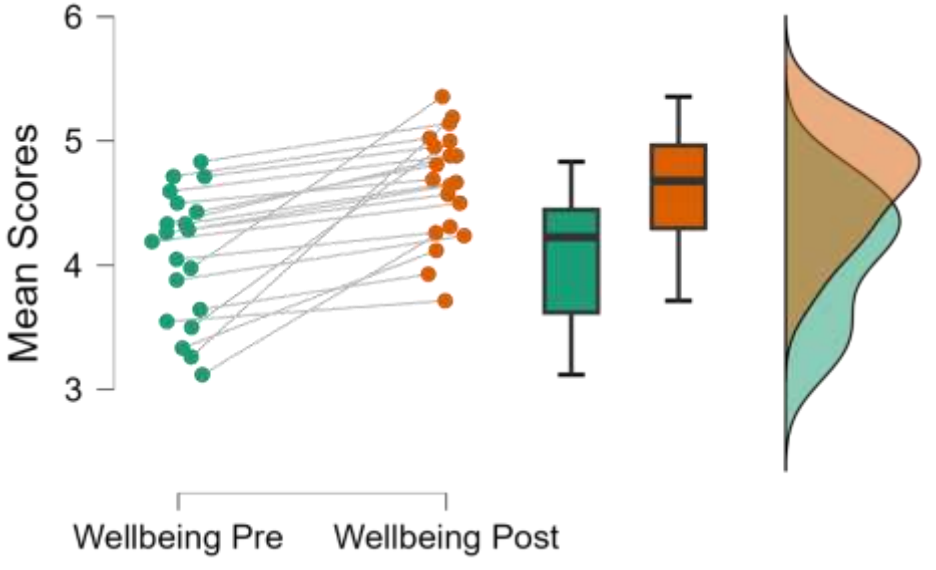

Figure 2 shows almost every participant reflecting positive changes in well-being scores from pretest-posttest levels, verifying significant progress.

Discussion

The outcomes of this quasi-experiment provide convincing evidence supporting the effectiveness of the 10-day "three good things" gratitude intervention among male university students in Sindh, Pakistan. The analysis using the non-parametric Wilcoxon signed-rank test described a significant improvement in both gratitude ($Z=-3.83, p<.001$) and psychological well-being ($Z=-3.92, p<.001$). Moreover, the extraordinarily robust rank-biserial correlation values ($rrb=-0.99$ for gratitude and $rrb=-1.00$ for psychological well-being) indicate a consistent and persistent positive change, supporting the impression that the gratitude intervention efficaciously produced positive psychological outcomes. These findings aligned with Fredrickson's Broaden-and-Build Theory (2001), which postulates that cultivation of emotions like gratitude enhances an individual's cognitive and behavioral resources, strengthens emotional status, and augments personal well-being (Kashdan et al., 2009; Noor et al., 2018; Tsang, 2006). This change concerning positive emotional processing, determined by the everyday reflection on favorable outcomes of events, also helps to counter cognitive biases and depressive perception of the world (Beck, 1976). It also offers essential grounds for achieving the best possible psychological state as defined by Ryff's multidimensional model of psychological well-being.

A leading theoretical outcome of this research is the empirical evidence of a gratitude effect within a South Asian collectivistic cultural context, a region often underrepresented in positive psychology intervention research. Previous cross-cultural studies examining gratitude in Asian populations have reported mixed results, sometimes noting that the expression of gratitude can trigger feelings of indebtedness or guilt, potentially diluting the intended therapeutic benefit (Titova, Wagstaff & Parks, 2017). In stark contrast, the observed, near-perfect effect sizes in this Pakistani sample suggest that the local cultural and religious framework may actively facilitate the success of the intervention. Specifically, among Muslim students, the practice of gratitude is intrinsically tied to the religious concept of Shukr (thanksgiving to God). This profound and pervasive cultural directive to recognize blessings means the secular "three good things" exercise resonates powerfully with an existing, highly valued behavioral and cognitive script. This cultural congruity likely amplified participant adherence and maximized the emotional depth of the exercise, enabling gratitude to function as a powerful mediator for enhancing emotional resilience and psychological well-being (Al-Seheel & Noor, 2016). Thus, the findings indicate that culturally resonant positive practices can achieve profound and rapid therapeutic outcomes, contributing vital context-specific evidence to the global positive psychology literature.

Despite the highly compelling outcomes, a cautious interpretation of the data is warranted due to several methodological constraints. Foremost among these is the limitation posed by the single-group, pretest-posttest quasi-experimental design. The absence of a randomized control group prevents the definitive conclusion that the intervention caused the observed improvements, as the gains could be attributed to extraneous variables, such as researcher expectancy effects, the novelty of the exercise, or statistical artifacts like Regression to the Mean. This risk is amplified by the study's selection procedure, which deliberately targeted male students with lower baseline scores, a subset statistically predisposed to improve upon retesting. Consequently, the observed extreme effect sizes (rrb of -0.99 and -1.00) may substantially overestimate the true effect of the intervention in the general student population. Furthermore, the 10-day duration of the intervention is shorter than the two-week minimum often recommended by meta-analyses for securing stable and long-lasting psychological benefits (Cunha, Pellanda, & Reppold, 2019).

Based on these critical insights, several key recommendations for future research are proposed to advance this line of inquiry. The most urgent step is the implementation of a rigorous Randomized Controlled Trial (RCT) design, which must include both an active comparison group and a substantially larger sample size to confirm causality and mitigate the influence of selection bias and regression to the mean. Crucially, future investigations should focus on explicitly testing the role of cultural and religious framing. This can be achieved by conducting a comparative efficacy study between the standard secular "three good things" intervention and a culturally adapted, faith-based intervention that leverages the concept of Shukr to determine which approach yields the most sustainable long-term enhancement of psychological well-being in this population (Al-Seheel & Noor, 2016). Finally, replication across diverse regions and age groups within Pakistan is essential to establish the external validity and generalizability of these highly promising results

Conclusion

This experiment aimed to investigate the effectiveness of a 10-day gratitude intervention, the "three good things" journaling, on gratitude and psychological well-being among male university students in Sindh, Pakistan. The quasi-experimental results are explicitly indicative of a robust increase in both gratitude level and psychological well-being after the 10-day intervention of journaling "three good things". The findings advocate that the gratitude intervention is highly effective in improving psychological well-being and daily life gratitude practices within a collectivistic, South Asian setting, specifically Sindh, Pakistan.

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