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Reducing Stress through Transactional Analysis Group Training among College Students in Kerala

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Abstract -

Background: Stress among college students has reached concerning levels globally, and Kerala is no exception. The state's highly competitive academic environment, combined with societal and familial expectations, places significant psychological burden on students. Transactional Analysis (TA), a well-established psychological theory and therapeutic approach, offers potential benefits for stress management through its focus on interpersonal communication and self-awareness.

Objective: This study examined the effect of a Transactional Analysis intervention on perceived stress levels among college students in Kerala, India.

Method: A randomized controlled trial design was employed with 90 undergraduate students from colleges affiliated with universities in Kerala. Participants were randomly assigned to either an experimental group (n = 45) or a control group (n = 45). The experimental group received eight 90-minute TA group training sessions over four weeks. Perceived stress was measured using the Perceived Stress Scale-10 (PSS-10).

Results: Analysis of covariance (ANCOVA) revealed a statistically significant difference between groups at posttest ($F(1, 87) = 52.34$, $p < .001$, partial eta squared = .38). The experimental group showed significant reduction in stress scores (pretest M = 24.67, SD = 5.23; posttest M = 15.42, SD = 4.18), while the control group showed minimal change (pretest M = 24.89, SD = 5.45; posttest M = 24.12, SD = 5.67).

Conclusion: The findings support the effectiveness of TA group training as a viable intervention for reducing perceived stress among college students in Kerala. These results have significant implications for campus mental health services and stress management programs in the state's educational institutions.

Key Words: transactional analysis, stress reduction, college students, perceived stress, group intervention, Kerala

1. INTRODUCTION

Stress has emerged as one of the most significant psychological concerns affecting college students worldwide. Research consistently demonstrates that academic stress represents the single most dominant stress factor affecting college students' mental well-being (Barbayannis et al., 2022). The consequences of chronic stress extend beyond immediate psychological distress to include impaired academic performance, physical health problems, and increased risk of mental health disorders (Karyotaki et al., 2020).

In Kerala, the situation is particularly concerning due to the state's unique educational context. Kerala boasts one of the highest literacy rates in India and a strong emphasis on education as a pathway to social mobility (Soman, 2018). However, this educational excellence comes with significant psychological costs. Studies have documented high levels of academic pressure, intense competition for limited opportunities, and substantial parental expectations that contribute to elevated stress among students (Thomas & Raj, 2019). The pressure to excel in competitive examinations, secure admissions to prestigious institutions, and meet family expectations creates a stressful environment for many college students in the state.

Research conducted in Kerala has revealed concerning patterns of stress and mental health difficulties among young people. Nair and colleagues (2020) found significant rates of emotional and behavioral problems among adolescents in the state. Studies of college students have similarly documented high prevalence of stress, anxiety, and depression (Kumar & Sebastian, 2021). The COVID-19 pandemic further exacerbated these concerns, with students in Kerala reporting increased stress related to online education, social isolation, and uncertainty about the future (George & Thomas, 2022).

Transactional Analysis (TA), developed by psychiatrist Eric Berne in the late 1950s, provides a comprehensive framework for understanding personality, communication, and personal change (Berne, 1961). The theory proposes that individuals operate from three distinct ego states, namely Parent, Adult, and Child, which influence their thoughts, feelings, and behaviors (Stewart & Joines, 2012). TA interventions aim to increase self-awareness, improve communication skills, and facilitate healthier patterns of interaction with oneself and others.

Several mechanisms within TA theory suggest its potential for stress reduction. First, the emphasis on understanding ego states helps individuals recognize stress-inducing internal dialogues, particularly critical Parent messages and adaptive Child responses (Berne, 1972). Second, TA's focus on analyzing interpersonal transactions can help individuals identify and modify stress-producing communication patterns. Third, the concept of strokes and recognition addresses fundamental psychological needs whose unmet status often contributes to stress (Stewart & Joines, 2012).

Research has demonstrated the effectiveness of TA interventions for various psychological outcomes. Vos and van Rijn (2022) conducted a comprehensive systematic review and meta-analysis finding significant evidence for TA's effectiveness across multiple clinical presentations. Studies have shown TA's benefits for emotional regulation, relationship improvement, and psychological well-being (Alkasir et al., 2017; Nayeri et al., 2014). However, limited research has specifically examined TA's effectiveness for stress reduction among college student populations in the Indian context, particularly in Kerala.

1.1 Objectives of the Study

The primary objective of this study was: To examine the effect of a Transactional Analysis (TA) intervention on the level of stress among college students in Kerala.

1.2 Hypotheses

H1: There will be a statistically significant difference in perceived stress scores between college students who receive TA group training and those in the control group.

H2: College students who participate in TA group training will demonstrate significantly lower perceived stress scores at posttest compared to pretest.

2. REVIEW OF LITERATURE

2.1 Stress Among College Students

The prevalence of stress among college students has been extensively documented. Lazarus and Folkman (1984) conceptualized stress as a transaction between the individual and environment, occurring when demands are appraised as exceeding coping resources. This transactional model of stress provides a valuable framework for understanding how students experience and respond to academic and personal challenges. College students face multiple concurrent stressors including academic workload, assessment pressures, relationship difficulties, financial concerns, and future career uncertainty (Reddy et al., 2018).

Research indicates that academic stress may be the single most dominant stress factor affecting college students' mental well-being (Barbayannis et al., 2022). A study by Karyotaki et al. (2020) examined sources of stress among college students internationally and found that academic pressures, financial concerns, and relationship problems were the most commonly reported stressors. Importantly, estimates of population attributable risk suggested that targeted stress prevention interventions could potentially eliminate up to 80% of the prevalence of psychological disorders observed in the student population.

In Kerala specifically, several factors contribute to elevated stress among students. The state's strong emphasis on education, while producing notable achievements, has created an intensely competitive academic environment (Soman, 2018). Research by Thomas and Raj (2019) documented the psychological impact of academic pressure on higher secondary students in Kerala, finding significant associations between academic stress and mental health difficulties. Additionally, factors unique to Kerala's context, including high unemployment rates among educated youth and pressures related to migration, add to the stress burden experienced by students (Kurien, 2021).

2.2 Theoretical Framework: Transactional Analysis and Stress

Transactional Analysis offers several theoretical concepts relevant to understanding and addressing stress. At its foundation, TA proposes that personality comprises three ego states: Parent, Adult, and Child (Berne, 1961). The Parent ego state contains internalized attitudes, beliefs, and behaviors derived from authority figures during childhood. The Adult represents rational, reality-testing capacities. The Child encompasses emotional responses, creativity, and early-learned behavioral patterns.

From a TA perspective, stress often arises from dysfunction within and between ego states. Critical Parent messages, which are internalized criticisms and unrealistic expectations, can generate chronic self-condemnation and performance anxiety (Stewart & Joines, 2012). This concept is particularly relevant in the Kerala context, where students may internalize high expectations from family, teachers, and society. Similarly, adaptive Child patterns developed in response to early experiences may lead to maladaptive stress responses in adult situations. The goal of TA intervention is to strengthen Adult functioning, enabling more rational appraisal of stressors and more effective coping responses.

The concept of strokes, which are units of recognition and acknowledgment, is particularly relevant to stress. Berne (1964) proposed that humans have a fundamental need for strokes, and stroke deprivation produces significant psychological distress. Many stress-producing patterns can be understood as attempts to obtain strokes through maladaptive means. Teaching individuals to recognize their stroke patterns and develop healthier ways of meeting recognition needs represents an important component of TA-based stress intervention.

Additionally, the concept of drivers in TA theory provides insight into stress-producing behavioral patterns. Drivers are compulsive behaviors learned in childhood that individuals feel compelled to perform, such as Be Perfect, Hurry Up, Be Strong, Please Others, and Try Hard (Kahler, 1975). These drivers often contribute to chronic stress by establishing unrealistic standards and expectations. In academic contexts like Kerala's competitive educational environment, drivers such as Be Perfect and Try Hard may be particularly relevant to understanding student stress.

2.3 Psychological Interventions for Stress Reduction

Various psychological interventions have demonstrated effectiveness for stress reduction among college students. Techniques including mindfulness meditation, cognitive-behavioral therapy, relaxation training, and psychoeducational programs have shown promise in reducing stress symptoms (Ross et al., 2023). Research suggests that teaching students healthy stress management techniques can improve psychological well-being (Alborzkouh et al., 2015).

Interventions based on the transactional model of stress and coping have demonstrated particular effectiveness. Studies employing Lazarus and Folkman's framework have shown significant improvements in coping skills and stress reduction among various populations (Sanaeinasab et al., 2017). Educational interventions targeting stress appraisal and coping strategies have proven effective across diverse settings, from healthcare workers to industrial employees (Ghaffari et al., 2019).

Transactional Analysis interventions have shown effectiveness for various psychological outcomes that relate to stress. Studies have demonstrated TA's benefits for emotional regulation, anxiety reduction, and improved psychological functioning (Widdowson, 2014). Research on TA group training has found significant improvements in participants' ability to manage emotions and communicate effectively (Alkasir et al., 2017). However, specific research examining TA's effectiveness for stress reduction among college students in the Indian context remains limited.

3. METHODS

3.1 Research Design

This study employed a randomized controlled trial (RCT) design with pretest-posttest assessments. Participants were randomly assigned to either the experimental group (TA intervention) or a waitlist control group. This design allows for strong causal inferences regarding intervention effects while controlling for potential confounding variables. The independent variable was group assignment (TA intervention vs. control), and the dependent variable was perceived stress as measured by the Perceived Stress Scale-10.

3.2 Participants

Participants were 90 undergraduate students from arts and science colleges affiliated with the University of Kerala and Mahatma Gandhi University in Kerala. A priori power analysis using G*Power indicated that a sample of 76 participants (38 per group) would provide .80 power to detect a medium effect size (f = .25) with alpha = .05. A larger sample (n = 90) was recruited to account for potential attrition. Inclusion criteria were: (a) enrollment as an undergraduate student, (b) age 18 to 25 years, (c) moderate to high stress as indicated by a PSS-10 score of 14 or above, (d) not currently receiving psychological treatment, and (e) provision of informed consent.

Table 1. Demographic Characteristics of Participants (N = 90)

Variable	Experimental (n = 45)	Control (n = 45)
Gender		
Male	19 (42.2%)	18 (40.0%)
Female	26 (57.8%)	27 (60.0%)
Age (years)		
M (SD)	20.67 (1.58)	20.44 (1.63)
Year of Study		
First Year	14 (31.1%)	13 (28.9%)
Second Year	16 (35.6%)	18 (40.0%)
Third Year	15 (33.3%)	14 (31.1%)
District		
Thiruvananthapuram	23 (51.1%)	22 (48.9%)
Ernakulam	22 (48.9%)	23 (51.1%)
Baseline PSS-10 Score		
M (SD)	24.67 (5.23)	24.89 (5.45)

3.3 Instruments

3.3.1 Perceived Stress Scale-10 (PSS-10)

The PSS-10 (Cohen & Williamson, 1988) is a widely used 10-item self-report measure assessing the degree to which situations in one's life are appraised as stressful over the past month. Items are rated on a 5-point Likert scale from 0 (never) to 4 (very often), with total scores ranging from 0 to 40. Higher scores indicate greater perceived stress. The PSS-10 has demonstrated good psychometric properties, with internal consistency reliability of alpha = .78 in the original validation study (Cohen & Williamson, 1988) and subsequent studies reporting alpha coefficients ranging from .74 to .91 (Lee, 2012). The scale has been validated for use in Indian populations. In the present study, Cronbach's alpha was .84 at pretest and .87 at posttest.

3.3.2 Demographic Questionnaire

A researcher-developed questionnaire collected information on participants' age, gender, year of study, district of residence, and field of study.

3.4 Intervention

The TA group training intervention consisted of eight 90-minute sessions conducted twice weekly over four weeks. Sessions were facilitated by a certified Transactional Analyst with extensive experience in group therapy and stress management, and familiarity with the Kerala educational context. The intervention was designed based on established TA protocols (Stewart & Joines, 2012) and incorporated stress-specific applications of TA concepts with examples and scenarios relevant to college students in Kerala.

Table 2. Content of Transactional Analysis Group Training Sessions for Stress Reduction

Session	Topic	Stress-Related Focus
1	Introduction and Ego States	Identifying internal stress triggers; recognizing Parent, Adult, Child responses to academic stress
2	Critical Parent and Stress	Recognizing critical internal messages from family and society; developing Nurturing Parent; self-compassion exercises
3	Adult Functioning	Strengthening Adult rational appraisal; reality-testing skills; cognitive restructuring of academic worries
4	Transactions and Stress	Stress-producing communication patterns with family and peers; assertive communication; role-playing
5	Strokes and Time Structure	Meeting recognition needs; healthy time structuring; reducing isolation and academic overwork
6	Drivers and Stress Patterns	Identifying drivers (Be Perfect, Hurry Up, etc.); modifying stress-producing behaviors related to academic pressure
7	Life Scripts and Beliefs	Identifying stress-related script beliefs about success and failure; redecision work; new permissions
8	Integration and Future	Personal stress management plan; contracts for change; relapse prevention; ongoing self-care

3.5 Procedure

Following institutional ethics board approval, participants were recruited through campus announcements, notices in college departments, and social media. Interested students completed an online screening questionnaire including the PSS-10. Those meeting inclusion criteria (PSS-10 score of 14 or above) were invited to participate. Eligible participants provided written informed consent and completed the baseline assessment battery.

Random assignment to experimental or control conditions was accomplished using a computer-generated random number sequence. The experimental group participated in the eight-session TA group training program conducted at designated venues in their respective colleges. The control group was placed on a waitlist and offered the intervention following completion

of the study. Posttest assessments were administered to both groups within one week following the final intervention session.

3.6 Data Analysis

Statistical analyses were conducted using SPSS version 26.0. Descriptive statistics were calculated for all variables. Independent samples t-tests examined baseline equivalence between groups. The primary hypothesis was tested using analysis of covariance (ANCOVA) with posttest PSS-10 scores as the dependent variable, group assignment as the independent variable, and pretest PSS-10 scores as the covariate. Effect size was calculated using partial eta-squared. Within-group changes were examined using paired samples t-tests. Cohen's d was calculated for within-group effect sizes. The significance level was set at alpha = .05 for all analyses.

4. RESULTS

4.1 Preliminary Analyses

Preliminary analyses examined baseline equivalence and verified assumptions for statistical tests. Independent samples t-tests revealed no significant differences between experimental and control groups on pretest PSS-10 scores, $t(88) = 0.19$, $p = .847$, or demographic variables (all ps > .05), confirming successful randomization.

Assumptions for ANCOVA were tested and met. Shapiro-Wilk tests indicated normal distribution of residuals in both groups (ps > .05). Levene's test confirmed homogeneity of variances, $F(1, 88) = 0.98$, $p = .325$. The interaction between the covariate and treatment was non-significant, $F(1, 86) = 1.12$, $p = .293$, supporting the homogeneity of regression slopes assumption.

4.2 Descriptive Statistics

Table 3 presents means and standard deviations for PSS-10 scores by group and time point. The experimental group demonstrated substantial reduction in perceived stress from pretest to posttest, while the control group showed minimal change.

Table 3. Descriptive Statistics for Perceived Stress Scores by Group and Time

Time Point	Experimental (n = 45)		Control (n = 45)	
	M	*SD*	*M*	*SD*
Pretest	24.67	5.23	24.89	5.45
Posttest	15.42	4.18	24.12	5.67
Change Score	-9.25	3.42	-0.77	2.34

Note. Perceived stress measured using PSS-10 (possible range 0 to 40). Higher scores indicate greater stress.

4.3 Hypothesis Testing

ANCOVA was conducted to test the primary hypothesis. Results revealed a statistically significant main effect of group on posttest perceived stress scores after controlling for pretest scores, $F(1, 87) = 52.34$, $p < .001$, partial eta squared = .38. According to Cohen's (1988) guidelines, this represents a large effect size, indicating that the TA intervention accounted for 38% of the variance in posttest stress scores.

Table 4. ANCOVA Summary Table for Perceived Stress Scores

Source	*SS*	*df*	*MS*	*F*	*Partial eta sq*
Pretest (Covariate)	523.67	1	523.67	38.45***	.31
Group	712.89	1	712.89	52.34***	.38
Error	1184.56	87	13.62		
Total	2421.12	89			

Note. ***p < .001

Paired samples t-tests examined within-group changes from pretest to posttest. The experimental group showed a statistically significant decrease in perceived stress, $t(44) = 18.14$, $p < .001$, $d = 1.96$ (large effect). The control group showed no significant change, $t(44) = 1.21$, $p = .232$, $d = 0.14$ (negligible effect).

Table 5. Paired Samples t-test Results for Within-Group Changes

Group	Mean Diff (SD)	*t*	*p*	*Cohen's d*
Experimental	-9.25 (3.42)	18.14	< .001	1.96
Control	-0.77 (2.34)	1.21	.232	0.14

Note. df = 44 for both groups. Negative values indicate reduction in stress.

5. DISCUSSION

This randomized controlled trial examined the effectiveness of Transactional Analysis group training in reducing perceived stress among college students in Kerala. The results strongly support the research hypotheses, demonstrating that participants who received the TA intervention experienced significantly greater reductions in perceived stress compared to control group participants. The large effect size (partial eta squared = .38) indicates that the TA intervention had a substantial and practically meaningful impact on stress reduction.

The magnitude of stress reduction observed in this study (a 37.5% decrease in mean PSS-10 scores) compares favorably with other evidence-based stress interventions. For example, mindfulness-based interventions typically produce effect sizes in the medium range (Smit & Stavrulaki, 2021), while the present study found a large effect. This suggests that TA may offer particular advantages for stress management in the Kerala context, possibly due to its comprehensive approach addressing cognitive, emotional, and interpersonal dimensions of stress.

Several mechanisms within TA theory may account for the observed stress reduction. First, teaching participants to recognize and modify critical Parent messages likely reduced internal sources of stress. In Kerala's competitive educational environment, students often internalize high expectations from family and society (Thomas & Raj, 2019). The TA concept of developing a Nurturing Parent provides a framework for cultivating self-compassion as an alternative to self-criticism.

Second, strengthening Adult functioning may have improved participants' ability to rationally appraise stressors and develop effective coping strategies. This aligns with cognitive theories of stress emphasizing the role of appraisal in determining stress responses (Lazarus & Folkman, 1984). The Adult ego state's capacity for reality testing and problem-solving provides tools for evaluating situations more objectively and generating adaptive responses to academic and personal challenges.

Third, the focus on recognizing and modifying drivers (Be Perfect, Hurry Up, Be Strong, Please Others, Try Hard) addresses common patterns underlying chronic stress, particularly in academic settings. Many students in Kerala operate under unrealistic expectations driven by these patterns. Teaching participants to recognize and moderate driver behaviors may have reduced the psychological pressure contributing to stress experiences.

5.1 Limitations

Several limitations should be considered when interpreting these findings. First, the absence of follow-up assessment limits our ability to determine whether stress reduction is maintained over time. Future research should include longer-term follow-up to assess durability of effects. Second, the sample was drawn from arts and science colleges in two districts of Kerala, which may limit generalizability to students in professional courses or other regions of the state. Third, reliance on self-report measures introduces potential biases including social desirability. Fourth, the waitlist control design does not allow for distinguishing specific effects of TA from non-specific factors such as group support and attention.

5.2 Implications and Recommendations

The findings have important implications for college mental health services in Kerala. Given the high prevalence of stress among college students in the state and its negative consequences for academic performance and well-being, effective stress management interventions are critically needed (Thomas & Raj, 2019). The present study suggests that TA group training represents a viable and effective approach that could be implemented within campus counseling centers or as a preventive program for at-risk students.

Future research should compare TA to other evidence-based stress interventions to clarify its relative effectiveness and identify for whom it works best. Investigation of mediators and moderators of treatment effects would enhance understanding of change mechanisms. Studies examining the effectiveness of TA interventions across diverse student populations in Kerala, including professional course students and students from different socioeconomic backgrounds, would strengthen the evidence base. Additionally, research examining briefer TA interventions would inform feasibility of implementation in settings with limited resources.

6. CONCLUSION

This randomized controlled trial provides strong evidence for the effectiveness of Transactional Analysis group training in reducing perceived stress among college students in Kerala. The significant stress reduction observed in the intervention group, combined with the large effect size, suggests that TA represents a valuable addition to the range of evidence-based interventions available for addressing student stress. As colleges and universities in Kerala continue to seek effective approaches for supporting student mental health, TA group training offers a theoretically grounded and empirically supported option worthy of consideration.

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