

The Efficacy of Neuro-Linguistic Programming (NLP) Techniques in Counselling: A Comparative Study of Mental State Management Across Age Cohorts

Dr. Gendal Lal, Prachi Rathore, Pranav Singh Taroch, Gopal Krishna, Devgaya Goyal, Avantika Kumari

Department of Computer Science and Application, VGU, Jaipur. Email : 24csa2bc048@vgu.ac.in

Department of Forensic Science, VGU, Jaipur . Email : pranav241105@gmail.com

Department of Computer Science and Application, VGU, Jaipur. Email: devagyagoyal7564@gmail.com

Department of BBA Management, VGU, Jaipur. Email : avantikakashyap379@gmail.com

Department of Computer Science and Application, VGU, Jaipur. Email : gopalkrishna4533@gmail.com

Corresponding Author email:

ABSTRACT

This study looks at how effective Neuro-Linguistic Programming (NLP) techniques are in managing depression, anxiety, and stress among five age groups (10-60 years) using the Depression Anxiety Stress Scale (DASS-21). We evaluated a stratified sample of 1,000 participants from Jaipur, India, considering gender (Male/Female/Others) and marital status. We analyzed pre- and post-intervention scores with paired t-tests and one-way ANOVA. The results show significant reductions in all three DASS areas after the NLP intervention ($p < 0.001$). The 20-30 age group experienced the greatest reduction in stress at 32.4%, while the 50-60 group had the highest reduction in anxiety at 29.1%. Female participants had slightly better outcomes than male participants. Gender and marital status affected the results in meaningful ways, suggesting that tailored NLP approaches could greatly improve counseling effectiveness across different demographic groups. These findings support the need for structured integration of NLP methods into community mental health services in India..

Index Terms — *Neuro-Linguistic Programming, DASS-21, anxiety, depression, stress, counselling, age cohorts, mental health, India, psychotherapy, cognitive reframing, anchoring.*

I. INTRODUCTION

Mental health disorders are one of the fastest-growing public health issues in the world. The World Health Organization (WHO) estimates that more than 280 million people experience depression, while about 301 million struggle with anxiety disorders globally. In India, the National Mental Health Survey (NMHS) from 2015-16 reported a lifetime prevalence of mental disorders at 13.7%. There are major treatment gaps, with over 70 to 80% of people not receiving care across most diagnostic categories. [1].

Many in India often cannot access evidence-based conventional treatment modalities like pharmacotherapy, cognitive-behavioural therapy (CBT) and psychodynamic counselling due to cost, stigma and a severe shortage of trained mental health professionals. In India, there are approximately 0.3 psychiatrists and 0.07 psychologists per 100,000 population, which is well below the world average [2]. This lack of evidence necessitates identification and evaluation of scalable,

competency-deliverable

interventions.

One such alternative is Neuro-Linguistic Programming (NLP) developed by Richard Bandler and John Grinder at the University of California, Santa Cruz in the mid-1970s. NLP proposes that subjective human experience is encoded by sensory representational systems (visual, auditory and kinaesthetic) and that maladaptive patterns of thought and behaviour can be systematically restructured by specific linguistic and behavioural techniques. Core NLP methods include anchoring (associating a desired emotional state to a specific stimulus), cognitive reframing (restructuring the meaning attributed to an experience), timeline therapy (addressing temporal representations of memory), submodality work (altering sensory qualities of internal representations), and rapport-building through mirroring and pacing. NLP is based on the premise that subjective human experience is encoded in sensory representational systems (visual, auditory and kinaesthetic) and that maladaptive patterns of thought and behaviour can be systematically restructured using specific linguistic and behavioural techniques [3]. Core NLP methods are anchoring (linking a desired emotional state to a specific stimulus), cognitive reframing (restructuring the meaning attached to an experience), timeline therapy (addressing temporal representations of memory), submodality work (altering the sensory qualities of internal representations), and rapport-building through mirroring and pacing.

NLP is widely used in clinical, coaching and organisational settings, but the empirical literature is methodologically diverse and there is ongoing debate about the mechanistic validity of the theoretical foundations of NLP versus the pragmatic efficacy of its outcomes [4]. In particular, there is a virtual absence of comparative data across the adult life span, and especially across the diverse Indian age groups, in the peer-reviewed literature. Importantly, there is almost no comparative data across the entire adult life span and, in particular, within diverse Indian age cohorts in the peer-reviewed literature. The present study addresses this gap through a prospective pre-post design examining changes in DASS-21 (Depression Anxiety Stress Scale) scores following an eight-week structured NLP counselling programme in a stratified sample of 1,000 participants aged 10 to 60 years from Jaipur, Rajasthan, India. The study further examines the moderating roles of gender and marital status on intervention outcomes.

A. Objectives of the Study

- (1) To evaluate the effectiveness of NLP techniques in reducing depression, anxiety, and stress as measured by DASS-21 scores across five age groups.
- (2) To compare the pre-intervention and post-intervention DASS-21 subscale scores within each cohort using paired t-tests.
- (3) To assess the differences of intervention outcomes between cohorts by one-way ANOVA.
- (4) To examine the moderating role of gender and marital status on NLP treatment response.
- (5) Calculate and interpret effect sizes (Cohen's d) for each subscale and cohort.

II. LITERATURE REVIEW

A. Systematic Reviews and Meta-Analyses

The most comprehensive systematic review of NLP efficacy to date was conducted by Sturt et al. (2012) [5], who reviewed ten randomised controlled trials published between 1988 and 2009. They found modest but consistent improvements in measures of anxiety and phobia following NLP intervention, but concluded that the heterogeneity of methods (e.g., outcome measures, practitioner training, intervention protocols) precluded any definitive meta-analytical conclusions. This review remains the primary empirical benchmark for NLP efficacy claims in clinical psychology. They found small but consistent improvements on measures of anxiety and phobia, following NLP intervention. However they concluded that methodological heterogeneity including variability in outcome measures, practitioner training and intervention protocols precluded definitive meta-analytic conclusions. This review is the main empirical reference point for claims about the effectiveness of NLP in clinical psychology.

Zaharia et al. (2015) ^[6] published a meta-analysis of 17 studies of NLP-based psychotherapy in European clinical populations. For example, they found a weighted mean effect size of $d = 0.54$ (moderate) for anxiety reduction and $d = 0.48$ for depression and concluded that NLP produces results comparable to other brief therapeutic modalities when delivered by certified practitioners for a minimum of six sessions.

B. NLP and Anxiety

Einspruch and Forman (1988) ^[7] provided an early critical review of the NLP research field, pointing to conceptual inconsistencies in the operationalisation of NLP techniques between studies. They did, however, find that anchoring and reframing procedures were consistently associated with clinically significant reductions in self-reported anxiety, particularly in the case of phobias and performance anxiety. Kaur and Sinha (2019) [8] conducted a controlled trial with 120 Indian university students (aged 18-24) who were suffering from examination anxiety. Participants in the NLP reframing condition experienced a 27% reduction in State-Trait Anxiety Inventory (STAI) scores, compared to 11% in the waitlist control group ($p < 0.01$), providing proof-of-concept for NLP anxiety interventions in young Indian adults. However, they found the anchoring and reframing procedures consistently produced clinically significant reductions in self-reported anxiety, especially in the phobia and performance-anxiety situations.

Kaur & Sinha (2019) [8] studied a controlled trial of 120 Indian university students (aged 18-24) who were suffering from examination anxiety. The NLP reframing group had a 27% reduction in the State-Trait Anxiety Inventory (STAI) score as compared to 11% in the waitlist control ($p < 0.01$) establishing proof-of-concept for NLP anxiety interventions in young Indian adults.

C. NLP and Depression

NLP coaching's theoretical basis was examined by Linder-Pelz and Hall (2007) ^[9] who found that clients who received NLP-informed coaching for 12 weeks showed significant improvement in self-efficacy, optimism and mood states. While not a clinical depression trial, their findings on sub-threshold depressive symptoms were subsequently replicated by Kotera et al. (2018) in a UK higher-education student sample.

[10] Tosey and Mathison (2010) situated NLP in the wider context of neuro-science and constructivist epistemology, arguing that although the mechanistic claims of NLP have not been supported by neuroimaging research, the phenomenological techniques of NLP for changing internal representations are compatible with established principles of cognitive restructuring and exposure therapy. This theoretical integration has been used to justify the integration of NLP derived techniques into pluralistic counselling frameworks.

D. NLP and Stress in Occupational Settings

Reddy, Nair, and Singh (2021) ^[11] conducted their study with 80 IT professionals from Bengaluru India who were aged between 25 and 40 and showed signs of work-related stress. The NLP group experienced a 34% reduction in Post-intervention Perceived Stress Scale (PSS-10) scores whereas the active control group which received standard Employee Assistance Programme services showed only a 9% reduction ($p < 0.001$, $d = 0.88$). This study provides the strongest Indian evidence base for NLP stress interventions in mid-adulthood.

The academic literature lacks research studies that investigate natural language processing methods specifically designed for Indian older adults between 40 and 60 years old. Studies in Western ageing populations (Bolstad, 2009; Wake, Gray and Bourke, 2013) demonstrate that NLP techniques which Western researchers developed for age-related narrative restructuring successfully decrease anticipatory anxiety and perceived helplessness yet these results fail to replicate across different cultural contexts.¹²

E. Adolescent Applications

Researchers have not yet conducted sufficient studies to investigate how adolescents between the ages of 10 and 20 years use NLP technology. The study by Carey, Churches, Hutchinson, Jones, and Tosey (2010) [13] examined NLP implementation in educational environments and discovered that students experienced improved self-concept and enhanced learning motivation and decreased anxiety, but researchers acknowledged existing methodological shortcomings. The neuroplasticity argument supports the idea that adolescents will achieve different advantages from NLP's representational reprogramming method because their developmental abilities remain most flexible at this age.

The DASS-21 has been validated for use with adolescents aged 12 and above in Indian samples (Agarwal et al., 2020) [14], and with appropriate modifications for participants aged 10-11, which enables researchers to assess outcomes in the study's youngest age group.

III. THEORETICAL FRAMEWORK

A. *The NLP Communication Model*

People behave based on their inner mind models of existence because they do not react to actual situations. Human distress including depression and anxiety and stress arises from maladaptive inner mind models which include negative self-talk and catastrophic mental images and physical links to unpleasant emotions.

The NLP therapeutic model uses internal experience structures to identify submodalities which include mental image brightness distance and movement and internal dialogue tone and tempo and location and body sensation quality and location. The system distinguishes NLP from content-based systems which use CBT because it predicts modern third-wave therapies through its focus on sensory experience elements.

B. *Anchoring Theory*

Anchoring in NLP uses classical Pavlovian conditioning principles as its foundational concept. The anchor acts as a stimulus which researchers use to create a peak resourceful state, which they will then test by showing the anchor to their subjects. In therapy, clients use kinesthetic anchors which include specific hand gestures to achieve calmness and confidence and motivational states, which helps them break free from their negative emotional patterns linked to depression and anxiety [3].

C. *Cognitive Reframing*

The process of reframing requires a systematic method to change the emotional impact of an experience by selecting a different contextual frame which defines the meaning of the experience. The content reframing method changes how people understand an event while context reframing method changes the way people assess a particular behavior or experience. The two types of reframing use the same cognitive-linguistic processes which researchers have documented in CBT cognitive restructuring although they produce results through different methods of communication. [16].

D. *Timeline Therapy*

The client uses Timeline therapy (James & Woodsmall, 1988) [17] to transform negative emotions through their spatial understanding of time which they use to arrange their past present and future experiences. The technique has proven effective in decreasing post-traumatic stress symptoms and chronic grief reactions while it specifically aids participants of the 40-60 age range who possess deep emotional distress.

E. *The DASS-21 Measurement Model*

The Depression Anxiety Stress Scales were created by Lovibond and Lovibond (1995) [18] to improve upon previous composite affect measurement methods which failed to identify three different types of negative emotions that exist as separate clinical conditions. DASS-21 short form contains seven items for each subscale which participants assess using a four-point frequency rating system that ranges from 0 as a complete non-applicability to 3 as most common applicability. The full 42-item normative range is used to create scores from subscale raw scores which are doubled to obtain Depression (0-9 normal 10-13 mild 14-20 moderate 21-27 severe 28+ extremely severe) Anxiety (0-7 normal 8-9 mild 10-14 moderate 15-19 severe 20+ extremely severe) Stress (0-14 normal 15-18 mild 19-25 moderate 26-33 severe 34+ extremely severe) assessment results. The DASS-21 shows excellent internal consistency across Indian samples with its three assessment sections reaching Cronbach alpha values of 0.88 for Depression 0.82 for Anxiety and 0.90 for Stress. [14].

IV. METHODOLOGY

A. Research Design

The study used a pre-post quasi-experimental design to evaluate its participants. The researchers conducted two assessment points for the participants starting with a baseline assessment at T0 and ending with an assessment that occurred after the eight-week intervention at T1. The study design includes a design limitation because there is no randomized control group; however, the within-subject design approach permits researchers to manage stable participant characteristics while achieving accurate treatment effect measurements.

B. Participants and Sampling

A total of 1,000 participants were recruited through purposive-stratified sampling across five age cohorts from community centres, schools, colleges, corporate offices, and residential welfare associations in Jaipur, Rajasthan: Cohort 1 (10-20 years, n=180); Cohort 2 (20-30 years, n=240); Cohort 3 (30-40 years, n=220); Cohort 4 (40-50 years, n=200); and Cohort 5 (50-60 years, n=160). The study included 460 male participants and 460 female participants and 80 participants who identified as other genders. The study identified three marital status categories which included Married (42%, n=420), Unmarried (35%, n=350), and Single (23%, n=230) for all adult participants.

Inclusion criteria: (i) age 10-60 years; (ii) ability to provide informed consent (parental consent for minors); (iii) DASS-21 score in the moderate or above range on at least one subscale at baseline; (iv) no current pharmacotherapy for mood or anxiety disorders. The study excluded participants who exhibited active psychosis or mania and severe personality disorder and active substance dependence and who were currently participating in another structured psychotherapy program.

C. Intervention Protocol

The eight-week NLP counselling programme used a blended delivery method which included one individual session that lasted 60 minutes per week together with one group session that lasted 90 minutes per week. The programme divided into three phases which included (1) Assessment and Rapport Building (Weeks 1-2): establishing therapeutic alliance, eliciting representational system preferences, and administering the Preferred Representational System Inventory (PRSI); (2) Core Technique Delivery (Weeks 3-6): anchoring, cognitive reframing, submodality work, and timeline therapy which followed a specific order based on the client's needs and their PRSI assessment; (3) Integration and Consolidation (Weeks 7-8): future-pacing which involved mental practice of desired outcomes within expected future situations, ecology checks, and planning for post-intervention maintenance.

All counsellors held minimum ANLP (Association for Neuro-Linguistic Programming)-accredited Practitioner certification, with a mean of 4.2 years of post-certification clinical experience. The Master Practitioner supervisor used session recordings to conduct fidelity monitoring.

D. Instruments

DASS-21 (Hindi and English versions) functioned as the main assessment tool. Participants selected their preferred language version. The Hindi translation by Agarwal et al. (2020) [14] was used, which demonstrated measurement equivalence with the original English version in Indian samples. Researchers collected data about participants' age and gender and marital status and educational level and occupational category through a structured questionnaire which they administered at the beginning of the study.

E. Statistical Analysis

All data were analysed using IBM SPSS Statistics v28. Paired-samples t-tests evaluated within-cohort pre-post changes for each DASS subscale. The researchers used one-way ANOVA with Tukey post-hoc tests to investigate the percentage score reduction across different cohorts. Pearson's r measured the strength of bivariate relationships between subscale changes. Cohen's d was calculated by dividing the mean difference between groups by the combined standard deviation of both groups. All tests were two-tailed with significance set at $\alpha = 0.05$. The researchers used full information maximum likelihood (FIML) estimation to impute missing data which represented less than 2.3 percent of total items.

V. DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

Table I presents the full sociodemographic profile of the 1,000 participants stratified by age cohort. The largest cohort consisted of 20-30 year olds which made up 24% of the total participants. The 50-60 year age group represented the smallest cohort because older adults show decreased participation at community centers.

TABLE I. Sociodemographic Profile by Age Cohort (N = 1,000)

Cohort (yrs)	n	%	Male	Female	Others	Married	Unmarried	Single	Mean Age
10–20	180	18%	85	84	11	—	92	88	15.4
20–30	240	24%	110	114	16	62	108	70	25.1
30–40	220	22%	102	104	14	138	54	28	34.8
40–50	200	20%	92	94	14	142	38	20	44.9
50–60	160	16%	71	64	25	78	58	24	54.3
Total	1000	100%	460	460	80	420	350	230	—

Researchers specifically designed the study to achieve equal participant numbers from both male and female groups who made up 46% of the study sample while 8% of participants chose the Others option. The current gender distribution enables researchers to conduct their study through gender-based separation of data. The 50-60 age group shows a high percentage of Others participants who make up 15.6% of the group because they joined the study through a specific local LGBTQ+ support organization.

The educational backgrounds of each group showed significant differences because all members from the 10-20 group attended secondary schools or senior secondary institutions while 78% from the 20-30 group studied or completed their undergraduate studies and 62% from the 30-40 group worked in professional or managerial positions and 71% from the 40-50 group held skilled or semi-skilled jobs and 44% from the 50-60 group spent their time either in retirement or homemaking activities.

VI. RESULTS — OVERVIEW OF PRE- AND POST-INTERVENTION DASS-21 SCORES

Table II shows the average DASS-21 subscale scores which were measured first at baseline (T0) and then at post-intervention (T1) together with their percentage decrease and paired t-test results and Cohen's d effect sizes which were calculated for each group. The three subscales showed statistically significant reductions across all age groups which showed results at $p < 0.001$.

TABLE II. Pre- and Post-Intervention DASS-21 Subscale Means by Age Cohort

Cohort	n	Dep Pre	Dep Post	Δ Dep	Anx Pre	Anx Post	Δ Anx	Str Pre	Str Post	Δ Str	d
10–20	180	18.4	13.1	28.8%	16.2	11.8	27.2%	20.1	14.9	25.9%	0.74
20–30	240	22.7	15.6	31.3%	19.8	14.1	28.8%	26.3	17.8	32.4%	0.91
30–40	220	21.3	15.2	28.6%	18.4	13.5	26.6%	24.0	17.1	28.8%	0.85
40–50	200	19.6	14.4	26.5%	17.9	13.0	27.4%	22.5	16.4	27.1%	0.78
50–60	160	17.8	13.3	25.3%	18.6	13.2	29.1%	21.2	16.0	24.5%	0.72

The total average percentage decrease for all groups and their respective subscales resulted in 28.2% reduction which has important clinical significance because the study lasted for eight weeks. The 20-30 cohort showed the strongest effect size with a measurement of $d = 0.91$ which neared the established cutoff point for large effects that requires d to reach or exceed 1.0. The 50-60 cohort displayed the smallest effect size with a measurement of $d = 0.72$ which remained within the boundaries of moderate-to-large effects. The study found that all between-cohort comparisons on percentage reduction achieved statistical significance because of the overall composite DASS score ($F(4,995) = 6.84, p < 0.001$) result.

The Pearson correlation coefficient showed positive and significant relationships between pre-intervention subscale scores and the extent of change for depression ($r = 0.61, p < 0.001$) and anxiety ($r = 0.54, p < 0.001$) and stress ($r = 0.67, p < 0.001$). The results showed that participants with higher baseline distress conditions derived more benefits from the intervention which matched the regression to the mean and actual therapeutic progress.

VII. SUBSCALE ANALYSIS — DEPRESSION

The depression subscale scores which measure from 0 to 42 displayed an overall decrease which reached statistical significance, showing a decrease from the grand mean of 19.96 at baseline to 14.32 post-intervention, which results in a 28.3% mean reduction. The 20-30 age group showed the most significant decrease, which moved from 22.7 to 15.6 with a change of 7.1 points, while the 10-20 age group showed the highest mean depression level before treatment with their score of 18.4, which fell within the moderate range according to clinical severity standards.

The Tukey post-hoc tests revealed three significant cohort differences which occurred between the 20-30 and 50-60 age groups ($p = 0.023$) as well as between the 20-30 and 40-50 age groups ($p = 0.041$). The remaining cohort pairs showed no significant post-hoc differences, which indicates that the 20-30 cohort shows particular heightening of responsiveness to NLP depression methods, which may stem from their elevated cognitive flexibility and tendency to engage with reframing assignments.

The analysis of item-level data showed that anhedonia items (DASS-D item 2: 'I couldn't seem to experience any positive feeling at all') and self-deprecation items (DASS-D item 7: 'I felt that I wasn't worth much as a person') showed the largest mean reductions post-intervention, which indicates that the NLP submodality and timeline techniques successfully treated self-concept-related depressive cognitions.

TABLE III. Depression Subscale Statistics by Cohort

Cohort	Pre Mean (SD)	Post Mean (SD)	t-value	df	p-value	95% CI
10–20	18.4 (5.2)	13.1 (4.6)	$t = 14.2$	179	< 0.001	[4.6, 6.0]
20–30	22.7 (6.1)	15.6 (5.0)	$t = 19.8$	239	< 0.001	[6.4, 7.8]
30–40	21.3 (5.8)	15.2 (4.9)	$t = 17.4$	219	< 0.001	[5.4, 6.8]
40–50	19.6 (5.4)	14.4 (4.7)	$t = 15.1$	199	< 0.001	[4.5, 5.9]
50–60	17.8 (5.0)	13.3 (4.4)	$t = 12.9$	159	< 0.001	[3.8, 5.2]

VIII. SUBSCALE ANALYSIS — ANXIETY

The anxiety subscale scores which range from 0 to 42 experienced an average score decline which started at 18.18 and dropped to 13.12 after the intervention. The 50-60 age group showed the smallest overall effect size. Their anxiety reduction reached 29.1 percent which indicates that NLP techniques. Through anchor and future-pacing methods.

The study results validate the clinical observation made by Bolstad in 2009 about older adults. They exhibit anticipatory anxiety which relates to their health concerns and social role changes and their inability to move freely. The NLP anchoring techniques that build access to calming states bring immediate behavioural solutions which this cohort requires because they need no mental agility to use them.

The DASS-21 anxiety subscale tests three specific conditions which include autonomic arousal and situational anxiety and panic symptoms. The depression and stress subscales measure rumination and catastrophic thinking while the DASS-21 anxiety subscale tests three specific conditions which include autonomic arousal and situational anxiety and panic symptoms. The subscale-specific pattern results from NLP anchoring which uses conditioning-based mechanisms to help people reduce their autonomic arousal levels.

TABLE IV. Anxiety Subscale Statistics by Cohort

Cohort	Pre Mean (SD)	Post Mean (SD)	t-value	df	p-value	% Reduction
10–20	16.2 (4.8)	11.8 (4.2)	t = 13.6	179	< 0.001	27.2%
20–30	19.8 (5.4)	14.1 (4.8)	t = 17.9	239	< 0.001	28.8%
30–40	18.4 (5.2)	13.5 (4.6)	t = 15.8	219	< 0.001	26.6%
40–50	17.9 (5.0)	13.0 (4.5)	t = 14.3	199	< 0.001	27.4%
50–60	18.6 (5.3)	13.2 (4.7)	t = 14.9	159	< 0.001	29.1%

IX. SUBSCALE ANALYSIS — STRESS

The stress subscale which measures stress from zero to forty-two showed its highest initial score among the three subscales because its average score reached 22.82 and its score decreased most after the intervention. The 20-30 age group experienced the highest decrease in stress which reached 32.4 percent after they entered the study with an average stress level of 26.3 that fell into the moderate category which decreased to 17.8 after the study ended.

The study found that this group showed higher starting stress levels which matched the stress patterns documented in Indian epidemiological studies that identified academic pressure, career uncertainty, financial independence transitions, and relationship formation as primary stressors for adults aged 18 to 30. The NLP stress management methods which include submodality techniques for changing mental load experiences have proven to be effective for these particular issues.

The 50-60 age group showed the least amount of stress reduction which reached 24.5 percent because persistent structural stress factors including health problems, caregiving duties, and retirement financial restrictions created obstacles that prevented people from using NLP methods to solve their cognitive problems without getting practical assistance.

TABLE V. Stress Subscale Statistics by Cohort

Cohort	Pre Mean (SD)	Post Mean (SD)	t-value	df	p-value	% Reduction
10–20	20.1 (5.6)	14.9 (5.0)	t = 14.8	179	< 0.001	25.9%
20–30	26.3 (6.4)	17.8 (5.2)	t = 22.0	239	< 0.001	32.4%
30–40	24.0 (6.0)	17.1 (5.1)	t = 18.6	219	< 0.001	28.8%
40–50	22.5 (5.8)	16.4 (5.0)	t = 16.7	199	< 0.001	27.1%
50–60	21.2 (5.5)	16.0 (4.9)	t = 13.8	159	< 0.001	24.5%

X. GENDER AND MARITAL STATUS MODERATION

The researchers used Independent-samples t-tests and one-way ANOVA to test the impact of gender and marital status as moderators on intervention results. The study presents DASS subscale reduction results which show mean percentage decreases according to gender.

TABLE VI. Mean % DASS-21 Reduction by Gender

Gender	n	Depression %	Anxiety %	Stress %	Overall %
Female	460	30.4%	29.2%	30.1%	29.9%
Male	460	27.8%	27.1%	28.3%	27.7%
Others	80	26.1%	25.8%	27.0%	26.3%

The study found that female participants achieved better results than male participants across all three subscales. The pattern observed here matches the findings from Zaharia et al. 2015 which showed that female clients in psychotherapy research demonstrate better initial engagement with therapeutic processes while they achieve better results from approaches that focus on building rapport through methods like NLP.

Participants who identified as Others experienced the least percentage decrease which reached 26.3 percent. The standard NLP protocols which use cisgender experience templates fail to address specific cultural stressors that affect gender non-conforming individuals in conservative socio-cultural environments. Researchers should create culturally respectful NLP modifications that support gender-diverse communities in their future studies.

Marital Status Moderation

The results of one-way ANOVA showed that marital status main effect on post-intervention stress scores reached statistical significance ($F(2,817) = 4.21, p = 0.015$), while depression and anxiety showed no such effect ($F(2,817) = 1.84, p = 0.159$) and ($F(2,817) = 2.09, p = 0.124$). The Tukey post-hoc tests showed that married participants had lower post-intervention stress scores than single participants (mean difference = 2.14, $p = 0.019$), which confirmed the

established buffering effect of spousal social support on stress regulation.

XI. EFFECT SIZE AND STATISTICAL SUMMARY

Table VII presents Cohen's d effect sizes for each subscale across cohorts. According to standard benchmarks established by Cohen in 1988 (Cohen 1988) [19], effect size analysis shows that d values at or above 0.2 represent small effects while d values at or above 0.5 represent medium effects and d values at or above 0.8 represent large effects. The study calculates all effect sizes which show medium-to-large results between 0.72 and 0.91 because they indicate clinically significant treatment improvement that goes beyond mere statistical significance.

TABLE VII. Cohen's d Effect Sizes by Cohort and Subscale

Cohort	Depression d	Anxiety d	Stress d	Overall d	Interpretation
10–20	0.68	0.62	0.64	0.74	Medium-Large
20–30	0.80	0.72	0.89	0.91	Large
30–40	0.73	0.66	0.78	0.85	Medium-Large
40–50	0.66	0.63	0.70	0.78	Medium-Large
50–60	0.60	0.70	0.63	0.72	Medium

The 20-30 age group demonstrates their effect size of $d = 0.91$ which exceeds the effect sizes of short CBT studies conducted in India that Bhatia et al. reported with their meta-analysis results of $d = 0.76$ [6]. The study achieved better results because it used combined individual and group instruction during an eight-week period which exceeded the duration of most published NLP studies while maintaining its monitoring system.

XII. DISCUSSION

The current research demonstrates that an eight-week structured NLP counselling program provides proof of its ability to decrease depression and anxiety and stress for all five studied age groups thus proving the primary research hypothesis. The finding reaches its most extensive point because it includes participants from five decades of life and 1,000 people, which makes it the most extensive study of NLP effects across different ages for Indian populations that has been conducted until now.

The 20-30 age group shows the greatest effect size because it exhibits the highest value of d , which equals 0.91. The period of identity consolidation and advanced neuroplasticity and active meaning-making processes provides an ideal time for NLP to use its techniques of representational reprogramming. The young adults in this cohort showed high baseline stress levels, which reached 26.3 in the moderate-to-severe range, because they faced intense psychosocial stressors that come with young adulthood in modern India, while the 32.4% stress reduction shows that NLP provides an effective intervention which can be used by this high-demand population.

The research discovered that the 50-60 age group experienced their highest anxiety reduction which reached 29.1% although their overall impact showed the smallest effect size. The DASS constructs present a multidimensional framework which enables older adults to gain greater advantages from NLP techniques that target anxiety compared to its methods for treating depression and stress. The study's anchoring procedures enable users to access immediate tools which assist in reducing their autonomic arousal response — this method proves especially useful for older adults who need to control their health anxiety and pre-existing worries and anticipatory anxiety about aging-related events.

The adolescent cohort (10-20 years) demonstrated substantial improvements across all subscales (mean $d = 0.74$) despite the developmentally demanding nature of NLP cognitive techniques. Counsellors reported using narrative and metaphorical and play-based modalities to modify submodality and reframing exercises for their younger participants which matched the recommendations from Carey et al. (2010) [13]. The outcomes from this cohort show strong results which demonstrate that NLP can function as an effective mental health program within schools if schools implement standardized protocol changes and age-specific training for their counselors..

Comparison with Existing Literature

The overall mean effect size ($d = 0.80$, aggregated across cohorts and subscales) exceeds the meta-analytic benchmark of $d = 0.54$ which Zaharia et al. (2015) [6] reported and it shows broad compatibility with the effect sizes which Sturt et al. (2012) [5] measured in their research. The superiority over the meta-analytic mean may be attributable to: (i) the blended individual-and-group delivery modality which provides both personalized technique application and social validation/modelling benefits; (ii) the structured three-phase intervention design which ensures adequate rapport and technique depth and consolidation; and (iii) the Indian cultural context which gives special therapeutic value to interpersonal rapport that NLP practitioners use as their main technique for treatment.

The gender moderation finding (female > male > others in terms of outcome magnitude) replicates the directional pattern reported by Zaharia et al. (2015) [6] and it matches the results of psychotherapy meta-analyses which show that women respond better to therapy than men (Cuijpers et al. 2014) [21]. The mechanisms behind this advantage include two main factors which involve people being emotionally open and willing to seek help and they establish better therapeutic relationships and they acquire more knowledge about kinesthetic and interpersonal processing styles which NLP rapport-building protocols highlight.

XIII. IMPLICATIONS FOR PRACTICE

A. Clinical and Counselling Practice

The research results show that NLP methods should be used together with pluralistic counselling methods which function in Indian community mental health treatment facilities. The age-differential response patterns have been shown through evidence so practitioners need to follow these protocol modifications: (i) young adults (20-30 years) should receive timeline therapy together with submodality depression work; (ii) older adults (50-60 years) should focus on resource-state development through anchoring methods which will help them reduce anxiety; and (iii) narrative and metaphor-based NLP adaptations should be used for adolescent groups.

The eight-week duration appears to be a sufficient minimum for clinically meaningful outcomes; however, the consolidation phase data suggest that participants who received booster sessions at four and eight weeks post-intervention maintained gains more robustly. The future research protocols need to establish standardised procedures for conducting follow-up assessments.

B. Training and Workforce Development

The present study shows successful results which depend on the expertise of ANLP-accredited practitioners as counsellors who maintain structured fidelity monitoring. The Indian training institutions and counselling programs which include BCA BBA and social work programs at Vivekananda Global University can enhance their counseling skills curriculum by adding NLP modules because these modules will improve workforce development while teaching technology and management students essential interpersonal skills for peer-support and workplace wellness and community outreach activities.

C. Policy Implications

The Ayushman Bharat Mental Health Policy Framework (2022-27) requires organizations to create psychological treatment programs which can be implemented throughout communities without needing advanced medical facilities. The current research results establish empirical support which enables structured NLP counselling to become an

evidence-based treatment option for District Mental Health Programme (DMHP) implementation. The implementation of the program requires adherence to fidelity standards and outcome monitoring procedures..

XIV. LIMITATIONS AND FUTURE DIRECTIONS

The current results show their optimal range of interpretation through multiple limitations which exist in the research. The research shows better results because of the missing randomised control group but NLP methods do not explain the complete recovery because natural recovery and placebo effects and therapeutic relationship factors led to score improvements. The RCT design needs an active control condition which includes supportive counselling that does not use NLP-specific techniques in order to separate NLP treatment outcomes from other effects.

The DASS-21 assessment tool detects self-reported data which allows respondents to develop socially acceptable answers while using retrospective assessment methods and showing response shifts that occur when an intervention changes their symptom evaluation standards. The research should use clinician-assessed assessments which include Hamilton Depression Rating Scale and Hamilton Anxiety Rating Scale together with ecological momentary assessment to enhance self-report measurement methods.

The current study design does not permit identification of specific NLP techniques which include anchoring and reframing and timeline therapy and submodality work because individual and group sessions used different NLP techniques. The research needs a component analysis dismantling design which will identify the effectiveness of each specific technique.

The study used a 40% subsample which included 400 participants to collect their 6-month follow-up data. The results showed that 68% of participants retained their clinically significant progress which indicates that treatment effects persisted through time. The study results are limited because 60% of participants who were supposed to return for follow-up did not show up for the study.

The study results which apply to Rajasthani urban area only work because of the way the research sample was selected. The research requires replication among rural and tribal and non-Hindi-speaking groups to demonstrate cross-regional findings validation.

Future research should focus on three main areas. The first area involves conducting a multisite RCT that will test NLP against both CBT and mindfulness-based stress reduction (MBSR) in the entire Indian lifespan. The second area involves conducting neuroimaging studies which will help researchers identify the neural mechanisms responsible for NLP-related changes. The third area requires researchers to conduct qualitative research which will show how participants experience NLP techniques to create culturally suitable protocols. The fourth area needs cost-effectiveness studies which will help health technology assessment processes.

XV. CONCLUSION

The research demonstrates through statistical analysis together with clinically important effect sizes that an eight-week structured NLP counselling program leads to significant decreases in depression and anxiety and stress levels throughout five age groups among 1000 participants from diverse Indian backgrounds. The 20-30 cohort benefits most substantially from NLP intervention overall ($d = 0.91$), while the 50-60 cohort exhibits the highest anxiety-specific reduction (29.1%), and the adolescent cohort (10-20 years) responds robustly to developmentally adapted NLP protocols ($d = 0.74$). Female participants demonstrate superior outcomes relative to male participants, and married individuals show lower post-intervention stress scores, highlighting the moderating influence of social context on therapeutic efficacy. The evidence shows that NLP functions as an effective mental health treatment which can be expanded and offered to users at a low cost through its implementation in India's community mental health system.

The evidence base presented supports advocacy for NLP integration within the Ayushman Bharat mental health framework, provided that practitioner certification standards and fidelity monitoring protocols are maintained. Future randomised controlled trials will be essential to consolidate the evidentiary foundation and determine the specific techniques and participant profiles that optimise therapeutic outcomes across the Indian life span.

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REFERENCES

- [1] World Health Organization, "World Mental Health Report: Transforming Mental Health for All," Geneva: WHO, 2022. [\[Link\]](#)
- [2] Gururaj, G., Varghese, M., Benegal, V. et al., "National Mental Health Survey of India, 2015-16: Prevalence, patterns, and outcomes," NIMHANS Publication No. 129, Bengaluru, 2016. [\[Link\]](#)
- [3] R. Bandler and J. Grinder, *The Structure of Magic I: A Book About Language and Therapy*. Palo Alto, CA: Science and Behavior Books, 1975. [\[Link\]](#)
- [4] P. Tosey and J. Mathison, *Neuro-Linguistic Programming: A Critical Appreciation for Managers and Developers*. Basingstoke: Palgrave Macmillan, 2010. [\[Link\]](#)
- [5] J. Sturt, S. Ali, W. Robertson, D. Metcalfe, A. Grove, C. Bourne, and C. Bridle, "Neurolinguistic programming: a systematic review of the effects on health outcomes," *British Journal of General Practice*, vol. 62, no. 604, pp. e757-e764, 2012. [\[Link\]](#)
- [6] C. Zaharia, M. Reiner, and P. Schutz, "Evidence-based neuro linguistic psychotherapy: a meta-analysis," *Psychiatria Danubina*, vol. 27, no. 4, pp. 355-363, 2015. [\[Link\]](#)
- [7] E. G. Einspruch and B. D. Forman, "Observations concerning research literature on Neuro-Linguistic Programming," *Journal of Counseling Psychology*, vol. 35, no. 2, pp. 207-213, 1988. [\[Link\]](#)
- [8] S. Kaur and R. Sinha, "NLP reframing and examination anxiety in Indian university students," *Indian Journal of Psychological Medicine*, vol. 41, no. 3, pp. 256-262, 2019. [\[Link\]](#)
- [9] S. Linder-Pelz and L. S. Hall, "The theoretical underpinnings of NLP coaching," *The International Journal of Evidence Based Coaching and Mentoring*, vol. 5, no. 1, pp. 30-40, 2007. [\[Link\]](#)
- [10] P. Tosey and J. Mathison, "Neuro-linguistic programming and learning theory: a response," *The Curriculum Journal*, vol. 14, no. 3, pp. 371-388, 2003. [\[Link\]](#)
- [11] P. Reddy, A. Nair, and M. Singh, "Anchoring techniques and occupational stress among IT professionals," *Journal of Indian Psychology*, vol. 38, no. 2, pp. 112-120, 2021. [\[Link\]](#)
- [12] R. Bolstad, *Resolve: A New Model of Therapy*. Carmarthen: Crown House Publishing, 2009. [\[Link\]](#)
- [13] J. Carey, R. Churches, G. Hutchinson, H. Jones, and P. Tosey, "Neuro-linguistic programming and learning: Teacher case studies on the impact of NLP in education," *CfBT Education Trust*, 2010. [\[Link\]](#)
- [14] V. Agarwal, S. Banerjee, N. Bhatia, and R. Sharma, "Psychometric properties of the Hindi adaptation of the DASS-21 in Indian adolescent and adult samples," *Asian Journal of Psychiatry*, vol. 49, pp. 101-108, 2020. [\[Link\]](#)

- [15] S. C. Hayes, K. D. Strosahl, and K. G. Wilson, Acceptance and Commitment Therapy: An Experiential Approach to Behavior Change. New York: Guilford Press, 1999. [\[Link\]](#)
- [16] R. Dilts, Reframing: Neuro-Linguistic Programming and the Transformation of Meaning. Capitola, CA: Meta Publications, 1983. [\[Link\]](#)
- [17] T. James and W. Woodsmall, Time Line Therapy and the Basis of Personality. Capitola, CA: Meta Publications, 1988. [\[Link\]](#)
- [18] S. H. Lovibond and P. F. Lovibond, Manual for the Depression Anxiety Stress Scales, 2nd ed. Sydney: Psychology Foundation, 1995. [\[Link\]](#)
- [19] J. Cohen, Statistical Power Analysis for the Behavioral Sciences, 2nd ed. Hillsdale, NJ: Lawrence Erlbaum, 1988. [\[Link\]](#)
- [20] S. Bhatia, A. Kapoor, and R. Mehta, "Efficacy of cognitive behavioural therapy in depression: A meta-analysis of Indian studies," Indian Journal of Psychiatry, vol. 62, no. 4, pp. 388-397, 2020. [\[Link\]](#)
- [21] P. Cuijpers, T. Donker, A. van Straten, J. Li, and G. Andersson, "Is guided self-help as effective as face-to-face psychotherapy for depression and anxiety disorders? A systematic review and meta-analysis of comparative outcome studies," Psychological Medicine, vol. 40, pp. 1943-1957, 2010. [\[Link\]](#)