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EFFECTIVENESS OF A FIVE-DAY NEURO-LINGUISTIC PROGRAMMING PROGRAM ON THE MENTAL HEALTH OF ADOLESCENTS IN KERALA: A PRETEST–POSTTEST STUDY

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ABSTRACT:



Adolescence is a time when young people are especially vulnerable to mental health difficulties, yet short, skills-based interventions in schools are hard to find in Kerala, India. I asked whether a five-day program of selected neuro-linguistic programming (NLP) techniques went along with better mental health in adolescents. Using a single-group pretest–posttest design, 41 higher secondary students (aged 14–19) from Kozhikode District, all of whom had sought school counselling, completed the 42-item Mental Health Scale before and after the program. The scale covers ability to enjoy life, balance, flexibility, optimism, and perseverance. Mean total scores rose from 81.95 (SD = 7.20) to 89.85 (SD = 5.03), a gain of 7.90 points, $t(40) = 9.94$, $p < .001$, 95% CI [6.29, 9.51], $d = 1.27$. Scores went up on all five dimensions, but not evenly: perseverance gained the most (3.80 points, about 48% of the total gain) and ability to enjoy life the least (0.29 points). Posttest scores did not differ significantly by gender, school management (government vs. private), or school locality (urban vs. rural), though these comparisons had little power. With no control group, a small purposive sample, and only an immediate posttest, the findings are preliminary and cannot show that the NLP techniques caused the improvement. Controlled trials with follow-up are needed.

KEYWORDS: *neuro-linguistic programming, adolescent mental health, school counselling, pretest–posttest design, Kerala*

INTRODUCTION

The World Health Organization (2022) describes mental health as a state of well-being in which people can cope with the normal stresses of life, realize their abilities, learn and work well, and contribute to their communities. So mental health is about more than not having a disorder. It sits on a continuum, and people move along it differently, with different amounts of difficulty and distress. Adolescence is an especially sensitive part of that continuum. Biological, cognitive, and psychosocial changes arrive at the same time as new demands from school, peers, and family, and many lifelong mental health problems first show up in these years (World Health Organization, 2022). Schools are an obvious place to reach young people, and school counsellors increasingly meet students who come in with academic pressure, low confidence, emotional distress, or trouble in their relationships.

Indian school samples suggest these difficulties are common. In a cross-sectional survey of 742 adolescent girls in Gujarat, nearly half screened positive for common mental disorders on the General Health Questionnaire-12 (Mangal et al., 2020). Most of the Indian literature, though, describes how

widespread the problems are and what goes with them, rather than testing interventions, and very little of it comes from Kerala. Practitioners here have little local evidence on which brief, acceptable approaches might strengthen adolescents' coping and well-being.

One approach used in counselling and coaching is neuro-linguistic programming (NLP). Bandler and Grinder (1979) introduced it as a set of methods for studying subjective experience and for modelling and changing how people represent events through language and the senses. Techniques commonly taught include anchoring, reframing, dissociation, and working with submodalities, meaning the qualities of an inner image or feeling, such as its brightness, distance, or intensity. Several small studies report benefits. In a quasi-experimental study of 52 nursing and midwifery students, five 120-minute NLP sessions improved general health (Sahebalzamani, 2014). NLP training reduced social anxiety in a randomized comparison (Sylabkhori & Abdivarmazan, 2016), improved quality of life among university students (Albalawi, 2014), and lowered occupational stress among critical-care nurses (Hemmati Maslakpak et al., 2016). It has also been linked to lower mathematics anxiety in college students (Saleh, 2020), less sport anxiety in athletes (Hendraiana et al., 2021), and fewer depressive and anxiety symptoms in liver transplant patients (Bagci et al., 2021).

This body of work needs to be read with care. Systematic reviews describe the evidence for NLP as thin and of low methodological quality, with small samples, varied outcomes, and few well-controlled trials (Sturt et al., 2012). Another review of the research literature concluded that the empirical record offers little support for many of NLP's theoretical claims (Witkowski, 2010). Studies of NLP with adolescents are especially rare, and I found none from Kerala. Even so, a transparent evaluation of a clearly defined, replicable NLP program with school-age students can add something useful, if preliminary, as long as its limits are stated plainly.

In this study I asked whether a five-day program of selected NLP techniques was associated with better mental health among adolescents in Kozhikode District, Kerala. I tested five hypotheses: (H1) mental health scores would improve from pretest to posttest; (H2) posttest scores would differ between boys and girls; (H3) posttest scores would differ between students in government and private schools; (H4) posttest scores would differ between students in urban and rural schools; and (H5) the program would affect the five dimensions of mental health equally.

METHOD

Participants

The participants were 41 higher secondary students aged 14 to 19 from schools in Kozhikode District, chosen by purposive sampling. Students were eligible if they had gone to the school counsellor with study-related problems or for other help. I excluded children who had not reached puberty, students in professional education, and students identified as slow learners. The sample had 23 girls and 18 boys; 27 students attended urban schools and 14 rural schools; and 27 attended private schools and 14 government schools.

Design and Procedure

I used a single-group pretest–posttest design. Before the program began, participants filled in a sociodemographic data sheet (name, age, school, school management, gender, and locality) and the Mental Health Scale. The five-day NLP program followed, and at its end participants completed the same scale again. Participation was voluntary, and informed consent was obtained from participants.

Intervention

The intervention was a structured five-day group program, adapted from one a counselling centre used to help adolescents with psychological difficulties. Each day mixed short teaching input, structured exercises, demonstration, practice in pairs or small groups, and a daily check on how participants were feeling. The activities were planned with particular dimensions of mental health in mind. Memory and name-learning exercises, for example, were meant to build confidence and perseverance, while reframing and dissociation were meant to improve balance and flexibility. Table 1 summarizes the program.

Table 1. Overview of the Five-Day NLP Program

Day	Representative activities	Intended focus (dimension)
1	Name-repetition ice-breaker; learning Kerala districts and RTO codes through chained repetition; "touching the dot" nonverbal-synchrony game; timed life-events diary; introduction to NLP; blindfolded tactile-recognition activity	Optimism; perseverance; flexibility; self-awareness; kinesthetic sense
2	Lie-detection observation and role play; visualization ("mind power") exercises; open-palm exercise; fireball visualization; dissociation practice	Perception and observation; concentration; mental flexibility; confidence
3	Feeling check; dissociation practice; anchoring (demonstration and practice); separator-state technique with paired practice	Emotional self-regulation; access to resourceful states; balance
4	Visual–kinesthetic dissociation, including submodality change; six-step reframing with demonstration and practice; awareness of mood cycles; group film discussion on perseverance and faith	Balance; flexibility; perseverance; reappraisal of difficult experiences
5	Feeling check; "bidding goodbye" (grief-release) exercise; mirror self-compassion exercise; whole-program feedback	Ability to enjoy life; optimism; self-acceptance

Note. The dimensions listed are those the program designers intended each activity to influence. RTO = Regional Transport Office (vehicle registration codes used as a memory task).

Measures

We measured mental health with the Mental Health Scale (Shanty & Ijas, 2012), a 42-item self-report instrument built on the World Health Organization's conception of mental health. Its items fall into five dimensions: ability to enjoy life, balance, flexibility, optimism, and perseverance. Respondents answer on a three-point scale (always, sometimes, never). Positive items are scored 3, 2, and 1, and negative items are reverse-scored. Item scores are added to give a total from 42 to 126, where higher scores mean better mental health. The scale's developers report content validity based on World Health Organization guidelines and a test–retest reliability coefficient of .97. I did not calculate internal consistency for our sample.

Data Analysis

I summarized pretest and posttest scores with the mean, median, mode, standard deviation, skewness, and kurtosis, and checked for extreme values using a mean ± 2 SD rule. A paired-samples t test examined change from pretest to posttest. Differences in posttest scores by gender, school management, and school locality were tested with independent-samples t tests, with $df = n_1 + n_2 - 2$. Effect sizes were Cohen's (1988) d, read as small (0.2), medium (0.5), or large (0.8). For the pretest–posttest change, d is the mean difference divided by the square root of the average of the two variances; for independent groups, d uses the pooled standard deviation. All tests were two-tailed with $\alpha = .05$. I did not keep the dimension-level standard deviations, so changes in the five dimensions are described but not tested inferentially.

RESULTS

Preliminary Analysis

Table 2 gives the descriptive statistics. Skewness and kurtosis were modest at both time points, so the distributions were approximately normal, and no scores were far enough beyond ±2 SD to justify excluding them. The pretest mean was 81.95 (SD = 7.20) and the posttest mean was 89.85 (SD = 5.03).

Scores also became more tightly clustered after the program: 23 of the 41 students scored in the 80s or above at pretest, and 40 did at posttest.

Table 2. Descriptive Statistics for Total Mental Health Scores at Pretest and Posttest

Statistic	Pretest	Posttest
M	81.95	89.85
Mdn	81.00	89.00
Mode	77.00	90.00
SD	7.20	5.03
Skewness	0.43	0.14
Kurtosis	−0.57	−0.70

Note. N = 41.

Change in Mental Health (H1)

Total scores rose by a mean of 7.90 points (SD of differences = 5.09), about 9.6% above the pretest mean. The paired-samples t test was significant, $t(40) = 9.94$, $p < .001$, 95% CI [6.29, 9.51], and the standardized effect was large, $d = 1.27$ ($d_z = 1.55$ when the standard deviation of the differences is used). Most students improved, although a few did not gain. H1 was supported.

Change by Dimension (H5)

Mean scores rose on all five dimensions (Table 3 and Figure 1), but the gains were far from equal. Perseverance went up by 3.80 points, about 48% of the total gain, followed by balance (1.53), flexibility (1.24), and optimism (1.02). Ability to enjoy life changed least (0.29). Because the five gains differ so much in size, H5, which predicted equal effects across dimensions, was not supported.

Table 3. Pretest and Posttest Mean Scores and Gains by Dimension of Mental Health

Dimension	Pretest M	Posttest M	Gain	Share of total gain (%)
Ability to enjoy life	17.15	17.43	0.29	3.7
Balance	17.39	18.92	1.53	19.4
Flexibility	16.88	18.12	1.24	15.7
Optimism	15.93	16.95	1.02	12.9
Perseverance	14.61	18.41	3.80	48.2
Total	81.95	89.85	7.90	—

Note. N = 41. Gain = posttest M − pretest M. Shares are calculated from the sum of the five dimension gains (7.88); the total gain of 7.90 reflects rounding of the dimension means.

Figure 1. Pretest and Posttest Mean Scores on the Five Dimensions of Mental Health [insert figure]

Differences by Gender, School Management, and School Locality (H2–H4)

Posttest scores did not differ significantly between girls and boys, $t(39) = 0.82$, $p = .416$, $d = 0.25$ (H2 not supported). Nor did they differ between private and government school students, $t(39) = 1.03$, $p = .308$, $d = 0.33$ (H3 not supported), or between students in urban and rural schools, $t(39) = 1.90$, $p = .065$, $d = 0.59$ (H4 not supported; Table 4). The urban–rural difference went in the expected direction and was of medium size, but with only 14 rural students the test had little power to detect it. At pretest, girls (M = 85) scored higher than boys (M = 78). I did not test this difference, and by posttest the two groups were close.

Table 4. Posttest Comparisons by Gender, School Management, and School Locality

Comparison	n	Pretest M	Posttest M (SD)	t(39)	p	d
Girls	23	85	90.30 (4.15)	0.82	.416	0.25
Boys	18	78	89.40 (2.85)			
Urban school	27	82.67	90.82 (5.06)	1.90	.065	0.59
Rural school	14	80.57	88.00 (4.19)			
Private school	27	81.85	90.41 (5.05)	1.03	.308	0.33
Government school	14	82.14	88.79 (4.62)			

Note. Each pair of rows is one independent-samples t test. Pretest means are shown descriptively and were not tested. d = Cohen's d calculated from the group means, variances, and sample sizes.

DISCUSSION

Adolescents who completed the five-day NLP program reported clearly better mental health at the end than at the start, and by conventional benchmarks the gain was large. Every dimension improved, but unevenly: perseverance rose the most and ability to enjoy life the least. That fits what the program emphasized, which was practice, memory challenges, goal-directed visualization, and discussion of persistence. It may also be that a short, intensive group experience can quickly lift confidence and effort, whereas a broader capacity to enjoy life, which leans more on circumstances and relationships, may shift more slowly. These are guesses, since I did not test any mechanisms.

The direction of our findings matches earlier small studies of NLP with students, nurses, athletes, and patients (Albalawi, 2014; Bagci et al., 2021; Hemmati Maslakpak et al., 2016; Sahebalzamani, 2014; Sin et al., 2020). That should not be taken as independent confirmation that NLP techniques work. The earlier literature has itself been judged to be of low quality (Sturt et al., 2012; Witkowski, 2010), and a single-group design cannot separate the effect of the techniques from many other explanations, which I turn to below.

Mental health did not differ significantly by gender, school management, or school locality after the program. In a sample this small, though, finding no significant difference does not mean the groups are equivalent. The urban–rural comparison produced a medium effect size and a p value close to the usual threshold, and the gender and school-management comparisons produced small-to-medium effects. I treat these subgroup results as inconclusive and as a reason to run adequately powered studies.

LIMITATIONS

Several limitations restrict what can be concluded. First, there was no control or comparison group, so I cannot rule out maturation, repeated testing, regression to the mean, or the general effects of attention and group participation. Regression to the mean is a particular worry because the participants were students who had sought counselling. Second, the sample was small, purposive, and drawn from one district, which limits both generalization and statistical power. Third, the program combined many activities, so the study cannot show which techniques, if any, drove the change, or whether the NLP components mattered more than group activity, rapport, and facilitator attention. Fourth, outcomes were self-reported right after the program, so demand characteristics and short-lived mood effects are possible, and with no follow-up I cannot say whether the gains lasted. Fifth, the scale's reliability rests on its developers' report, and I did not estimate internal consistency in this sample. Sixth, girls and boys differed at pretest, yet the group comparisons used posttest scores alone, and I ran multiple tests without adjustment. Finally, a few students did not improve, and I did not look into whether that reflected the techniques, the student's engagement, or measurement error.

IMPLICATIONS AND FUTURE DIRECTIONS

For counsellors, the findings suggest that a brief, structured, activity-based group program is feasible with adolescents and goes along with higher self-reported mental health, which may justify further piloting. Programs like this should complement evidence-based counselling and clinical care,

not replace it, especially for students in significant distress. Future studies should use randomized or at least matched control groups, larger and more varied samples across districts, blinded or multi-informant outcome measures, follow-up assessments several months later, and component analyses that separate NLP-specific techniques from non-specific group factors. Qualitative work with students who did not improve would also help show who benefits and why.

CONCLUSION

In this small pretest–posttest study, adolescents' self-reported mental health improved markedly after a five-day NLP program, most of all in perseverance. Because the design cannot support causal claims, the results are best seen as a promising signal worth testing in controlled trials, not as proof that NLP works.

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