

Rational emotive intervention for stress management among english education undergraduates

Implications for school curriculum innovation

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Abstract

Background/objective: Different studies have shown the prevalence of high level of stress among undergraduate students. The objective of the present study was to investigate the effect of rational emotive behavioral therapy (REBT) as a stress management intervention among English Education undergraduates in Universities in Southeastern Nigeria.

Method: The study adopted a group randomized trial design. One hundred sixteen samples of English education undergraduates (with a high level of perceived stress) took part in the study. These students were randomly assigned to groups – intervention group (n=58) and no-intervention control group (n=58). The Perceived Stress Scale (PSS-14) was used for data collection. The collected data were analyzed using 2-way mixed repeated measure ANOVA and independent sample *t* test at 0.05 probability level.

Result: Results showed that an REBT program significantly reduced the stress among English education undergraduates in the intervention group compared to the students in the control group as measured by PSS-14. Also, the English education undergraduates who benefited from the REBT program maintained the reduction in stress after 3 months when the researchers conducted a follow-up.

Conclusion: REBT program can be used to equip undergraduate students with the necessary skills to manage stress. The implications for curriculum innovation were highlighted.

Abbreviations: ANOVA = analysis of variance, PSS-14 = Perceived Stress Scale 14, REBT = Rational Emotive Behavior Therapy.

Keywords: curriculum innovation, english education, intervention, stress, undergraduates

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The authors have no conflicts of interests to disclose.

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1. Introduction

Students are among the groups of individuals who suffer chronic stress due to the demands of the academic life, social problems, and personal issues.^[1,2] Different studies have shown the prevalence of high level of stress among students especially undergraduate students. A previous study reported that 48.80% of the students experience stress.^[3] Stress prevalence among undergraduates have been reported in several studies.^[4–7] In Nigeria, studies have also reported the occurrence of stress among undergraduate students.^[8,9] Stress affects students' physical and mental health and academic success.^[7,10,11]

Rational-emotive behaviour therapy (REBT) can be applied to reduce stress symptoms by identifying and altering patients' thoughts, beliefs, and feelings.^[12–15] With regard to stress, REBT theory proposes that events of life seem stressful majorly because individuals think and believe it is.^[12,14] Individuals can be assisted to think more rationally and positively about stressful situations, lead a stress-free life and actualize their life goals.^[12,14] REBT aims to combat stress-related irrational beliefs and thoughts through various cognitive, emotional, and behavioral techniques.^[12–15]

REBT is an evidence-based intervention for reducing stress in different groups of clients.^[12–14] In Nigeria, while there are studies which have reported the prevalence of stress among students,^[8,9] studies on intervention for curbing stress among English education undergraduates in Nigeria are scarce. Therefore, this research aimed at examining the effect of REBT as a stress intervention among English education undergraduates in Universities in Southeastern part of Nigeria. English education is a program aimed at exploring education in relation to language and literature.^[16] The undergraduate program is a 4-year program designed to prepare students (prospective English teachers) with broad and deep knowledge of English language and literature, and pedagogy to become an effective, creative, and reflective teachers of English.^[17] English education undergraduates take courses in writing, linguistics, oral language, a wide range of literature in various genres, adolescent development, diversity, and methods of teaching the English language at both formal and non-formal settings.^[17] From the researchers' observation, English education undergraduate students in Nigeria suffer from stress as they are exposed to offering several inter-faculty courses, second language problem, and problems associated with teaching practice among others. Researchers believe that these students could benefit from evidence-based stress management interventions like rational emotive behavior therapy intervention. Thus, we hypothesized that REBT will significantly reduce stress among English education undergraduates when compared with other students in control group. We equally hypothesized that any significant reduction in stress level would be sustained at follow-up.

2. Method

2.1. Ethical approval

This study was approved by the Faculty of Education Research Ethics Committee, University of Nigeria Nsukka. All the participants completed an informed consent form. The study adhered to the ethical principles of WMA's Declaration of Helsinki.

2.2. Study participants

This study involved 116 English education undergraduates in Public Universities in Southeastern Nigeria who met the inclusion criteria (Fig. 1). The inclusion criteria apart from being an undergraduate student in English education also demands that one must show signs of high perceived stress (which was ascertained using perceived stress scale of 14 items), not involved in any stress intervention program during the time of the study, agree to complete the program once started and have a functional email and WhatsApp phone number for intervention updates. Those who did not meet these criteria were excluded from the study. Participants' demographics are contained in Table 1. The sample size was determined using G-power 3.1 software^[18] based on a chosen effect size of 0.25, alpha level of 0.05 and statistical power of 0.91 for repeated measures within and between-factors F-test (see Fig. 2).

2.3. Measure

2.3.1. Perceived stress scale-14. The main instrument for data collection in this study was the Perceived Stress Scale-14 (PSS-14). The PSS-14 is a well-known stress assessment instrument

developed in 1983 by Cohen et al.^[19] The items were designed to measure the degree to which the situation in one's life are appraised stressful in the past month. It consists of 14 items with a 5-point rating scale of never (0) to very often (4). To determine the stress level, items 4,5,6,7, 9 and 10 were reversed before scores are summed up. The minimum stress level is a total score of 14 while the maximum stress level is a total score of 56. In this study, a total score ranging from 1 to 15 was considered low stress while a total score ranging from 16 to 34 was considered moderate stress and a total score ranging from 35 to 56 was considered high stress. The PSS-14 was pre-tested for reliability for this study on a small sample of the study population and it yielded a Cronbach reliability alpha of 0.943 (see Table 2).

2.3.2. Demographic questionnaire. The demographic questionnaire was used to obtain the demographic characteristics of the participants. The information sought for include: gender, year of study, residence (campus or off-campus), marital status, monthly allowance, ethnicity and parent relationship status.

2.4. Study design

The study adopted a group randomized trial design.

2.5. Procedure

The researchers collected data between August 2018 and January 2019 from 2 groups of participants (intervention and no-intervention control groups); and 3 measurements (pre-test (Time 1), post-test (Time 2), and follow-up test (Time 3)) were administered. We visited the universities in the study area where we organized a meeting with the students through their class representatives with permission from the Heads of Department. The students were then enlightened on the purpose and conditions of the study. The students were encouraged to join after assurance of confidentiality. After filling the informed consent form, the phone numbers and email addresses of the volunteers were taken. Afterwards, a copy of the PSS-14 was sent to all volunteers which they were expected to complete in 2 weeks. 5 batches of bulk text messages were sent on different intervals to remind the volunteers about completing and submitting the PSS-14 before the deadline. A total of 233 students completed and submitted the PSS-14 during a survey purposely designed to find out students suffering from stress. Students' responses were analyzed to determine those whose stress was high in order to recruit them for the study. Out of the 233 respondents, 116 students with high stress were finally recruited for the study. This formed the baseline data (Time 1). The students were then assigned to 1 of the 2 groups- intervention group (n=58) and no-intervention control group (n=58). To ensure random assignment to groups, we used Random Allocation Software^[20] to generate a random allocation sequence (see Fig. 3). Then, we followed the procedure as described in Onuigbo et al.^[15] to assign the participants to groups. To minimize bias, data analysts were blinded by blurring some portions of the scale. A WhatsApp group was created for those in the no-intervention control group where motivational posts were shared weekly. The intervention group participated in a weekly REBT program for a period of 10 weeks of 75 minutes each. An REBT stress management manual was adapted from previous studies and used for the intervention program.^[13,15] Meeting days were discussed and fixed via the WhatsApp groups.

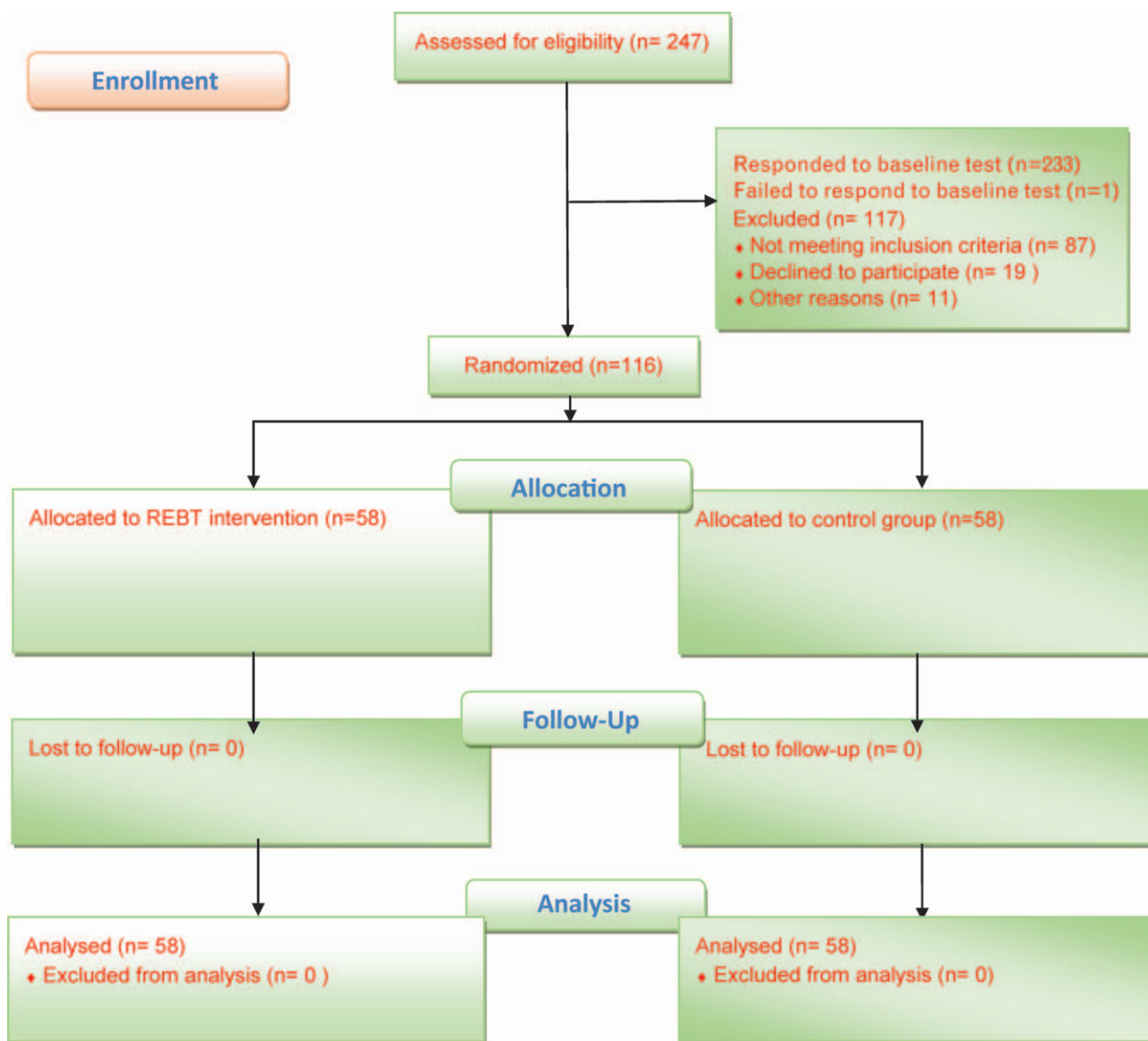


Figure 1. Participant eligibility flowchart.

Students’ stress level was assessed after this period (both for the intervention and control groups) to obtain the data for Time 2 (post-test). Two months after Time 2, we conducted a 2-weeks follow-up meeting. This took place twice a week at the end of which the students’ stress level was assessed again for the third time. This yielded the follow-up data (Time 3). The REBT program was delivered in English language by 2 of the researchers. We ensured that questionnaires were distributed, filled accordingly, and collected from all participants.

2.6. Intervention

REBT manual for stress management: This manual was adapted from REBT manual used in previous related studies.^[13,15] The purpose of the REBT stress management manual is to guide the students through a series of REBT prescribed exercises aimed at reducing stress through conscious and intentional thought change and belief modification. The stress management program

lasted for 10 weeks with 2 sessions per week which lasted for 75 minutes. Specifically, the treatment involves guiding the students to identify their school and non-school related stressors, irrational beliefs, and negative thoughts. The participants are then taught the various therapeutic techniques and approaches to combat these ill thoughts, irrational beliefs, and stressors. These techniques include disputing, use of rational self-talk, Socratic questioning, cognitive reversal, and role-playing. Each therapeutic session ends with a homework assignment which was to be completed before the next session. Based on REBT procedures, this intervention consisted of cognitive restructuring components, stress inoculation training framework, and provided training on behavioral and cognitive-behavioral coping skills to participants. The ABCDE model was also applied during the intervention. In this model, “‘A’ refers to an unfortunate activating event in student’s life that results in a dysfunctional behavioral or emotional reaction; ‘B’ is the belief system that largely determines or regulates their response to the A; ‘C’ is their disturbed

Table 1
Demographic characteristics of participants.

Characteristics	Levels	Intervention group	Control group	f test	P value
Age		21.22 ± 1.80	20.47 ± 1.45	2.500	.014
		n (%)	n (%)	χ^2	Pvalue
Gender	Male	21 (52.50)	19 (47.50)	0.153	.696
	Female	37 (48.68)	39 (51.32)		
Year of study	Year 1	10 (45.45)	12 (54.55)	0.983	.805
	Year 2	18 (54.54)	15 (45.46)		
	Year 3	21 (52.5)	19 (47.50)		
	Year 4	9 (42.86)	12 (57.14)		
Residence	Off campus	23 (52.27)	21 (47.73)	0.036	.849
	Campus	35 (48.61)	37 (51.39)		
Marital status	Single	47 (47.47)	52 (52.53)	1.732	.189
	Married	11 (67.71)	6 (35.29)		
Monthly allowance	N10,000 or less	35 (52.24)	32 (47.76)	8.029	.018
	Between N10,000 and N20,000	15 (37.50)	25 (62.50)		
	More than N20,000	8 (88.89)	1 (11.11)		
Ethnicity	Ibo	44 (46.81)	50 (53.19)	3.460	.326
	Hausa	2 (66.67)	1 (37.33)		
	Yoruba	5 (83.33)	1 (16.67)		
	Others	7 (53.85)	6 (46.15)		
Parent relationship status	Both parents alive and living together	30 (44.78)	37 (52.22)	5.096	.165
	Both parents alive but seperated	2 (28.57)	5 (71.43)		
	One of the parents alive	18 (50.06)	13 (39.94)		
	Neither of the parents alive	8 (72.72)	3 (27.28)		

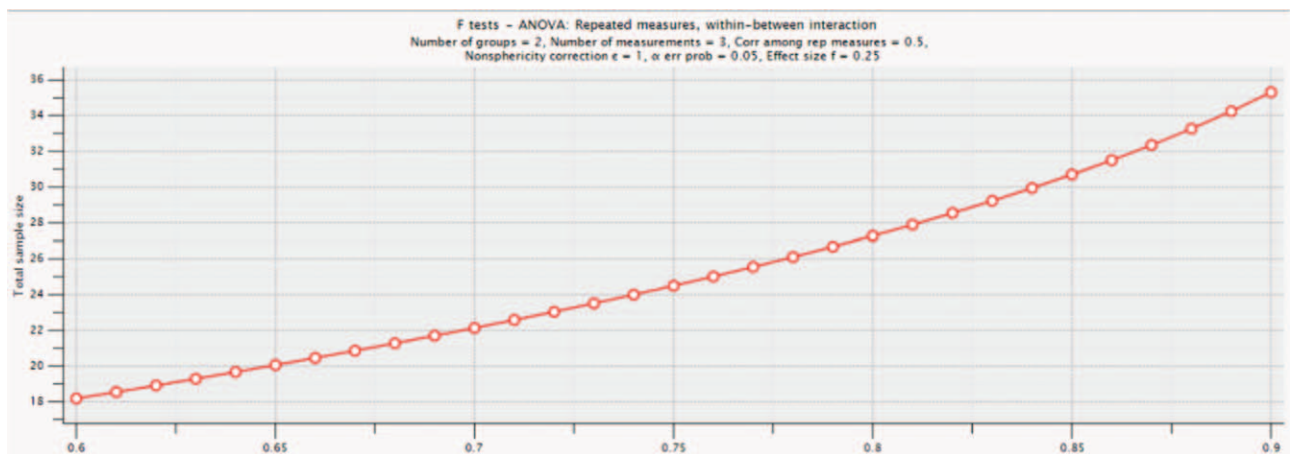


Figure 2. G-power sample size determination.

Table 2
Item reliability.

Items	Cronbach's alpha
1	0.933
2	0.931
3	0.933
4	0.937
5	0.941
6	0.950
7	0.945
8	0.939
9	0.932
10	0.943
11	0.934
12	0.950
13	0.932
14	0.937
Overall Cronbach'sAlpha	0.943

consequence to the A and B; 'D' refers to the disputing that challenges their irrational disturbance-creating beliefs; Finally, 'E' is their effective new philosophy that they are encouraged to adopt".^[14] The present REBT stress management manual for students was validated by 3 REBT practitioners.

2.7. Data analyses

In order to analyze baseline data on the stress level of the participants, a *t* test was conducted. For the post-test data, we conducted a within and between-subject factors 2-way mixed repeated measures analysis of variance (ANOVA) to determine the main effect of treatment condition, the main effect of time; and the time × group interaction effect. Partial eta squared was calculated to show the effect size of the REBT intervention. A post-hoc analysis by Times of measure and group was performed with the Bonferroni correction. To ensure that the assumptions of the repeated measures ANOVA was met, we tested for sphericity

by conducting the Mauchly test. The result showed that the sphericity assumption was met ($\chi^2=1.194$, $P=.55$). All the statistical analyses including screening for missing values (there were no missing values) were done using SPSS 22.

3. Results

From Table 3, the mean stress of the no-intervention control group were not significantly different across the 3 Times of

measure (Time 1= 43.78 ± 5.9 , Time 2= 43.53 ± 5.78 , Time 3= 43.79 ± 4.60) (see Fig. 4). For the intervention group, the mean stress scores show a significant decrease in stress across the Times of measure (Time 2= 25.00 ± 5.44 , and Time 3= 21.72 ± 2.99) (see Fig. 5). Result of t test showed that for Time 1 (the baseline data), there was no significant difference between the mean stress level of the intervention group and the control group, $t(114)=-0.382$, $P=.703$, 95% CI= $-2.4539, 1.6608$.

0001: intervention	0059: no intervention
0002: intervention	0060: intervention
0003: no intervention	0061: intervention
0004: intervention	0062: intervention
0005: no intervention	0063: intervention
0006: intervention	0064: intervention
0007: intervention	0065: no intervention
0008: intervention	0066: no intervention
0009: intervention	0067: no intervention
0010: no intervention	0068: intervention
0011: no intervention	0069: intervention
0012: intervention	0070: no intervention
0013: intervention	0071: no intervention
0014: no intervention	0072: no intervention
0015: no intervention	0073: intervention
0016: intervention	0074: intervention
0017: no intervention	0075: no intervention
0018: no intervention	0076: no intervention
0019: intervention	0077: no intervention
0020: no intervention	0078: no intervention
0021: intervention	0079: no intervention
0022: no intervention	0080: no intervention
0023: intervention	0081: no intervention
0024: intervention	0082: intervention
0025: intervention	0083: intervention
0026: no intervention	0084: intervention
0027: intervention	0085: no intervention
0028: intervention	0086: intervention
0029: intervention	0087: no intervention
0030: no intervention	0088: no intervention
0031: intervention	0089: intervention
0032: no intervention	0090: intervention
0033: no intervention	0091: no intervention
0034: intervention	0092: no intervention
0035: no intervention	0093: intervention
0036: intervention	0094: intervention
0037: no intervention	0095: no intervention
0038: intervention	0096: no intervention
0039: intervention	0097: no intervention
0040: no intervention	0098: no intervention
0041: no intervention	0099: intervention
0042: no intervention	0100: no intervention
0043: intervention	0101: intervention
0044: no intervention	0102: no intervention
0045: no intervention	0103: no intervention
0046: no intervention	0104: intervention
0047: no intervention	0105: no intervention
0048: intervention	0106: intervention
0049: no intervention	0107: intervention
0050: no intervention	0108: intervention
0051: intervention	0109: intervention
0052: no intervention	0110: intervention
0053: no intervention	0111: no intervention
0054: no intervention	0112: intervention
0055: intervention	0113: intervention
0056: intervention	0114: intervention
0057: intervention	0115: no intervention
0058: no intervention	0116: intervention

Figure 3. Random allocation sequence.

Time	Groups	Mean	Std. deviation	N
Time 1	Intervention	43.38	5.30	58
	Control	43.78	5.87	58
Time 2	Intervention	25.00	5.44	58
	Control	43.53	5.78	58
Time 3	Intervention	21.72	2.99	58
	Control	43.79	4.60	58

From Table 4, the two-way mixed repeated measures ANOVA results showed that there was a significant overall main effect of time on students' stress level scores, $P < .001$, $\eta_p^2 = 0.658$. In addition, there was a significant main effect of group on students' stress level, ($F(1,114) = 392.173$, $P < .001$, $\eta_p^2 = 0.775$).

Also, our ANOVA result indicated that the interaction between Time and group was significant, $P < .001$, $\eta_p^2 = 0.654$. Significant differences observed across the groups over time were explored further via a post-hoc analysis for pairwise comparison (see Tables 5 and 6). The post-hoc result showed that for students in the intervention group, the difference in their mean stress scores across the 3 Times of measure was significant with all P values $< .001$, this was however not the case for the control group. Again, a between-group pairwise comparison for each Time showed a significant difference between the stress level of the intervention group and the control groups for Time 2 and

Time 3 with all P values $< .001$. These results support our proposition of the significant effect of REBT in reducing stress among English education students.

4. Discussion

The objective of this research was to investigate the effect of Rational Emotive Behaviour Therapy (REBT) on stress among English education undergraduates in Universities in Southeastern Nigeria. The finding showed that the REBT intervention was efficacious in reducing the stress of English education undergraduates who benefitted from it compared to those in a control group. Just as in previous studies which reported the occurrence of stress among students,^[1-6] the English education undergraduates showed a high-level of stress at the commencement of the study. However, after undergoing the REBT program, the stress level of the students in the intervention group reduced significantly when compared to its initial level and in comparison to those students that did not partake in the intervention program. This trend was sustained at follow-up period. This finding is in line with previous studies which reported the effectiveness of an REBT program in reducing stress.^[13,15,21-26] While there appears to be other strategies for reducing stress, this study has specifically added to the empirical evidence regarding the clinical utility of REBT in stress reduction. This is particularly significant in that an REBT program offers an alternative to pharmacotherapy method of stress reduction among students. Researchers have acknowledged that stress reduction interventions with the most evidence of effectiveness uses cognitive

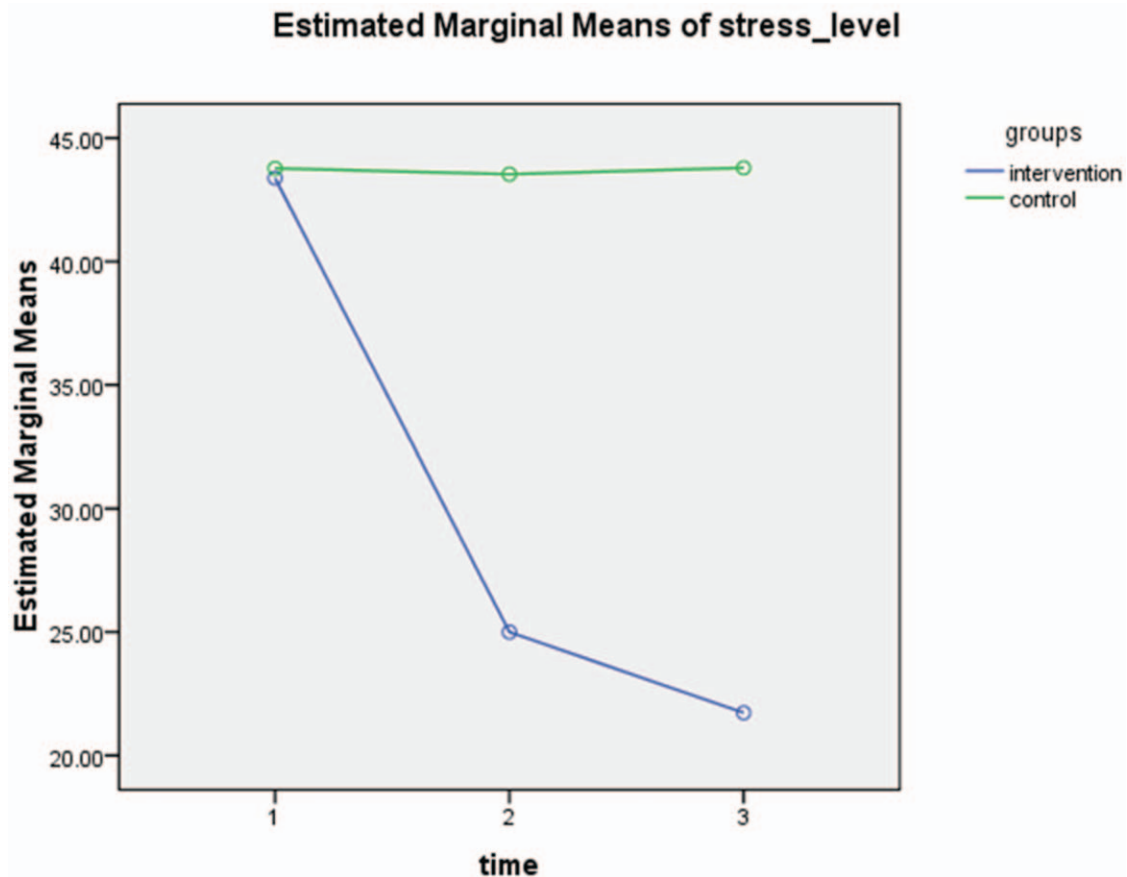


Figure 4. Estimated marginal means of stress levels based on Time.

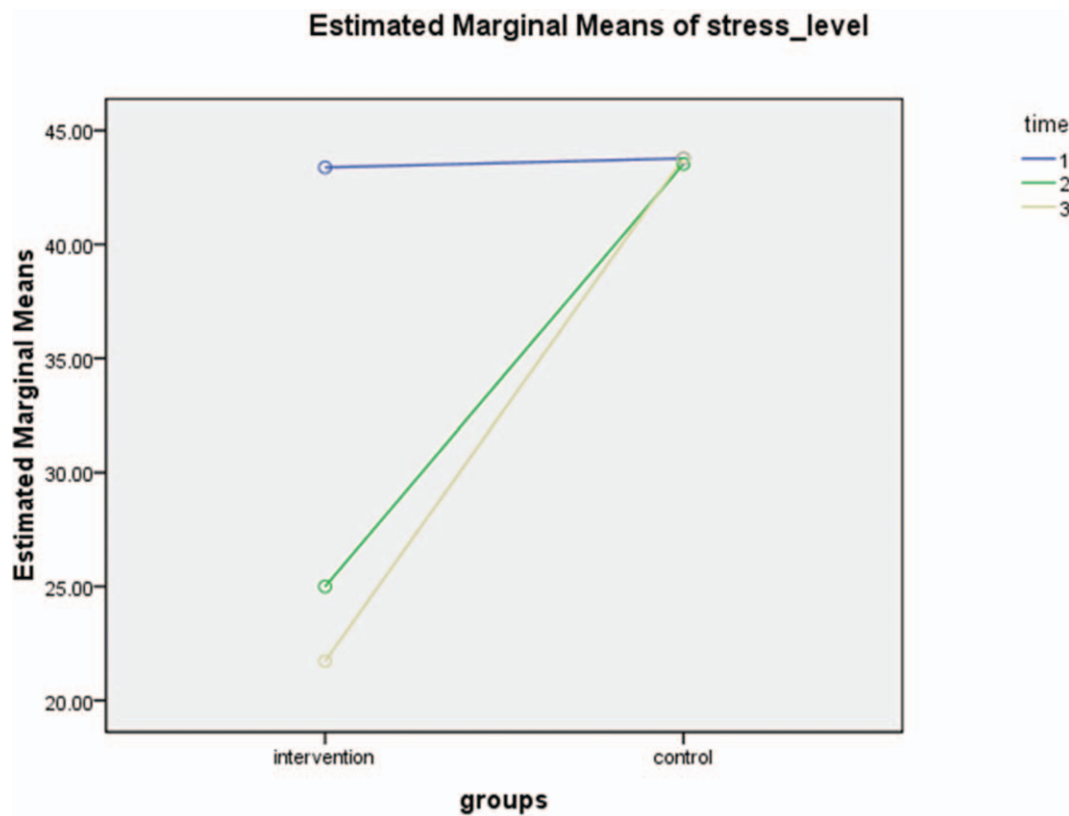


Figure 5. Estimated marginal means of stress levels based on group.

Table 4

Repeated measure ANOVA result of the overall effect of Time, Group and Time × Group interaction of REBT intervention on the stress levels of English education undergraduates.

Source	SS	df	MS	Error (df)	F	Significance	η_p^2
Time	7965.661	2	3982.830	228	218.938	<0.001	0.658
Groups	16249.667	1	16249.667	114	392.173	<0.001	0.775
Time × Group	7841.316	2	7841.316	228	215.520	<0.001	0.654

df=degree of freedom, MS=Mean Square, SS=Sum of Squares (type iii).

Table 5

Within-group pairwise comparison of the effect of REBT intervention on English education undergraduates at different times for each group.

Groups	(I) Time	(J) Time	Mean difference (I–J)	Significance	95% Confidence interval for difference [†]	
					Lower bound	Upper bound
Intervention	1	2	18.379*	<0.001	17.022	19.737
		3	21.655*	<0.001	20.275	23.035
	2	1	-18.379*	<0.001	-19.737	-17.022
		3	3.276*	<0.001	2.224	4.328
	3	1	-21.655*	<0.001	-23.035	-20.275
		2	-3.276*	<0.001	-4.328	-2.224
Control	1	2	0.241	1.00	-2.225	2.708
		3	-0.017	1.00	-2.510	2.475
	2	1	-0.241	1.00	-2.708	2.225
		3	-0.259	1.00	-2.657	2.140
	3	1	0.017	1.00	-2.475	2.510
		2	0.259	1.00	-2.140	2.657

Based on estimated means.

*The mean difference is significant at the 0.05 level.

[†]Adjustment for multiple comparison: Bonferroni.

Table 6
Between-group pairwise comparison of the effect of REBT intervention on English education undergraduates' stress levels at different times.

Time	Group (I)	Group (J)	Mean difference (I–J)	Significance*	95% CI
Time 1	Intervention	Control	0.397	0.492	–0.752, 1.545
	Control	Intervention	–0.397	0.492	–1.545, 0.752
Time 2	Intervention	Control	18.534 [†]	<0.001	16.608, 20.461
	Control	Intervention	–18.534 [†]	<0.001	–20.461, –16.608
Time 3	Intervention	Control	22.069 [†]	<0.001	20.605, 23.533
	Control	Intervention	–22.069 [†]	<0.001	23.533, –20.605

Based on estimated marginal means.

* Adjustment for multiple comparisons: Bonferroni.

[†] The mean difference is significant at the 0.05 level.

restructuring components based on REBT procedures and provides behavioral and cognitive-behavioral coping skills.^[27] To this end, this study is relevant for having provided a stress management intervention for English education undergraduates through an REBT program. We hope that this study will motivate future studies in different academic specialties in order to continuously validate the REBT approach to stress reduction which would invariably lead to its greater generalizability.

A previous study noted it is crucial to acknowledge and tackle the issues of stress in the academic society before it becomes a pandemic.^[4] With this in mind, since the activities of the school is guided by the curriculum, a curriculum-based stress management intervention strategy would be most apt. Thus, the curriculum of the English education undergraduates could be innovated to include stress management education/course. And given the efficacy of the REBT program in stress management among students as proven by this study, we propose that it should be adopted and added to the curriculum of English education undergraduates. This will equip the students with necessary skills to manage stress and also in their future line of duty as English teachers while also equipping them towards teaching the same skills to their own future students.

Including the REBT program as a course in the school curriculum may not be enough. The REBT ideology needs to be institutionalized in the school system so as to tap its maximum potential. This can be done by ensuring that the school environment is conducive both physically and psychologically for effective teaching and learning. This is necessary given that the REBT ideology is premised on the belief that rational and positive thoughts and beliefs reduce stress whereas irrational thought and beliefs induce stress. Also a conducive learning environment is required to engender healthy thoughts and beliefs among students. Also, as part of the institutionalization strategy, periodic check-up of students for stress symptoms should be incorporated into the school curriculum. During such exercise, English education undergraduates with high perceived stress could be helped to manage their condition by enrolling them in REBT stress management program organized by the school/department.

4.1. Limitations

Despite the success recorded in this study, its results should be interpreted bearing the following limitations in mind. First, we used 1 instrument (PSS-14) as an outcome measure repeatedly. This could result in practice effect – a situation whereby participants get better at or bored while completing the instrument.^[28] Hence, future research should explore the possibility of using multiple measures simultaneously or at different times. Second, the study was an experimental

study without any moderating variables. Thus, we did not consider the effect of the interaction between our main treatment variable (the REBT program) and other moderating covariates such as gender, year of study, age, and others. This direction should be explored in the future by REBT researchers. Third, the study utilized self-administered questionnaire. We suggest the inclusion of clinician-rated and qualitative means of data collection in future research for possible triangulation and reduction of reporting bias. Finally, it could be argued that the follow-up period was insufficient which could result in latency effect – a situation whereby an effect fails to appear (on the participants) until after a particular period.^[28] This could be taken care of in the future by extending the follow-up period so as to detect any hidden effect or changes in the participants for more objective analysis and report.

5. Conclusion

This study examined the effect of Rational Emotive Behaviour Therapy (REBT) as a stress management intervention among English education undergraduates in Southeastern Nigeria. There was a significant effect of an REBT intervention in reducing the stress of students in the intervention group compared to students in the control group at posttest and follow-up as measured by PSS-14. Therefore, it was suggested that given the effectiveness of an REBT program in reducing students' stress, the REBT ideology and practice should be adopted and institutionalized in the school system through effective curriculum innovation. This may guarantee its application in promoting students' mental and behavioral health and well-being.

Author contributions

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