

# Effects of a rational-emotive health education intervention on stress management and irrational beliefs among technical college teachers in Southeast Nigeria

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## Abstract

**Background:** Stress is the product of how an individual reacts and adapts to the specific demands and threats they encounter while carrying out given tasks. The main purpose of this study was to investigate the effects of a rational-emotive health education intervention (REHEI) on stress management, and irrational beliefs in a sample of technical college teachers in Southeast Nigeria.

**Method:** The study design was a pretest–posttest control group. Repeated measures analysis of variance, paired *t* test and Mann–Whitney *U* tests were used to analyze the data collected.

**Results:** The REHEI significantly reduced teacher stress in those teaching staff exposed to the treatment intervention, relative to a waitlist control group. Furthermore, the REHEI program significantly decreased irrational beliefs about teaching in those teaching staff exposed to the treatment intervention compared to a waitlist control group.

**Conclusion:** The REHEI program can be used to coach teachers on how to manage and cope with stress and overcome irrational beliefs in teaching.

**Abbreviations:** REBT = rational-emotive behavior therapy, REHEI = rational-emotive health education intervention, TIBQ = Teachers' Irrational Beliefs Questionnaire, TSQ = Teachers' Stress Questionnaire.

**Keywords:** irrational beliefs, Nigeria, rational-emotive behavior therapy, rational-emotive health education intervention, stress management, technical college teachers

## 1. Introduction

Teachers are very much exposed to high stress levels in their workplace when compared with people in other professions.<sup>[1–10]</sup> Highly stressed teachers have many health problems, are less satisfied with their jobs, and are more often absent from work.<sup>[2]</sup>

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Some of the factors which may contribute to teacher stress include student misbehavior,<sup>[10,11]</sup> dearth of administrative support,<sup>[12,13]</sup> and workload.<sup>[14,15]</sup> Stress in teaching result in up to 50% of the teaching staff leaving the profession before reaching their sixth year of teaching.<sup>[16]</sup> In England, a recent investigation on teachers' stress levels revealed that 83% reported suffering from job-related stress; 67% indicated that their job has adversely affected their mental or physical health; nearly half of the surveyed participants (n = 3000) reported seeing a doctor due to job-related mental or physical health problems; 5% had been hospitalized; and 2% reported they had self-harm.<sup>[17]</sup>

Rational-emotive behavior therapy (REBT) created by Albert Ellis is an evidence-based clinical approach for the management of workplace stress given the amount of literature which indicates that irrational beliefs contributes to stress.<sup>[18–22]</sup> The ability to cope with stress depends on how an individual perceives the stressor; internal coping resources, such as resilience and cognitive ability of the individual, are also crucial for overcoming stress.<sup>[23,24]</sup> From an REBT viewpoint, stress is basically the way a person perceives, interprets, and evaluates events in their environment; situations are considered stressful when those individuals reacting to them perceive them to as such.<sup>[25]</sup> Thus, a rational-emotive health education intervention (REHEI) based on REBT principles is warranted given that a teacher's appraisal of job demands in their workplace as a threat and their ability to cope with such demands can determine the effects of a stressor.

The REHEI program was developed by the researchers to help teachers to cope with workplace stress and overcome irrational beliefs in teaching.

Stress from teaching also indicates an imbalance between risk and protective factors<sup>[26]</sup> within the school and/or classroom environment. When risk factors exceed protective factors, a teacher's ability to cope with adversity is inhibited, likely resulting in stress and negative consequences.<sup>[26]</sup> Seven domains of stressors have been identified in the literature as sources of stress in teaching, including poor school environment, student misbehavior, poor working conditions, personal concerns of teachers, relationships with parents, time pressures, and inadequacy of training.<sup>[27]</sup> Blase<sup>[28]</sup> showed that the culmination of daily stressors undermines a teacher's intellectual curiosity and may lead to a lack of self-involvement in discharging their role expectations. Arguably, it appears that in recent years, promoting students' mental health and well-being has been greatly emphasized, whereas teachers themselves may not be able to support students' well-being if their own emotional and social needs remain unmet,<sup>[29]</sup> especially in developing countries such as Nigeria.

Previous studies showed that teacher stress is common in Nigerian school settings.<sup>[30–34]</sup> Yusuf et al<sup>[34]</sup> found that lack of job satisfaction was among the major causes of teacher stress in Nigeria, and that stress negatively impacts teachers' productivity. Nwimo and Onwunaka<sup>[31]</sup> found that secondary school teachers had high levels of stress, and there were significant differences in levels of stress reported by male and female teachers, with male teachers reporting higher levels of stress than female teachers. Most of these studies from Nigeria are only teacher stress surveys on the sources of teacher stress, manifestations of stress, and

suggested coping strategies. Despite the empirical utility of REBT in various educational settings in other countries,<sup>[35–44]</sup> no empirical studies, to the best of our knowledge, have been conducted using the REBT approach to help Nigerian secondary school teachers reduce job-related stress and irrational beliefs about teaching. According to Terjesen and Kurasaki,<sup>[45]</sup> the REBT model could be used to help teachers identify and challenge their irrational beliefs, replace them with more rational beliefs, and enable them to handle the stress of teaching better. The main objective of this study was, therefore, to investigate the effects of a REHEI on stress management and teacher irrational beliefs in a sample of technical college teachers in Southeast Nigeria. We hypothesized that REHEI program would lead to significant reductions in teacher stress, and reductions in irrational beliefs about teaching in those teaching staff exposed to the treatment intervention, compared to a waitlist control group.

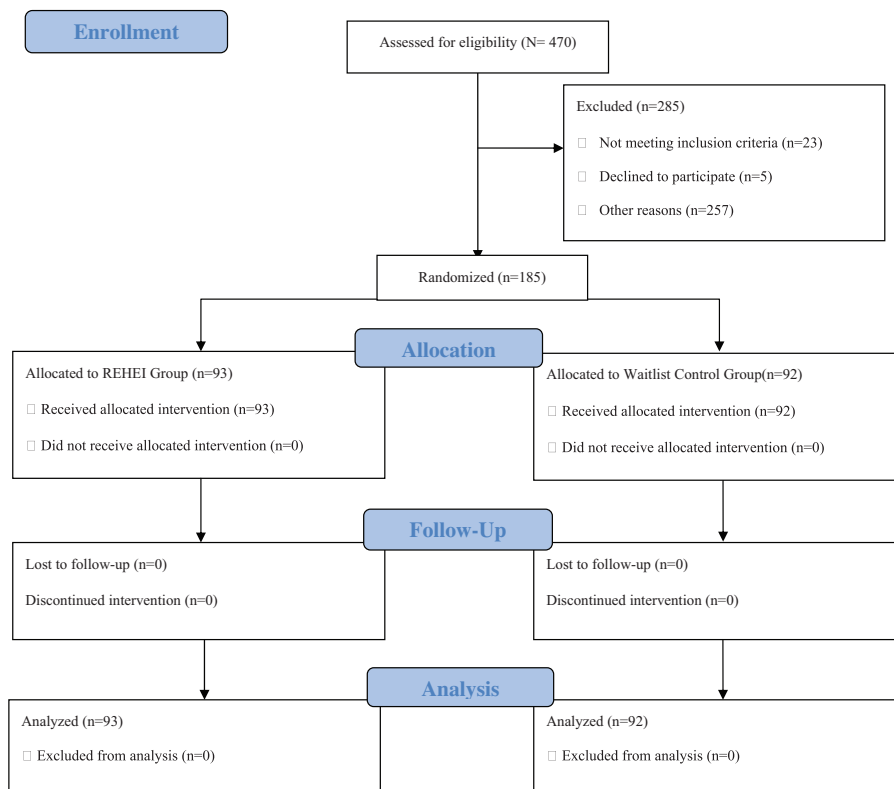
## 2. Methods

### 2.1. Ethical approval

Approval to conduct this study was granted by the Faculty of Education at the University of Nigeria, Nsukka. Written permission was granted by the school principals and informed written consent was obtained from the study participants.

### 2.2. Study participants

The participants were 185 technical college teachers in Southeast of Nigeria (Fig. 1). The demographic characteristics of the study participants are presented in Table 1. The study sample was determined based on a statistical power of 0.99.



**Figure 1.** Participant eligibility criteria.

**Table 1**  
**Demographic characteristics of participants.**

Characteristic		REHEI group (n), %	Waitlist control group (n), %
Gender	Male	46 (49.46)	40 (43.48)
	Female	47 (50.54)	52 (56.52)
Age*		38.65 ± 6.49	37.62 ± 6.23
Level of education	HND	30 (32.26)	32 (34.78)
	First degree	56 (60.21)	57 (61.96)
	Higher degree	7 (7.53)	3 (3.26)
Teaching experience	1–6y	70 (75.27)	69 (75)
	7y and above	23 (24.73)	23 (25)
Marital status	Single	56 (60.22)	60 (65.22)
	Married	37 (39.78)	32 (34.78)

HND = higher national diploma, REHEI = rational-emotive health education intervention.  
\* Mean ± SD.

**2.3. Measures**

**2.3.1. Teachers’ Stress Questionnaire.** The Teachers’ Stress Questionnaire (TSQ) is a 14-item questionnaire developed by the researchers based on the Teachers’ Stress Scale by Bernard.<sup>[46]</sup> Higher scores on the TSQ indicate high levels of teacher stress. The TSQ is scored using a 5-point scale of not stressful to very much stressful. Based on experts’ consensus, the face and content validity of the TSQ was established. Using the data from the present study sample, the overall Cronbach’s alpha reliability coefficient of the TSQ was 0.82.

**2.3.2. Teachers’ Irrational Beliefs Questionnaire.** The Teachers’ Irrational Beliefs Questionnaire (TIBQ) is a 30-item instrument created by the researchers based on the Teacher Irrational Belief Scale by Bernard.<sup>[46]</sup> The TIBQ is scored based on a 5-point scale of strongly disagree to strongly agree. Higher scores on the TIBQ indicate high levels of irrational beliefs associated with teaching. Based on experts’ consensus, the face and content validity of the TIBQ was established. Using the data from our study sample, the overall Cronbach’s alpha reliability coefficient of the TIBQ was 0.91.

**2.4. Procedure**

The researchers surveyed 470 technical college teachers to identify eligible participants using 2 measurements (TSQ and TIBQ). The study participants were recruited for a period of 2 months. The researchers conducted the screening for eligibility

with the help of 2 research assistants. In order to acquire the baseline data, a pretest (Time 1) was conducted on the participants before the REHEI program. The eligible participants were teachers (N=185) with high level of stress, and high irrational beliefs related to teaching. Additional inclusion criteria included: being employed as a teacher for the past 1 year, holding a minimum qualification of a bachelor’s degree in an education course, and being available for the study. Exclusion from the study was implied when the potential participant did not meet any of these criteria.

We randomly assigned the study participants to 1 of the 2 groups: REHEI or waitlist control group. Simple randomization was conducted. The random assignment produced a total of 93 participants for the REHEI and 92 participants for the waitlist control condition. We took adequate care to eliminate selection bias during participants’ recruitment and randomization by concealing the assignment and/or allocation sequence from the study participants and research assistants. Furthermore, as a strategy to reduce risk of potential bias, we blinded the data analyst until the analysis was completed by concealing some details in the questionnaires, which may unveil the group that received the actual intervention.

The invention program was guided by an REHEI manual. Participants in the REHEI group took part in the REHEI program for 20 treatment sessions which lasted 60 minutes each for 10 consecutive weeks. After the program, a posttest (Time 2) was administered to all the participants in the REHEI and waitlist control conditions. After 4 months, we conducted 2-weekly follow-up meetings that led to the third assessment (Time 3). Three of the researchers delivered the REHEI program. The questionnaires were distributed and retrieved on the spot from the participants during each assessment.

**2.5. Intervention**

**2.5.1. Rational-emotive health education intervention.** The REHEI was designed to assist the study participants in acquiring cognitive-behavioral skills and techniques for effective management of teacher stress and challenging of the accompanying irrational beliefs about teaching. The REHEI program spans through a 10-week period of 20 therapeutic sessions and 2-week follow-up conducted after 4 months. Therapeutic techniques employed in the present study included relaxation, stretching, and cognitive restructuring exercises following a similar procedure employed by previous studies.<sup>[18]</sup>

**Table 2**  
**Results of data analysis showing REHEI effect on teachers’ stress and irrational beliefs.**

Measure	Assessment	Group	N	M ± SD	Mean rank	$\eta_p^2$	r
TSQ	Pretest (Time 1)	Treatment	93	58.67 ± 9.00	98.16	.002	−.40
		Waitlist control	92	58.09 ± 5.00	87.79		
	Posttest (Time 2)	Treatment	93	32.15 ± 3.17	47.00	.897	.95
		Waitlist control	92	57.11 ± 4.68	139.50		
TIBQ	Follow-up (Time 3)	Treatment	93	29.73 ± 3.84	47.00	−	.94
		Waitlist control	92	119.38 ± 8.66	93.93		
	Pretest (Time 1)	Treatment	93	118.15 ± 13.46	92.08	003	−.54
		Waitlist control	92	119.38 ± 8.66	93.93		
Posttest (Time 2)	Treatment	93	68.82 ± 6.63	47.00	.935	.97	
	Waitlist control	92	118.62 ± 6.62	139.50			
Follow-up (Time 3)	Treatment	93	61.71 ± 6.40	47.00	−	.97	

M ± SD = mean and standard deviation, n = number of participants, r = Pearson product-moment correlation coefficient, TIBQ = Teachers’ Irrational Beliefs Questionnaire, TSQ = Teachers’ Stress Questionnaire.

## 2.6. Study design and data analysis

The design of the study was pretest–posttest control group. We employed repeated measures analysis of variance (ANOVA), partial  $\eta^2$ , paired  $t$  test, and Mann–Whitney  $U$  test ( $U$ ) for analysis of data. Mean rank and Pearson product–moment correlation coefficient ( $r$ ) were also used for data analysis. Furthermore, we reported the mean rank of teachers stress and irrational beliefs. We conducted screening for missing values and violation of assumptions using SPSS 20 (IBM Corp., Armonk, NY).

## 3. Results

As can be seen in Table 2, the Mann–Whitney  $U$  test show that there were no differences in baseline scores in teachers stress between participants in the treatment and waitlist control groups ( $U=3798.50$ ,  $P=.187$ ). The baseline results showed that the correlation between the groups and teachers stress was negatively strong,  $r=-0.40$ . The Mann–Whitney  $U$  test also show that there were no baseline differences in teachers' irrational beliefs between participants in the treatment and waitlist control conditions ( $U=4192.50$ ,  $P=.814$ ). Furthermore, the baseline results showed that the correlation between the groups and teachers' irrational beliefs was negatively strong,  $r=-0.54$ .

Table 2 shows that with the TSQ, a repeated measures ANOVA revealed a significant treatment by time interaction effect for teachers' stress,  $F(1,184)=1809.938$ ,  $P<.001$ ,  $\eta_p^2=0.908$ . Results of the Mann–Whitney  $U$  test that was performed to see the changes within each group over the same period for teachers' stress revealed significant decreases from Times 1 to 2 on teachers' stress ( $U=0.000$ ,  $P<.001$ ) for the REHEI group, whereas the waitlist control group showed no significant change in their score. The follow-up tests revealed significant reductions in teachers' stress,  $t_{(93)}=-41.15$ ,  $P<.001$  for participants in the REHEI group. The follow-up results also indicate a correlation between the and a decrease in teachers stress,  $r=0.94$  (Table 2).

Table 2 indicates that based on the TIBQ, a repeated measures ANOVA revealed a significant treatment by time interaction effect for teacher irrational beliefs,  $F(1,154)=2615.614$ ,  $P<.001$ ,  $\eta_p^2=0.935$ . Postintervention results of the Mann–Whitney  $U$  test that was performed to examine changes within each group over the same period for teacher irrational beliefs revealed a significant reduction from Times 1 to 2 on teacher irrational beliefs ( $U=0.000$ ,  $P<.001$ ) for the REHEI group, whereas the waitlist control group showed no significant change in their score. Furthermore, follow-up tests revealed significant reductions in teacher irrational beliefs after 4 months,  $t_{(93)}=-41.19$ ,  $P<.001$ , for the REHEI group. Follow-up tests also indicate a correlation between the REHEI and a decrease in teacher irrational beliefs,  $r=0.97$  (Table 2).

## 4. Discussion

This study investigated the effects of a REHEI on stress management and teacher irrational beliefs in a sample of secondary level teachers in Southeast Nigeria. First, we found that REHEI reduced teacher stress in those teaching staff exposed to the treatment intervention, compared to a waitlist control group. This finding is consistent with previous research,<sup>[47]</sup> which found that rational-emotive group intervention led to a decrease in stress symptoms of the participants. The present finding is also in line with that of Forman<sup>[48]</sup> who showed that a

cognitive-behavioral stress management program brought about significant reduction in self-reported stress among secondary school teachers who benefitted from it, compared to a waitlist control group. The methodology of REBT has been applied successfully in group training sessions to manage work-related stress.<sup>[49,50]</sup>

Second, our finding showed that the REHEI program significantly decreased irrational beliefs about teaching in those teaching staff exposed to the treatment intervention compared to a waitlist control group. The present finding is consistent with the previous research report, which indicated that a rational-emotive behavioral program brought about significant reduction in irrational beliefs among its beneficiaries.<sup>[47]</sup> The present finding also support the view that the REBT model could be used to help teachers identify and challenge their irrational beliefs, replace them with more rational beliefs, and enable them handle the stress of teaching better.<sup>[45]</sup> According to the evidence by Wakefield,<sup>[51]</sup> the stressful impact of life events can be reduced by modifying irrational beliefs. REBT has been successfully applied in stress management through consultative work with teachers to identify, challenge, and modify specific irrational beliefs.<sup>[45]</sup> Overall, our findings lend credence to several other previous studies that have explored and reported the empirical utility of REBT in educational settings in other countries.<sup>[35–44]</sup> To this end, offering REHEI to overcome teacher stress and irrational beliefs by future researchers and REBT practitioners both in Nigeria and in other countries should be considered indispensable, since the ability to cope with stress depends on the way individuals perceives the stressor and their resources for overcoming it.<sup>[23,24]</sup> Research into the efficacy of REHEI on teacher stress and beliefs is further warranted, given that several studies have shown that irrational beliefs contributes to stress.<sup>[18–22]</sup> From our findings, the REHEI can be used to coach teachers on how to manage and overcome stress and overcome irrational beliefs about teaching.

### 4.1. Limitations

The current study has some limitations that future studies need to address. The smallness of our study sample may limit the generalizability of the results. In this regard, future investigators should use larger samples in their investigation of the effectiveness of an REHEI program on teacher stress and teacher irrational beliefs in both Nigeria and in other countries. The study primarily used self-report measures. We utilized only quantitative data to provide outcome in stress encountered by teachers. It would be helpful if future studies also embark on qualitative assessment of teacher stress in order to reveal the patterns of stress experienced by teachers. The lack of data to identify the patterns of stress among secondary-level teachers and its relationship to gender, age, workplace position, educational qualification, and working experience also limits the contribution of the current investigation.

### 4.2. Implications

The REHEI program is a promising treatment modality for overcoming teacher stress and irrational beliefs in teaching. Future REBT interventions may need to examine the nature of stress response and explore the influence of teacher–student relations and classroom climate on teacher stress during an REHEI program. Given that stronger endorsement of irrational beliefs associated with teaching is related to greater stress of



teaching, future REBT interventions on stress management should also endeavor to use measures of irrationality and stress in teaching that have been developed and validated based on the REBT philosophy.

Furthermore, professionals in the medical field should not overlook the nature of stress response as well as the therapeutic benefits of an REBT program in the reduction of stress levels. Evidence show that medical students face a variety of stressors<sup>[52,53]</sup>. Nurse educators are also at risk for job-related stress.<sup>[54–56]</sup> Therefore, it would be helpful if these students and educators are exposed to an REBT program to help them manage stressful situations.

## 5. Conclusion

From our findings, it is obvious that REHEI program significantly decreased teacher stress in those teaching staff exposed to the treatment intervention, relative to a waitlist control group. Furthermore, the REHEI program significantly decreased irrational beliefs about teaching in those teaching staff exposed to the treatment intervention compared to their counterparts in a waitlist control condition. However, future researchers should realize that school administrators are key stakeholders in ensuring the success of school-based interventions. This is because their level of support and willingness to allow their staff to participate in this kind of program can either strengthen or mar the outcome of the intervention. If the school administrator refuses to grant informed consent to researchers even after realizing the aim of the intervention, the possibility of reaching out and assisting highly stressed teachers would be very bleak. Therefore, school administrators must also realize that as custodians of the school, promoting the mental health and wellbeing of both the teachers and students is vital to achieving the goals of education, which REHEI aims to contribute to. School-based REBT education programs should be supported by all relevant stakeholders in the educational sector for the benefit of the school administrators, teaching staff, and students alike.

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