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Rational emotive education for reducing stress of undergraduate students of religious education program
An experimental study

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Abstract

Background: Rational emotive education (REE) program aims to improve the behavioral and mental health of students. This study objective was to evaluate the effect of an REE program on stress among undergraduate students of religious education program in Nigerian Universities.

Method: One hundred and fifty (150) religious education undergraduates who had high level of stress participated in the study. Participants were assigned to 2 different groups. The treatment group had 75 participants and while control group also had 75 participants. Data collection was done using the Perceived Stress Scale (PSS-10) while data analysis was done using independent sample t test and paired t test statistics at .05 probability level.

Results: The REE program resulted in a significant decrease in level of stress among undergraduate students of religious education program in the treatment group compared with those students in the control group. Also, the effect of the REE program was maintained during the follow-up among undergraduate students of religious education program exposed to it.

Conclusion: The REE program can be used to assist undergraduate students of religious education program to manage their stress.

Abbreviations: PSS = Perceived Stress Scale, REE = rational emotive education.

Keywords: rational emotive education, religious education program, stress, undergraduate students

1. Introduction

Stress which is known to influence individual's psychological and health outcomes also affect students in high proportion.[1–5] A 2015 cross-sectional research of select sample of 451 undergradu-

ate medical students at a Nigerian University reported that 94.2% of the students experienced stress.[6] A 2016 cross-sectional study of 224 Nigerian undergraduate students in the medical disciplines reported a high stress prevalence of 59.8%; there was no significant difference between male and female students.[7] A 2018 descriptive survey of undergraduate students in the Education Faculty of some selected Nigerian Universities reported a high stress prevalence of 93.8%.[8] A 2019 descriptive cross-sectional survey of 385 undergraduate medical students at a Nigerian University showed that the prevalence of high stress was 51.9%; students in their fifth year were the most highly stressed group.[9] Also, the prevalence of stress among a sample of 212 undergraduate medical students in a Nigerian University was reported to be 67% in a 2019 cross-sectional study.[10] Thus, stress is considered as an important issue that needs to be addressed among undergraduate students in Nigerian Universities.

Stress is a significant risk factor for reduced mental health scores, recurrent emotional problems, and psychological distress leading to social and role disabilities and poor quality of life in young adults and students.[11–13] Severe stress can also result in anxiety, depression, alcoholism, and suicidal ideations.[14,15] Undergraduate students generally including bachelor's degree students enrolled in religious education program are not invulnerable to stress in University setting. These students could feel stressed due to how they handle school tasks, fear of failure, interpersonal relationship difficulties, financial concerns, peer pressure, personal inadequacies, and how they construe and think about school-related life events.[4,16–22]

Although past studies have demonstrated the significance of rational emotive approach in stress reduction among individuals,[16–20,23–27] empirical works examining the effect of rational emotive education (REE) program on stress among undergraduate students specializing in various academic disciplines like religious education is lacking. To this end, the objective of this study was to examine the effect of an REE program on stress among undergraduate students of religious education program.

2. Religious education program for undergraduate students

The bachelor's degree curriculum in religious education program provide undergraduate students with hands-on skills, extensive knowledge about classroom management, and evidence-informed teaching approaches which are essential for becoming effective religious education teachers.[28] The program prepares undergraduate students for success as prospective teachers of religious studies in secondary and religious schools.[28] The program also provides students with the opportunity to discover how to meaningfully and practically incorporate faith, learning, and day-to-day life and to explore ways of becoming more efficient in the ministry and workplace.[28] Prior to graduation, students could serve as interns in a worship center, religious school, or religious organization.[29]

With the knowledge acquired during the program, some graduates who hold bachelor's degree in religious education could choose to engage in ministerial work in a church, para-church organization or missions as clergy members, church coordinators, youth pastors, church administrators, social workers, or religious counselors.[28,30] Students' choice of obtaining a bachelor's degree in religious education could be for a number of reasons. These may include but not limited to helping themselves realize their true passions and staying on the path to realize their desired goals; becoming enlightened about existing employment opportunities not known earlier in the field; acquiring basic competencies required for rewarding careers in various related vocations; and gaining a wider perspective on religion and how it has influenced the history of the human race.[31]

3. Rational emotive education

Rational emotive education (REE)[32,33] aims to improve the behavioral and mental health of students. The REE developed by Knaus follows the tenets of rational-emotive behavior therapy by Ellis.[34] In the rational emotive paradigm, stress is seen as being the consequence of people's irrational beliefs with respect to the situation in their environment.[35] The REE program can teach self-acceptance, self-determination, responsibility, and facilitate experiential learning among students.[32] In an REE program, participants are opportune to derive from experience, knowledge of basic and potent human problem-solving strategies, and learn how to approach and cope with their problems through experiential learning.[33]

The REE program could be delivered as an in-person therapy or a virtual therapy. Therapy delivery by virtual means is an acceptable approach as it can be as much beneficial as a face-to-face intervention.[36–40] Also research indicates that when a virtual therapy results in positive experiences for students, it can motivate them to also seek face-to-face care in future.[40] Virtual therapy is made possible through the use of mobile devices, an app (such as WhatsApp), or even a virtual reality device; these options enable clients to conveniently seek for treatment from their home, without travelling to meet in-person with a therapist.[41]

In view of the foregoing, it is our expectation that an REE program delivered virtually would significantly reduce stress of undergraduate students of religious education program in Nigeria when compared with those in a control intervention.

4. Method

4.1. Compliance with ethical standards

This randomized controlled trial was approved for the authors by the Faculty of Education Research Ethics Committee at the University of Nigeria Nsukka. The study was performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments. Informed consent was obtained from all individual participants included in the study.

4.2. Study participants

The participants included 150 undergraduates of religious education in public universities in Southwest Nigeria, who fulfilled the criteria for inclusion (see Fig. 1). The sample size calculation was done using G-power 3.1 software[42] based on statistical power of 0.84, alpha level of 0.05 and a chosen effect size of 0.50 for independent sample t test. Asides being an undergraduate student enrolled in religious education program, the criteria for participation were also having a high stress score at baseline as determined by the Perceived Stress Scale.[43] Each participant provided the researchers their cell phone number linked to their WhatsApp as well as their functional email address. Failure to meet any of the mentioned inclusion criteria made potential participants unqualified for the study.

4.3. Data collection tool
4.3.1. Perceived stress scale-10.
The Perceived Stress Scale-10 (PSS-10)[43] was used for data collection in this study. The PSS developed in 1983 by Cohen et al[43] is a short and easy-to-use scale for measuring individual stress levels. The items are intended to measure the extent to an individual adjudges their life situations as being stressful in the previous month. This instrument is composed of 10 items with a 5-point rating ranging from never (0) to very often (4). An individual's score on the PSS-10 ranges from 0 to 40 with higher scores indicating higher stress. Stress scores within the range of 0 to 13 was viewed as low, stress scores within the range of 14 to 26 was viewed as moderate while stress scores within the range of 27 to 40 was viewed as high.[44] Research shows that PSS-10 has a good internal consistency with Cronbach α of 0.842.[44] Our reliability test for this scale gave a Cronbach α of 0.87.

4.3.2. Socioemographic questionnaire.
The students' socio-demographic characteristics were obtained using this questionnaire. Information sought after were students' sex, age, residence, monthly allowance, year of study, ethnicity, and location of the institution.

4.4. Procedure

We gathered data from 2 participant groups belonging to control and treatment groups respectively at 3 time points: pre-test (Time 1), post-test (Time 2), and follow-up (Time 3). Of the 250 student volunteers who responded to eligibility survey, 150 respondents
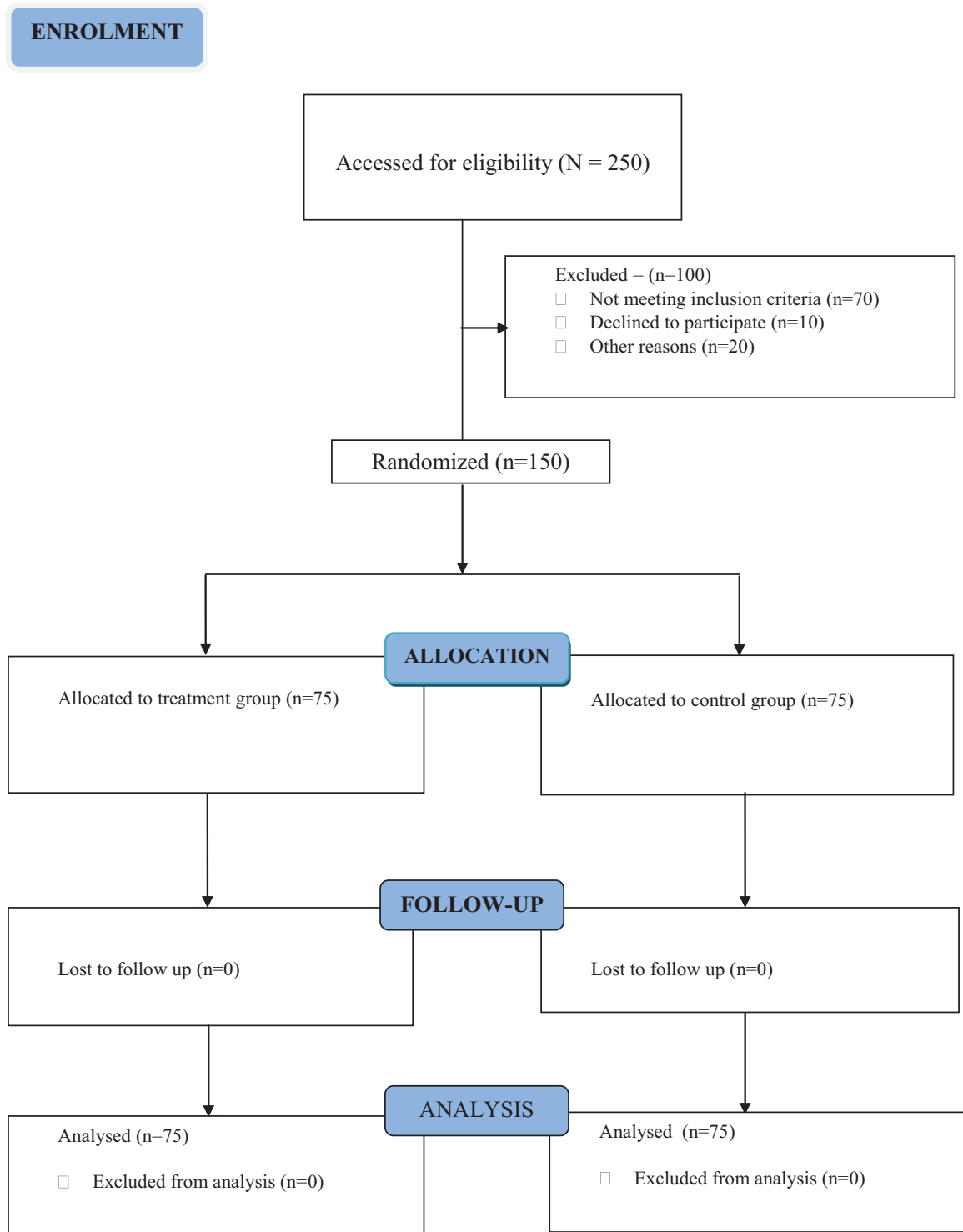
Figure 1. Participant flowchart.

whose mean stress was high were recruited for the study. This constituted the pre-test data (Time 1).

The participants were allocated to either treatment group (n = 75) or control group (n = 75) through random allocation facilitated by Random Allocation Software[45] which produced the random allocation sequence.

After last session of the treatment condition, data were on students' stress was gathered as post-test (Time 2). Then, after 3 months, 4 weeks follow-up sessions were held. This happened once every week at the end of which students' stress level was measured (Time 3). The questionnaire was completed and returned by electronic mail.

Table 1

Participants' sociodemographic variables by group.

Variable	Treatment group N (%)	Control group, N (%)	χ^2	Significance
Gender				
Male	48 (32.0%)	50 (33.3%)	0.118	0.864
Female	27 (18.0%)	25 (16.7%)		
Age*	22.67±4.07	21.64±2.68	1.823	0.071†
Residence				
Campus	34 (22.7%)	27 (18.0%)	1.354	0.319
Off-campus	41 (27.3%)	48 (32.0%)		
Monthly allowance				
Less than 20K	16 (10.7%)	20 (13.3%)	1.227	0.541
20K–50K	31 (20.7%)	33 (22.0%)		
Above 50K	28 (18.7%)	22 (14.7%)		
Year of study				
1st year	17 (11.3%)	25 (16.7%)	2.873	0.412
2nd year	21 (14.0%)	20 (13.3%)		
3rd year	22 (14.7%)	15 (10.0%)		
Final year	15 (10.0.5%)	15 (10.0%)		
Ethnicity				
Hausa	12 (8.0%)	9 (6.0%)	0.844	0.839
Igbo	17 (11.3%)	15 (10.0%)		
Yoruba	35 (23.3%)	38 (25.3%)		
Others	11 (7.3%)	13 (8.7%)		
Location				
Urban	38 (25.3%)	42 (28.0%)	0.429	0.624
Rural	37 (24.7%)	33 (22.0%)		

* Mean age (SD) of participants in years, N = number of participants, χ^2 = chi-square.
† t = test results for age.

4.5. Description of control condition

For students in the control group, a WhatsApp group was established where motivational posts, pictures, and short videos on stress were shared and discussed on weekly basis with group activities moderated by one of the researchers for the duration of 10 weeks and 75 minutes per session. Topics which the posts, pictures, and videos centered on include the meaning of stress and factors responsible for student stress; the essence of managing stress before it becomes severe; behavioral, economic, and health consequences of severe stress; academic consequences of severe stress; ways of managing stress at school; personal responsibilities in managing stress; and behavioral, economic, academic, and health benefits of a stress-free life.

4.6. Description of treatment condition

The treatment group took part in a weekly REE series for duration of 10 weeks which lasted 75 minutes per session. The REE program adapted therapeutic techniques from previous rational emotive stress management program[16,20] and was delivered through WhatsApp. The REE treatment package was aimed at aiding the students through a sequence of REE virtual exercises geared towards decreasing their stress level. In specific terms, the intervention motivates students towards recognizing and learning how to manage their stress. The students were exposed to various therapeutic techniques for managing stress. At the end of every therapeutic session, homework assignments were given. Based on the REE protocol, this intervention included behavioral, cognitive, and emotive coping skills training and use of techniques like Socratic questioning, rational self-talk, disputing, and cognitive reversal. During the intervention, the ABCDE model of the rational emotive approach was applied to illustrate how students can handle stress using the REE approach.[35,46]

4.7. Data analyses

IBM Statistical Package for the Social Sciences (IBM SPSS), version 22 was used for data processing and analyses. To reduce bias related to data analysts, some portions of the data collection tool were de-identified before handing it over to them for data analyses. We used frequency, percentages and Chi-square as deemed appropriate to analyze the demographic data. For between-group data analysis, we used independent samples t test whereas within-group analysis was conducted using paired t test. We also conducted further analyses using analysis of variance based on participants' sex, residence, year of study, monthly allowance, ethnicity, and location within the treatment and control groups to see how these variables may impact the REE results.

5. Result

The result of data analysis regarding the demographic information of participants is presented in Table 1.

The baseline (Time 1) result in Table 2 revealed that the Religious Education students perceived stress level is very high with no significant difference recorded between the treatment (mean = 36.14 ± 3.72) and control groups (mean = 36.85 ± 3.92); $t(1,148) = -1.133$, $P = .259$.

In addition, at Time 2, the results in Table 2 also show that at post-treatment assessment, exposure to the REE brought about more significant reduction in mean perceived stress scores among the treatment group (mean = 12.35 ± 2.89, compared with participants in the control group (mean = 35.35 ± 4.90); $t(59) = -49.505$, $P < .001$.

Table 2

Independent samples t test (between-group) comparison of stress scores for treatment and control groups at Time 1, Time 2, and Time 3 as measured by PSS-10.

Time	Group	N	M±SD	95% CI	t	P
Time 1	Treatment	75	36.14±3.72	35.29–37.00	−1.133	.259
	Control	75	36.85±3.92	35.95–37.76		
Time 2	Treatment	75	12.35±2.89	11.80–12.89	−49.505	<.001
	Control	75	35.35±4.90	34.60–36.09		
Time 3	Treatment	75	11.79±3.49	10.98–12.59	−50.332	<.001
	Control	75	36.49±2.43	29.48–32.50		

CI = confidence interval, M = mean, N = number of participants, NA = not applicable, PSS-14 = Perceived Stress Scale-14, SD = standard deviation, Time 1 = pre-test, Time 2 = post-test, Time 3 = follow-up.
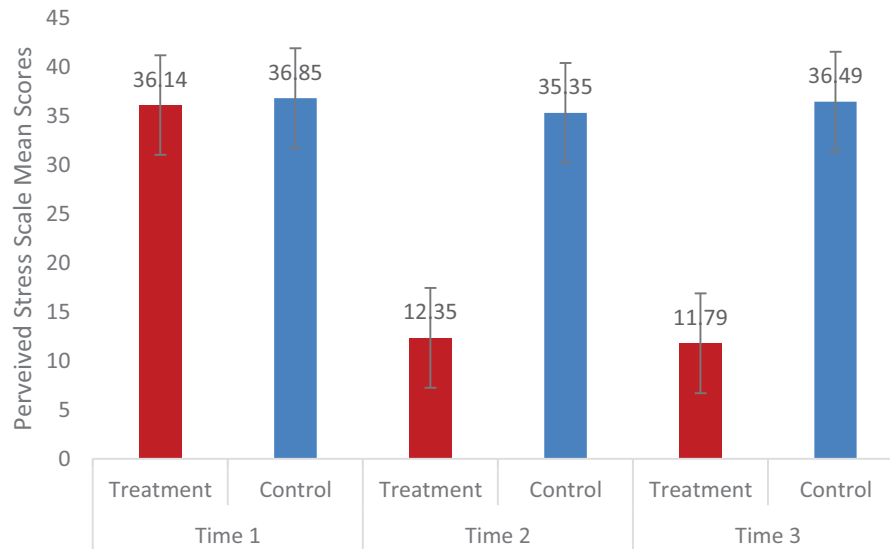
Figure 2. A bar chart showing the students stress scores across time of measure.

At Time 3, the follow-up results revealed more sustenance of the significant decrease in mean perceived stress scores of the treatment group (mean = 11.79 ± 3.49) compared with participants in the control group (mean = 36.49 ± 2.43); $t(59) = -50.332$, $P < .001$. (See also Fig. 2).

The paired sample t test (within-group) analysis results in Table 3 revealed a significant change in mean perceived stress scores of the religious education students in the treatment group. That is to say that the within-group analysis showed a significant change in mean perceived stress scores of the religious education students in the treatment group at Time 1 paired with Time 2 (t [74] = 49.214, $P < .001$); this significant change in mean perceived stress scores among religious education students was sustained at Time 2 paired with Time 3 (t[74] = 1.28, $P = .202$). On the other hand, the significant change in mean perceived stress score of religious education students in the control group at Time 1 paired with Time 2 (t[74] = 2.432, $P = .017$) was still at the high perceived stress range and this outcome was retained at Time 2 paired with Time 3 (t[74] = -2.520, $P = .014$]).

The results in Table 4 show the analyses of perceived stress scores based on sex, residence, year of study, monthly allowance, ethnicity, and location within the treatment and control groups which indicate how these variables impact the REE results.

6. Discussion

The purpose of this research was to examine the effect of a rational emotive education (REE) on stress among undergraduate students of religious education program in Nigeria. Just as in previous studies which reported the incidence of stress among students,[6–10,47–50] a high-level of stress was seen among the undergraduate students of religious education program at the start of the study. However, after administration of the REE treatment, a significant reduction in mean stress of the students in the treatment group was observed and this positive result was maintained at follow-up. Thus, the results demonstrated that the REE program was effective in stress reduction among undergraduates of religious education program who participated in it compared with those in a control group. This positive observation is in support of previous studies which evaluated the efficacy of rational emotive programs in managing stress.[16–20,23–27] Researchers have also recognized the use of rational emotive procedures and cognitive–behavioral coping skills training in stress reduction as an effective approach.[16–20,51] Although, there are other approaches for dealing with stress, the current study in particular added to the increasing existing empirical evidences concerning the clinical usage of rational emotive education approach in reducing stress among undergraduate students enrolled in religious education program.

Table 3

Paired sample t test (within-group) comparison of stress scores for treatment and control groups as measured by PSS-10.

Measure	Group	Time	Mean ± SD	t	df	P
PSS-10	Treatment	Time 1	36.15 ± 3.72	49.214	74	<.001
		Time 2	12.35 ± 2.89			
		Time 2	12.35 ± 2.89	1.28	74	.202
		Time 3	11.79 ± 3.49			
	Control	Time 1	36.85 ± 3.92	2.432	74	.017
		Time 2	35.35 ± 3.24			
		Time 2	35.35 ± 3.24	−2.520	74	.014
		Time 3	36.49 ± 2.43			

CI = confidence interval, M = mean, N = number of participants, NA = not applicable, PSS-14 = Perceived Stress Scale-14, SD = standard deviation, Time 1 = pre-test, Time 2 = post-test, Time 3 = follow-up.

Table 4

Analyses of perceived stress scores based on gender, residence, year of study, monthly allowance, ethnicity and location within the treatment and control groups to see how they impact the REE results.

Variable	Pre-test (Time 1)				Post-test (Time 2)				Follow-up			
	TG M±SD	CG M±SD	F	P	TG M±SD	CG M±SD	F	P	TG M±SD	CG M±SD	F	P
Gender												
Male	35.88±3.79	37.68±3.76	1.28	.259	11.85±2.20	34.90±3.09	2450.76	<.001	11.25±3.33	36.88±2.42	2533.27	<.001
Female	36.63±3.59	35.20±3.77			13.22±2.49				12.74±3.62	35.72±2.30		
Residence												
Campus	35.12±3.49	37.89±3.72	1.28	.259	11.56±2.29	35.48±2.79	2450.76	<.001	11.74±3.19	36.89±2.69	2533.27	<.001
Off-campus	37.00±3.72	36.27±3.95			13.00±2.28	35.27±3.49			11.83±3.75	36.27±2.27		
Monthly allowance												
Less than 20K	36.88±3.20	38.25±3.78	1.28	.259	12.19±1.90	36.00±2.51	2450.76	<.001	12.25±3.44	36.40±2.60	2533.27	<.001
20K − 50K	35.32±4.06	37.24±3.67			11.65±2.37	34.12±3.17			10.87±3.19	36.97±2.32		
Above 50K	36.64±3.53	35.00±3.87			13.21±2.44	36.59±3.40			12.54±3.72	35.86±2.38		
Year of study												
1st year	36.76±3.13	37.72±3.78	1.28	.259	12.00±2.00	35.40±2.79	2450.76	<.001	12.12±3.37	36.56±2.50	2533.27	<.001
2nd year	34.90±4.39	37.00±3.64			11.33±2.37	34.25±3.24			10.67±3.19	37.85±2.13		
3rd year	37.59±3.11	37.20±4.33			12.73±1.72	35.93±3.47			11.63±3.19	35.53±2.03		
Final year	35.07±3.51	34.87±3.78			13.60±3.07	36.13±3.60			13.20±4.16	35.53.2.36		
Ethnicity												
Hausa	36.17±2.66	40.22±4.12	1.28	.259	12.50±1.78	36.11±2.36	2450.76	<.001	13.58±2.27	36.11±2.42	2533.27	<.001
Igbo	34.29±4.28	36.47±2.85			10.59±2.32	35.07±3.10			10.59±3.43	36.87±2.67		
Yoruba	37.34±3.47	36.58±4.20			13.00±1.99	35.05±3.42			11.20±3.19	36.76±2.29		
Others	35.18±3.49	35.77±3.06			12.82±3.09	36.00±3.51			13.55±4.46	35.54±2.54		
Location												
Urban	35.74±3.94	37.17±3.70	1.28	.259	11.63±2.21	35.19±2.88	2450.76	<.001	11.32±3.31	37.24±2.45	2533.27	<.001
Rural	36.57±3.47	36.45±4.20			13.08±2.36	35.55±3.68			12.27±3.64	35.55±2.08		
Religion												
Christian	36.00±3.90	37.59±3.76	1.28	.259	11.64±2.15	35.04±3.05	2450.76	<.001	11.62±3.29	37.02±2.42	2533.27	<.001
Others	36.33±3.51	35.60±3.94			13.24±2.39	35.86±3.54			12.00±3.76	35.60±2.22		

CG = Control Group, TG = Treatment Group, F = ANOVA, degree of freedom (df) = 1,148, M±SD = mean and standard deviation.

It is hoped that this study is going to trigger future studies in different academic settings to further corroborate the REE method of stress reduction. It is vital to recognize and manage the issues of stress within the academic sphere.[48] Therefore, a stress management intervention strategy with an REE-driven curriculum would be appropriate since the activities of schools are directed by the curriculum. The religious education program curriculum for undergraduate students could be improved to include REE stress management contents. This will furnish the students with crucial skills for managing stress now and in the future even as teachers of religious studies, while also preparing them towards inculcating such skills into their students.

This study has the following limitations. First, the study is open to practice effects following the use of same data collection tool over time.[51] Thus, future studies should imbibe the habit of using multiple data collection tools for repeated measurements. Second, the study made use of self-administered measurement tool which have been criticized for its vulnerability to self-reporting bias. Consequently, the inclusion of qualitative and clinician-rated tools for data collection in future studies is advised. Finally, it could be contestable that the follow-up duration was not enough which could course latency effect.[52] This could be factored into future studies by extending the follow-up period so as to spot any inconspicuous changes in the participants for more objective investigation.

7. Conclusion

In conclusion, the rational emotive education program had a significant influence in reducing stress among undergraduate students of religious education program in the treatment group compared with the undergraduate students in the control group at posttest and follow-up as measured by PSS-10. In view of this, the study becomes a relevant guide for providing stress management intervention for undergraduate students of religious education program in the future.

Author contributions

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