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Investigation of burnout syndrome among electrical and building technology undergraduate students in Nigeria

Jimoh Bakare, PhD[a], Hyginus Osita Omeje, PhD[a,*], Mukaila Abiodun Yisa, PhD[a], Chibueze Tobias Orji, MEd[a], Kay C. N. Onyechi, PhD[b], Chiedu Eseadi, PhD[b], Chinyere Augusta Nwajiuba, PhD[c], Emenike N. Anyaegbunam, PhD[d]

Abstract

Background: The investigation of burnout among undergraduate students is yet to receive the same amount of attention as burnout in employees. Despite the negative effects of burnout among students, there is dearth of literature on burnout problem among electrical and building technology undergraduate students. Therefore, this study aimed to determine the burnout levels and the effect of rational-emotive behavior therapy (REBT) on symptoms of burnout among electrical and building technology undergraduate students in South–East zone of Nigeria.

Method: A group randomized trial design involving a treatment group versus no-treatment group was adopted for this study. One hundred fifty four undergraduate students of electrical and building technology who met the study's inclusion criteria were selected from public universities in the South–East zone of Nigeria. The intervention consisted of 10 weeks of REBT treatment and 8 weeks of follow-up meetings conducted at 4 months. A self-report questionnaire was used for data collection. Repeated-measures analysis of variance, paired sample *t* test, and Chi-Squared were used for data analysis.

Results: The outcome indicated that the levels of burnout syndrome among the students are high and REBT had a significant effect on the symptoms of burnout syndrome among the electrical and building technology students in the treatment group compared to their counterparts in the no-treatment group. Finally, the positive gains were significantly maintained by the treatment group at follow-up.

Conclusion: The current study suggests that an REBT program can be effective for dealing with burnout syndrome among the population of undergraduate students of electrical and building technology in Nigeria.

Abbreviations: ANOVA = analysis of variance, OLBI-S = oldenburg burnout inventory (OLBI) students version, REBT = rational emotive behavior therapy.

Keywords: building construction students, burnout, electrical technology student, rational-emotive behavior therapy, undergraduates, vocational and technical education

1. Introduction

In the past, researchers felt that burnout syndrome is only common in workers in human service occupations. Presently, it is well-known that burnout syndrome goes beyond care services.[1] Particularly, some researchers[2,3] argued that university students also execute work when they fulfill many school-related responsibilities such as attend classes, carry out practical exercises, complete assignments, take examinations, and acquire a degree and that therefore burnout symptoms might be an issue in this age group as well. Burnout is a response to chronic stress characterized by emotional and physical exhaustion, lower productivity, and over depersonalization.[4] Burnout is a response to chronic interpersonal stressors characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment.[5] Student burnout refers to a psychological syndrome which occurs in the form of an exhaustion state due to coursework demand, a cynical and detached attitude towards the college degree, and a feeling of low efficacy and academic achievement.[6] Burnout can negatively affect students' academic achievement[7,8] and result in poor school performance, loss of

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[a] Faculty of Vocational and Technical EducationEnugu, [b] Faculty of Education, University of Nigeria Nsukka, Enugu State, [c] Faculty of Education, [d] Faculty of Management and Social Sciences, Alex Ekwueme Federal University Ndufu-Alike Ikwo, Ebonyi State, Nigeria.

[*] Correspondence: Hyginus Osita Omeje, Faculty of Vocational and Technical Education, University of Nigeria, Nsukka P.M.B. 410001, Enugu State, Nigeria (e-mail: hyginus.omeje@unn.edu.ng).

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interest in completing schoolwork, alexithymia, and poor health.[9–11]

Burnout is attributable to undesirable stress[12] which may manifest among technical education students[13–15] due to high irrational beliefs related to electrical, building or wood practical works. Studies have noted that many undergraduate students showing signs of adverse stress and burnout symptoms[16–18] might have a complication in managing their emotional reactions.[8] In spite of the high level of burnout among undergraduate electrical and building technology students, little is known about how to assist these students to manage burnout symptoms. Intervention program against the symptoms of burnout can be of assistance.[19]

The rational emotive behavior therapy (REBT) intervention can be used to amend the cognitive-emotionally distorted concepts, which seem to trigger burnout. That being the case, an REBT intervention can target clients' maladaptive cognitions and disturbed emotions by improving their mental toughness and resilience through its cognitive, emotive and behavioral techniques.[20–23] Mental toughness denotes someone's capability to be constantly victorious in coping with stressful life situations, handle adversity, stress, and pressure; the capacity to overcome and recover from an intense failure; and the capacity to endure and persevere.[8,24] Furthermore, recent studies[15,25] also showed that individuals who were mentally tougher in a stressful situation were at low risk of burnout symptoms compared to those with lower scores for mental toughness. On the other hand, several authors have also noted that irrational beliefs, a major concept in REBT model, build maladaptive cognitive pattern leading to burnout.[8,26,27] Thus, a change in burnout-related irrational beliefs can lead to a corresponding reduction in burnout symptoms.[8]

Since cognitive vulnerabilities can predispose clients to burnout thoughts and behaviors, an REBT approach could be applied to change cognitive-emotionally distorted concepts underlying burnout.[8] Also, REBT approach can be used to teach students how to change their low frustration tolerance beliefs into high frustration tolerance beliefs and become resilient against burnout.[20] Thus, the need to employ the REBT approach in the management of burnout among the student population cannot be overemphasized. Burnout syndrome is a significant problem[28] which affects technical and vocational students.[13,15] In addition, the rationale for the choice of electrical and building technology students originated from researchers' observation that these categories of students are faced with numerous hands-on practicals and schoolwork to the extent that many of them show symptoms of exhaustion and fatigue and have really lost interest in schoolwork. Some of these students have been observed to demonstrate cynical attitude towards schoolwork like assignments completion, writing quizzes and examinations by researchers. But, there is a dearth of empirical studies that have examined how an REBT program can help to manage burnout of electrical and building technology undergraduate students. Therefore, the main objective of the current study was to investigate the levels of burnout and the effect of REBT on burnout symptoms among electrical and building technology undergraduate students in public universities in Southeast Nigeria. More specifically, this study asked the following questions: What are the levels of burnout in a sample of electrical and building technology undergraduate students from public universities in Southeast Nigeria? Can REBT result in a reduction of burnout symptoms among electrical and building technology undergraduate students?

2. Method

2.1. Ethical statement

The research protocol for the study was reviewed and approved by the Department of Industrial Technical Education, University of Nigeria, Nsukka. The study was conducted in line with the WMA Helsinki Declaration. The study was registered retrospectively in UMIN Clinical Trials Registry (UMIN000037999).

2.2. Participants and procedure

A total of 368 electrical and building technology undergraduate students were accessed to take part in the study, comprising of 191 students from 2 federal universities and 177 students from 2 state universities. One hundred fifty four (154) participants were randomized into 2 study groups having met the study inclusionary criteria. The inclusion criteria included being burned-out, completing the informed consent in writing and being available to participate throughout the study period. The exclusion criteria were having no symptoms of burnout at baseline as assessed by OLBI-S dimensions, declining to participate even though there was evidence of burnout problem, being currently enrolled in a stress management intervention, and unwillingness to make oneself available throughout the study duration. See Figure 1 for participant flow diagram.

See Table 1 for participant demographics. The sample size was confirmed appropriate for the study using *GPower* 3.1 software[29] based on effect size $F=0.25$, alpha ($\alpha=.05$), power ($1-\beta=.96$) and statistical test (F tests–ANOVA: Repeated measures, between factors). The approach for the selection of eligible participants was by summing up the participant burnout scores that enabled researchers to identify those with a high level of burnout symptoms. This approach was warranted because there are 2 approaches for obtaining burnout scores of respondents – Sum and Average methods.[30] We used the sum method in which high scores indicate the manifestation of a high level of the symptoms of burnout.

Simple randomization was carried out using Saghaei random allocation software, version 1.0[31] to assign the participants randomly to the study groups: 77 participants were assigned to the treatment group and 77 participants were assigned to the no-treatment group. The researchers administered the pretest (Time 1) 2 weeks before the intervention. Two of the researchers delivered the intervention using the REBT manual for burnout.[8] The REBT intervention consists of 20 therapeutic sessions held for 10 weeks, and 8-week follow-up (held twice per week) conducted after 4 months. Each session lasted for 90 minutes. Participants in the treatment and no-treatment groups completed the OLBI-S posttest (Time 2). Follow-up assessment (Time 3) was performed at the end of follow-up meeting for the study participants.

2.3. Design

The study utilized a group randomized trial design involving a treatment group versus a no-treatment group.

2.4. Measures

2.4.1. Students' demographic questionnaire (SDQ). The SDQ was used at Time 1 for data collection regarding participants' characteristics such as institution type, gender, age, study hour, year of study, and course of study.

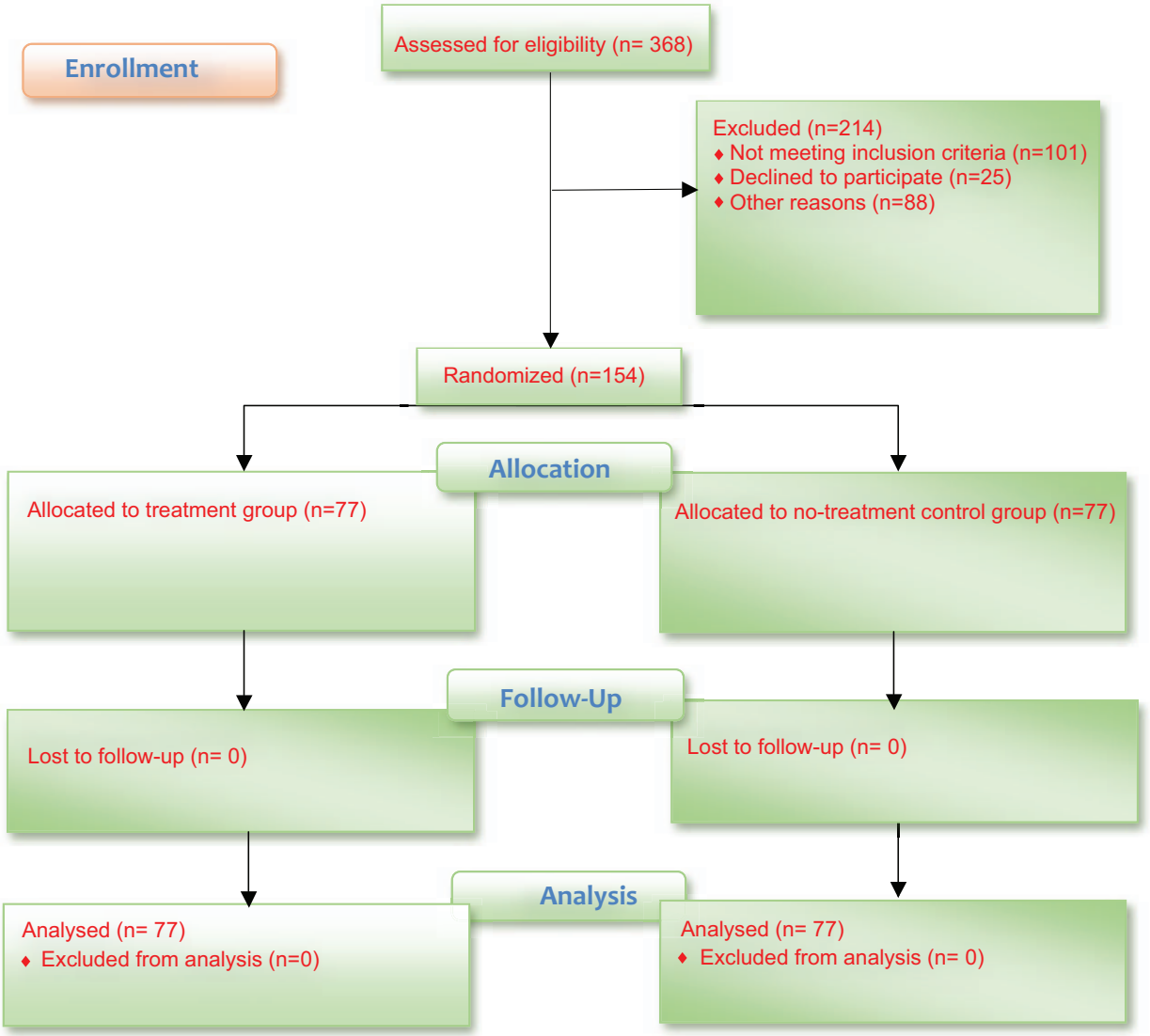

Figure 1. Participant eligibility criteria.

2.4.2. Oldenburg burnout inventory-student version (OLBI-S). We used the English version of the oldenburg burnout inventory (OLBI) for students[32] to capture the students' academic burnout at different periods. The OLBI-S consists of 16 items with 2 subscales (Exhaustion and Disengagement) comprising of 8 items each. An example of item from the exhaustion subscale is: "There are days when I feel tired before I arrive at class or start studying." While an example of an item from the disengagement subscale is: "It happens more and more often that I talk about my studies in a negative way." OLBI-S was rated on a 4-point scale of strongly agree to strongly disagree. As in previous study, we recoded the responses so that high scores would imply high levels of exhaustion and disengagement among the students.[32] Previous research reported that both the exhaustion (Cronbach's alpha = 0.87) and the disengagement (Cronbach's alpha = 0.81) subscales of the OLBI-S were reliable.[32] Another previous study also reported that the OLBI-S has good discriminant, concurrent and divergent validity.[33] Our study found that the internal consistency (Cronbach alpha) was 0.86 for the exhaustion and 0.89 for the disengagement subscales.

2.5. Data analysis

Before data analyses, the data were checked to ascertain if it was normally distributed. All the graphics showed that the distribution was normal. The data of the research were analyzed with descriptive statistics, paired-samples *t* test, Chi-Squared, ANOVAs for repeated measures with the factors–Time (within-subjects variables), Group (between-subjects factors) and Time x Group-interaction, and then partial η^2 was reported as a measure of the effect size. The paired-samples *t* test was used to determine whether the assessment scores differed over time and across treatment and no-treatment group participants, while chi-square was used for checking participants' demographic characteristics. We also assessed the association between OLBI-S scores and potential confounders (institution type, gender, age, study hour, year of study, and course of study)

Table 1

Participant demographics.

Variable	Treatment group N (%)	No-treatment group, N (%)	χ^2	Significance
Institution Type				
†Federal Uni.	40 (26.0%)	39 (25.3%)	.062	.872
‡State Uni.	37 (24.0%)	38 (24.7%)		
Gender				
Male	46 (29.9%)	49 (31.8%)	.247	.619
Female	31 (20.1%)	28 (18.2%)		
Age§	22.66 ± 4.02	22.59 ± 3.46	.364*	.915
Study Hour				
≤ 1 – 2h	33 (21.4%)	29 (18.8%)	.441	.802
> 2–5 h	28 (18.2%)	31 (20.1%)		
> 5 h	16 (10.4%)	17 (11.0%)		
Year of Study				
First	15 (9.7%)	16 (10.4%)	.260	967
Second	21 (13.6%)	19 (12.3%)		
Third	18 (11.7%)	20 (13.0%)		
Fourth	23 (14.9%)	22 (14.3%)		
Course of Study				
Electrical Tech.	43 (27.9%)	41 (26.6%)	.105	.872
Building Tech.	34 (22.1%)	36 (23.4%)		

* t-test results for age,
† Federal Universities,
‡ State University.
§ Mean age (*SD*) of participants in years. χ^2 = Chi-Squared.

using *t* test or one-way ANOVA statistics. All statistical analyses, including screening for missing values and violation of assumptions, were conducted using SPSS(R) 22.0(IBM Corporation, Armonk NY, USA) for Windows(R)/Apple Mac(R).[34] All the results were considered significant at $P \leq .05$.

3. Results

Table 1 indicated that the mean age of the treatment group was 22.66 ± 4.02 years, while that of the no-treatment group was 22.59 ± 3.46years, with no significant difference, $t = .364$, $P = .915$. Among the 154 participants who took part in the study, 40 (26.0%) of those in the treatment group came from a federal university while 37 (24.0%) are from the state university. Also, 39(25.3%) from federal university and 38 (24.7%) from state university make up the no-treatment group. Furthermore, those in the treatment group comprised 46(29.9%)male and 31 (20.1%) female participants, while the no-treatment group comprised 49(31.8%)male and 28(18.2%) female participants, with no significant difference, $\chi^2 = .247$, $P = .619$. Other demographic details like study hour, year and course of study are shown in Table 1. 100% attendance to the sessions was recorded.

Table 2 shows the burnout scores of the study participants in respect of potential confounders assessed in the study. Using *t* test or one-way ANOVA statistics where appropriate, the data was broken down to show the association between OLBI-S scores and the following potential confounders: institution type, gender, age, study hour, year of study, and course of study.

Table 2

Burnout scores (OLBI-S subscales) across potential confounders in electrical and building technology undergraduate students.

OLBI-S dimensions	Potential confounders	Category	N	Mean	SD	*P*	95%CI
Exhaustion	Institution Type	Federal University State University	79	26.24	3.79	.418	−1.738, .726
			75	26.75	3.95		
	Gender	Male	95	25.97	3.69	.034	−2.605, −.103
		Female	59	27.32	4.02		
	Age	Mean age	154	26.49	3.86	.000	−4.682, −3.032
	Study Hour	≤ 1–2 h	62	26.29	4.12	.012	25.243, 27.337
		> 2–5 h	59	25.75	3.25		24.899, 26.592
		> 5 h	33	28.18	3.98		26.771, 29.593
	Year of Study	First	31	26.81	4.02	.336	25.332, 28.281
		Second	40	25.65	3.79		24.437,26.863
		Third	38	26.34	3.43		25.213, 27.471
		Fourth	45	27.13	4.13		25.892, 28.375
	Course of Study	Electrical Technology	84	26.20	3.72	.318	−1.862,.609
		Building Technology	70	26.83	4.03		
Disengagement	Institution Type	Federal University State University	79	25.05	4.77	.030	−2.899, −.147
			75	26.57	3.79		
	Gender	Male	95	25.18	4.46	.027	−3.014, −.187
		Female	59	26.78	4.07		
	Age	Mean age	154	25.79	4.37	.000	−4.011,−2.314
	Study Hour	≤ 1–2 h	62	24.94	5.08	.027	23.646, 26.225
		> 2–5 h	59	25.76	3.27		24.912, 26.614
		> 5 h	33	27.45	4.32		25.923, 28.988
	Year of Study	First	31	25.90	4.37	.015	24.301, 27.506
		Second	40	24.03	5.13		22.386, 25.665
		Third	38	26.13	3.09		25.117, 27.146
		Fourth	45	27.00	4.21		25.735, 28.265
	Course of Study	Electrical Technology	84	25.12	4.65	.036	−2.863,−.098
		Building Technology	70	26.60	3.89		

*Age (Paired R for Age & Exhaustion = .072; Paired R for Age & Disengagement = .145).

Table 3

Results of students' mean burnout as measured by OLBI-S dimensions.

Burnout Subscale	N	M ± SD	Min	Max	95% CI
Exhaustion	154	26.49 ± 3.86	16.00	32.00	25.87–27.10
Disengagement	154	25.79 ± 4.37	10.00	32.00	25.10–26.49

CI = confidence interval, *M* = mean, *N* = number of participants, OLBI-S = Oldenburg Burnout Inventory-Student Version, OLBI-S = Oldenburg Burnout Inventory-Student Version.

The burnout level results in Table 3 based on burnout subscales showed that the electrical and building technology undergraduate students experience burnout mostly as exhaustion (mean = 26.49; 95% CI = 25.87,27.10), followed by disengagement (mean = 25.79, 95% CI = 25.10, 26.49) dimensions.

The ANOVA results in Table 4 indicates that there was no significant difference between the undergraduate students in the treatment (26.66 ± 3.99) and no-treatment groups (26.31 ± 3.76) on OLBI-S-exhaustion scores, $F(1,152) = .316$, $P = .575$, $\eta_p^2 = .002$, $\Delta R^2 = -.004$, $SE = .624$. There was no significant difference between the undergraduate students in the treatment (25.40 ± 4.59) and no-treatment control groups (26.18 ± 4.13) on OLBI-S-disengagement scores, $F(1,152) = .1.224$, $P = .270$, $\eta_p^2 = .008$, $\Delta R^2 = -.001$, $SE = .704$.

The post-treatment measure revealed a significant decrease in OLBI-S-exhaustion scores among electrical and building technology undergraduate students in the treatment group (10.22 ± 2.32) compared to students in the no-treatment control group (25.83 ± 3.88), $F(1,152) = 915.870$, $P = .000$, $\eta_p^2 = .858$, $\Delta R^2 = -.857$, $SE = .515$. The post-treatment measure revealed a significant decrease in OLBI-S-disengagement scores among undergraduate students in the treatment group (11.31 ± 2.01) compared to students in the no-treatment control group (25.53 ± 4.08), $F(1,152) = 752.025$, $P = .000$, $\eta_p^2 = .832$, $\Delta R^2 = -.831$, $SE = .519$.

The follow-up assessment (Time 3) indicated that there was a significant decline in OLBI-S-exhaustion scores among students in the treatment group (11.23 ± 2.49) in contrast to those in the no-treatment control group (25.36 ± 4.86), $F(1,152) = 515.698$, $P = .002$, $\eta_p^2 = .772$, $\Delta R^2 = -.771$, $SE = .622$. The follow-up assessment (Time 3) also indicated that there was a significant decline in OLBI-S-disengagement scores among students in the treatment group (12.97 ± 2.71) in contrast to those in the no-treatment control group (25.09 ± 4.90), $F(1,152) = 360.651$, $P = .000$, $\eta_p^2 = .704$, $\Delta R^2 = -.702$, $SE = .638$. This meant that REBT was useful in reducing burnout symptoms among electrical and building technology undergraduate students in public universities in Southeast Nigeria.

To determine whether there was a difference in the effect of REBT on electrical and building construction burnout syndrome at time 1, 2 and time 3, a paired sample *t*-test analyses were conducted. The results of the paired *t* test analyses showed a significant difference between OLBI-S-exhaustion scores at Time 1 and OLBI-S exhaustion scores at Time 2, $t(152) = 11.44$, $P = .000$, 95%CI = 6.995,9.914, *SE* Mean = .7388. There was also a significant difference between OLBI-S-exhaustion scores at Time 1 and OLBI-S-exhaustion scores at Time 3, $t(152) = 10.881$, $P = .000$, 95%CI = 6.362,9.184, *SE* Mean = .71433. This indicated that there was a significant mean change in OLBI-S-exhaustion scores of participants in the treatment group from Time 1 to Time 2. No significant difference was found between OLBI-S-exhaustion at Time 2 and OLBI-S exhaustion scores at Time 3, $t(152) = -.682$, $P = .496$, 95%CI = −1.0372,.50471, *SE* Mean = .39023. This implies that the reduction in OLBI-S-exhaustion scores at Time 2 was sustained at Time 3 for the treatment group participants.

We observed similar changes for the OLBI-S-disengagement scores across the 3-time points for the treatment group participants. The results of the paired *t* test analyses indicated a significant difference between OLBI-S-disengagement scores at Time 1 and OLBI-S-disengagement scores at Time 2, $t(152) = 11.191$, $P = .000$, 95%CI = 6.069,8.6712, *SE* Mean = .65859. There was also a significant difference between OLBI-S-disengagement scores at Time 1 and OLBI-S-disengagement scores at Time 3, $t(152) = 10.384$, $P = .000$, 95%CI = 5.474,8.0458, *SE* Mean = .65095. This implies that there was a significant mean change in OLBI-S-disengagement scores of participants in the treatment group from Time 1 to Time 2. No significant difference was found between OLBI-S-disengagement scores at Time 2 and OLBI-S-disengagement scores at Time 3, $t(152) = -1.469$, $P = .144$, 95% CI = −1.432,.21076, *SE* Mean = .41565. This implies that the reduction in OLBI-S-disengagement scores at Time 2 was sustained at Time 3 for the treatment group participants.

4. Discussion

There is dearth of intervention studies to our knowledge, which specifically aimed to alleviate burnout symptoms in electrical and

Table 4

OLBI-S scoring for components of burnout by treatment group and no-treatment group.

Measure	Assessment	Group	OLBI-S Subscale	N	M ± SD	95% CI	Significance	η_p^2
OLBI-S	Time 1	Treatment	Exhaustion	77	26.66 ± 3.99	25.56–27.57	.714	.001
			Disengagement	77	25.40 ± 4.59	24.36–26.45		
		No-treatment	Exhaustion	77	26.31 ± 3.76	24.36–26.45		
			Disengagement	77	26.18 ± 4.13	25.24–27.12		
	Time 2	Treatment	Exhaustion	77	10.22 ± 2.32	9.707–10.76	.000	.864
			Disengagement	77	11.31 ± 2.01	10.86–11.77		
		No-treatment	Exhaustion	77	25.83 ± 3.88	24.95–26.71		
			Disengagement	77	25.53 ± 4.08	24.61–26.46		
	Time 3	Treatment	Exhaustion	77	11.23 ± 2.49	10.67–11.80	.000	.775
			Disengagement	77	12.97 ± 2.71	12.36–13.59		
		No-treatment	Exhaustion	77	25.36 ± 4.86	24.26–26.47		
			Disengagement	77	25.09 ± 4.90	23.98–26.20		

η_p^2 = effect size, CI = confidence interval, M = mean, N = number of participants, OLBI-S = Oldenburg Burnout Inventory-Student Version, REBT = rational emotive behavior therapy, SD = standard deviation.

building technology undergraduate students in developing regions like Nigeria. The focal reason for this study was to investigate the levels of burnout and to determine if the REBT program can lead to a reduction in the symptoms of burnout syndrome among electrical and building technology undergraduate students. Our result showed that the electrical and building technology undergraduate students experiences a high level of burnout mostly as exhaustion followed by disengagement. The present finding seems to be consistent with the research[35] which found out that education students also suffers from a high level of burnout factors such as exhaustion and cynicism. The result also confirms previous research[36] which indicated that burnout levels of vocational students are high. Therefore, the current study is important and in the right direction gearing towards an effective means for dealing with the symptoms of burnout syndrome among electrical and building technology undergraduate students in Nigeria.

Also, the post-treatment measure revealed a significant decrease in exhaustion and disengagement scores among electrical and building technology undergraduate students in the treatment group compared to students in the no-treatment control group. Besides, the result showed this mean decrease was sustained significantly for the treatment group at follow-up. This finding is compatible with the previous researches that reported a significant effect of rational emotive-behavioral intervention program[8,37,38] on symptoms of burnout syndrome among participants in the treatment group compared to their counterparts in the control group. The result further sustains recent evidence that REBT intervention programs are effective and can decrease student learning burnout.[39–42] This finding suggests the need to deal with the burnout of electrical and building construction undergraduate before full occupation entry. Otherwise, these set of vocational and technical students will enter into their occupation with symptoms of burnout syndrome. Some of the previous researches which examined the impact of REBT on burnout were conducted using only school teachers,[37] English education students,[39] and students of Chemistry education.[41,42]

From the present findings, the significance of REBT intervention on burnout reduction among undergraduate students of electrical and building technology cannot be overlooked. From the foregoing, that REBT intervention significantly reduced burnout among undergraduates of electrical and building technology, the school administration has the responsibility of ensuring that those students at risk of burnout benefit from REBT interventions. Vocational schools should also adopt the REBT program into their school system for managing burnout among university undergraduate students of electrical and building technology.

4.1. Limitations and strengths of the current study

Although this study has provided valuable evidence on the impact of REBT on symptoms of burnout among undergraduate students of electrical and building technology in Southeast Nigeria, it is not void of limitations. One limitation of this study has to do with the homogeneity of the participants, which were electrical and building technology undergraduate students only. This restricts the generalization of the findings to other categories of students. We chose to study these categories of students because their training is considered stressful to the extent that may result in maladaptive emotions and thoughts. We suggest that other studies should replicate our study with other groups of students in other fields of study.

While some researchers may feel that our sample is quite small, it should be noted that power calculation using Gpower computer software[29] was done to confirm the sufficiency of the chosen sample and its representativeness of the analyzed population. Also, one of the most effective ways to achieve representativeness is by randomization[43] which was carried out in this present trial using computer generated numbers. Moreover, researchers suggest that the sample size in a controlled trial should not be arbitrarily large.[44] The overall number of subjects potentially available, the budget, as well as the amount of time available often limit the number of participants that can be included in a trial.[44] Therefore, it is also arguable that the sample size of this trial is sufficient enough to allow a reasonable chance of addressing the questions posed. Some studies include very large sample size to the extent that continuing randomization beyond the point of near-certainty will result in ethical discomfort.[44] Some similar studies with adequate sample sizes based on power calculations include that of Ogbuanya et al (n = 124)[8], Ugwoke et al (n = 54)[37], Ezenwaji et al (n = 52),[38] Igbokwe et al (n = 96),[39] and Ezeudu et al (n = 30, n = 36).[41,42] However, a critical analysis of the sample size utilized in these previous and recent studies shows that our current sample is even larger in size, thus, this is an improvement to the sample sizes utilized by clinical trials investigating the impact of REBT on burnout symptoms.

Rational emotive behavior therapy and its impact on burnout has largely been investigated. However, an innovative element of the current study lies in its extension of REBT to benefit undergraduate students of electrical and building technology programs. Another aspect of uniqueness of the current study is the fact that while previous studies on REBT and its impact on burnout ignored the analysis of potential confounders, this study showed the association between participants' OLBI-S scores and the following potential confounders: institution type, gender, age, study hour, year of study and course of study.

Furthermore, the clarity regarding the allocation of participants and its randomization procedure, registration of the study in clinical trials registry and increased number of participants makes this study unique and novel from previous similar studies, that is,[8,37–39,41,42] REBT researchers have been encouraged to seek for new study populations and new clients to validate the impact of REBT intervention on a given problem such as burnout.[8,37–39,41,42] The aim is to further understand the cross-cultural relevance and clinical utility of REBT in various settings and patient populations. Our current study added to the realization of this objective which REBT experts seek to achieve by investigating whether REBT program can be effective for dealing with burnout syndrome among the population of undergraduate students of electrical and building technology.

5. Conclusion

The study examined the effect of REBT intervention program on burnout symptoms among a sample of electrical and building technology undergraduate students. The findings showed that the selected groups of students in public universities in the area of study have a high level of burnout symptoms. The findings also showed that REBT program was an effective intervention in managing the undergraduate students' emotional exhaustion and disengagement. Thus, it was recommended that therapists with an adequate understanding of REBT strategy should continue to use it to assist undergraduate students of electrical and building

technology to reduce their burnout symptoms. To end with, additional studies could be conducted on REBT programs for reducing burnout in this group of undergraduate students.

Author contributions

Conceptualization: Jimoh Bakare, Hyginus Osita Omeje, Mukaila Abiodun Yisa, Chibueze Tobias Orji, Kay C. N. Onyechi, Chiedu Eseadi, Chinyere Augusta Nwajiuba, Emenike N. Anyaegbunam.
Data curation: Jimoh Bakare, Hyginus Osita Omeje, Mukaila Abiodun Yisa, Chibueze Tobias Orji, Kay C. N. Onyechi, Chiedu Eseadi.
Formal analysis: Jimoh Bakare, Hyginus Osita Omeje, Mukaila Abiodun Yisa, Chibueze Tobias Orji, Chiedu Eseadi, Emenike N. Anyaegbunam.
Funding acquisition: Jimoh Bakare, Hyginus Osita Omeje, Mukaila Abiodun Yisa, Chibueze Tobias Orji, Kay C. N. Onyechi, Chiedu Eseadi, Chinyere Augusta Nwajiuba, Emenike N. Anyaegbunam.
Investigation: Jimoh Bakare, Hyginus Osita Omeje, Chibueze Tobias Orji, Kay C. N. Onyechi, Chiedu Eseadi, Chinyere Augusta Nwajiuba, Emenike N. Anyaegbunam.
Methodology: Jimoh Bakare, Hyginus Osita Omeje, Mukaila Abiodun Yisa, Chibueze Tobias Orji, Kay C. N. Onyechi, Chiedu Eseadi, Chinyere Augusta Nwajiuba, Emenike N. Anyaegbunam.
Project administration: Jimoh Bakare, Hyginus Osita Omeje, Mukaila Abiodun Yisa, Chibueze Tobias Orji, Kay C. N. Onyechi, Chiedu Eseadi, Chinyere Augusta Nwajiuba, Emenike N. Anyaegbunam.
Resources: Jimoh Bakare, Hyginus Osita Omeje, Mukaila Abiodun Yisa.
Software: Hyginus Osita Omeje, Chibueze Tobias Orji, Kay C. N. Onyechi, Chiedu Eseadi, Chinyere Augusta Nwajiuba, Emenike N. Anyaegbunam.
Supervision: Jimoh Bakare, Mukaila Abiodun Yisa, Chibueze Tobias Orji, Chiedu Eseadi.
Validation: Jimoh Bakare, Hyginus Osita Omeje, Mukaila Abiodun Yisa, Chibueze Tobias Orji, Kay C. N. Onyechi, Chiedu Eseadi, Chinyere Augusta Nwajiuba, Emenike N. Anyaegbunam.
Visualization: Hyginus Osita Omeje, Mukaila Abiodun Yisa, Chibueze Tobias Orji, Kay C. N. Onyechi, Chinyere Augusta Nwajiuba, Emenike N. Anyaegbunam.
Writing – original draft: Jimoh Bakare, Hyginus Osita Omeje, Mukaila Abiodun Yisa, Chibueze Tobias Orji, Kay C. N. Onyechi, Chiedu Eseadi, Chinyere Augusta Nwajiuba, Emenike N. Anyaegbunam.
Writing – review & editing: Jimoh Bakare, Hyginus Osita Omeje, Mukaila Abiodun Yisa, Chibueze Tobias Orji, Kay C. N. Onyechi, Chiedu Eseadi, Chinyere Augusta Nwajiuba, Emenike N. Anyaegbunam.
Chiedu Eseadi orcid: 0000-0003-1711-7558.

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