Intervention for depression among undergraduate religious education students
A randomized controlled trial

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Abstract
Background: This research was designed to investigate the management of depression among undergraduate religious education students and identify the research implications for school-based religious intervention.

Methods: This research is a randomized controlled trial. The treatment condition had 34 undergraduate religious education students but 33 undergraduate religious education students were in the control condition. The treatment process involved a 12-week application of religious rational emotive behavior therapy (RREBT). With Beck’s depression inventory, version 2 (BDI-II), data collection was made possible.

Results: Compared to students in the control condition, undergraduate religious education students in the treatment condition demonstrated a significant drop in mean BDI-II scores at post-test ($F(1, 65) = 592.043, P < .05, \eta^2_p = .90$). The effect of RREBT among students in the treatment condition stayed consistent at 2 weeks follow-up ($F(1, 65) = 786.396, P < .05, \eta^2_p = .92, \Delta R^2 = .922$).

Conclusion: The effect of RREBT on depression treatment among undergraduate religious education students was positive and can be consistent. The study results underscore the importance of expanding this treatment approach for these undergraduate education students in Nigeria.

Abbreviation: BDI-II = Beck’s depression inventory, version 2, REBT = rational emotive behavior therapy, RREBT = religious rational emotive behavior therapy.

Keywords: BDI-II, depression, RREBT, undergraduate religious education students

1. Introduction
Depression is a common mental health concern among Nigerian university students.[1-3] A previous cross-sectional survey reported a 25.2% prevalence rate for moderate to severe depression among a sample of 820 Nigerian university students.[4] Another study of a sample of 408 Nigerian undergraduate students from a specific field of study showed a prevalence of 44.6% for depression.[5] A study of 352 Nigerian medical students sampled from two universities reported that students’ age, socioeconomic class and gender were not significantly related to depression.[6]

Undergraduate education students in Nigeria are also susceptible to depression.[6,7] A mean depression score of 40.84 ± 9.10 and 36.75 ± 9.48 were reported among first-year male and female undergraduate education students respectively (total sample = 560) in a Nigerian study that employed ex post facto research design.[7] Undergraduate religious education students in Nigeria are, thus, not immune to depression. Undergraduate religious education students in Nigeria are, thus, not immune to depression. Religious education students are exposed to a religious education curriculum that equips them with the knowledge and skills for analytic and ethical thinking in a multidisciplinary and contextualized manner about religion, faith, personal beliefs, and institutional religious practices.[8,9] Exposure to the religious education curriculum enables the students to also acquire the knowledge and skills required for examining ways of living and practising religions locally and globally.[8,9] Upon graduation, these students could work as religious teachers or engage in ministerial works.[8,9]

Several studies have looked at how psychological interventions[6-12] can help to manage depression among Nigerian students in other fields of learning, but not among undergraduate religious education students. Therefore, the aim of this randomized controlled trial (RCT) was to investigate the management...
of depression among undergraduate religious education students by employing religious rational emotive behavior therapy (RREBT) and to identify the research implications for school-based religious intervention in Nigeria.

The RREBT is a faith-based mental health intervention created following the principles and practice of rational emotive behavior therapy (REBT), a therapy, started by Ellis. In RREBT it is assumed that emotionally healthy behavior can be actualized by harnessing an individual’s absolutistic religious philosophies. Therefore, the incorporation of scriptural contents and other religious resources relevant to an individual’s religious traditions and orientations into the treatment process for resolving the emotional and/or behavioral problems of the individual is a common feature of RREBT. Against this backdrop, the study hypothesis is that, compared to the students in the control condition, the management of depression using RREBT will be significantly realistic among undergraduate religious education students in the treatment condition.

2. Methods

2.1. Ethical statements

The ethical approval of the study protocol for this RCT was issued by the Education Faculty Research Ethics Committee, University of Nigeria (REC/UNN/FE/2019/000017). The undergraduate religious education students sampled for the study filled out the informed consent form. The research study was developed and delivered as per the WMA Declaration of Helsinki. This RCT’s registration was done in the Pan African Clinical Trials Registry (unique identification number for the registry is: PACTR202209591337370).

2.2. Participants

Participants were 67 first-year undergraduate religious education students sampled from four universities located in the southern part of Nigeria (see Fig. 1). With GPower 3.1 software, we were able to conduct the sample calculation (\(\alpha = 0.05\); actual

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**Figure 1.** Participant flowchart.
power = 0.76; effect size = .20; suggested sample = 38). The treatment condition had 34 undergraduate religious education students but 33 undergraduate religious education students were in the control condition as achieved using randomization software.

2.3. Randomization, allocation concealment, and blinding procedure

The allocation sequence in this study was generated through simple randomization using a randomization table generated by random allocation software. The allocation sequence was concealed from the individual allocating participants to study groups through the use of sealed opaque envelopes. In order to improve the blinding process, certain information concerning participants and group was not disclosed to the data analyst.

2.4. Measures

The Students’ Demographic Questionnaire was employed to get personal details like age (uncategorized), gender (1 = male; 2 = female), and ethnicity (1 = Igbo; 2 = Yoruba; 3 = others).

The Beck’s depression inventory-II (BDI-II) which has 21 items with 4-point self-rating options ranging from 0 to 3 was used to evaluate the severity of depression among the undergraduate religious education students. The BDI-II scores are interpreted in the following manner: 0 to 13 for minimal depression, 14 to 19 for mild depression, 20 to 28 for moderate depression, and 29 to 63 for severe depression. The BDI-II was shown to be consistent for this research (α = .84).

2.5. Procedure

With the BDI-II, data collection was made possible at pretest, post-test, and two weeks follow-up (conducted 3 months after the post-test). At the beginning of the study, 350 undergraduate religious education students were screened for the presence of moderate to severe depression. As such, undergraduate religious education students with moderate to severe depression were considered eligible for the study. Other eligibility criteria were being a first-year undergraduate religious education student, submission of a consent form, and noninvolvement in other depression treatment programs. The treatment process involved a 12-week application of RREBT. The RREBT techniques in addition to general RBT techniques for treatment of depression were used in the current intervention to render therapeutic assistance to undergraduate religious education students. One session was held per week and lasted for two hours. The students in the control condition were waitlisted to commence their treatment sessions a week after the study follow-up evaluation.

2.6. Data analyses

A balance test was carried out before the main analyses. By employing repeated measures ANOVA (at 95% CI), analyses of data were made possible in the Statistical Package for Social Sciences software. In the analysis, within-subjects factor was Time, whereas between-subjects factor was Group. Univariate analyses were carried out to find out any if there were mean differences in the pretest/follow-up depression scores of students in the two groups. Data screening for missing values and test of assumption violations were also carried out.

3. Results

The students’ mean age in the treatment condition was 18.35 ± .08 years while the mean age for students in the control condition was 19.06 ± 2.15 years. Information with respect to gender of participants showed that in RREBT group, 28.4% were males while 22.4% were females. Also, in the control group, 32.3% were males while 14.9% were females. Furthermore, based on ethnicity, in RREBT 35.8% were Igbo, 1.5% were Yoruba, and 13.4% were other ethnic groups. Likewise, in the control group, 38.8% were Igbo, 3.0% were Yoruba while 6.0% were other ethnic groups.

Table 1 shows the descriptive statistics for each group by time points. Univariate analysis of the pretest data shows that undergraduate religious education students in the RREBT and control groups had comparable BDI-II scores (F [1, 65] = 2.645, P = .109).

Posttest results (Greenhouse-Geisser corrected) revealed a significant effect of Time (F [1.259, 81.860] = 294.766, P < .05, η² = .76), Group (F[1, 63] = 592.043, P < .05, η² = .90), and Time by Group interaction (F [1.259, 81.860] = 294.766, P < .05, η² = .76).

Table 2 show the descriptive statistics for each group by time points. Univariate analysis of the posttest data shows that undergraduate religious education students in the RREBT and control groups had comparable BDI-II scores (F [1, 65] = 2.645, P = .109).

Posttest results (Greenhouse-Geisser corrected) revealed a significant effect of Time (F [1.259, 81.860] = 200.953, P < .05, η² = .76), Group (F[1, 63] = 592.043, P < .05, η² = .90), and Time by Group interaction (F [1.259, 81.860] = 294.766, P < .05, η² = .76).

Table 1

| Characteristics | RREBT group (n, %) | Control group (n, %) | χ² | p |
|-----------------|-----------------|-----------------|------|---|
| Gender          |                 |                 |      |   |
| Male            | 19 (28.4%)      | 23 (34.3%)      |      |   |
| Female          | 15 (22.4%)      | 10 (14.9%)      | 1.366| .314|
| Age             | *18.35 ± 0.88   | *19.06 ± 2.15   | -1.772| .087|
| Ethnicity       |                 |                 |      |   |
| Igbo            | 24 (35.8%)      | 26 (38.8%)      |      |   |
| Yoruba          | 1 (1.5%)        | 2 (3.0%)        |      |   |
| Others          | 9 (13.4%)       | 5 (7.5%)        | 1.542| .463|

χ² = Chi-square, *Mean age ± SD of participants = mean and standard deviation, n = number of participants in each group, at-test result for age comparison, RREBT = religious rational emotive behavior therapy, t = t test.

Table 2

| Measure | Time | RREBT group (n = 34) M ± SD | Control group (n = 33) M ± SD | p value |
|---------|------|-----------------------------|-----------------------------|---------|
| BDI-II  | Time 1 | 40.15 ± 4.24                | 41.97 ± 4.92                | .109    |
|         | Time 2 | 12.91 ± 5.70                | 44.39 ± 5.56                | <.05    |
|         | Time 3 | 12.38 ± 4.51                | 44.79 ± 4.95                | <.05    |

BDI-II = Beck’s depression inventory, version 2, RREBT = religious rational emotive behavior therapy.
η² = .82) on depression severity among undergraduate religious education students. The results suggest that RREBT significantly reduced depression severity among the undergraduate religious education students (see Fig. 2 also).

Univariate analysis of the follow-up data show that the effect of RREBT among students in the treatment condition remained consistent at 2 weeks follow-up ($F [1, 65] = 786.396, P < .05, \eta² = .92, sΔR² = .922$).

In Table 3, the pairwise comparisons regarding the main effect of Time revealed a significant decrease in students’ BDI-II score from time 1 to time 2 ($MD = 12.406, SE = .899, P < .05, 95\% CI = 10.203, −14.608$), and from time 1 to time 3 ($MD = 12.473, SE = .770, P < .05, 95\% CI = 10.586, −14.360$). Likewise, the significant decrease at time 2 was sustained at time 3 ($MD = .68, SE = .374, P > .05, 95\% CI = −.848, −.984$). In addition, pairwise comparisons regarding the main effect of Group revealed that the undergraduate religious education students in the RREBT condition reported lower BDI-II scores than students in the control condition ($MD = 21.903, SE = .900, P < .05, 95\% CI = 20.106 −23.701$).

4. Discussion

The objective of this RCT was to investigate the management of depression among undergraduate religious education students through the application of RREBT and to highlight the research implications for school-based religious intervention in Nigeria. The study found that, compared to students in the control condition, undergraduate religious education students in the treatment condition demonstrated a significant drop in mean BDI-II scores at post-test. The result of RREBT among students in the treatment condition stayed consistent at follow-up. This aligns with some past studies that showed that REBT techniques can be effective for treating depression.$^{[10,12,24–26]}$ The implications of this research for school-based religious intervention in Nigeria cannot be overstated. Majority of Nigerian university students identify with one religion or the other. As such, exploring their religious philosophies which are similar to that of RREBT can help in creating a student-friendly intervention for the treatment of mental health problems like depression. Also, religious educators and religious counselors working in the university environment may collaborate to further investigate the usefulness of RREBT in helping university undergraduate students to cope with other mental health problems like suicidal ideation and posttraumatic stress disorder. When developing school-based mental health interventions, students’ religious orientations should be taken into account$^{[27]}$ and their religious traditions should be incorporated into such intervention process to address their peculiar mental health needs.

It is important to state that this study has its limitations like not making use of a qualitative approach for data collection and addressing this public health problem among undergraduate religious education students only, thereby, excluding undergraduate students from other academic disciplines. Also, the role played by students’ demographic characteristics in predicting the extent to which RREBT impacts depression among
the students were not explored in this study. In future studies, the use of qualitative approaches is suggested and inclusion of students across the various academic disciplines is also recommended. In future studies, researchers should also recognize the extent to which students' demographics, for instance, their ethnicity, age, gender, and socioeconomic class, could affect how much the RREBT program would reduce the severity of depression experienced by students.

5. Conclusion

The effect of RREBT on depression treatment among undergraduate religious education students was positive and can be consistent. The study results underscore the importance of expanding this treatment approach for these undergraduate education students in Nigerian universities.

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References

[1] Adewuya AO, Ola BA, Aloba OO, et al. Depression amongst Nigerian university students. Soc Psychiatry Psychiatr Epidemiol. 2006;41:674–8.
[2] Dabana A, Gohir AA. Depression among students of a Nigerian University: prevalence and academic correlates. Arch Med Surg. 2018;3:6.
[3] Peltzer K, Pengpid S, Olowu S, et al. Depression and associated factors among university students in Western Nigeria. J Psychol Afr. 2013;23:459–65.
[4] Aluh DO, Abba A, Afoif AB. Prevalence and correlates of depression, anxiety and stress among undergraduate pharmacy students in Nigeria. Pharm Educ. 2020;20:236–48.
[5] Tamunomski CA, Chunawa JM, Aniwada EC, et al. Determinants of depression among medical students in two medical schools from South East Nigeria: a screening test. Ann Niger Med. 2017;11:27–31.
[6] Nwefuru BC, Otu MS, Eseadi C, et al. Stress, depression, burnout and anxiety among chemistry education students in Universities in South-East, Nigeria. J Consult Train Serv. 2018;2:46–54.
[7] Njoku JN, Igabor DO, Amalu MN. Influence of sex and age on depression among first year undergraduates of Faculty of Education in Cross River State, Nigeria. Mediter J Sci. 2020;11:43–43.
[8] Office of Assessment. Religious studies. 2020. Available at: https://www.scu.edu/provost/institutional-effectiveness/assessment/

Academic-program-assessment/department-learning-objectives/ religious-studies/.