Clinical Trial/Experimental Study

Medicine

OPEN

Intervention for depression among undergraduate religious education students

A randomized controlled trial

Chiedu Eseadi, PhD[a], Leonard Chidi Ilechukwu, PhD[b], Vera Victor-Aigbodion, PhD[a], Abatihun Alehegn Sewagegn, PhD[a,c,*], Amos Nnaemeka Amedu, PhD[d]

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.[1,2] A previous cross-sectional survey reported a 25.2% prevalence rate for moderate to severe depression among a sample of 820 Nigerian university students.[3] Another study of a sample of 408 Nigerian undergraduate students from a specific field of study showed a prevalence of 44.6% for depression.[4] 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.[5]

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[10–12] 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

The authors have no funding and conflicts of interest to disclose.

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

[a] Department of Educational Psychology, University of Johannesburg, South Africa, [b] Department of Arts Education, University of Nigeria, Nsukka, Enugu State, Nigeria, [c] Institute of Education and Behavioral Science, Debre Markos University, Debre Markos, Ethiopia, [d] Department of Social Science Education, University of Nigeria, Nsukka, Enugu State, Nigeria.

**Correspondence: Abatihun Alehegn Sewagegn, Institute of Education and Behavioral Science, Debre Markos University, Debre Markos, Ethiopia (e-mail: abatihunalehegn@gmail.com).*

How to cite this article: Eseadi C, Ilechukwu LC, Victor-Aigbodion V, Sewagegn AA, Amedu AN. Intervention for depression among undergraduate religious education students: A randomized controlled trial. Medicine 2022;101:41(e31034).

Received: 22 November 2021 / Received in final form: 2 September 2022 / Accepted: 7 September 2022

http://dx.doi.org/10.1097/MD.0000000000031034

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.[13,14] In RREBT it is assumed that emotionally healthy behavior can be actualized by harnessing an individual's absolutistic religious philosophies.[14–16] 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.[15,17] 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

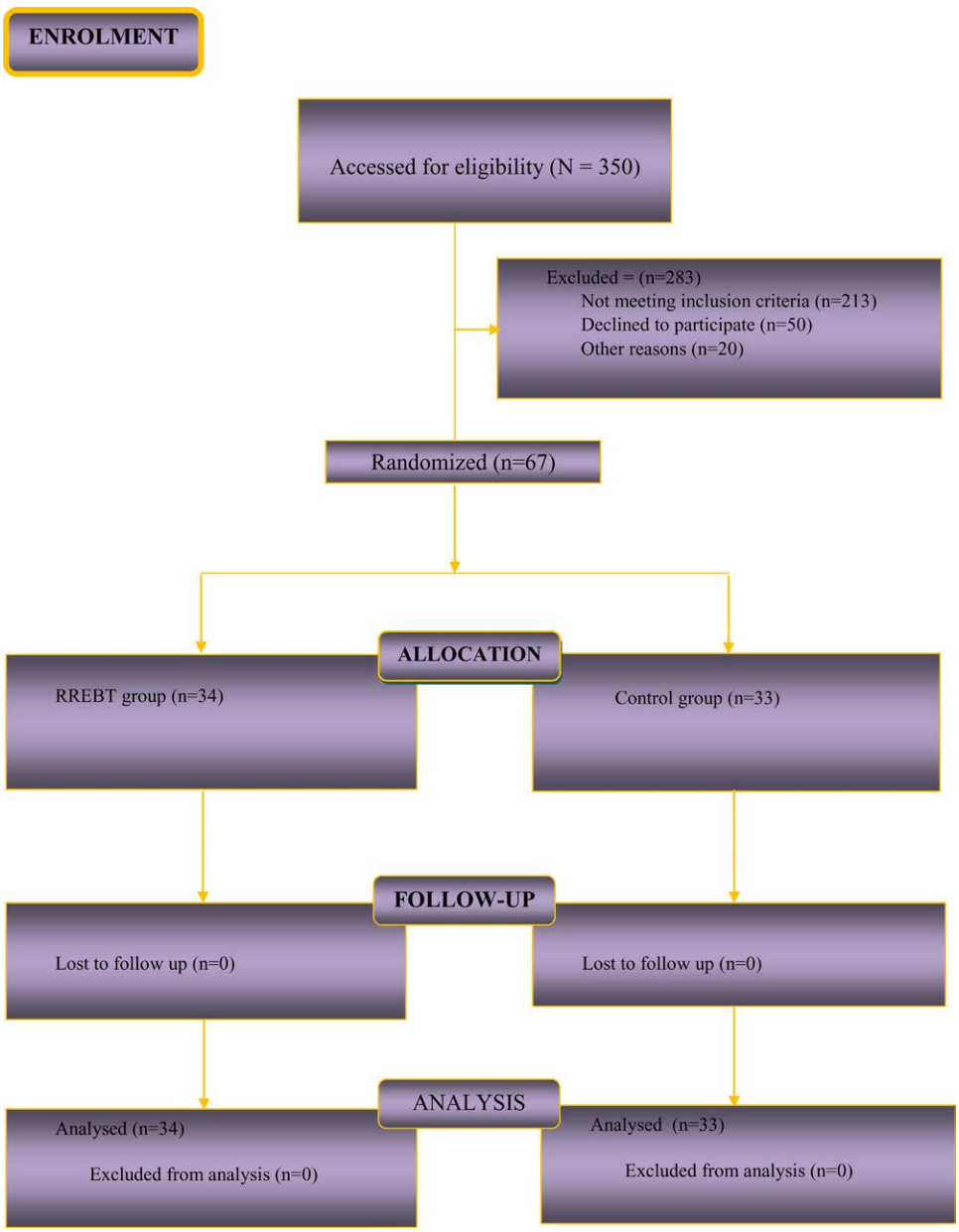

Figure 1. Participant flowchart.

power = 0.76; effect size = .20; suggested sample = 38).[18,19] 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.[20]

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.[20] 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)[21] 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[15] in addition to general REBT techniques for treatment of depression[22] 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.[23] 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 2 show 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] = 200.953, P < .05, η^2_p = .76), Group (F [1, 65] = 592.043, P < .05, η^2_p = .90), and Time by Group interaction (F [1.259, 81.860] = 294.766, P < .05,

Table 1

Participants demographic characteristics.

Characteristics		RREBT group (n, %)	Control group (n, %)	χ^2	*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[t]	.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

χ^2 = 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

Descriptive statistics.

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.

η^2_p = .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, η^2_p = .92, sΔR^2 = .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

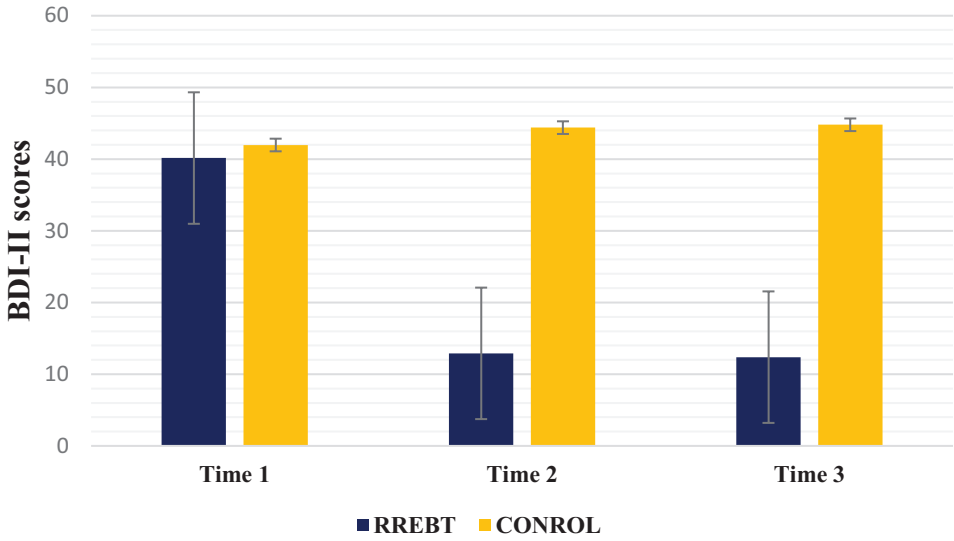

Figure 2. Mean changes in BDI-II scores of students across the study groups. BDI-II = Beck's depression inventory, version 2.

Table 3

Pairwise comparisons on the effect of Time and Group on students' BDI-II scores.

Comparisons		MD(I-J)	SE	Sig.[b]	95% CI[b]
(I) Time	(J) Time				
Time 1	Time 2	12.406*	.899	.000	10.203, 14.608
	Time 3	12.473*	.770	.000	10.586, 14.360
Time 2	Time 1	–12.406*	.899	.000	–14.608, –10.203
	Time 3	.068	.374	.997	–.848, .984
Time 3	Time 1	–12.473*	.770	.000	–14.360, –10.586
	Time 2	–.068	.374	.997	–.984, .848
(I) Group	(J)				
RREBT	Control	–21.903*	.900	.000	–23.701, –20.106
Control	RREBT	21.903*	.900	.000	20.106, 23.701

bAdjustment for multiple comparisons: Sidak.

MD = mean difference, RREBT = RREBT = religious rational emotive behavior therapy, SE = standard error.

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.

Author contributions

Conceptualization: Chiedu Eseadi, Leonard Chidi Ilechukwu, Vera Victor-Aigbodion, Abatihun Alehegn Sewagegn, Amos Nnaemeka Amedu.
Data curation: Chiedu Eseadi, Leonard Chidi Ilechukwu, Vera Victor-Aigbodion, Abatihun Alehegn Sewagegn, Amos Nnaemeka Amedu.
Formal analysis: Chiedu Eseadi, Leonard Chidi Ilechukwu, Vera Victor-Aigbodion, Abatihun Alehegn Sewagegn, Amos Nnaemeka Amedu.
Funding acquisition: Chiedu Eseadi, Leonard Chidi Ilechukwu, Vera Victor-Aigbodion, Abatihun Alehegn Sewagegn, Amos Nnaemeka Amedu.
Investigation: Chiedu Eseadi, Leonard Chidi Ilechukwu, Vera Victor-Aigbodion, Amos Nnaemeka Amedu.
Methodology: Chiedu Eseadi, Leonard Chidi Ilechukwu, Vera Victor-Aigbodion, Abatihun Alehegn Sewagegn, Amos Nnaemeka Amedu.
Project administration: Chiedu Eseadi, Leonard Chidi Ilechukwu, Vera Victor-Aigbodion, Abatihun Alehegn Sewagegn, Amos Nnaemeka Amedu.
Resources: Vera Victor-Aigbodion, Abatihun Alehegn Sewagegn.
Software: Chiedu Eseadi, Vera Victor-Aigbodion, Abatihun Alehegn Sewagegn, Amos Nnaemeka Amedu.
Supervision: Leonard Chidi Ilechukwu, Abatihun Alehegn Sewagegn, Amos Nnaemeka Amedu.
Validation: Chiedu Eseadi, Leonard Chidi Ilechukwu, Vera Victor-Aigbodion, Abatihun Alehegn Sewagegn, Amos Nnaemeka Amedu.
Visualization: Vera Victor-Aigbodion, Abatihun Alehegn Sewagegn.
Writing – original draft: Chiedu Eseadi, Leonard Chidi Ilechukwu, Vera Victor-Aigbodion, Abatihun Alehegn Sewagegn, Amos Nnaemeka Amedu.
Writing – review & editing: Chiedu Eseadi, Leonard Chidi Ilechukwu, Vera Victor-Aigbodion, Abatihun Alehegn Sewagegn, Amos Nnaemeka Amedu.

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, Gobir 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, Afosi AB. Prevalence and correlates of depression, anxiety and stress among undergraduate pharmacy students in Nigeria. Pharm Educ. 2020;20:236–48.
[5] Tamunosiki CA, Chinawa 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, Igbodor DO, Amalu MN. Influence of sex and age on depression among first year undergraduates of Faculty of Education in Cross River State, Nigeria. Mediterr J Soc 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/.
[9] Department of Religion. Goals for Religion Study. 2019. Available at: http://religion.emory.edu/home/about/religion-study.html.
[10] Ezeudu FO, Eya NM, Nwafor SC, et al. Intervention for depression among chemistry education undergraduates in a Nigerian university. J Int Med Res. 2020;48:0300060519865064.
[11] Ofoegbu TO, Asogwa U, Otu MS, et al. Efficacy of guided internet-assisted intervention on depression reduction among educational technology students of Nigerian universities. Medicine (Baltim). 2020;99:e18774.
[12] Onuigbo LN, Eseadi C, Ebifa S, et al. Effect of rational emotive behavior therapy program on depressive symptoms among university students with blindness in Nigeria. J Ration Emotive Cogn Behav Ther. 2019;37:17–38.
[13] Ellis A. Rational emotive behavior therapy. Curr Psychother. 1995;5:162–96.
[14] Ellis A. Can rational emotive behavior therapy (REBT) be effectively used with people who have devout beliefs in God and Religion? Prof Psychol Res Pract. 2000;31:29–33.
[15] Iremeka FU, Ede MO, Amaeze FE, et al. Improving work-life balance among administrative officers in Catholic primary schools: assessing the effect of a Christian religious rational emotive behavior therapy. Medicine (Baltim). 2021;100:e26361.
[16] Ellis A. My current views on rational-emotive therapy (RET) and religiousness. J Ration Emotive Cogn Behav Ther. 1992;10:37–40.
[17] Nielsen S. Accommodating religion and integrating religious material during rational emotive behavior therapy. Cogn Behav Pract. 2001;8:34–9.
[18] Faul F, Erdfelder E, Lang AG, et al. G* Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behav Res Methods. 2007;39:175–91.
[19] Faul F, Erdfelder E, Buchner A, et al. Statistical power analyses using G* Power 3.1: tests for correlation and regression analyses. Behav Res Methods. 2009;41:1149–60.
[20] Saghaei M. Random allocation software for parallel group randomized trials. BMC Med Res Methodol. 2004;4:1–6.
[21] Beck AT, Steer RA, Brown GK. Beck depression inventory-II. San Antonio. 1996;78:490–8.
[22] David D, Szentagotai A, Lupu V, et al. Rational emotive behavior therapy, cognitive therapy, and medication in the treatment of major depressive disorder: a randomized clinical trial, posttreatment outcomes, and six-month follow-up. J Clin Psychol. 2008;64:728–46.
[23] IBM Corp. IBM SPSS statistics for windows, Version 22. IBM Corp. 2013.
[24] Moon JR, Huh J, Song J, et al. The effects of rational emotive behavior therapy for depressive symptoms in adults with congenital heart disease. Heart Lung. 2021;50:906–13.
[25] Eseadi C, Onwuka GT, Otu MS, et al. Effects of rational emotive cognitive behavioral coaching on depression among type 2 diabetic inpatients. J Ration Emotive Cogn Behav Ther. 2017;35:363–82.
[26] Ede MO, Adene FM, Okeke CI, et al. The effect of rational emotive behaviour therapy on post-traumatic depression in flood victims. J Ration Emotive Cogn Behav Ther. 2021:1–20.
[27] Onyishi CN, Eseadi C, Ilechukwu LC, et al. Potential influences of religiosity and religious coping strategies on people with diabetes. World J Clin Cases. 2022;10:8816–26.