Educational Administration: Theory and Practice

2024, 30(11), 1050 -1056 ISSN: 2148-2403 https://kuey.net/

Research Article



Stress and Burnout Management Among Teachers in Enugu State, Nigeria: Intervention of Cognitive Behavioural Therapy

Chioma Vivian Madu¹, Offiong Asuquo Effanga¹, Chukwuemeka A. Ezurike¹, Nwamara Chidiebere Isilebo¹, Eke N. Ukpai¹, Chijioke V. Amoke¹, Uchenna. Lawrencia Okolie¹, Eze Fidelis Amaeze¹, Chinwe Faith Diara^{1*}

¹Department of Educational Foundations Faculty of Education, University of Nigeria, Nsukka.

Citation: Chioma Vivian Madu et al. (2024), Stress and Burnout Management Among Teachers in Enugu State, Nigeria: Intervention of Cognitive Behavioural Therapy, Educational Administration: Theory and Practice, 30(11) 1050 -1056

Doi: 10.53555/kuey.v30i11.8961

ARTICLE INFO

ABSTRACT

The study investigated intervention effects of cognitive behavioural therapy on stress and burnout management among teachers in Enugu State, Nigeria. The teachers' stress was measured with Resenberg Occupational Stress Scale (ROSS) with an internal consistency reliability coefficient of 0.83. The ROSS has nine components of stress such as Student Behaviour, Administrators' Relation, Teacher Relation, Parent/Teacher Relation, Time Management, Intrapersonal Relation, Physical Symptom of Stress, Emotional Symptom of Stress and Stress Management Technique with 4 items in each of the components. The Maslach Burnout Inventory (MBI) was used for data collection. The MBI has 25 items and was developed by Maslach and Jackson 1981. The internal consistency reliability of MBI was established through Cronbach alpha which gave coefficients of o.87. The participants are 162 teachers identified with Stress and Burnout symptoms. The teachers were put in two groups- experimental and control groups. The experimental group that received CBT-treatment has 82 teachers while the control group has 80 teachers respectively. A therapist's guide to brief cognitive behavioral therapy Developed by Clerk in 2006 (42) was used as intervention by the study as the treatment. The assistants adhered to the outlines of Clerk in the intervention process that lasted for four weeks. A placebo on conventional counselling was given to the control group. The study revealed that CBT significantly increased stress and burnout management among teachers in secondary schools in Enugu State, Nigeria. The school administrators should also avoid conflicting role assignment of responsibility to the teachers, involve the teachers in decision making, provide conducive teaching environment through the support of appropriate instructional materials and allow the teachers to enjoy their free periods without interferences.

Keywords: Cognitive Behavioural Therapy, Teachers' Stress and Burnout Management.

Introduction

The complexities associated with the teaching profession in the contemporary society seem to be associated with prolonged stress which could amount to burnout. Teaching profession has been implicated with stressful conditions (1). Teaching profession has been tagged as one of the professions that are bedeviled with high stress level (2). Teaching is one of the most stressful professions (3, 4, 5).

The teachers are constantly faced with the responsibility of addressing the needs of the students, professional training and development, subject content demand, provision of conducive learning environment and involvement in their school community relation result in job stress (6). Job stress is the reaction of the body to pressure that will necessitate changes in mental, emotional physical adjustments (7). These stressful conditions are linked to the state of distress (8). Previous studies suggested that psychological distress (PD) manifest in the forms of sadness, anxiety, self-consciousness, irritability and emotional vulnerability [9], worthlessness, restlessness, nervousness, hopelessness, sadness and helplessness [10].

^{*}Corresponding author- Dr Chinwe Faith Diara

^{*}Department of Educational Foundations Faculty of Education, University of Nigeria, Nsukka, Emai: chinwe.diara@unn.edu.ng

It was further revealed that work stress leads to negative productivity among school teachers (2Umaru). Previous study has implicated teachers stress in the school system to work overload, irregular payment of salaries, poor time management, physical danger, delayed promotion and policy somersault (2). (10) opined that causes of work stress are inability to take decision in critical work issues, work hours, role conflict, multiple and contradicting supervision and role ambiguity. Occupational stress introduces a lot of complex emotional and psychological, cognitive, physical and behavioural changes in an employee (11).

Stress can make an employee to be upset, emotionally unstable, inability to make sound and justifiable decisions (3). Work stress can greatly reduce employees' live span as well as physical and mental health dispositions (12). Stress has a negative impact on a person's ability to associate others, develop feeling of anxiousness, alcoholism, sleeping disorder, attention deficit, and antisocial behaviours and work burnout (13). These consequences of stress are irrespective of the warning by (14) that stress is a harmful physical and emotional response to work challenges.

In the same vein, psychological stress and distress has been linked to burnout [15]. Burnout is conceived as extreme and prolonged impact of uncontrolled stress on administrators' emotional, physical, social and cognitive dimensions. Burnout can also be seen mental, physical, and emotional exhaustive state that can happen as a result of chronic workplace stress. Burnout can have serious effects on your health and relationships (16). A study found that 36% of teachers experienced burnout (17). In the same vein and in the line of teaching profession, it was found that 57.7% of lecturers experienced burnout (18). These prevalent rates of on burnout can impact negatively in the profession and life of the teaching staff members.

It was reported that burnout significantly relates with depersonalization, poor job performance and emotional exhaustion (19). It was revealed that teachers who experience burnout feel exhausted even after quality sleeping (20, 21). On the other hand, teachers who experience burnout finds it difficult to have quality sleep (22). Teachers' burnout can make them leave the teaching profession. It was reported in a global trend that 40% to 50% of the teachers leaving the teaching profession were implicated on their level of burnout (23). Teachers' job burnout is associated with absenteeism, reduced job commitment and poor students' academic achievement (24, 25). Teachers who experience burned out also deliver poor quality of instruction than others (26, 27). The presence of burnout, depersonalization and emotional exhaustion are factors of poor job performance (10). Stress and burnout are psychological variables and may require interventions.

One of such psychological interventions is the use of Cognitive Behavioural Therapy (CBT). Cognitive Behavioural is a therapeutic technique that helps people know and handle unjustified or irrational beliefs through cognitive restructuring (28). The goal is to replace negative thoughts with rational and realistic ones. Recording of thoughts, Selection of thought, use of different perspectives and establishment of different response are some of the key techniques in CBT. All techniques are summarized cognitive restructuring and reframing which deals with the use of statement to handle psychological challenges perceptively. In the year 1960, the Psychiatrist Aaron T. Beck originated the Cognitive Behavioral Therapy (CBT) for handling of issues related to cognition and behaviour. CBT is based on three aspects of cognition which includes automatic thoughts, cognitive distortion and underlying beliefs of schema (29, 30, 31, 32). In this regard, automatic thoughts are usually sudden and unprocessed and interpretation analysis of events. Automatic thought can affect mood and emotional dispositions because it is devoid of proper interpretation of actions. On the other hand, cognitive distortion is very significant as it helps heightened automatic thoughts and processes. Cognitive distortions function with dichotomous thinking, overgeneralization, selective abstraction, selective abstraction, mind reading, future telling, minimization, catastrophizing, emotional reasoning and attribution (29, 30, 31, 32). Underlying belief shapes life experiences through perception and interpretation. The core beliefs are based on the central issues about life level of belief as well as dysfunctional beliefs like lack of involvement, inadequacy and bad perception of life(29, 30, 31, 32).

The efficacy of CBT has been proven in different contexts. One of such is in the study by (33) who reported that CBT can serve as occupational coaching intervention for those who have psychological coping challenges. Furthermore, (34, 35, 36, 37) CBT coaching is necessary for emotional issues. The study by (38) revealed that CBT in a form of coaching can increase hasthe ability to control administrators' burnout levels. More so, (39) reported emotional coaching can address behavioural challenges among workers.

Methodology

The teachers stress was measured with Resenberg Occupational Stress Scale (ROSS) (40). The ROSS is a 36-item instrument with response options of Never (1), Rarely (2), Sometimes (3), Often (4) and Very Often (5) respectively. The internal consistency reliability coefficient of ROSS is 0.83. The instrument has nine components of stress such as Student Behaviour, Administrators' Relation, Teacher Relation, Parent/Teacher Relation, Time Management, Intrapersonal Relation, Physical Symptom of Stress, Emotional Symptom of Stress and Stress Management Technique with 4 items in each of the components.

The Maslach Burnout Inventory (MBI) was used for data collection. The MBI measure has 25 items and developed by Maslach and Jackson 1981 (41). This scale was solely designed to elicit information on burnout signs and symptoms of workers experiencing burnout. The MBI has four subscales of Depersonalization 5-items, Emotional Exhaustion with 9-items, Involvement with 3-items and Personal Accomplishment 8-items respectively. The internal consistency reliability was established through Cronbach alphawhich gavecoefficients

of 0.87 for MBI. The reliability indices of Depersonalization, Emotional Exhaustion, Involvement and Personal Accomplishment are 0.70, 0.78, 0.71 and 0.72 respectively. The MBI was structured in four response options of Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1).

The participants are 162 teachersidentified with Stress and Burnout symptoms. The teachers were put in two groups- experimental and control groups. The experimental group that received CBT-treatment has 82 teachers while the control group has 80 teachers respectively.

The Rational Emotive Cognitive Treatment was administered to the experimental group while the control group received no treatment. English Language was used to administer CBT-Treatment to the experimental group through the help of Rational Emotive Cognitive Health Coaches and Industrial Counselling-Psychologists. These therapists had first degree and postgraduate qualifications (M.Sc/M.Ed or Ph.D) as their qualifications. These therapists were exposed CBT with for one week to be family with the treatment.

A therapist's guide to brief cognitive behavioral therapy Developed by Clerk in 2006 (42) was used as intervention by the study as the treatment. The assistants adhered to the outlines of Clerk in the intervention process that lasted for four weeks. A placebo on conventional counselling was given to the control group.

Data analysis

After the administration of the pretest, posttest and follow-up measures, the data obtained were screened and cleaned for missing values. Thereafter, the Statistical Package for the Social Sciences (SPSS) software version 22 was used to conduct the statistical analysis. Mean and standard deviation were used to answer the research questions while Analysis of Covariance (ANCOVA) was used to t-test the hypotheses at 0.05 level of significance.

Results

Table 1: mean and standard deviation scores of the effect of CBT on stress management

Groups		Pre-test				Mean loss	Mean loss
			Post-test				difference
			Std.		Std.	_	
	N	\overline{x}	Deviation	\overline{x}	Deviation		
Experimental	82	71.22	4.57	54.41	13.49	16.81	11.21
Control	80	63.74	7.63	58.14	5.92	5.60	-

Table 1 shows that teachers with stress who were exposed to CBT(experimental group) had mean and standard deviation scores of ($\bar{x}=71.23$, SD = 4.57) at the pretest and mean and standard deviation scores of ($\bar{x}=54.41$, SD = 13.49) at the posttest. Similarly, teachers with stress who were not exposed to CBT (control group) had mean and standard deviation score of ($\bar{x}=63.74$, SD = 7.63) at the pretest and mean and standard deviation scores of ($\bar{x}=58.14$, SD = 5.92) at the posttest. Thus, the mean loss scores of 16.81 and 5.60 indicate that the teachers with stress who were exposed to CBT had their stress reduced than their counterparts who were not so exposed.

Table 2: Analysis of Variance of the effect of CBT on stress management

Tuble 2: manysis of variance of the effect of ebt on stress management								
Source	Type III Sum of Squares df		Mean Square	F	Sig.	Partial Eta Squared		
Corrected Model	773.29^{a}	2	386.65	3.56	.03	.04		
Intercept	2641.04	1	2641.04	24.28	.00	.13		
Pretest	212.06	1	212.06	1.95	.17	.01		
Groups	773.20	1	773.20	7.11	.01	.04		
Error	17295.33	159	108.78					
Total	530703.00	162						
Corrected Total	18068.62	161						

Table 2 reveals that there is a significant difference in the mean stress score of teachers who were exposed to CBT and those not exposed in favour of the teachers exposed to CBT, F(1, 159) = 7.11, p = .01. Thus, the null hypothesis is rejected since the associated probability value of .01 is less than the .05 level of significance. This means that CBT has a significant effect on teachers' stress management.

Table 3: mean and standard deviation scores of the effect of CBT on burnout management

Table 3. mean and standard deviation scores of the effect of CB1 on burnout management									
Groups		Pretest				Mean loss	Mean loss		
				Posttest		difference			
			Std.		Std.				
	N	\overline{x}	Deviation	\overline{x}	Deviation				
Experimental	82	90.61	4.94	24.21	2.28	66.40	61.99		
Control	80	73.35	3.55	68.94	7.40	4.41			

Table 3 shows that teachers with burnout who were exposed to CBT(experimental group) had mean and standard deviation scores of ($\bar{x}=90.61$, SD = 4.94) at the pretest and mean and standard deviation scores of ($\bar{x}=24.21$, SD = 2.28) at the posttest. Similarly, teachers with burnout who were not exposed to CBT (control group) had mean and standard deviation score of ($\bar{x}=73.35$, SD = 3.55) at the pretest as well as mean and standard deviation scores of ($\bar{x}=68.94$, SD = 7.40) at the posttest. Thus, the mean loss scores of 66.40 and 4.41 indicate that the teachers with burnout who were exposed to CBT had their burnout reduced than their counterparts who were not so exposed.

Table 4: Analysis of Variance of the effect of CBT on burnout management

	Type III Sum of					Partial	Eta
Source	Squares	df	Mean Square	F	Sig.	Squared	
Corrected Model	81030.94ª	2	40515.47	1359.39	.00	.95	
Intercept	759.32	1	759.32	25.48	.00	.14	
pretestburnout	11.32	1	11.32	.38	·54	.00	
Groups	16777.17	1	16777.17	562.92	.00	.78	
Error	4738.83	159	29.80				
Total	432992.00	162					
Corrected Total	85769.78	161					

Table 4 reveals that there is a significant difference in the mean burnout score of teachers who were exposed to CBT and those not exposed in favour of the teachers exposed to CBT, F(1, 159) = 562.92, p = .00. Thus, the null hypothesis is rejected since the associated probability value of .00 is less than the .05 level of significance. This means that CBT has a significant effect on teachers' burnout management.

Discussion

The study revealed that CBT significantly increased stress and burnout management among teachers in secondary schools in Enugu State, Nigeria. The finding of this study is in agreement with that of (33) who reported that CBT can serve as occupational coaching intervention for those who have psychological coping challenges. Furthermore, the finding of this study collaborated that of (34, 35, 36, 37,) which showed the efficacy of CBT in coaching form in handling emotional issues.

The finding of this study has also supported that of (38) which revealed that CBT in a form of coaching can enhance administrators' burnout management. More so, and in tandem with the finding of this study was (38) who reported that emotional coaching can address behavioural challenges among workers. In the same vein, cognitive and behavioural coaching are proven to reduce work stress and burnout among electronic workers (39). These findings are also supported by recent similar studies like (43-55)

Limitations and suggestion for further studies

This study could not use students and school administrators in the educational sector as the population. Efforts should be made to integrate the teachers and students in the population of the study in order to expose them on the sources of teachers' stress and burnout in the school system.

Conclusions

The study has shown that CBT is effective in the management of teachers' stress and burnout in the school system. This implied that the application of CBT can enhance the management of teachers' stress and burnout in the school system. These findings would serve as a working document for the school counselors and psychologists as the will judiciously and effectively make use of it in the management of emotional related factors such as teachers' stress and burnout management in the school. The school administrators should also avoid conflicting role assignment of responsibility to the teachers, involve the teachers in decision making, provide conducive teaching environment through the support of appropriate instructional materials and allow the teachers to enjoy their free periods without interferences.

Conflict of Interest

The researchers declared that there was no existence of conflict of interest.

References

1. Wang Y, Ramos A, Wu H, et al. Relationship between occupational stress and burnout among Chinese teachers: a cross-sectional survey in Liaoning, China. Int Arch Occup Environ Health. 2015;88(5):589–97. https://doi.org/10.1007/s00420-014-0987-9.

- 2. Umaru A. Workplace stress, effect and teachers coping strategies in secondary schools in Niger State, Nigeria. Al-Hikmah Journal of Business Education. 2024: 4(1); 146-153
- 3. Kyriacou C & Chien PY. Teacher stress in Taiwanese primary schools. The Journal of Educational Enquiry, 2004;5(2).
- Madigan DJ & Kim LE. Does teacher burnout affect students? A systematic review of its association with academic achievement and student-reported outcomes. International Journal of Educational Research, 2021:105, 101714. https://doi.org/10.1016/j.ijer.2020.101714
 Saloviita T & Pakarinen E. Teacher burnout explained: Teacher-, student-, and organisation-level
- 5. Saloviita T & Pakarinen E. Teacher burnout explained: Teacher-, student-, and organisation-level variables. Teaching and Teacher Education, 2021: 97(5);103221.https://doi.org/10.1016/j.tate.2020.103221
- 6. Subair, S.Tayo; Abe Olaitan Oluwaseun; Aliyu, M. Olasunkanmi. Job Stress and Teachers' Coping Strategies in Nigerian Schools. American Journal of Social Sciences and Humanities, 2021: 6(1); 1-13.
- 7. Erdogan B & Bauer TN. Perceived over qualification and its outcomes: The moderating role of empowerment. Journal of Applied Psychology. 2009:94(2); 557-565. Available at: https://doi.org/10.1037/a0013528
- 8. Lahey BB. Public health significance of neuroticism. Am Psychol. 2009;64(4):241–56. https://doi.org/10.1037/a0015309.
- 9. Kessler RC, Andrews G, Colpe LJ, et al. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. Psychol Med. 2002;32(6):959–76. https://doi.org/10.1017/s0033291702006074.
- 10. Murphy, LR. Occupational stress management: A review and appraisal. Journal of Occupational Psychology. 2005: 57(1); 1-15.
- 11. Stranke EJ. Scottish and Australian teacher stress and strain: A comparative study. British Journal of Educational Psychology. 2005: 68(2); 269-279.
- 12. Hopkins M L. The sources of work stress and coping resources for high school teachers in the Gauteng Province within different career stages. 2014: Doctoral Dissertation.
- 13. Chunninghan C. Perceived over qualification and its outcomes: The moderating role of empowerment. Journal of Applied Psychology. 2000: 94(2); 557.
- 14. National Institutes for Occupational Safety and Health. Stress at work. 2022. https://www.cdc.gov/niosh/docs/99-101/default.html.
- 15. Naring G, Vlerick P, Van de Ven B. Emotion work " and emotional exhaustion in teachers: the job and individual perspective. Educ Stud. 2011;38(1):63–72.
- 16. MelindaSmith,MA and Sheldon R. What is burnout? HelpGuide.Org. https://www.helpguide.org/mental-health/stress/burnout-prevention-and-recovery
- 17. Ozoemena EL, Agbaje OS, Ogundu L, Ononuju AH, Umoke PCI, Iweama CN, Kato GU, Isabu AC, Obute AJ. Psychological distress, burnout, and coping strategies among Nigerian primary school teachers: a school-based cross-sectional study. BMC Public Health. 2021 Dec 30;21(1):2327. doi: 10.1186/s12889-021-12397-x. PMID: 34969391; PMCID: PMC8719383
- 18. Aguwa, EN; Shu, EN¹; Conable, JE². Burnout and Job Satisfaction among Lecturers in Public Universities in Enugu State, Nigeria. Nigerian Journal of Clinical Practice 27(5):p 654-663, May 2024. | DOI: 10.4103/njcp.njcp_87_24
- 19. Abdullah, D.N.M.A., & Yuen, F.C. The impact of job burnout towards job performance among nurses. Retrieved from https://ieeexplore.ieee.org/document/6088836/2011
- 20. Saleh, P., & Shapiro, C. M. (2008). Disturbed sleep and burnout: implications for long-term health. Journal of Psychosomatic Research, 65(1), 13. https://doi.org/10.1016/j.jpsychores.2008.05.028
- 21. Shin H Noh H Jang Y Park Y M & Lee SM. A longitudinal examination of the relationship between teacher burnout and depression. Journal of Employment Counseling 2013:50; 124–137. https://doi.org/10.1002/j.2161-1920.2013.00031.x
- 22. Pyhältö K Pietarinen J Haverinen K Tikkanen L & Soini T 2021). Teacher burnout profiles and proactive strategies. European Journal of Psychology of Education, 36(1), 219–242.https://doi.org/10.1007/s10212-020-00465-6
- 23. Ingersoll R M & Smith T M. The wrong solution to the teacher shortage. Educational leadership 2003: 60(8); 30–33.
- 24. Billingsley, B., & Bettini, E. (2019). Special education teacher attrition and retention: A review of the literature. Review of Educational Research, 89, 697–744. https://doi.org/10.3102/0034654319862495
- 25. Brouwers, A., & Tomic, W. (2000). A longitudinal study of teacher burnout and perceived self-efficacy in classroom management. Teaching and Teacher Education, 16, 239–253. https://doi.org/10.1016/S0742-051X(99)00057-8
- 26. Klusmann, U., Kunter, M., Trautwein, U., Ludtke, O., & Baumert, J. (2008). Engagement and emotional exhaustion in teachers: does school context make a difference? Health and Wellbeing, 57, 127–151. https://doi.org/10.1111/j.1464-0597.2008.00358.x
- 27. Pyhältö, K., Pietarinen, J., Haverinen, K., Tikkanen, L., & Soini, T. (2021). Teacher burnout profiles and proactive strategies. European Journal of Psychology of Education, 36(1), 219–242. https://doi.org/10.1007/s10212-020-00465-6

- 28. Gorji, M. The effect of job burnout dimension on employees' performance. International Journal of Social Science and Humanity, 2011; 1(4), 243-246.
- 29. Villines Z. Cognitive restructuring and its technique. Medical News Today, 2022. https://www.medicalnewstoday.com/articles/cognitive-restructuring.
- 30. de Jonge M, Bockting CLH, Kikkert MJ, van Dijk MK, van Schaik DJF, Peen J, Hollon SD, Dekker JJM. Preventive cognitive therapy versus care as usual in cognitive behavioral therapy responders: A randomized controlled trial. J Consult Clin Psychol. 2019 Jun;87(6):521-529.
- 31. Tolin DF, Wootton BM, Levy HC, Hallion LS, Worden BL, Diefenbach GJ, Jaccard J, Stevens MC. Efficacy and mediators of a group cognitive-behavioral therapy for hoarding disorder: A randomized trial. J Consult Clin Psychol. 2019 Jul;87(7):590-602.
- 32. Heenan A, Pipe A, Lemay K, Davidson JR, Tulloch H. Cognitive-Behavioral Therapy for Insomnia Tailored to Patients With Cardiovascular Disease: A Pre-Post Study. Behav Sleep Med. 2020 May-Jun;18(3):372-385.
- 33. Obuanya, C.T., Eseadi, C., Orji, C.T., Ede, M.O., Ohanu, I.B. & Bakare, J. Effects of rational emotive occupational health therapy intervention on the perceptions of organizational climate and occupational risk management practices among electronics technology employees in Nigeria. Clinical Trial/Experimental Study, Medicine. http://dx.doi.org/10.1097/MD.00000000006765 2017
- 34. Kunle, T.A. Administrative competence and work-life balance. Journal of Educational Administration and Policy Institution, 2017; 1(3), 1-19.
- 35. Emejiobi, C.V. Administrators' work strategies and family satisfaction. Journal of Education in the Developing Region, 2018; 1(1), 1-15.
- 36. Iloabuchi, M.C. Administrative work schedule and personal accomplishment in secondary schools in Nigeria. Journal of Educational and Human Management, 2019; 1(1), 1-21.
- 37. Abinbola, O.B. Work-life balance and effective school administration in secondary schools in Ogun State, Nigeria. Journal of School Planning and Administration, 2016; 2(1), 44-65.
- 38. Ekechukwu, R.O. Correlates of burnout among policemen in Rivers State.Unpublished Ph.D Thesis submitted to the Department of Educational Psychology, Guidance Counselling, University of Port Harcourt2008.
- 39. Bema, A.B. Application of coaching strategies in the management of behavioural problems in electronic companies. Journal of Engineering and Applied Knowledge, 2007; 1(1), 67-98.
- 40. Rosenberge TC. Teachers stress: An assessment of teachers' need for and receptiveness towards a stress reduction program within one rural school system. Edu Spec. 2010.
- 41. Malasch, C & Jackson, E.S. The measurement of experienced burnout. Journal of Occupational Behaviour, 1981; 2, 99-113.
- 42. Clark CC. Cognitive Behavioural Therapy. In book: Clinical Child Psychiatry, Second Edition (pp. 129-149), 2006.
- 43. Ugwuanyi CS, Ede MO, Onyishi CN, et al. Effect of cognitivebehavioral therapy with music therapy in reducing physics test anxietyamong students as measured by generalized test anxiety scale. Medicine(Baltimore). 2020;99:e16406.
- 44. Ugwuanyi CS, Gana CS, Ugwuanyi CC, et al. Efficacy of cognitivebehaviour therapy on academic procrastination behaviours amongstudents enrolled in Physics, Chemistry and Mathematics Education(PCME). J Rat-Emo Cognitive-Behav Ther. 2020;38:522–39.
- 45. Ede MO, Anyanwu JI, Onuigbo LN, et al. Rational emotive familyhealth therapy for reducing parenting stress in families of children withautism spectrum disorders: a group randomized control study. J RatEmo Cognitive Behav Ther. 2020;38:243–71.
- 46. Agboeze MU, Ugwuanyi CS, Okeke CI, et al. Efficacy of music-basedcognitive behavior therapy on the management of test-taking behavior children in basic science using a randomized trial group: implicationforcommunity development. Medicine (Baltim). 2020;99:e21535.
- 47. Ugwuanyi CS, Okeke CIO. Enhancing university students 'achievement in physics using computer-assisted instruction. Int J Higher Educ.2020;9:115–24.
- 48. Okide CC, Eseadi C, Ezenwaji IO, et al. Effect of a critical thinkingintervention on stress management among undergraduates of adulteducation and extramural studies programs. Medicine (Baltim).2020;99:e21697.
- 49. Ugwuanyi CS, Okeke CIO, Agboeze MU. Management of testanxiety among pupils in basic science using music-based cognitive behavior therapy intervention: implication for communitydevelopment. J Rat-Emo Cognitive Behav Ther. 2020;39:285–305.
- 50. Abiogu GC, Ede MO, Agah JJ, et al. Cognitive-behavioural reflectivetraining for improving critical thinking disposition of nursing students.Medicine (Baltim). 2020;99:e22429.
- 51. Umoke PC, Umoke M, Ugwuanyi CS, et al. Bullying experience ofpupils in Nigerian primary schools. Medicine (Baltim). 2020;99:e22409
- 52. Eneogu ND, Ugwuanyi CK, Ugwuanyi CS. Efficacy of Cognitive Behavioral Therapy on Academic Stress Among Rural Community Secondary School Economics Students: A Randomized Controlled Evaluation. Journal of Rational-Emotive & Cognitive-Behavior Therapy, 2024, 42(2), 245–262. https://doi.org/10.1007/s10942-023-00508-z.

- 53. Eya NM, Anumudu JI, Nweze BN, Dave-Ugwu PO, EgboJJ, Chukwunwogor EO, Okebanama CI, Omeje CO, Aikoye JE, Ngwainmbi D, Ibrahima NN, Ugwuanyi CS. Evaluating the efficacy of cognitive restructuring and exposure therapies on secondary school chemistry students' test anxiety: A randomized trial. Medicine, 2024, 103(32), e39253.
- 54. Chinweuba NH, Chigbu BC, Aham AC, Onyi IE, Ezeugo NC, Anakpua BC, Enebechi RI, Kalu IA, Eze NJ, Ugwuanyi CS. Management of work stress among arts and science school administrators in Nigeria using rational emotive occupational health coaching: A randomized controlled trial evaluation. Medicine, 2024, 103(20), (e38135). http://dx.doi.org/10.1097/MD.000000000038135
- 55. Igwe JN, Edikpa EC, Chikaodinaka OA, Ani MI, Ekeh DO, Eze NJ, Nweze BN, Metu IC, Mbelede NG, Ezemoyih CM, Ugwuanyi CS. Effectiveness of cognitive behavior therapy on occupational stress management among administrative, language, science and vocational education staff within open and distance learning centers: A randomized controlled trial evaluation. Medicine, 2024, 103(9), e37231. http://dx.doi.org/10.1097/MD.00000000000037231