

## Management of Stress among Trainee-Teachers Through Cognitive-Behavioural Therapy

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**Abstract:** This study examined the effectiveness of cognitive-behavioural therapy in managing stress among some trainee-teachers of a College of Education in Kwara State, Nigeria. The seventy-two participants employed for the study were randomly assigned into two experimental groups and a control group based on their high scores on an occupational stress scale. All the participants were administered the stress, depression, state and trait anxiety scales before and after treatment. The students in experimental group one received cognitive-behavioural therapy, those in experimental group two received relaxation training alone while the control group had none. Treatment lasted six weeks of twelve sessions. The post treatment scores of the students on stress, depression, state and trait anxiety were subjected to 3×2 ANCOVA and Scheffe Test using pretest scores as covariates. The results indicated that the two experimental groups had significant reductions in their levels of stress, depression, state and trait anxiety than the control group after treatment. The two experimental groups maintained their reductions from post treatment level to follow-up after twelve weeks but not the control group. The therapeutic implications of the findings for treating stress and other related problems were discussed.

**Key words:** Stress, teachers, anxiety, depression, cognitive-behavioural therapy

### INTRODUCTION

Teacher stress has been defined by Kyriacou (1989) as the experience by teachers of unpleasant, negative emotions, such as tension, anxiety, frustration, anger and depression, resulting from aspects of work as teachers. According to Jegede and Okebukola (1995), stress leads to the lowering if on-the-job performance of teachers-a situation that cannot be tolerated in these days when ways are being sought to improve the quality of teaching in the schools.

Although incidence of stress among teachers may not be greater than that for other professional groups, negative effects on students may increase the scope of the problem (Forman, 1982). There is some evidence to indicate a relationship between anxiety or stress among teachers and the affective and academic functioning of students. Teacher stress or anxiety has been shown to be related to low pupil/teacher rapport, pupil anxiety and low pupil achievement (Forman, 1982; Hains and Szyjakowski, 1990). This negative affective functioning in teachers may be detrimental to classroom climate and pupil learning outcomes.

The most frequently cited sources of stress for teachers generally are: Poor working conditions, misbehaviour of students, lack of resources for teaching, overload with non-teaching duties and students' poor attitude toward work (Jegede and Okebukola, 1995). Because teaching conditions are not getting any better and given the gloomy nature of the economic depression

prevailing in Nigeria at the moment, one could predict that teachers will continue to be exposed to a great deal more stress in the years to come (Jegede and Okebukola, 1990, 1995).

As the negative effects of daily stress on the teachers become evident, the need for intervention efforts to reduce stress and related emotional arousal becomes increasingly important. Yet, as Jegede and Okebukola (1995) indicated, most efforts have been focused on identifying the personal and demographic factors that determine the teachers' level of occupational stress. Little attention has been given to procedures designed to help teachers cope with a wider range of stressors or prevent stress-related problems before they arise.

The devastating consequences of prolonged and unchecked stress on the body have motivated psychologists in designing management techniques for reducing stress. Cognitive-behavioural interventions that are geared toward stress reduction and stress management might prove useful for helping the teachers cope with their major life stress events and daily stressors. Such cognitive-behavioural approach would train the teachers to recognize negative self-statements and cognitive processes that contribute to emotional arousal (Meichenbaum, 1995). The teachers could then be taught coping responses, self-instructions and means of restructuring their cognitions in order to reduce the negative emotional reactions (Hains and Szyjakowski, 1990; Meichenbaum, 1995).

Most cognitive interventions focusing on stress reduction have been directed at other adults (Johnson, 1986; Meichenbaum, 1995) and adolescents coping with anger (Feindler *et al.*, 1986; Hains and Szyjakowski, 1990) and those coping with transition after high school (Jason and Burrows, 1983). A number of studies have investigated the efficacy of interventions in reducing teacher anxiety and stress. Such intervention programmes have included training in teaching skills and in relaxation skills. However, they have shown inconsistent and ambiguous findings (Forman, 1982). Very few studies have examined the use of cognitive-behavioural interventions with teachers (Forman, 1982).

In this study, cognitive-behavioural approach which has other sets of strategies that have been shown to be effective in reducing stress was adopted. A number of psychologists have emphasized the role of cognition in the experience of stress and emotions (Beck, 1995; Ellis, 1995; Lazarus, 1993, 1995; Long, 1998; Meichenbaum, 1995; Nelson-Jones, 2000). There is a growing body of literature lending support to the role of cognitions in behaviour and psychopathologies (Ellis and Dryden, 1987; Folkman *et al.*, 1986).

Meichenbaum (1985, 1995) outlined a cognitive-behavioural procedure termed stress inoculation and having three stages: an educational phase during which the client is provided with a conceptual framework for understanding his/her response to stress; a rehearsal phase during which the client is provided with cognitive and behavioural coping techniques; and an application phase during which the individual has the opportunity to practice using the coping skills. In view of the fact that most of the studies done on stress management were carried out either in America, Europe or Canada and the few conducted on stress among teachers in Nigeria were designed to find out occurrence of stress and none was designed to examine the issue of stress management among teachers, the present researcher felt that a method of managing stress could be designed to reduce stress among Nigerian teachers. The results of this study would thus help in finding out to what extent the western-designed treatments fit the needs of the Africans especially Nigerians considering their different cultures.

**Purpose of the study:** The purpose of this study was to evaluate the effectiveness of a cognitive-behavioural approach to stress management for teacher trainees based on Meichenbaum's (1985) stress inoculation model and Ellis' (1995) Rational emotive therapy. The effects of the programme on self-report anxiety, depression and stress measures were examined.

**Hypotheses:** It was hypothesized that:

- There is significant difference between the stress level of the groups exposed to cognitive-behavioural therapy, relaxation training alone and the control group.
- There is significant difference between the depression of the groups exposed to cognitive-behavioural therapy, relaxation training alone and the control group.
- There is significant difference between the state anxiety of the groups exposed to cognitive-behavioural therapy, relaxation training alone and the control group.
- There is significant difference between the trait anxiety of the groups exposed to cognitive-behavioural therapy, relaxation training alone and the control group.
- There is significant sex difference in the stress, depression and anxiety levels of the groups exposed to cognitive-behavioural therapy, relaxation training alone and the control group.
- There is significant interaction effects of treatment and sex on the stress, depression and anxiety levels of the trainee teachers.
- There is significant reduction in the stress, depression and anxiety levels of the experimental groups from post-treatment assessment to follow-up.

## MATERIALS AND METHODS

**Research design:** The research adopted a 3x2 factorial pretest-posttest experimental control group design in which there were three groups-two experimental groups and one control group. The experimental (cognitive-behavioural approach and relaxation approach) and the waiting list control groups constituted the rows while the gender of the respondents (grouped into male and female) formed the columns.

**Participants:** Seventy-two participants employed for the study were selected on the basis of their stress scores from a pool of 200 sandwich student-teachers of a College of Education in Kwara State, Nigeria who indicated their interest and willingness to participate in the stress-management projects. The 72 student-teachers had stress scores that were 100 and above. Those who scored less than 100 in the stress scale were promised their own stress management programme after this exercise. The 72 participants (male = 35, female = 37) were randomly assigned into two experimental groups that received

training and one waiting list control group by dip hand method. Experimental group one has 24 respondents with 11 males and 13 females. Of the 24 student-teachers in experimental group 2, 14 were males and 10 were females. In the control group, there were also 24 student-teachers with 10 males and 14 females. The participants' mean age was 33.11 years and their age range was 27-50 years with standard deviation of 5.08.

## INSTRUMENTS

**Stress:** Stress was measured by means of Occupational Stress Scale (OSS) constructed by Salami (2003).

The OSS by Salami (2003) is made up of two parts. This study contains information on the biographical data of the respondents such as age, years of working experience, marital status, job position, gender and type of duty they do in their organizations. This study has 50 items on job stress classified into seven sub-sections with examples of items for each dimension as follows:

Workload-(6 items), Interpersonal problems-(8 items), Time pressure-(3 items), Working conditions-(14 items), Leadership problems-(3 items), Inadequate facilities-(5 items), Personal Problems-(11 items).

The instrument adopted the Likert type scale ranging from 1 to 5 such that Strongly Agree = SA = 5, Agree = A = 4, Neutral = N = 3, Disagree = D = 2, Strongly Disagree = SD = 1. Scores in each section were got by adding together the scores of the corresponding items in each section. The range of scores is 50-250. Higher score means higher stress experienced. The test-retest reliability of the OSS was 0.83 with an interval of three weeks when administered on a sample of Nigerian teachers. The cronbach alpha of .85 for the coefficient of internal consistency was obtained with the same sample. The construct validity of the instrument was found to be 0.75 when validated against a similar scale by Cooper *et al.*, (1988) with a population of 100 industrial workers who participated in this study.

**Anxiety:** Anxiety was measured by the State-Trait Anxiety Inventory (STAI; Spielberger, 1983). The STAI is a 40-item instrument with 20 items measuring state anxiety and 20 items measuring trait anxiety. State anxiety indicates the presence of anxiety that an individual feels at the time of assessment. Trait anxiety indicates the overall level of anxiety that a person generally feels. The State-Trait anxiety scale adopts a 4-point Likert scale in which the respondents rated their reactions to each item using this format; not at all = 1, somewhat = 2, moderately so = 3 and very much so = 4. Scores on both scales range from 20 to 80 with higher scores indicating higher levels of anxiety. Internal consistency estimates range from 0.86

to 0.95 with the stability estimates of the trait subscale ranging from 0.65 to 0.86 and the state subscale ranging from 0.16 to 0.62 (Chaplin, 1984). The STAI had been used extensively in clinical practices and research with Nigerian respondents with success (Alarape and Afolabi, 2001; Ofovwe, 1999).

**Depression:** Depression was measured by a modified version of the Beck Depression Inventory (BDI) (Beck *et al.*, 1979). The BDI is a 21-item measure of the presence and degree of depression. Each item assesses an attitude or symptoms of depression. Examples of the items are "My future seems dark to me", "I do not expect to get what I really want." Responses are multiple choice, with each responses weighted 0-3, depending on the severity of the symptom/item. Total scores range from 0 to 63 with higher scores indicating greater degrees of depression. The test-retest reliability and internal consistency estimates of the 21-item have been found to be .90 and .86 respectively (Hains and Szyjakowski, 1990). For the present study, the cronbach alpha was established to be .84 with Nigerian samples. The BDI had been used with successful results among Nigerian samples (Alarape and Afolabi, 2001; Ihediwa-Okoro, 2005).

**Procedure:** The study was conducted in three stages: Pre-treatment, treatment and post-treatment stages. In the pre-treatment stage, the measures of occupational stress, state and trait anxiety and depression were administered to 200 student-teachers from which 72 respondents that constituted the three groups were selected on the basis of their stress score. Respondents who had stress score of 100 and above were selected for the study. The 72 selected respondents were randomly assigned into either experimental groups 1 and 2 or control group.

Participants in the experimental group 1 received 12 sessions of cognitive-behavioral therapy consisting of stress-inoculation training model developed by Meichenbaum (1985), relaxation and national emotive therapy. Those in the experimental group 2 had relaxation training only six weeks. Each group received their training in one of the large classrooms twice a week for six weeks on different days of the week. The control group was not treated but they were given general counseling after the six weeks' experiment. At the end of the treatment, measures of stress, anxiety and depression were administered to all the experimental and control groups a day after treatment and twelve weeks later for follow up assessment.

**Treatment:** The treatment programme was arranged in twelve training sessions for six weeks with each session lasting sixty minutes at the rate of two sessions per week. The outlines of treatment are as follows.

Table 1: Means and standard deviation for stress, depression, state and trait anxiety scores of the three groups

Variable	Pre		Post		Follow-up	
	M	SD	M	SD	M	SD
Experimental (RT) GP 1 (n=24)						
Stress	110.50	6.83	75.70	4.91	74.37	4.78
Depression	12.54	2.16	5.45	0.58	5.00	0.58
Trait anxiety	44.70	4.51	33.45	3.41	31.41	1.34
State anxiety	45.25	3.82	32.54	2.20	31.75	1.56
Experimental (RT) GP 2 (n=24)						
Stress	113.25	3.54	78.58	4.78	76.58	5.38
Depression	12.87	1.57	6.37	0.87	5.12	0.74
Trait anxiety	44.08	3.22	36.45	2.60	32.58	1.79
State anxiety	47.12	4.26	36.50	1.41	31.70	1.48
Control GP 3 (n=24)						
Stress	114.00	8.96	112.70	10.20	11.30	9.30
Depression	14.00	1.35	11.66	1.52	12.30	2.40
Trait anxiety	42.04	1.33	41.58	1.28	40.80	1.50
State anxiety	41.16	1.37	40.50	1.53	40.70	1.80

**Experimental group 1:** The participants in the experimental group were treated with cognitive-behaviour therapy that consisted of four main parts: presentation of a conceptual framework (the conceptualization phase), relaxation training, cognitive restructuring and rehearsal and application phase. They were also exposed to coping skills such as relaxation, conflict resolution, cooperative behaviour, positive self-talk, self-control and effective communication.

**Experimental group 2:** The experimental group 2 participants were treated with training in relaxation technique/procedures only using Jacobson's (1976) method. They were exposed to the meaning of stress, human reactions to stress and effects of stress as well as stress-related illnesses. They were trained on muscle relaxation cycle namely: focus, tense, hold, release and relax. The participants practised the tension-relax cycle using the 16 muscles group in the body during sessions and were given homework assignments to practice muscle relaxation at least two 15-20 min period a day in a quiet place.

**Control group:** The control group was met two times for pre- and post-test sessions. They were given general counselling after administration of post-test to avoid any contamination.

**Post treatment:** The post-treatment assessment stage of the study was done a day after the last session and 12 weeks later for follow up assessment. The two experimental groups were asked to evaluate the training by asking them to give their impressions about the training they have received and how they felt at the end of the experiment. This they did in written form. The measures of stress, state and trait anxiety and depression were administered to the two experimental and the control groups after treatment under similar conditions as in the

pre-treatment stage. In evaluating the training the participants expressed happiness, about the treatment received and at their improved situation.

After 12 weeks a follow up assessment was done in which the four measures of stress, state and trait anxiety and depression were administered to the two experimental and control groups.

**Data analysis:** Three (treatment) by 2 (sex) Analysis of Covariance (ANCOVA) using pretest scores as covariates, t-test statistics and Scheffe's Tests were employed at the .05 level of significance on the data collected in order to determine the effects of the treatment and sex on the participants' stress, depression, state and trait anxiety.

## RESULTS

As a frame of reference for this section, the means and standard deviations for the measures of stress, depression, state and trait anxiety for the three groups are presented on Table 1.

In order to test the hypotheses set, 3 (treatment) by 2 (sex) Analysis of Covariance (ANCOVA) was conducted on the following dependent variables: post assessment measures of stress, depression, state and trait anxiety. To control for any pre-training differences, the pre-assessment measures of each of these dependent variables served as the covariates. The results obtained are presented in Table 2.

**Effect of treatment on stress:** The results on Table 2 showed that there was significant treatment effect on stress,  $F(2,71) = 204.75, P < .05$ . This is an indication that significant between group difference existed on stress. As predicted, significant difference existed in the posttest stress scores of the experimental and control groups thereby supporting Hypothesis 1.

Table 2: Analysis of covariance of posttest stress scores of experimental and control groups by treatment and sex

Source of variation	Sum of squares	Df	Mean square	F	Sig. of F
Covariate	691.364	1	691.364	14.228	.000
Pretest stress	691.364	1	691.364	14.228	.000
Main effects	19947.208	3	6649.069	136.833	.000
Treatment	19899.355	2	9949.677	204.756	0.325
Sex	47.853	1	47.853	0.985	.894
2-Way					
Interactions	10.900	2	5.450	0.112	0.894
Treatment x Sex	10.900	2	5.450	0.112	0.894
Explained	20649.47	6	3441.579	70.825	0
Residual	3158.529	65	48.593		
Total	23808	71	335.324		
Analysis of covariance of posttest depression of experimental and control groups by treatment and sex					
Pretest depression	64.136	1	64.136	58.290	.000
	64.136	1	64.136	58.290	.000
Main effects					
Treatment	475.971	3	158.657	144.195	.000
Sex	474.947	2	237.474	215.828	.000
	1.023	1	1.023	0.930	.338
2-Way					
Interactions	6.374	2	3.187	2.897	0.062
Treatment x sex	6.374	2	3.187	2.897	0.062
Explained	546.481	6	91.08	82.778	0
Residual	71.519	65	1.1		
Total	618	71	8.704		

In order to know the direction of difference among the groups, Scheffe Test was performed. The result indicated that the participants in the control group had significantly higher posttest mean stress scores  $X = 112.70$  than those in Cognitive-Behavioural Therapy (CBT) group  $X = 75.70$  and Relaxation Training (RT) group  $X = 78.58$ . However, no significant difference was found between the posttest mean stress scores of the CBT and RT groups. This is an indication that the two treatments have seemingly equal effects in the reduction of the participants' stress.

**Effect of treatment on depression:** The results on Table 2 revealed that significant difference existed between the depression of the groups exposed to Cognitive Behavioural Therapy (CBT) and Relaxation Training alone (RT) and the control group thereby confirming Hypothesis 2,  $F(2, 71) = 215.82$ ,  $p < .05$ . Scheffe Test performed on the posttest mean depression scores of the three groups indicated that participants in the control group had significantly higher posttest depression scores  $X = 11.66$  than those in each of the CBT group  $X = 5.45$  and RT group  $X = 6.37$ . Significant difference was also found between the posttest depression scores of participants in CBT and RT groups.

**Effects of treatment on state and trait-anxiety:** Results on Table 3 show that there was significant difference between the posttest state anxiety scores of the experimental (CBT and RT) and the control groups,  $F(2,$

$71) = 103.44$ ,  $p < .05$ . This is in support of Hypothesis 3. Scheffe test performed on the posttest mean state anxiety scores of the three groups revealed that there was significantly higher posttest state anxiety scores of the control group  $X = 40.50$  compared with those in the CBT group  $X = 32.54$  and RT group  $X = 36.50$ .

As predicted, the results on Table 3 also revealed that there was significant difference between the posttest trait anxiety scores of the experimental and control groups,  $F(2, 71) = 74.42$ ,  $P < .05$ . These results support Hypothesis 4. Scheffe test performed on the posttest trait anxiety scores of the three groups indicated that participants in the control group has significantly higher posttest trait anxiety scores  $X = 41.58$  than those in CBT group  $X = 33.45$  and RT group  $X = 36.45$ .

**Effects of sex on stress, depression, state and trait anxiety:** The results on Tables 2 and 3 further showed that there was no significant sex difference in the posttest stress scores  $F(1, 71) = .98$ ,  $p > .05$ ; depression scores,  $F(1, 71) = .93$ ,  $p > .05$ ; state anxiety scores  $F(1, 71) = .13$ ,  $p > .05$  and trait anxiety scores,  $F(1, 71) = .46$ ,  $p > .05$  of the groups exposed to CBT, RT and control groups. This means that these results did not support Hypothesis 5.

Similarly, the results on Tables 2 and 3 revealed that there were no significant treatment by sex interactions effect for stress,  $F(2, 71) = .11$ ,  $p > .05$ ; depression  $F(2, 71) = 2.89$ ,  $p > .05$ ; state anxiety  $F(2, 71) = 1.92$ ,  $p > .05$  and trait anxiety  $F(2, 71) = 1.62$ ,  $p > .05$ . These results therefore are in opposite direction predicted by Hypothesis 6.

Table 3: Analysis of Covariance of posttest state anxiety scores of experimental and control groups by treatment and sex

Source of variation	Sum of Squares	Df	Mean Square	F	Sig. of F
Covariate	123.534	1	123.534	40.155	.000
Pretest state anxiety	123.534	1	123.534	40.155	.000
Main effects	636.628	3	212.209	68.980	.000
Treatment	636.494	2	318.247	103.448	.000
Sex	0.134	1	0.134	0.134	0.836
2-Way Interactions					
Treatment x Sex	11.858	2	5.929	1.927	0.154
	11.858	2	5.929	1.927	0.154
Explained	772.02	6	128.67	41.825	0
Residual	199.966	65	3.076		
Total 971.986	71	13.69			
Analysis of covariance of posttest trait anxiety scores of experimental and control groups by treatment and sex.					
Covariate	3.764	1	3.764	0.645	0.425
Pretest trait anxiety	3.764	1	3.764	0.645	0.425
Main Effects	870.015	3	290.005	49.698	.000
Treatment	868.547	2	434.273	74.421	.000
Sex	1.469	1	1.469	0.252	.618
2-Way Interactions					
Treatment x Sex	18.922	2	9.461	1.621	0.206
	18.922	2	9.461	1.621	0.206
Explained	892.702	6	148.784	25.497	0
Residual	379.298	65	5.835		
Total 1272	71	17.915			

**Differences between posttest and follow-up scores of stress, depression, state and trait anxiety:** Within group changes between posttest assessment and follow-up scores were conducted on the two experimental and control groups. Comparisons showed that for RT group there was no significant difference between their posttest and follow-up scores on measure of stress  $t_{(23)} = 1.55$ . However, significant decreases were obtained at follow-up on state anxiety  $t_{(23)} = 18.77$ ,  $p < .05$  trait anxiety  $t_{(23)} = 5.16$ ,  $p < .05$  and depression  $t_{(23)} = 5.70$ ,  $p < .05$ .

For the CBT group, comparison of the posttest with follow-up scores indicated that there was no significant decrease at follow-up on stress  $t_{(23)} = 1.06$ ,  $p > .05$  and state anxiety,  $t_{(23)} = 1.60$ ,  $p > .05$ . However, there were significant decreases at follow-up for trait anxiety  $t_{(23)} = 2.83$ ,  $p < .05$  and depression  $t_{(23)} = 2.54$ ,  $p < .05$ .

For the control group, comparison of the posttest assessment with follow-up scores showed no significant differences on measures of stress,  $t_{(23)} = 1.1$ ,  $p > .05$ , depression,  $t_{(23)} = 1.12$ ,  $p > .05$  state  $t_{(23)} = 1.2$ ,  $p > .05$  and trait anxiety  $t_{(23)} = 1.1$ ,  $p > .05$ . These results therefore supported Hypothesis 7 partially.

## DISCUSSION

**Effects of treatment on stress, depression, state and trait-anxiety:** The results from this study provide support for the use of cognitive-behavioural therapy as a viable form of intervention for stress management among teachers. The teachers who received cognitive-behavioural

treatment and relaxation training alone showed significant reductions in their stress, depression, state and trait anxiety levels in comparison to the control group.

A 12-week follow-up revealed that the teachers who received CBT maintained their treatment gains on measures of stress and state anxiety and had significant decreases on measures of trait anxiety and depression. The group that received Relaxation Training alone (RT) also maintained their treatment gains at follow-up on measure of stress and had significant decreases on measures of depression, state and trait anxiety. The control group had no significant decreases in their stress, depression, state and trait anxiety at follow-up. With these results Hypotheses 1, 2, 3 and 4 are confirmed.

These results support the findings of Meichenbaum (1995) that cognitive behavioural therapy is efficacious in the treatment of stress-related problems. Findings from this study corroborate the work of other previous researchers (Bission, 2003, 2004; Bisson *et al.*, 2004; Bryant *et al.*, 1998; Bryant, Sackville, Dang, Modds and Guthrie, 1999; Ehlers and Clark, 2000; Ehntholt *et al.*, 2005; Hains and Szyjakowski, 1990; Harvey *et al.*, 2003; Talbot and McMurray, 2004) who have applied cognitive-behaviour therapy in the treatment of stress disorders and got significant stress reduction among their samples.

The efficacy of the CBT in causing the significant reduction of the stress, depression and anxiety levels of the respondents indicate that training the student-teachers in cognitive restructuring, psychoeducation, self-instructions, anxiety management, such as coping

skills relaxation skills, conflict resolution, self-control, communication skills and deployment of these skills while facing stressful situations has the potential benefits that extends beyond the reduction of depression. The reduction in the stress, depression and anxiety levels of the experimental groups might have resulted from their acquisition of the necessary coping skills like relaxation, positive self-talk, self control and cognitive restructuring and the use of the skills during therapy sessions and at stressful situations in real-life settings outside therapy.

**Effects of sex on stress, depression, state and trait anxiety:**

The result that no significant sex differences were found in the stress, depression, state and trait anxiety levels of the groups exposed to CBT, RT and the control group is an indication that the treatments were equally effective for both male and female participants. These findings are in support of previous researchers (Riggs *et al.*, 1995; Rothbaum *et al.*, 1992) who reported similar effectiveness of CBT interventions on women and men who were diagnosed with posttraumatic stress disorders. These results reflect the fact that the CBT and RT treatments received by the experimental groups were not influenced by the participants' sex.

**Interaction effects of sex×treatment on stress, depression, state and trait-anxiety:**

The finding that there was no significant interaction effects of sex by treatment for stress, depression and anxiety levels of the respondents support the work of previous researchers (Riggs *et al.*, 1995; Rothbaum *et al.*, 1992) who found that CBT was as effective for the male as it was for the female respondent having stress-related problems. This could be due to the fact that both male and female teachers acquired and practiced the necessary coping skills and cognitive restructuring and applied them successfully in stressful situations.

**Differences between posttest and follow-up scores on stress, depression, state and trait-anxiety:**

The results of this study revealed that the two experimental groups (CBT and RT) had significant reductions in depression and trait anxiety from post treatment to follow-up. The CBT group maintained their post-treatment stress and state anxiety levels at follow up. The same story goes for the RT group with reference to their stress as follow up. However the RT group and significant reduction in the post treatment stress at follow-up. These findings are not surprising. One of the goals of the CBT programmes was to provide training for the student-teachers in self-management techniques. The student-teachers might

have practised daily the skills acquired during training and continued the use of the techniques after completion of the twelve training sessions. Further reductions 12 weeks after the termination of the training sessions appeared to indicate that there was continued successful use of the self-management techniques by the training participants. These findings further lend supports to the findings of previous researchers (Bisson, 2003; Bisson *et al.*, 2004; Bryant *et al.*, 1999; Talbot and McMurray, 2004) who had successfully used CBT in decreasing the stress, anxiety and depression levels of their treated samples.

The control group's pre-treatment stress, anxiety and depression levels were maintained at post-treatment and follow-up. This might have been due to the fact that they did not participate in the CBT and RT training programmes and they were still experiencing some forms of occupational stress in their respective schools. Findings from this study lends support to the use of cognitive-behavioural therapy which has been shown to be effective with clinical populations (Bisson, 2003, 2004; Bisson *et al.*, 2004; Ehlers and Clark, 2000; Hains and Szyjakowski, 1990; Meichenbaum, 1995; Talbot and McMurray, 2004) and reinforce the contention that cognitive-behavioural therapy may provide intervention strategies useful for reducing teacher stress, anxiety and depression.

**Limitations of the study:** There is need to mention some limitations of this study. First, this study was conducted among student- teachers who were mostly of the Yoruba ethnic group. To further confirm the generalisability of the findings of this study, future researchers could conduct the study among other professionals and also among other ethnic groups in other parts of Nigeria.

## CONCLUSION

The purpose of this study was to investigate the effectiveness of cognitive behavioural approach in managing stress among student-teachers. Based on the findings, it could be concluded that cognitive-behaviour technique was efficacious in reducing the stress, depression, state and trait anxiety levels of the participants at the end of treatment. Furthermore, the reduction was maintained twelve weeks after the end of the treatment when follow-up data were collected on the stress depression, state and trait anxiety levels of the participants.

The study also showed that the treatment programme could be used with groups of participants as well as with individuals successfully.

An important implication of the findings from this study is that the cognitive-behavioural approach has the potential to reduce stress among teachers and it is thus suggested that practising counsellors, psychologists or therapists working with stressed clients should use the approach as an integral part of their counselling intervention strategies. The non-significant interaction effect of sex and treatment on stress provides the empirical basis for suggesting the use of the treatment with stressed clients irrespective of their gender. It is instructive to note that while stress management is potent in reducing stress among teachers there is need to identify all the aetiologic factors and something positive done about them.

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