


Assessment of stress management coaching among Nigerian pre-service history teachers

A randomized controlled study

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Abstract

Background: Studies have found that pre-service teachers commonly face stressful circumstances that prevent them from completing their academic tasks effectively. In terms of psychological factors and interventions, pre-service history teachers in Nigeria are the least studied group. The objective of this study was to investigate the effect of stress management coaching among Nigerian pre-service history teachers.

Methods: The research participants consisted of a randomized sample of 109 pre-service history teachers from Nigerian public higher education institutions (55 pre-service history teachers composed the stress management coaching group while 54 pre-service history teachers composed the waitlist control group). The stress management coaching for the pre-service history teachers was guided by a coaching manual created using the theoretical framework of rational emotive behavior coaching.

Results: Pre-service history teachers who participated in stress management coaching showed significantly reduced stress levels at the post-test and follow-up. There was an interaction effect between group and time on the stress of pre-service history teachers.

Conclusion: The study suggests that pre-service history teachers can benefit from a stress management coaching intervention that uses the rational emotive behavior coaching approach. The development of this form of stress management coaching program on a large scale among pre-service history teachers could prove beneficial to their academic and personal success. Studies may be conducted in the future to examine the stress of history teachers in colleges and the efficacy of stress management coaching.

Abbreviations: HEIs = higher education institutions, PSS-10 = Perceived Stress Scale-10, SMC = stress management coaching, WC = waitlist control.

Keywords: pre-service history teachers, rational emotive behavior coaching, stress, stress management coaching

1. Introduction

Studies have found that pre-service teachers frequently experience stress, which interferes with their ability to complete tasks efficiently.^[1–8] Time management, handling teaching workload, and discipline management and management of classrooms are all areas in which pre-service teachers encounter stress in the classroom setting.^[1] Teachers' stress is characterized by emotional exhaustion at a moderate level and burnout at an extreme level. Emotional exhaustion has been described as the reduction of teachers' energetic resource which can lead to a negative attitude towards work, lower efficacy and sometimes results in conflicts in the workplace.^[9] Similarly, burnout which is an extreme long term stress is associated with reaction to psychological burden in teaching professions as well as human services

which is explained by symptoms of detachment from work, ineffectiveness and total failure.^[10,11] The implications of emotional exhaustion and burnout syndrome as an occupational phenomenon typical of teachers may include risk factors such as workplace violence and working from home.^[9–11] A lack of support from teachers, administrators, and mentors is also one factor contributing to pre-service teachers' stress.^[12] Pre-service teachers (78.4%) reported high levels of stress in a previous cross-sectional survey.^[3] Similarly, a previous study found significant results regarding pre-service teachers' stress level across three teaching contexts with mean stress scores ranging from 20.52 to 23.204,^[4] which are significantly higher than the norm range from the general population (14.52–17.73).^[13]

Lower stress levels are associated with higher levels of occupational commitment among pre-service teachers.^[14] In order

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to reduce stress among pre-service teachers, physiological interventions have been implemented, but have been deemed ineffective.^[2] In contrast, rational emotive behavior coaching interventions can manage stress-related symptoms among pre-service and practicing teachers.^[15-17] This approach assumes that individuals are capable of developing more functional states, taking action to resolve their issues, recognizing and practicing new cognitive, behavioral, and emotional skills to achieve balance, and becoming self-aware, focused, and motivated.^[18] In this study, a rational emotive behavior coaching approach was used to examine the effect of stress management coaching on pre-service history teachers from Nigeria. The main aim of rational emotive behavior coaching is to eliminate irrational beliefs, maladaptive thinking patterns in individuals that positively result to stress.^[19] In addition, rational emotive behavioral coaching targets individual maladaptive cognitions and emotional disturbances thereby by enhancing their mental toughness, resilience, and hardness using its cognitive, emotive, and behavioral techniques.^[20,21] Therefore, a change in stress-related irrational beliefs can lead to a corresponding reduction in the stress symptoms of pre-service history teachers. In the current study, pre-service history teachers are students enrolled in the history degree program at Nigerian higher education institutions (HEIs).

1.1. Research problem and hypotheses

There has been no prior study examining the effectiveness of stress management coaching interventions on pre-service history teachers in Nigeria. It appears that these individuals who study history are the least studied group as far as psychological factors and interventions are concerned in Nigeria. During their field experience, pre-service history teachers have been shown to be particularly susceptible to stress-induced feelings.^[22] The demanding work conditions that pre-service history teachers face could have an adverse effect on their emotional states.^[22,23] It is thus essential that they receive stress management intervention in order to improve their emotional well-being and self-management abilities.^[18] In the current study, it is hypothesized that stress management coaching will significantly reduce pre-service history teachers' stress at post-test and follow-up in comparison to a waitlist control group. Lastly, the study hypothesis states that there will be a significant interaction effect of group and time on pre-service history teachers' stress.

2. Methods

The Faculty of Education Research Ethics Committee at the University of Nigeria approved the study's ethics application. All procedures were in accordance with the Declaration of Helsinki. Participants in the study were 109 pre-service history teachers from Nigerian public HEIs in the Southeast region of the country. The stress management coaching group (SMC group) consisted of 55 pre-service history teachers, while the waitlist control group (WC group) was comprised of 54 pre-service history teachers (see Fig. 1). A consent form was completed by each pre-service history teacher who participated in this study. Random Allocation Software^[19] was used to create a simple random list for group randomization.

The study was an open-label randomized controlled study. This study sample size estimation and justification was carried out using the Gpower program^[23] (a priori effect size f : 0.25; f -crit: 3.16; statistical power: 0.84; total sample size: 30; α error: .05). In addition to providing informed consent, participants had to show moderate to high levels of stress to participate in the study. During the eligibility survey, 213 pre-service history teachers were assessed using the Perceived Stress Scale-10 (PSS-10).^[24,25] The PSS-10 is a set of ten questions designed to assess the extent of stress respondents felt in the past month,

based on their thoughts and feelings.^[26,27] The rating for each of the questions is 0 (never) to 4 (very often), with a range of 0 to 40 for the total score. High PSS-10 scores indicate a high level of stress.^[28,29] Scores of 0 to 13 depict low stress, 14 to 26 depict moderate stress, and 27 to 40 depict high perceived stress.^[28,29] The PSS-10 is suitable to be used among university students since it was found to have good internal consistency and construct validity,^[30] as well as convergent validity.^[31] The present study found a Cronbach's α score of .84 for the internal consistency reliability. After the intervention as well as at the follow-up intervention, the PSS-10 instrument was also used to assess the effectiveness of the intervention.

Pre-service history teachers were provided stress management coaching by using an adapted version of a coaching manual^[15] based on the theory of rational emotive behavior coaching. This coaching technique focused on reduction of stress-related irrational beliefs such as demandingness, self-downing, awfulizing, and low frustration tolerance. In this study, REBT techniques such as disputation and homework assignments were applied to change problematic beliefs of pre-service teachers of history. Rational emotive coaching techniques^[18] were utilized to lessen the stressful symptoms of preservice history teachers. An average of 50 minutes was used for each session. The coaching was made up of 3 phases. Initial phase lasted from 1st week to 2nd week in which two sessions were held per a week covering 1 to 4 sessions, the middle phase lasted from 3rd week to 4th week in which 2 sessions were held per a week, covering 5th to 8th sessions, the final phase lasted from 5th to 6th weeks in which 1 session per a week was held covering 9th to 10th sessions. This rational emotive coaching programme strictly adhered to CONSORT reporting guidelines.^[32] In addition to the six weeks of stress management coaching, the intervention included 2 weeks of follow-up after 3 months in which no participants dropped. One month after the last follow-up meeting, the waitlist control group of pre-service history teachers was scheduled for coaching intervention. Three independent coaches monitored the coaching techniques and documented how the sessions were conducted based on the content of the coaching manual. Those who implemented this program had to possess a master's degree in counseling psychology or a related field with at least 2 years' experience as psychological coaches. These coaches were pre-trained and briefed about the intervention for a month prior to the start.

A total of 3 data collection phases were carried out (pre-coaching, post-coaching, and follow-up). The data analysis was also performed in JASP statistics program using repeated measures ANOVA, within-and-between-subjects effects (statistical significance level was set at $P < .05$). Based on relevant statistical tests, we examined the demographic characteristics of pre-service history teachers for each group. Mauchly test was used to test assumption violation, and omega squared (ω^2) was used to calculate treatment effect size. In order to determine the mean difference between groups and over time, Holm was used.

3. Results

Table 1 shows that among the pre-service history teachers included in the study, there were no significant group differences (P values $>.05$) in gender, age, or level of study. The pre-service history teachers in the SMC group had a mean age of 22.93 ± 1.99 years, while the pre-service history teachers in the WC group had a mean age of 22.85 ± 1.79 years. The details of the analysis are in Table 1.

Pre-stress-coaching scores for pre-service history teachers' stress were similar between the SMC ($M = 19.31$, $SD = 4.22$) and WC groups ($M = 19.67$, $SD = 4.21$) (see Table 2). For pre-service history teachers in the SMC group, there was a significant decrease in stress levels compared to the WC group at the post-stress coaching assessment ($F [1, 107] = 133.22$, $P <$

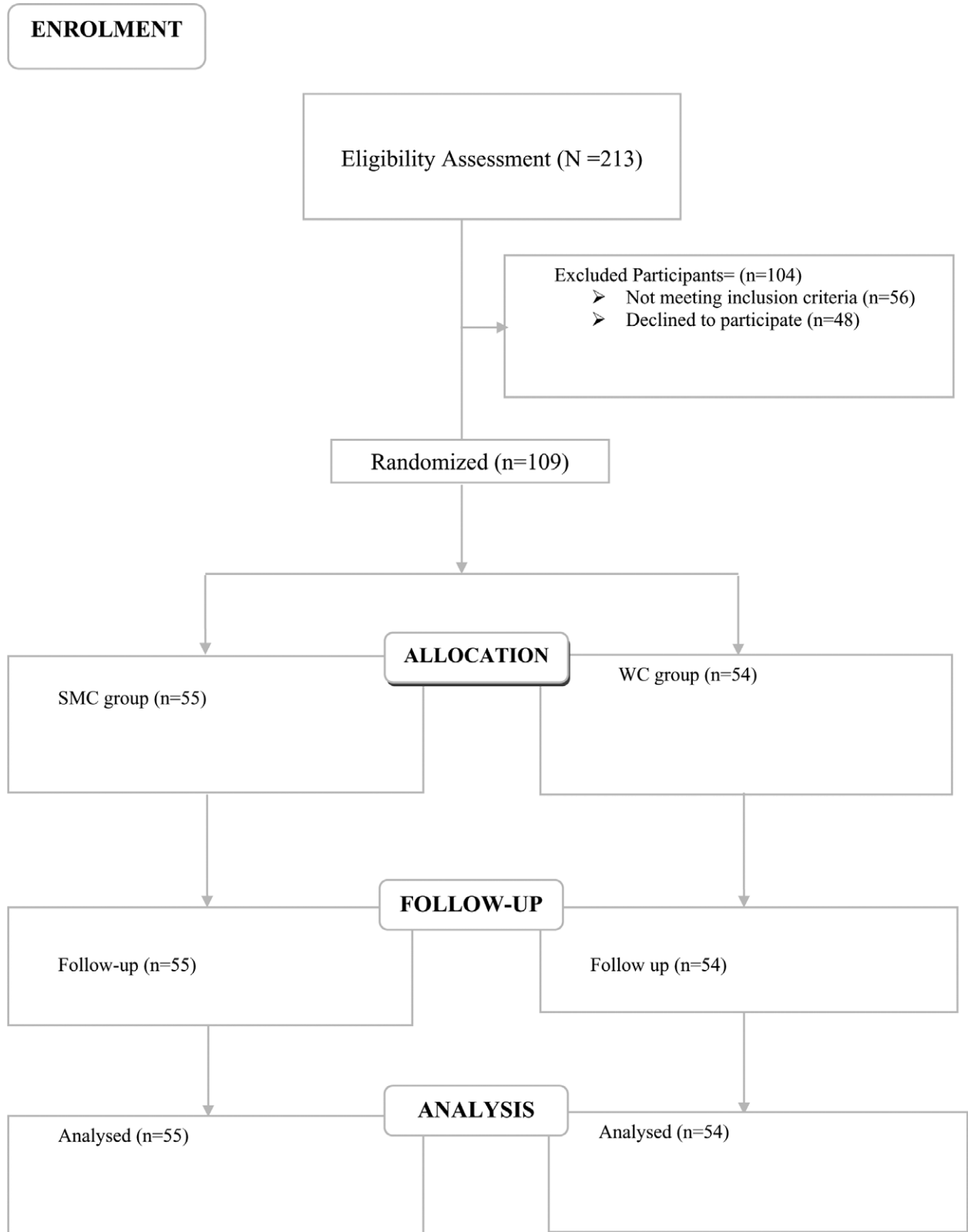


Figure 1. Participant flowchart.

.001, $\omega^2=0.38$) (see Table 3). There was a significant interaction effect between group and time (Huynh-Feldt correction) on pre-service history teachers' stress ($F [1.69, 180.51] = 53.05, P < .001, \omega^2=0.20$) (see Table 4).

In the between-group post hoc analysis, pre-service history teachers' post-stress-coaching score for the SMC group (*Mean*

loss = -5.89, standard error [SE] = 0.51, $P < .001$) was significantly lower than that for the WC group (see Table 5). After within-subjects post hoc analysis for pre-service history teachers' stress scores, it was found that the SMC group retained their reduced stress score at follow-up (*Mean difference* = 0.01, SE = 0.47, $P = .98$) (see Table 6).

4. Discussion

The purpose of this study was to investigate the effect of stress management coaching on Nigerian pre-service history teachers using the rational emotive behavior coaching approach. In the study, post-coaching stress levels among pre-service history teachers were reduced through stress management coaching. There was a significant interaction effect between group and time on the stress of pre-service history teachers. This indicates that stress management coaching is an effective intervention for managing pre-service history teachers' stress. The results of the study agree with those made by Ogbuanya et al^[33] who found that rational emotive behavior coaching as a stress management coaching intervention significantly reduced participants' stress level. Furthermore, these investigators found a significant interaction effect between group and time on stress.^[30] In addition,

the present findings confirm other past studies linking rational emotive stress management with reduced stress levels in the school environment.^[34,35] In addition, the results corroborate the report by Koledoye et al,^[36] which reported that rational emotive stress management coaching is effective in reducing university student stress. These researchers also found that the interaction between time and group on the stress of participants was significant as well.^[36]

Furthermore, the research findings agree with those of Ugwuanyi et al^[37] who in a randomized controlled trial found that a stress management coaching program utilizing rational emotive behavior coaching helped participants reduce their stress levels. The rational emotive behavior coaching approach to stress management has shown positive results in a number of other studies.^[38,39] Ogba et al^[38] attest that this type of stress management coaching approach reduced participants' stress versus a waitlist control group. This type of stress management coaching approach was also found to help reduce participants' stress levels in Ene et al randomized controlled trial.^[17] Similarly, Okeke et al found that the rational emotive behavior coaching approach to stress management resulted in significant stress reduction among participants from the school setting.^[40] Therefore, this study suggests that pre-service history teachers can benefit from a stress management coaching intervention that applies a rational emotive behavior coaching approach.

Considering that there were no substantial changes in stress levels in the WC group from the beginning to the end of this study, the authors consider the WC group to be under constant high stress. Although time was a factor, there were no changes (increase) in stress level in the WC group over time possibly because this study occurred within a very short period of 6 weeks. It seems that the lesser the length of time spent to deliver a stress management coaching intervention to a treatment group, the lesser the likelihood of observing significant changes in stress levels of participants assigned to a WC group over time. This outcome appears to be similar to that observed in previous studies stress management interventions which used WC group in university settings.^[23,41] It is suggested that future studies using similar sample population extend the length of time spent to deliver a stress management coaching intervention and compare with other types of control group to ascertain if this observation applies to their study as well.

Table 1

Pre-service history teachers' demographic characteristics.

Characteristics	Subcategory	SMC group	WC group	Test value	P value
		M ± SD	M ± SD	t	
Age	Mean age	22.93 ± 1.99	22.85 ± 1.79	.207	.84
Gender	Male	27(58.7)	19(41.3)	2.160	.14
	Female	28(44.4)	35(55.6)		
Level of study	100 level	8(53.3)	7 (46.7)	.119	.99
	200 level	21(51.2)	20(48.8)		
	300 level	13(50.0)	13(50.0)		
	400 level	13 (48.1)	14 (51.9)		

=t test, χ^2 = Chi-square.

SD = standard deviation, SMC = stress management coaching, WC = waitlist control.

Table 2

Descriptive statistics for pre-service history teachers' stress by group.

Time	Group	Mean	SD
Pre-stress-coaching	SMC group	19.31	4.22
	WC group	19.67	4.21
Post-stress-coaching	SMC group	11.15	3.32
	WC group	19.81	4.03
Follow-up	SMC group	11.14	3.30
	WC group	19.80	4.01

SD = standard deviation, SMC = stress management coaching, WC = waitlist control.

Table 3

Repeated measures between-subjects ANOVA for pre-service history teachers' stress.

Cases	Sum of squares	df	Mean Square	F	P	ω^2
Group	2835.36	1	2835.36	133.22	<.001	0.38
Residuals	2277.35	107	21.28			

Table 4

Repeated measures within-subjects ANOVA for pre-service history teachers' stress.

Cases	Sphericity Correction	Sum of Squares	df	Mean Square	F	P	ω^2
Time	Huynh-Feldt	1171.13	1.69	694.20	49.68	<.001	0.19
Time * group	Huynh-Feldt	1250.76	1.69	741.40	53.05	<.001	0.20
Residuals	Huynh-Feldt	2522.52	180.51	13.97			

4.1. Limitations and implications

One limitation of the research is the low number of participants who agreed to participate. In most cases, participants approached by the researchers seemed reluctant to respond to the eligibility survey, and most of them who qualified declined to participate in the study. As this study involved pre-service history teachers from selected Nigerian HEIs, its application is also limited to this context. The current findings should therefore be used with caution. The study's implications include that rational emotive behavior coaching can be used to empower pre-service history teachers to better manage their stress, in spite of these challenges. The findings of this research have implications for interventions on teachers in the framework of workplace health promotions programs and occupational health surveillance services aiming to increase mental well being of schoolteachers.

Table 5
Post hoc comparisons – group.

		Mean difference	SE	t	p _{holm}
SMC group	WC group	-5.89	0.51	-11.54	<.001

Table 6
Post hoc comparisons – time.

		Mean difference	SE	t	p _{holm}
Pre-stress-coaching	Post-stress-coaching	4.01	0.47	8.62	<.001
	Follow-up	4.02	0.47	8.65	<.001
Post-stress-coaching	Follow-up	0.01	0.47	0.03	0.98

First, the enhancement of mental toughness, resilience, and hardiness of pre-service teachers as a result of therapy could translate into more job accomplishment and healthy promotion at workplace.^[42] Furthermore, exposure to a therapy that considers spiritual dimensions can enhance the health and wellbeing of participants.^[43] As spiritual dimensions are considered vital to people's health,^[42–44] it is therefore important for future interventions to consider how spirituality and religious constructs of pre-service teachers might promote the rate of improvements among them. Overall, psychological coaches can achieve significant results in stress assessments among pre-service history teachers using this stress management coaching approach.

The rational emotive behavior coaching approach can be used to test the efficacy of stress management coaching among pre-service history teachers on a larger scale in the future. A collaborative effort among history departments, school clinics, and counselors in the area of stress management coaching programs could have significant effects on reducing stress among pre-service and in-service history teachers. The assessment of stress and implementation of stress management coaching for postgraduate history students and in-service history teachers are suggested for future studies. Blinded studies, whenever possible, could help improve the quality of future studies. In future studies, incentives may also be used in order to recruit more participants. A further suggestion is that future research should include a representative sample of pre-service teachers from other departments and faculties at the school to examine this type of stress management coaching.

5. Conclusion

In this study, Nigerian pre-service history teachers received a stress management coaching intervention for the first time. The study suggests that pre-service history teachers can benefit from a stress management coaching intervention that uses the rational emotive behavior coaching approach. The development of this form of stress management coaching program on a large scale among pre-service history teachers could prove beneficial to their academic and personal success. Studies may be conducted in the future to examine the stress of history teachers in colleges and the efficacy of stress management coaching.

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