



Rational emotive intervention for work-family conflict and female primary school teachers' well-being

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Abstract

Globally, work and family conflict has been investigated by many researchers. Yet there is an increased prevalence of work-family conflict and its influence on the well-being of the female teaching population, especially Nigerian primary school teachers. This incidence has kept a good proportion of schoolteachers vulnerable to health problems as well as affected their wellbeing. This study evaluates the effect of rational emotive behaviour therapy on improving the well-being of female teachers with irrational behaviours arising from the work-family conflict. This is a randomized study. A total of 69 female primary school teachers in Enugu state Nigeria who met the criteria for inclusion were used as the study participants. Three self-report measures (Work-Family Conflict questionnaire, Multidimensional Health States Scale-Short Form, and Teacher Irrational Belief Scale) were used to collect data. Repeated measures with analysis of variance (ANOVA) were used to determine the effects of the intervention. The findings of the study revealed that REBT had a significant effect on the well-being scores of Nigerian female primary school teachers with work-family conflict when compared to their counterparts in the no-intervention group at Time 2. In addition, the effect of REBT on improving well-being in female teachers with work-family conflict was significantly maintained at the follow-up measurements (Time 3). In conclusion, it is suggested that REBT is an effective intervention for moderating the effect of work-family conflict on the well-being of career female teachers. As such, cognitive behavioural therapists can further examine the effectiveness of REBT using other constructs and cultures.

Keywords Work-family conflict · Well-being · Primary school teachers · REBT

Introduction

Female teachers face a lot of challenges both at home and in the workplace. These are the two aspects that constitute an individual's life. These challenges include preparing their lessons, teaching, setting examinations, marking assignments, continuous assessments/tests and examinations and scoring them, acting as counsellors, and nurses, taking care of the pupils, and attending meetings. They sometimes take their work home in order to meet up deadlines. All these functions are carried out in addition to performing their

traditional African roles of taking care of their homes. These traditional roles include, among others, cooking, being a mother, taking care of the children, husbands, and other dependents, and making purchases of foodstuffs and other household items. It is therefore the difficulty of participating in work as well as family life that brings about work-family conflict. This conflict seems to be on the increase as more females are taking part in the workforce, so as to augment the family income especially now that most third world countries are facing economic recession, especially Nigeria which is now the poverty head-quarter of the world.

Work-Family Conflict is a type of double role conflict in which the general demands, time committed to and tension arising from one responsibility interfere with the other roles one is expected to perform (Hao et al., 2015). Work-family conflict is seen by Nyaledzigbor (2013) as a bi-directional concept. That is to say that work can interfere with family and family can interfere with work as well. Though these conflicts are different, they are reciprocally related (Byron,

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2005). In this work, the work-family conflict as conceptualized by Hao et al. (2015) is adopted. There are three dimensions of work-family conflict namely, time-based, strain-based, and behaviour-based (Carlson et al., 2000). It is assumed that these conflicting roles between family and work may adversely affect employees' well-being (Kinnunen et al., 2006). It is the concern of the present researchers to examine the effect of this conflict on the well-being of female teachers, as it is said that health is wealth. This means that the well-being of teachers is of utmost importance for the optimal performance of their duties.

Wellbeing is a widely used term that could mean when an individual is physically, mentally, and socially stable. There are speculations that females' well-being is adversely affected by work-family conflict as more of them have joined the labour force. Newland (2014) is of the opinion that an individual's well-being consists of five major components made up of physical health, mental health, self-regulation, social competence, and cognitive competence and is predicted by person, relationship, and other related factors. Well-being is more than the absence of discomfort or pain; it is a state of being stable in every aspect of the individual. Therefore, a conducive environment should be created to support a condition of satisfaction that enables employees to thrive and actualize their full potential for their benefit and that of the organisation to which they belong (Chartered Institute of Personnel Development, 2007). Well-being for the purpose of this study will be taken as the overall health of a person which will include the physical, social, mental and cognitive aspects of an individual's wellness. Many authors (Oludeyi & Olajide, 2016; Sfeatcu et al., 2014) have categorized wellbeing in different ways. Oludeyi and Olajide (2016), for instance, subdivided well-being into two categories (workplace well-being and general well-being). The study is however interested in the general well-being of the participants.

In order to protect their well-being and enhance their performance effectively and efficiently, both at home and in the workplace, it is imperative that these female primary school teachers are able to cushion the negative influence of pressure arising from work-family conflicts. One of the strategies for cushioning the pressure and irrational thoughts arising from work-family conflicts is Rational Emotive Intervention adapted from the principles of Rational Emotive Behaviour Therapy (REBT). Rational Emotive Behaviour Therapy is a counselling technique used to help people increase life, family, and work satisfaction and to avoid negative emotions that might arise from work-family conflicts and their effect on wellbeing. REBT strives to help people control their negative feelings.

Theoretical background

Albert Ellis developed Rational Emotive Behavior Therapy (REBT) in 1955. It is effective psychotherapy that teaches individuals how to change their behaviour and overcome identified problems in more desirable ways by replacing their irrational thoughts, unhealthy negative emotions, and dysfunctional and maladaptive behaviour with rational, healthy, functional, and adaptive behaviour so as to foster individual's emotional well-being (DiGiuseppe et al., 2013). The crux of REBT is on rational and irrational beliefs (David, 2014). Furthermore, rational beliefs have been empirically proven to have functional consequences such as rational thoughts, adaptive behaviours, and healthy psychophysiological reactions; but the reverse is the case for irrational beliefs (Abiogu et al., 2020, 2021; Agah et al., 2020; Iremeka et al., 2021; Ugwuanyi et al., 2022; Kahn et al., 1964) explain that some family or personal resources may cushion the negative effect of work-family conflict among employees. Kahn et al. (1964) further stated that cultural beliefs about gender roles influence women's behaviour, and most often correspond with societal expectations.

According to Okun and Kantrowitz (2015), rational emotive behaviour therapy is a teaching approach that is used to make people understand themselves, understand others, and act rationally by correcting their negative thoughts. This can be done by changing those basic life philosophies that affect them negatively (Ede et al. 2022; Obiweluzo et al., 2021). It will make them be in charge of their emotions. By so doing, their irrational behaviour can be changed positively which will, in turn, minimize the conflict that exists in their work and family lives and improve their well-being in the long run. People believe that irrational thoughts about an event influence emotions and behaviour rather than the event itself (Ellis, 1977). This is why Rational Emotive intervention will be used in this study since it has been used by many researchers (Ede et al., 2019, 2020; Ede, Okeke, Adene & Areji, 2021; Ede, Okeke & Chinweuba et al., 2021; Ede, Okeke & Chukwu, 2021; Ede, Okeke, Igbo et al., 2021; Ezegbe et al., 2019; Ogbuanya et al., 2019), however with a different focus. These researchers have concluded that it is effective as a preventive and curative method of psychotherapy. In other words, work-family conflict experiences do not make people have emotional and behavioural problems rather it is their irrational beliefs and thoughts processes about these conflicts that trigger dysfunctional emotions and behaviours, thus affecting their wellbeing.

Work-family conflict has been reported as having a significant correlation with general wellbeing (Oludeyi & Olajide, 2016; Ogbogu, 2013). Job performance and work-family conflict were explored in these studies. Asiedu-Appiah et al. (2014), also investigated the work-family

conflict of female lecturers in Ghana and related it with career progression. The findings of the study revealed that family-life conflicts impact negatively the female lecturers' career progression. However, their well-being was not part of the variables considered in the study reviewed. Generally, these studies did not investigate the strategy that will help to mitigate the effect of work-family conflict on well-being. This is the reason the researchers want to ascertain the effectiveness of the rational emotive intervention on work-family conflict as well as the well-being of female primary school teachers.

Rational emotive behaviour therapy has been shown to be effective in mitigating the effect of work-family conflict among workers and business persons in Africa, Asia, Europe, and some other places. Thus, this present study sought to also examine the moderating role of rational emotive intervention for cushioning the effect of work-family conflict on the well-being of female primary school teachers in Enugu State, Nigeria. It is against this backdrop that this study studied the role of rational emotive intervention in moderating the effect of work-family conflict on the well-being of female primary school teachers. In view of the knowledge gaps, the researchers hypothesized the relationship that exists between work-family conflict and the well-being of female primary school teachers as well as whether the application of Rational Emotive Intervention could lead to a significant reduction in work-family conflict and well-being relation among female primary school teachers in the intervention group weighed against those in the no-intervention control group. The gains from exposure to the group-focused Rational Emotive Intervention were hypothesized to be sustained at follow-up for the intervention group.

Method

The study used a number of coordinated methods and procedures to achieve the purpose of the study.

Compliance with ethical standards and Recruitment of Participants

Ethical approval was obtained from the Research and Ethics Committee of the researchers' institutions before the onset of the research. There were written informed consents by participating teachers and headteachers before their inclusion in the study. No financial inducement was given to any of the participants. These were implemented in compliance with the research ethics of the American Psychological Association (APA), and the World Medical Association's Declaration of Helsinki.

The participants for the study were from Nsukka in Enugu State, Southeast, Nigeria. The choice of Nsukka was informed by the fact that Nsukka is a University town where people of different cultures and backgrounds reside including many primary school teachers who were used for the study. The participants in this study were 69 female teachers at the primary school level. The focus of the study was only female teachers in Enugu State, Nigeria. Participants were selected during school and classroom visits between September 2018 and February 2019 by the research team. The GPower 3.1 software was used to ascertain if the sample is representative of the population. Self-reports were used to measure actions, beliefs, behavioural intentions, perceptions, and retrospective information.

Participants were included in this based on the following criteria:

1. Having experienced Work-family conflict as measured by self-report measures.
2. Willingness to participate in the study.
3. Participants must be married.
4. Must be 18 and above, and must be working full-time.
5. Acting irritability.
6. Be a female teacher with children and must not have house-help/maids.
7. Readily available throughout the period of the study.

Those that met these criteria were included in the sample. Only participants who self-reported to have experienced work-family conflict were selected and included in the sample. Teachers that did not meet the inclusionary measure were excluded from the study.

Design

The study used a group-randomized trial design which allowed the researchers to assign groups to study conditions and members of each group were assessed to measure their level of irrational thoughts/behaviours. Specifically, this type of study design enables randomization, the use of a control group which has been used in many REBT treatment studies (Agah et al., 2021; Ede et al., 2019, 2020; Egbe et al., 2022; Ezegbe et al., 2019; Uzodinma et al., 2022). This measure is taken so as to ensure an improvement or change in each participant as well as across no contact control and treatment groups' behaviours after the intervention programme as it relates to their work-family conflict.

Measures

The study employed three self-report questionnaires as instruments for data collection. The questionnaires are

titled; Work-Family Conflict questionnaire (W-FCQ) developed by Carlson et al. (2000); Multidimensional Health States Scale-Short Form (MHSS-SF) developed by Hardie et al. (2005) and Teacher Irrational Belief Scale developed by Bernard (1988).

Work-family conflict questionnaire (W-FCQ)

The study adopted a work-family conflict questionnaire (W-FCQ). This is a self-report questionnaire developed by Carlson et al. (2000) which is an 18-item scale measuring six dimensions of work-family conflict: time-based WIF, time-based FIW, strain-based WIF, strain-based FIW, behaviour-based WIF, and behaviour-based FIW. It is made up of three items in each of the 6 mentioned dimensions of work-family conflict. This self-report questionnaire was used to ascertain participants' level of irrational/rational thoughts/behaviours resulting from the work-family conflict. Coefficient alpha was used to estimate the internal consistency of each of the six dimensions. There are; time-based Work interference with family=0.87; time-based family interference with work=0.79; strain-based Work interference with family=0.85; strain-based family interference with work=0.87; behavioural-based Work interference with family=0.78; behavioural-based family interference with work=0.85 (Carlson et al., 2000).

Multidimensional health states scale –short form (MHSS-SF)

This scale adopted the Multidimensional Health States Scale-Short Form (MHSS-SF) developed by Hardie et al. (2005). This is a self-report scale that contains 30 items that enabled the researchers to ascertain participants' wellbeing. The Multidimensional Health States Scale-Short Form (MHSS-SF) contained 15-item well-being and 15-item ill-being. The Well-Being (WB) scale includes five subscales: social WB like enthusiastic, physical WB like strong and agile, emotional WB like satisfied, cognitive WB like alert and efficient as well as sexual WB such as affectionate. While the Ill-Being (IB) scale includes five subscales: Depression, Anxiety, Hostility, Somatic Symptoms, and Cognitive IB. Each health state was rated on a 5-point scale (0=not experienced to 5=strongly experienced) for a specific timeframe. Each 3-item subscale was summed to yield five well-being subscales and five ill-being subscale scores, each with a possible range of 0 to 15 with high scores showing higher frequencies of WB or IB experienced. Hardie et al. (2005) have confirmed that the reliability and validity of the MHSS-SF, internal consistency alphas for WB subscales ranged from 0.86 to 0.90, while alphas for IB subscales ranged from 0.80 to 0.92.

Teacher irrational belief scale (TIBS)

The teacher Irrational Belief Scale was developed by Bernard (1988). It is a 30-item scale, which measures teachers' irrational beliefs as it relates to teachers' tasks. TIBS has been employed in many studies with teachers and has proven to provide valid and reliable results (Bernard, 2016; Bermejo-Toro & Prieto-Ursua, 2006). The TIBS focuses on teachers' absolute thinking, exaggeration, or a tendency toward disproportionate perception, low frustration tolerance, and overgeneralization (Bora et al., 2008). The TIBS has a 5-point scale: (1=strongly disagree; 2=disagree; 3=not sure; 4=agree; 5=strongly agree). High scores indicate high endorsement of irrational beliefs while low scores indicate high endorsement of rational beliefs. Subscales score is obtained by adding the scores of items in each subscale. The following reliabilities for the TIBS subscales were reported: Self-Downing (0.76), Authoritarianism (0.78), Demand for Justice (0.70), Low Frustration Tolerance (0.77), and (0.85) for the global score.

This scale has been used by Bora et al. (2009) in a study conducted on the Romanian population. Bora et al. reported the following reliabilities for the TIBS subscales: Self-downing (0.66), Low Frustration Tolerance (0.48); other demandingness (0.68); and Total score (0.74). As can be seen, the Low Frustration Tolerance scale has a low coefficient. This scale gives practitioners insight into individuals' irrational beliefs. Since irrational beliefs are the underlying cause of dysfunctional thoughts and behaviours in individuals, it is important to dispute these faulty beliefs. This can be done through the application of REBT to the participants in order to change their faulty thinking. In addition, a section is added to solicit information on the demographic variables of the participants. This was used to obtain participants' demographic information, which includes, sex, age, marital status and number of children they have.

Procedure during the implementation of intervention

The intervention is based on the techniques and descriptions in the REBT manuals (Ellis & Grieger, 1977; Wallen, DiGiuseppe, & Dryden 1992). The basic rules of therapy, the rationale of REBT and the ADCDE model, and the goals of REBT are explained and discussed with the participants. The manual is a psycho-educational programme that explores REBT strategies to alter irrational beliefs associated with work-family conflicts among primary school teachers. The manual/intervention is also aimed at changing the dysfunctional thought processes that lead to misinterpretations of realities. The manual is made up of 14 sessions that consisted of 12 weeks of full treatment and 2 weeks

of follow-up. It is a session per week that lasted for one hour. In week 1, the researchers introduced themselves and established rapport and standard of conduct with the participants through therapeutic alliance. This is aimed at familiarizing with each other and the guidelines of the programme. Between weeks 2 and 3, the terms work-family conflict and wellbeing were discussed with the participants through the use of mood monitoring techniques. The objective is to educate the participants on the meaning of the concepts. From week 4 to week 5, the relationship between well-being and work-family conflict, characteristics, and symptoms; and how the perception of work-family conflict affects the participant's well-being is taught to the participants. The techniques used to achieve these are biofeedback, relaxation, and practice exercise. This is aimed to relate well-being and Work-family conflicts as well as the after-effects.

In the sixth week, identification of how factors associated with work-family conflict affect the wellbeing of primary school teachers and how irrational perception of work-family conflict arouses physiological responses is discussed using the hypnosis technique. This is aimed at identifying work-family conflict-related stress and its attendant effect on wellbeing. In week 7, the meaning of rational emotive behaviour therapy (REBT) was explained to participants, and how to overcome events related to the work-family conflict was addressed using the cognitive disputation technique. The aim is to make the participants understand the meaning, purpose, and goals of the programme. By the 8th week, irrational beliefs, dysfunctional emotional and negative attitudes in teachers with work-family conflict that create stress responses that affect their wellbeing are identified and clarified using biofeedback and relaxation techniques, meditation and yoga skills, and practice exercise. The objective is to ascertain the irrational beliefs of the participants about work-family conflict and their wellbeing.

In weeks 9 and 10, the therapists manage work-family conflict among primary school teachers and deal with identified irrational beliefs and emotions that trigger the conflict and their wellbeing using cognitive disputation, behavioural exercises, problem-solving techniques, meditation, and yoga skills. The objective is to accept what they cannot change. By week 11, participants are coached on how to meditate on events accurately so that life situations will not be perceived as enormous. How to dispute absolutism, faulty inferences, and worthlessness are also addressed, after which revision and review of home exercises are done. The techniques employed to achieve these are cognitive disputation, behavioural exercises, problem-solving techniques, Rational-emotive imagery skills, and meditation and yoga skills. This is to help reduce absolute beliefs and over-evaluation of events and discover how to recognize accurate beliefs and rational self-statement. During week 12, how to

cope and challenge problems associated with work-family conflict are the activities carried out. The techniques that can be used to achieve this include; behavioural exercises, coping skills, problem-solving technique, Rational-emotive imagery skills, cognitive disputation, and practice exercises. This is to help make life less stressful and practice exercise. Finally, weeks 13 and 14 activities include revision, review of home exercises focused on therapy termination and termination of the programme, and a follow-up to significantly sustain the gains from exposure to the Rational Emotive Behaviour Therapy (REBT) in the treatment group. In all the sessions, revision and home exercises are given to them as well as completion of the Self-Help form. See Table 1 for more details.

The teacher's irrational beliefs were measured using the ABCDE principle. The teachers described situations and experiences as well as the interpretation given to such situations and experiences. By this, the participants were able to show how they have erroneously activated events associated with work-family conflict. This affected the belief systems which showed to be negative. Examples of the negative self-talk later expressed were (1) I am over-stressed with house chores, with no help from anybody, (2) The schedule at work and other activities is becoming worrisome, (3) Someone I really care about rejects and ignores me to die of stress, (4) My wellbeing is negatively affected by the work-family conflict I am experiencing, etc. Therapists, therefore, used cognitive disputation, which is changing faulty beliefs. This cognitive disputing strategy was adopted to make the participants understand the consequences of their faulty beliefs, knowing that their irrational beliefs have affected their emotions and behaviours (Seligman & Reichenberg, 2014).

Control condition

The participants in the control group did not receive treatment by the time those in the treatment group did. Rather they were exposed to the same REBT-manual after the study has ended. That is after they had been assessed at three points (Time 1, Time 2, and Time 3). This process was taken because the participants were waitlisted and treated after the active engagement of the participants in the treatment group.

Therapists and treatment integrity check

The therapists are the research assistants for this study and are Post-graduate students from the University of Nigeria, Nsukka. They are 8 in number and were trained by the researchers and have at least a first degree in Guidance and Counselling, and psychology. The researchers gave the

Table 1 Summary of the Rational Emotive Intervention

Aims	Weeks	Sessions	Activities	Techniques
To familiarize with each other and guidelines of the programme	1	1	Introduction, established rapport and standard of conduct	Therapeutic alliance
To educate the participants about work-family conflicts	2	2	Explain work-family conflict	Mood monitoring technique
To educate the participants on the meaning of wellbeing	3	3	Explain wellbeing	Mood monitoring technique
To relate wellbeing and work-family conflict	4	4	Relationship between wellbeing and work-family conflicts, characteristics, and symptoms Revision and home exercise	Biofeedback technique, relaxation technique Practice exercise
To understand the after effects of work = family conflicts on wellbeing	5	5	How perception of work-family conflict affects participants' wellbeing. Revision and home exercise	Relaxation technique Practice exercise
To identify work-family conflict-related stress and its attendant effect on wellbeing.	6	6	Identification of how factors associated with work-family conflict affect the wellbeing and how irrational perception of work-family conflicts arouses physiological responses. Revision and home exercise	Hypnosis technique.
Understand the meaning, purpose and goals of the programme.	7	7	The meaning of Rational Emotive Intervention (REI) was explained to participants and how to overcome events related to the work-family conflict was addressed. Revision and home exercise	Cognitive disputation technique
Ascertain the irrational beliefs of the participants about work-family conflict and their wellbeing.	8	8	Irrational beliefs, dysfunctional emotional and negative attitudes in teachers with work-family conflict that create stress responses that affect their wellbeing are identified and clarified. Revision and home exercise	Biofeedback and relaxation techniques, meditation and yoga skills and practice exercise
To accept what they cannot change	9	9	To manage work-family conflict. Revision and home exercise	Cognitive disputation, behavioural exercises, problem-solving techniques, meditation and yoga skills
To change their irrational beliefs to rational beliefs	10	10	To deal with identified irrational beliefs and emotions that trigger the conflict and their wellbeing. Revision and home exercise	Cognitive disputation, behavioural exercises, problem-solving techniques, meditation and yoga skills
To help reduce absolute beliefs and over-evaluation of events and discover how to recognize accurate beliefs and rational self-statement.	11	11	To meditate on events accurately so that life situations will not be perceived as enormous. How to dispute absolutism, faulty inferences and worthlessness is also addressed. Then revision and review of home exercise.	Cognitive disputation, behavioural exercises, problem-solving techniques, Rational-emotive imagery skills, and meditation and yoga skills.
To help make life less stressful and practice exercise	12	12	How to cope and challenge problems associated with work-family conflict. Revision and home exercise	Behavioural exercises, coping skills, problem-solving technique, Rational-emotive imagery skills, cognitive disputation and practice exercises.
Follow-up	13–14	13–14	Revision, review of home exercises focused on termination of the programme	

therapist didactic instructions about the treatment and materials describing the goals, tasks, and activities involved in order to achieve the set goals. They were also given opportunities to role-play the techniques, analyze the situations and provided with periodic booster sessions. This is aimed at reinforcing progress and ensuring the continuation of positive changes made during the intervention. After which, they give a self-report on their daily activities.

Two raters were used to ascertain the treatment integrity. These raters were the headteachers. They were trained on minor and major treatment components. This training is to ensure that optimal outcomes are achieved. The 'spot checks' was used to assess treatment implementation as agreed upon by the researchers. The ways of therapists establish, assess, and evaluate treatment adherence as well as how self-report forms are reported are all objectives of

Table 2 Demographic characteristics of the participants based on groups

	Treatment Group n(%)	Control group n(%)	Statistic χ^2	Sig
Age				
18–25	6(8.6)	20(29.4)	21.599	0.001
26–32	8(11.4)	16(23.5)		
33–40	28(40.0)	24(35.3)		
41 Years & Above	28(40.0)	8(11.8)		
Marital Status				
Single	4(5.7)	12(17.6)	5.626	0.060
Married	54(77.1)	42(61.8)		
Divorce	12(17.1)	14(20.6)		
Family Size				
Low	4(5.7)	12(17.6)	5.626	0.060
Middle	12(17.1)	14(20.6)		
High	54(77.1)	42(61.8)		
Educational Qualifications				
NCE	18(25.7)	16(23.5)	4.037	0.258
Bachelor Degree	36(51.4)	28(41.2)		
Master Degree	16(22.9)	22(32.4)		
Work Status				
High Cadre	16(22.9)	12(17.6)	2.543	0.280
Middle Cadre	36(51.4)	44(64.7)		
Low Cadre	18(25.7)	12(17.6)		
Income Level				
Low Income	32(45.7)	26(38.2)	1.259	0.533
Moderate	28(40.0)	28(41.2)		
High	10(14.3)	14(20.6)		

Note: n = number of participant, % = Percentage, χ^2 = Chi-square, sig = Associated probability, NCE = Nigeria Certificate in Education

treatment integrity. This is an assurance that all aspects of treatment integrity are met, and that treatment was implemented as intended. These aspects include overall integrity, component integrity, and session integrity.

Data analysis

The effect of rational emotive behaviour therapy on reducing stress resulting from work-family conflict in order to improve teachers' wellbeing was statistically analyzed using a multivariate test analysis of variance. The effect size of the intervention on the reduction of irrational beliefs among teachers with work-family conflict was reported using partial eta square and adjusted R². The assumption of the Sphericity of the test statistic was tested using the Mauchly test of sphericity which was not significant. Thus, the variances of the differences between all combinations of the related measures are equal. The analysis was done using statistical package for social sciences version 18.0.

Results

Table 2 is the demographic responses of the participants. The results in Table 2 show no significant difference between the groups with regard to the participants' age ($\chi^2 = 21.599$, $p = 0.001$), marital status ($\chi^2 = 5.626$, $p = 0.060$), family size ($\chi^2 = 5.626$, $p = 0.060$), Educational Qualifications, ($\chi^2 = 4.037$, $p = 0.258$), work status ($\chi^2 = 2.543$, $p = 0.280$), and Income Level ($\chi^2 = 1.259$, $p = 0.533$).

Table 3 reveals the treatment results for the participants enrolled in the REBT compared to those in the control group (CG) over the Time 2 and 3 times of assessments. At the post-treatment level (time 2), the intervention had a significant effect on work-family conflict in participants as measured by WFCQ, $F(1, 137) = 31.520$, $p = 0.001$, $\eta_p^2 = 0.188$; and after the post-treatment, a follow-up (time 3) result also shows that treatment still had a significant effect on work-family conflict of participants as measured by WFCQ, $F(1, 137) = 37.744$, $p = 0.001$, $\eta_p^2 = 0.217$. The effect size of the independent variable at time 2 and Time 3 for the dependent measure (WFCQ) was 0.188 and 0.217 respectively. This indicates that long-term reduction in work-life conflict is attributed to REBT intervention.

Table 4 also shows that at the post-treatment level (time 2), the intervention had a significant effect on participants' multidimensional health states as measured by MHSS, $F(1, 137) = 12.586$, $p = 0.001$, $\eta_p^2 = 0.085$; and after the post-treatment, a follow-up (time 3) result still shows that intervention had a significant effect on participants' multidimensional health states as measured by MHSS, $F(1, 137) = 20.553$, $p = 0.001$, $\eta_p^2 = 0.131$. The effect size of the independent variable at time 2 and Time 3 for the dependent measure (MHSS) was 0.085 and 0.131 respectively. Indicating long term improvement in multidimensional health states is accounted to REBT intervention.

Table 5 shows there is a low significant negative correlation between the measure of irrational beliefs of teachers and work-life conflict at Time 1, $r(137) = -0.034$, $p = 0.69$. Hence, this indicates that as the irrational beliefs increase, the state of work-life conflict of teachers decreases. At post-treatment assessment, the result shows a strong significant positive correlation between the measure of irrational beliefs of teachers and multidimensional health states, Time 2, $r(137) = 0.189^*$, $p = 0.026$. Hence, this means that as the scores of the variables increase together.

Table 6 shows there is a moderate significant negative correlation between the measure of irrational beliefs of teachers and multidimensional health states at Time 1, $r(137) = -0.056$, $p = 0.52$. Hence, indicating that as the irrational beliefs increase, the state of teachers' multidimensional health decreases. At post-treatment assessment, the result shows a strong significant positive correlation

Table 3 Multivariate Analysis of Variance of the Effect of rational emotive intervention for work-family conflict of career female primary school teachers

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	WFCQPRE	23.514 ^a	1	23.514	0.623	0.431	0.005
	WFCQPOST	336.194 ^b	1	336.194	31.520	0.000	0.188
	WFCQFELLOW	369.666 ^c	1	369.666	37.744	0.000	0.217
Intercept	WFCQPRE	145360.681	1	145360.681	3848.192	0.000	0.966
	WFCQPOST	441092.194	1	441092.194	41354.830	0.000	0.997
	WFCQFELLOW	421569.875	1	421569.875	43042.946	0.000	0.997
Groups	WFCQPRE	23.514	1	23.514	0.623	0.431	-
	WFCQPOST	336.194	1	336.194	31.520	0.000	0.188
	WFCQFELLOW	369.666	1	369.666	37.744	0.000	0.217
Error	WFCQPRE	5137.231	136	37.774			
	WFCQPOST	1450.581	136	10.666			
	WFCQFELLOW	1332.007	136	9.794			
Total	WFCQPRE	150605.569	138				
	WFCQPOST	442618.660	138				
	WFCQFELLOW	422998.272	138				
Corrected Total	WFCQPRE	5160.746	137				
	WFCQPOST	1786.776	137				
	WFCQFELLOW	1701.673	137				

a. R Squared = 0.005 (Adjusted R Squared = -0.003)

b. R Squared = 0.188 (Adjusted R Squared = 0.182)

c. R Squared = 0.217 (Adjusted R Squared = 0.211)

Table 4 Multivariate Analysis of Variance of the effect of REBT on well-being

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	MHSSPRETEST	71.627 ^a	1	71.627	3.848	0.052	0.028
	MHSSPOST	796.244 ^b	1	796.244	12.586	0.001	0.085
	MHSSFEOLLOW	2954.996 ^c	1	2954.996	20.553	0.000	0.131
Intercept	MHSSPRETEST	1326450.715	1	1326450.715	71258.026	0.000	0.998
	MHSSPOST	603909.247	1	603909.247	9545.562	0.000	0.986
	MHSSFEOLLOW	973318.156	1	973318.156	6769.684	0.000	0.980
Groups	MHSSPRETEST	71.627	1	71.627	3.848	0.052	-
	MHSSPOST	796.244	1	796.244	12.586	0.001	0.085
	MHSSFEOLLOW	2954.996	1	2954.996	20.553	0.000	0.131
Error	MHSSPRETEST	2531.607	136	18.615			
	MHSSPOST	8604.172	136	63.266			
	MHSSFEOLLOW	19553.537	136	143.776			
Total	MHSSPRETEST	1329615.220	138				
	MHSSPOST	612800.960	138				
	MHSSFEOLLOW	997586.601	138				
Corrected Total	MHSSPRETEST	2603.234	137				
	MHSSPOST	9400.416	137				
	MHSSFEOLLOW	22508.533	137				

a. R Squared = 0.028 (Adjusted R Squared = 0.020)

b. R Squared = 0.085 (Adjusted R Squared = 0.078)

c. R Squared = 0.131 (Adjusted R Squared = 0.125)

between the measure of irrational beliefs of teachers and multidimensional health states, Time 2, $r(137) = 0.072$, $p = 0.403$). Hence, meaning that as the scores of the variables increase together.

Discussion

The main purpose of the study is to explore the effect of the application of rational emotive behaviour therapy intervention programme on teachers with work-family conflict and how it can produce therapeutic changes in them with

Table 5 Correlation between irrational beliefs and work-family conflict

		TIBSPRE	TIBSPOST	TIBSFELLOW	WFCQPRE	WFCQPOST	WFCQFELLOW
TIBSPRE	Pearson Cor	1	0.125	0.152	-0.034	-0.176*	-0.101
	Sig. (2-tailed)		0.143	0.074	0.692	0.039	0.238
	N	138	138	138	138	138	138
TIBSPOST	Pearson Cor	0.125	1	0.126	0.006	0.189*	0.196*
	Sig. (2-tailed)	0.143		0.142	0.945	0.026	0.021
	N	138	138	138	138	138	138
TIBSFELLOW	Pearson Cor	0.152	0.126	1	-0.029	0.152	0.171*
	Sig. (2-tailed)	0.074	0.142		0.735	0.075	0.045
	N	138	138	138	138	138	138
WFCQPRE	Pearson Cor	-0.034	0.006	-0.029	1	-0.023	-0.055
	Sig. (2-tailed)	0.692	0.945	0.735		0.785	0.521
	N	138	138	138	138	138	138
WFCQPOST	Pearson Cor	-0.176*	0.189*	0.152	-0.023	1	0.972**
	Sig. (2-tailed)	0.039	0.026	0.075	0.785		0.000
	N	138	138	138	138	138	138
WFCQFELLOW	Pearson Cor	-0.101	0.196*	0.171*	-0.055	0.972**	1
	Sig. (2-tailed)	0.238	0.021	0.045	0.521	0.000	
	N	138	138	138	138	138	138

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Table 6 Correlation between irrational beliefs and well-being

		TIB1	TIBS2	TIBS3	MHSS3	MHSS2	MHSS3
TIBS1	Pearson Correlation	1	0.125	0.152	-0.056	-0.062	-0.088
	Sig. (2-tailed)		0.143	0.074	0.518	0.471	0.307
	N	138	138	138	138	138	138
TIBS2	Pearson Correlation	0.125	1	0.126	-0.109	0.072	0.227**
	Sig. (2-tailed)	0.143		0.142	0.203	0.403	0.007
	N	138	138	138	138	138	138
TIBS3	Pearson Correlation	0.152	0.126	1	0.028	-0.041	-0.330**
	Sig. (2-tailed)	0.074	0.142		0.746	0.637	0.000
	N	138	138	138	138	138	138
MHSS1	Pearson Correlation	-0.056	-0.109	0.028	1	-0.121	0.030
	Sig. (2-tailed)	0.518	0.203	0.746		0.156	0.730
	N	138	138	138	138	138	138
MHSS2	Pearson Correlation	-0.062	0.072	-0.041	-0.121	1	0.055
	Sig. (2-tailed)	0.471	0.403	0.637	0.156		0.524
	N	138	138	138	138	138	138
MHSS3	Pearson Correlation	-0.088	0.227**	-0.330**	0.030	0.055	1
	Sig. (2-tailed)	0.307	0.007	0.000	0.730	0.524	
	N	138	138	138	138	138	138

** Correlation is significant at the 0.01 level (2-tailed)

regards to stress and conflicts compared to these in the no-contact control group. The study showed that stress symptoms and irrational beliefs resulting from work-family conflict decreased significantly over the three intervention stages. The four irrational belief components (self-downing, Authoritarianism, Demand for Justice, and Low Frustration Tolerance) decreased during the three intervention stages. The results of the study affirmed the postulated hypothesis on the effect of REBT on stress and conflict among teachers with work-family conflict exhibiting problematic

behaviours which affect their wellbeing. The findings also revealed that there is no significant difference between the treatment and no-contact control groups in initial stress and conflict among teachers. Previous studies have shown that the behaviour and well-being problems of teachers with work-family conflict were strongly related to stress (Greenhaus & Beutell, 1985; Wallace, 2005; Wong & Lin, 2007; Hayes, 2007; Moore, 2007; Schwarzer & Hallum, 2008). At Time 2, it was observed that there was a significant improvement in the stress and conflict level among

teachers with work-family conflict after they have been exposed to the treatment. This shows that the techniques let the teachers build and learn resources for controlling the emotional reactions triggered by work-family conflict. The results also revealed that there was a significant interaction effect of time and treatment on the effective reduction of stress among teachers with work-family conflict who exhibit dysfunctional behaviours which affect their well-being. From the first assessment (Time 1), certain irrational beliefs about stress were exhibited by the participants with respect to work-family conflict. Such beliefs included that, “Balancing work-family life is a major source of stress in my life” and “The non-challant attitude of people towards my wellbeing is also a source of stress to me”, “Balancing different responsibilities is very hard for me which may result to conflict”, among others. Abrams and Ellis (1993) however posited that beliefs anchored on absolute and rigid beliefs about goals and interest originates from stress reactions. Though irrational beliefs are found among teachers generally, it can be more predominant among teachers with work-family conflict. The findings of the study showed that rational emotive behaviour therapy had a significant effect on stress scores of Nigerian teachers with work-family conflict when compared to participants in the no-contact control group at Time 2. In addition, the effect of rational emotive behaviour therapy on effectively reducing stress in teachers with work-family conflict was significantly maintained at the follow-up measurements (Time 3). REBT experts are of the opinion that stress emanates from people’s irrational beliefs (Abrams & Ellis, 1994). In the same vein, the stress-related attitudes and behaviours of teachers could emanate from irrational beliefs related to work-family conflict (i.e. domain-specific beliefs) (Joyce, 2006). These findings corroborate previous studies which revealed that REBT can deal effectively with stress (Smith, 1983; McGee, 1984) by identifying and altering teachers’ irrational beliefs. The significant benefits of this psychotherapy to teachers are not surprising. This is because studies have established the long-term effect of REBT in reducing people’s irrational thought patterns, and its effect on improving the quality of life of people when faced with stress (Joyce, 1995; Greaves, 1997). This is because if the stress is not checked, it could affect the teachers’ physical and mental health as well as their well-being (See Ogakwu et al., 2022).

Some of the activities and the rational, emotive, and behavioural techniques that changed the participants’ perceptions about work-family conflict and well-being. At the initial session of the treatment, the therapists introduced themselves as well as the participants. Both the therapists and participants had brief conversations on issues related to the working environment and family life, sharing pleasant and unpleasant experiences in their respective work

settings. The therapists utilized the first session to establish a therapeutic alliance that made the participants feel relaxed and familiarized with each other and the treatment venue. It was essential as it helps to arouse the attention of the participants. By doing this, rapport was created through the application of the cognitive alliance technique.

The therapists discussed the concept of work-family conflicts and workers’ well-being. The discussion started with meanings, problems, experiences, etc. Through this, the participants were able to understand how work-family conflict relates to workers’ well-being and its adverse impact. This observation was made through the mood monitoring technique. Following this, the therapists asked the participants to state their irrational beliefs about work-family conflict and their wellbeing. These irrational beliefs, dysfunctional emotional and negative attitudes in teachers with work-family conflict that create stress responses that affect their wellbeing were systematically identified and clarified. In doing this, the participants were exposed to cognitive and emotional disputation techniques and how to alter automatic beliefs to better ones. Examples of cognitive biases were given and restructured. In a group context, biofeedback was used as part of a treatment technique for managing work-family conflict (See Ede et al., 2020). Participants learned how to voluntarily regulate bodily functions that were previously believed to be involuntary via 2-way mirror exercise. As participants expressed difficulty in regulating work and family responsibilities. To ensure that every participant participated in the 2-way mirror exercise, they were divided into subgroups of five. This allows them to view and alter one’s posture and emotional expressions. The therapists were allocated to each grouping under these circumstances, directing and guiding them. How the challenge of harmonizing work roles conflicting with family roles affects well-being was demonstrated during biofeedback training. The therapists taught them the need to use relaxation techniques.

Conclusion

This study has revealed that REBT brought about changes in the participants’ beliefs, as well as changes in the participants’ emotions and behaviours. This shows that the intervention had a significant effect on the participant’s ability to deal with emotional, behavioural, and mental problems of work-family conflict. This is due to the fact that REBT targets participants’ emotions and behaviour. Therefore, the reduction in work-family conflict score of participants in the treatment group is an indication that the REBT intervention programme had a significant effect on the irrational beliefs and behaviours of a sample of Nigerian primary school teachers associated with work-family conflict. The

participant's dysfunctional and maladaptive behaviours and thoughts became increasingly improved despite having experienced stress resulting from work-family conflicts. Undoubtedly, this was made possible through the REBT intervention programme.

Prevention and early treatment of stress resulting from work-family conflict can lead to reduced stress and its associated psychological and behavioural disorders in the community (Asmussen et al., 2019). A multi-agency approach should be adopted to reduce stress resulting from work-family conflict among teachers by identifying teachers at risk, assessing the nature of the risk, and using an appropriate strategy to reduce the risk. This is necessary because teachers are involved in children's education, welfare, mental health, and wellbeing. If this is not addressed, their job performance may be affected and in the long run, the children's education and wellbeing may also be affected. However, due to the limitations of this study, a follow-up study to assess teachers' work-family conflict and its effect on teachers' well-being in Nigeria could be conducted using qualitative data collection and analysis methods.

Implications for research and practice

The study has revealed that the REBT intervention programme is effective in overcoming irrational beliefs of teachers with work-family conflict. This implies that clinical psychologists, therapists, and childhood educators can use the techniques of rational-emotive behavior therapy to help teachers deal with irrational behaviours resulting from their exposure to stress-related to work-family conflict. The study also specified criteria to determine improvement in irrational beliefs, so making it easy for practitioners to assess teachers' rational beliefs before and after the REBT intervention programme (Ede, Nnaji et al., 2021). The REBT clinical psychologist, therapists, and childhood educators should be aware that effective treatment in accordance with the principle of REBT could result in a decline in irrational beliefs/thoughts arising from the work-family conflict. The random allocation of participants to groups and the sample size of the study derived from the power estimate is an indication that this intervention programme is not affected by small sample sizes, rather, it is dependent on the therapists' effective use to help clients analyze and dispute irrational thoughts/behaviours and change them to rational beliefs and behaviours. Practitioners and researchers are therefore encouraged to utilize the steps adopted in this present study and to effectively help teachers with work-family conflict reduce resultant stress and improve their wellbeing through the REBT intervention approach. Therapists and other practitioners believe that REBT is a family-centered intervention

that strengthens families by helping them deal with their dysfunctional thoughts/behaviours resulting from work-family conflicts and assists each individual member of the family knowing that exposure of family members to stress may affect their health and well-being. This programme is, therefore, meant to assist participants to develop rational beliefs of self, have balanced emotional well-being, and be able to relate amicably with family members and others.

Also, this study is significant in the post-pandemic context because of the opposing responsibilities workers especially primary school teachers face as they carry out their work and family responsibilities coupled with the increased work demands resulting from the COVID-19 pandemic experienced in the past and the post-pandemic era. Due to these increased work-family demands, they are likely to experience a reduced sense of well-being and as such have declined parenting responsibilities, poor job performance, and satisfaction, as well as other mental health issues like anxiety, depression, stress, and fear, among others. These excessive job demands affect work-family wellbeing negatively which necessitated the use of Rational Emotive Intervention (REI) as a coping strategy to mitigate the after-effect of work-family conflict on the primary school teachers' well-being.

Limitations

Though this study recorded positive outcomes like other studies, there are however some limitations. First, knowing that the sample size used for the study is not too large, some may want to find out if the study could be replicated using the same sample size with the same results recorded. This is because it is believed that small samples usually have low statistical power. These researchers believe that a study with low statistical power has a low probability of detecting a true effect (Bland, 2008; Siddharth, 2009; Hoffman, 2010; Button et al., 2013). In contrast, the sample size of this study did not affect the power estimate. This means that REBT had been used effectively to reduce the treatment group's irrational beliefs and behaviours arising from the work-family conflict. Another limitation could be the use of quantitative data collection and analysis methods only. This could have limited the scope of the study; as empirical evidence has shown that qualitative methods could help to collect more rich and in-depth information (MacDonald & Friedman, 2002). A mixed method that combines the collection of both qualitative and quantitative data could be considered in future studies. This is to avoid methodological biases (Dyer, 2006). The author further stated that self-report measures can create biases in the data; as such, it may be useful for further studies to include observation and peer-report information.

However, stringent quality control measures were used to ensure that high-quality data was collected. Nevertheless, other researchers are encouraged to vividly address this limitation in future research report. Lastly, the participants in the control group were not allowed to access REBT after the active treatment conditions of the study. Meanwhile, a no-contact control group helps to eliminate some threats to the authenticity of the findings of the study. Nonetheless, it does not account for expectancy effects and other alternative explanations. It only shows that REBT is better than doing nothing, but doesn't offer insight into whether REBT is better than a "placebo" or active control group, where participants receive treatment that differs in the specific therapeutic approach. Given the paucity of research on this specific area, using a simple no-contact control is still useful but the limitations are acknowledged. Future studies can use a non-equivalent wait-in-list intervention group so that the control group will receive the same intervention after the active treatment conditions.

Strengths of the study

The major strengths of this trial are: (1) this present study is the first to examine the efficacy of rational emotive behaviour therapy on reducing stress among teachers with work-family conflict in one of the developing countries; (2) a longer follow-up evaluation was given, (3) the present study presented a detailed analysis of the procedures for the treatment of stress among teachers with work-family conflict which may benefit other researchers who study similar cases and aid professionals' understanding of work-family conflict symptoms and treatments in other patients, and (4) treatment integrity procedure was used to ensure that set goals were achieved as planned.

Future directions

This intervention has been shown to be effective in the treatment of stress among teachers with work-family conflict, among others. It is suggested that future studies use this intervention for the treatment of stress among teachers with other irrational beliefs as well as other aspects of well-being such as mental, emotional, and physical health. It is also recommended that future behavioural research focus on conceptualizing treatment integrity, establishing standards of treatment integrity as well as using findings from implementation to make a significant improvement in treatment integrity procedures.

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Declarations

Conflict of interest No conflict of interest was reported by the authors.

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