



Testing the Efficacy of Family Health-Model of REBT on Family Values and Quality of Family Life Among Parents of Children with Visual Impairment

Moses Onyemaechi Ede¹ · Chinedu Ifedi Okeke² · Ngozi H. Chinweuba³ · Sebastian Okechukwu Onah⁴ · Glory M. Nwakpadolu⁵

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Abstract

The high rate of negative thinking in family circles due to the presence of children with visual impairment has grossly affects the quality of family life. In the case of Nigeria, low quality of family life is prevalent among parents of children with visual loss. This study attempts to validate the efficacy of a rational emotional family health therapy in addressing family values and quality of life among parents of children with visual impairment in Enugu state Nigeria. A group randomized controlled design, participants comprised 132 parents whose children were living with visual impairment in Enugu state, Nigeria. The participants in REFHP-group were exposed to a 12-session treatment programme whereas their counterparts in the waitlisted control group did not receive this intervention. Two measures-Family Quality of Life Scale and Family Value Scale were utilized in assessing the participants at three time points. Data analyses were completed using repeated measures ANOVA. Findings revealed that rational emotive family health therapy had a significantly positive effect on increasing family values and quality of family life among the study participants of the treatment group. This study contributes to the scholarship on the efficacy of rational emotive family health therapy in improving family values and quality of family life among parents of children with visual impairment.

Keywords Rational emotive family health therapy · Family values · Quality of family life · Parents · School children · Visual impairment · Nigeria

✉ Sebastian Okechukwu Onah
sebastian.onah@unn.edu.ng

Extended author information available on the last page of the article

Introduction

Visual impairment (VI) is a decrease in functioning visual systems of individuals characterized by reduced visual acuity, visual distortion, difficulties in perception and decreased ability to perform daily life activities such as reading and writing, movement and recreational activities (United States Department of Health & Human Services, 1996). Children with visual loss experience numerous problems that affect their developmental pattern (Broek et al., 2017). When vision is lost, the child's development and well-being is affected, in addition to having family value and quality of parental life threatened (Broek et al., 2017). This impairment is possibly to last indefinitely and lead to substantial limitations in terms of family value, quality of family life and belief (Leung & Li-Tsang, 2003).

Family value includes relationship with people, emotional sympathy, and respect among others within and outside the family circle (Kant, 2000). Value is an accepted universal conduct, standard and belief (Parihar, et al, 2018). Previous studies have recognized family value as a determining factor for social, economic, and political development of any nation (Ngwokabuenui, 2015). Hence, family members need to acknowledge that human beings deserve to be given a sense of worth, love and acceptance (Ngwokabuenui, 2015).

Scholars have decried the increase in the rate of discrimination against the families of children with disability which has continued to affect the general wellbeing of family members (e.g. Uwaegbute, 2013) as well as the family name. This situation has also affected the standard and development of the quality of life of those families (Ohwovorione, 2013). Given the situation, we argued that families of children with disabilities are likely to feel that they have lost family value in society. Consequently, the quality of life of the family members could also be affected and threatened.

Research has identified two dimensions of family value which include self-sufficient and instrumental value (Shiyanov, & Kotova, 1999). Self-sufficient values include the social status and social importance of family such as responsibility to the family, relatives and society (Shiyanov, & Kotova, 1999). On the other hand, instrumental values include attitudes, quality of life, knowledge, and skills (Shiyanov, & Kotova, 1999). Possibly, families that erroneously evaluate and misinterpret the social status, social importance, and attitudes could mar the quality of family life.

Quality of family life is determined by family mindset and positions in respect to culture, value system and beliefs (World Health Organization, 1998). It involves such norms as love, accommodation and perseverance (Brownet al., 2004). By implication, therefore, the cognitive and behavioural understanding of every family member about societal beliefs determines the quality of family life such as health and economic position of a family in the society.

Relating this to parents of children with visual impairment, previous studies have argued that the presence of visual impairment grossly affects the well-being of a child, family social environment as well as quality of family life (Lupón et al., 2018). The emergence of visual impairment in the family affects the quality of family life (Lizasoáin & Peralta, 2004). In a related research conducted on adults with VI and on children with other disabilities (Bambara et al., 2009a, 2009b; Braichet al., 2012)

reported that caregivers are engulfed with poor quality of family life and negative self-esteem. Likewise, in a study by Posokhova et al. (2016), the result shows that parents of children with visual loss experience low quality of life when compared to those raising children with loss of hearing. The economic power of parents with disabled children is usually threatened by the financial demands of keeping and managing their disability (Adebisi, 2018). Ede and et al., (2020a, 2020b) observed that caring for disabled children imposes a serious economic threat to parents especially parents who combine caregiving and paid employment or business activities. Parents also exhibit signs of withdrawal, low self-esteem in view of their status in the society (Castañeda et al., 2016; Smyth et al., 2014). In the same vein, researchers also indicate that caring for someone who is disabled affect the caregiver's quality of family life significantly (e.g. Lupón et al., 2018). Scholars have further noted that caring for a disabled child is more tasking and demanding when compared to taking care of normal children. Scholars further observe that such condition exposes parents with a disabled child to financial and emotional difficulty and it may be quite challenging for parents without adequate mental preparation and readiness to cope (Ede, et al., 2020a, 2020b; Plant & Sanders 2007). This situation could lead to unhealthy perception of self, others and the future which conversely affects the social importance of such individuals (e.g. low self-esteem and pleasure associated with marriage) (Obiyo et al., 2013).

Additionally, poor health status affects quality of family life and parental wellness (Chen et al., 2014, 2015). Poor health disposes parents to stress (Thoits, 2010), anxiety (Davenport, 2010) psychological depression (Dada et al., 2013; Heo et al., 2014), and parental maladjustment and marital distress (Ezegbe et al., 2018). Accepting a caregiving responsibility could increase stress levels, which significantly affect an individual's physical, psychological and social wellbeing (Lupón et al., 2018). The psychosocial concerns of parents of children with visual impairment reflects negative self tolerance low and fears that their visually impaired child could be isolated, mocked and excluded by friends and relatives from indoor and outdoor recreational activities (Fathizadeh et al., 2012; McKillop et al., 2006).

In a related study on qualities of life and family burden conducted in Spain, the result shows that more than 70% of parents experience moderate burden reaching severe levels (Dada et al., 2013). In the pre- and post-glaucoma surgery study, result indicates that the quality of life of 71% of the parents was very poor which culminated into unhealthy behaviours including exhaustion, anger, and self-blame (Gothwal et al., 2016). This explains why the attitude of parents with a disabled child is usually negative, and some of them pursue unrealistic goals, and experience low self-esteem (Brown, & Marshall, 2001).

In the case of Nigeria, low quality of family life is prevalent among parents of children with visual loss (Adigunet al., 2014). Studies have revealed that emotional and psychological unrest as well as stereotypes significantly reduce qualities of family life (Adigun et al., 2014; Sijuwola, & Fasina, 2012). This is not unexpected since parents of visually impaired children experience agony (Iyabo, 2014). Researchers therefore have argued that caring for individuals with disabilities leads to poor socioeconomic status and stigmatization; hence, erroneous perceptions concerning health of the child could set in.

Given the high rate of negative thinking in family circles due to the presence of children with visual impairment and how this grossly affects the quality of family life, it becomes necessary to investigate if cognitive-behaviour therapies could be useful in improving perceptions of family value as well as qualities of family life. Meanwhile, studies have suggested that cognitive behavioural approach can be employed to alter the negative perceptions of parents with a visually impaired child to achieve quality of family life (e.g. Weiss et al., 2015). Given this situation, we argue that there is a paucity of intervention designed to help parents manage and decrease negative family value and improve on quality of family life of families of children with visual impairment. Therefore, we hypothesised that rational-emotive approach proposed by Ede et al., (2020a, 2020b) could be useful and therapeutically efficient in addressing and cushioning the adverse psychosocial experiences of parents of children with visual impairment using rational emotive family health therapy (REFHT).

Rational emotive family health therapy (REFHT) coined by Ede et al., (2020a) is an extension of rational-emotive behaviour therapy (REBT). REFHT is a therapeutic intervention programme focused on investigating REBT approaches by utilizing it to change negative thoughts related to parental value and poor quality of family life.

The rational emotive family health therapy (REFHT) followed the REBT principles. REBT is one of the cognitive-behaviour therapies created by Ellis (1994). REBT is an evidence-based therapy that alters an automatic and negative beliefs that individuals hold about themselves, their future and the world. Among the core assumptions of REFHT is that once parents of children with problem behaviour and disabilities hold irrational beliefs, the reality could be very difficult to achieve thereby resulting to poor qualities of family life. The originators of REFHT believe that the presence of a child with disability is not the cause of family problem; instead it is the perception of the parents and family members. If the perception of parents and family members is negatively construed, family health and well-being and quality of life could be adversely affected. Similarly, the cognitive and behavioural interpretation by the family members about societal events may determine the quality of family life. Hence, once the perception is interpreted negatively, quality of family life may be difficult to achieve. In line with the philosophies of REBT, we argue that wrong interpretations occur when there is a gap between the cognitive representation of the event and the actual existence of the event. The individuals in such a state will wrongly interpret reality and this may lead to negative belief. Wrong interpretation of events occurs when parents of children with visual loss accept within themselves that they cannot cope with the problem or they hold the perception that visual impairment is a disease, is evil and contagious. This occurs when a family with a child with visual loss begins to isolate socially. It also occurs when the family believe that their family worth and well-being can no longer be achieved. Thus, the family experiences depression, anxiety, frustration and self-downing among others (Brown & Marshall, 2001; Ede et al., 2020a, 2020b).

Prior studies have noted that irrational beliefs and negative behaviours (e.g. self-disbeliefs about parenting, negative self-beliefs about coping with a chronic stressor

for having a child with visual loss) leave a significant stress in parental relationship (e.g. Joyce, 2006). Studies have attributed the psychiatric symptoms to erroneous self-beliefs (Ede et al., 2020a, 2020b, 2021; Greaves Joyce, 2006). Wrong notions about self-belief are undesirable cognitive judgment about self, future, and the world (Ede, et al., 2020a, 2020b; Sommer, et al., 2018). Meanwhile, the erroneous self-beliefs among parents of children with visual loss may probably affect the physical and psychological growth of the child and quality of family life (Murphy et al., 2007; Sanders, 2012). Similarly, parents could have negative beliefs on psychological issues as they grapple to cope with child rearing, parental status and possible interventions (Ellis et al. 1966; Joyce, 2006; Howe, 2006).

Previous studies have examined how irrational beliefs could be identified by classifying irrational beliefs of parents, namely, demandingness, awfulizing, low frustration tolerance and global evaluation of human worth (e.g. Nwokeoma et al., 2019). For example, a parent holding rigid belief about their child with regards to how the child's well-being should or should not be (i.e. demandingness), having extreme and absolute interpretation of a negative situation or event (i.e. awfulizing), believing that certain circumstance is intolerable (i.e. low frustration tolerance), and thinking that the family respect and value are dependent on achievements (i.e. global evaluation of human worth). Parents with these belief systems may be described as having unrealistic beliefs and feelings and therefore, could be experiencing reality distortion (Ede et al., 2020a, 2020b; Joyce, 2006).

Empirical studies have continued to show that parents of individuals with disability (visual loss) had an increased risk of vulnerability to unhealthy emotions, cognitive and behavioural responses characterised as poor physical and emotional well-being (e. g. Terjesen & Kurasaki, 2009). Thus, these characteristics impact on the quality of family life (Strawbridge et al., 2007; Terjesen & Kurasaki, 2009). This study also assumes that parents' cognitive interpretation about their worth in relation to their visually impaired child could likely affect their emotional and behavioural responses. In other words, parental interpretations of self-worth in association with their visually impaired child and parenting responsibilities could influence and control their belief (Gabler, 2013). Low quality of family life (LQoFL) could be attributed to erroneous and negative interpretations to situations by family members (e.g. poor self-concept, wrong notions).

From the REBT viewpoint, parents who exhibit low self-esteem, anxiety and unhealthy beliefs due to the societal perception about visual impairment could exhibit unhealthy cognitive behaviours (Ede et al., 2020a, 2020b; Terjesen & Kurasaki, 2009). There exist a lot of promising and considerable reports on the benefits of rational emotive behavioural therapy in improving quality of family life among parents of children with visual loss (Weiss et al., 2015). Studies have shown that REBT-based approach decreases the psychological symptoms of disability (Cobham et al., 1998). Similarly, rational emotive interventions have been conducted using other populations like the mothers of children with Down Syndrome (Ede et al., 2020a, 2020b), and Romanian foster parents with psycho-emotional distress (Ciff et al., 2015). Joyce (2006) developed a rational emotive parent education programme to reduce emotional stress among 48 parents. The researchers observed that rational emotive behavioural-driven programme

is targeted to assist parents to identify, dispute, and decrease parental irrational beliefs associated with parental stress, low quality of family life and to teach parents how to adjust (Ede, et al, 2020a, 2020b; Joyce, 2006). Thus, within the context of this study, it is possible that low self-esteem, poor social recognition, and inferiority complex, among others, affect family value and quality of family life of parents of children with visual impairments. Using rational emotive family health therapy (REFHT) to help parents of children with visual impairment to cope with their low self-esteem, poor social recognition and inferiority complex appeared important.

The present study focused specifically on family values and quality of life among parents of children with visual impairment. To date, despite the empirical value of REBT in various psychosocial and health related cases, little or no existing studies have been conducted in Nigeria using the family health model of REBT to help parents experiencing low quality of family life and value due to the existence of visually impaired child in the family. Currently, we are not aware of a scientific psychological intervention that addressed problems of family values in Nigeria. The study aims to test the efficacy of a family health model of REBT in addressing family values and quality of life among parents of children with visual impairment in Enugu state, Nigeria. In this study, we hypothesised that family value and quality of life among parents of children with visual impairment will be significantly improved and maintained at follow-up using REFHT intervention.

Materials and Methods

Ethical Statement and Considerations

The research ethics committee of the authors' academic affiliation granted ethical approval for the study. The participants were informed that participation was completely voluntary. They were assured that their responses would be confidential and that every effort would be made to ensure that their responses would not be traced back to them. They were also informed that they could withdraw from the study at any time if they so wished. Hence, this research was conducted in accordance with the research principles of the American Psychological Association (APA).

Design

This study utilized a randomized controlled design. This permits randomization of participants into different groups. We also used it since past studies (Agboeze, et al., 2020; Ede et al. 2021; Onyishi et al., 2020; Ugwuanyi, et al., 2020b; Ugwuanyi, et al., 2020c) utilized it and significant results were achieved.

Participants

A total of 142 parents (i.e. fathers and mothers) of children with visual impairment in Enugu State Nigeria participated in this study. The power of the sample size was determined using GPower 3.1 software (Faul et al., 2007). The demographic information of the participants is presented in Table 3.

Measures

Family Value Scale (FVS) was adapted from Personal Value Scale (PVS) developed by Scott, (1965). The items in PVS were restructured to reflect the family situations as in past scientific study (Ogba et al., 2020). Also, we approached family as an individual that has specific value for the growth and development of members. PVS is a 60-item instrument that measures personal values in terms of emotions, self-worth, physical development, status, honesty, religiosity, self-control as well as independence (Scott, 1965). The 60-item scale contained 12 subscales with four to six items. Some of the items were restructured to align with family value, family relationship, and emotions. The PVS has three-point Likert options of (1) Always admire (2) Depends on Situation (3). Always Dislike. Some items in the scale were reversely scored. The Personal Values Scale has been identified to be valid and reliable when measuring issues related to two or more persons such as family issues (Braithwaite et al., 1991). The validity and reliability of the PVS has been established across cultures and countries such as United States of America, Asia Australia and Greece (Baik et al. 2019; Ribeiro Santiago et al., 2020). In addition to that, we established the reliability (Cronbach's $\alpha=0.81$) of the scale in this study.

Family quality of life scale (FQoLS) is designed to elicit information about the wellness of family (Beach Center on Disability, 2012). FQoL is a 25-item self-report measure that assesses family perceptions and their quality of life. The scale is subdivided into five subscales namely family interaction (6 items), parenting (6 items), emotional well-being (4 items), physical / material well-being (5 items) and disability-related support (4 items). It has five-point Likert options ranging from Very Dissatisfied (1) to Very Satisfied (5). The scale has been identified to be valid and reliable instrument to measure the effectiveness of pre-and post-test intervention, outcome measure for programmes and as a measure to both dependent and independent variable of a study (Beach Center on Disability, 2003; Hoffman et al., 2006; Summers et al., 2005). The internal consistency (Cronbach's α) ranges from 0.88 to 0.94. The validity and reliability of FQoL have proved its universal acceptability in many countries including Albania, Bahasa Malaysia, Cantonese, Australia, Brazil, Canada, Israel, India, South Africa, and the United States (Demirsoy & Sayligil, 2016).

Intervention

Rational emotive family health therapy (REFHT) (Ede et al., (2020a, 2020b) aimed to use the core assumptions of rational emotive behaviour therapy (REBT) to address the psychological and social related problem facing families of children

with disabilities. The REFHT manual is a therapeutic programme focused on exploring REBT approaches by using it to alter irrational beliefs associated with parental low quality of family life and value. The manual consisted of 12 sessions that lasted for 12 weeks with specific objective per session. It is a weekly programme, that is, a session per week and each session lasted for 60 min. The manual contained several techniques such as meditation and yoga, behavioural exercises (Ellis & Abrahms, 1978), relaxation techniques (Fried, 1990), and motivation interviewing and enhancing techniques.

Implementation of Treatment Integrity

The integrity check of the treatment was ascertained to ensure that all steps slated in the intervention manual were adequately implemented by the therapists. Two external supervisors who were parts of the team were delegated to monitor the implementation process of the treatment. The external supervisors recorded the time each session began and ended. Also, they took account of the number of participants that participated in each session to increase the compliance level. They monitored participants' responses to questions, how participants complied with home exercises, and how they asked questions.

Procedure

We visited the government approved special schools in Enugu state Nigeria to notify the headteachers about the study and obtain the approval from March to May 2019. During the visitations, we requested for the phone numbers and e-mail addresses of the parents of children with visual impairment. The 142 parents (i.e. fathers and mothers) of children with visual impairment in Enugu State Nigeria who responded to our invitation were invited via emails and phone calls and offline through posters and town criers. Town criers are a means of information dissemination. (a local means of publicity). The email and phone numbers were received from the schools where the children had been enrolled. Following the invitations, only 140 parents indicated interest to participate in the study. We considered certain inclusion criteria including (1) parents who lived with a visually impaired child for not less than one year, (2) showing and authenticating the email addresses of the parents, (3) possession of smart mobile phone, and (4) willingness to cooperate and abide by the regulation set out to guide the treatment procedure. However, participants who did not meet up with the stated criteria were excluded. In addition, parents were excluded based on the following reasons: (1) parents receiving treatment from a counseling psychologist, treatment from hospital, psychological health interventionist or psychiatrist. (2) Parents who had completed psychological and medical treatment within the last six months. The screening exercise barely lasted for two months, from May to June 2019. The eligible parents ($n = 132$) were asked to sign a consent letter indicating that they were ready to participate in the programme. Sequel to the inclusion conditions, the eligible parents completed screening tools such as Family Value

Scale (PVS) and Quality of Family Life Questionnaire (QoFLQ) to know the state of the condition (baseline data).

The eligible participants were randomly assigned to rational emotive family health programme (REFHP) group ($n=66$) and waitlist control group ($n=66$) by the researchers. The randomization process adopted a simple random allocation sequence, using Random Allocation Software developed by Saghaei (2004). In essence, we utilized numbered containers mechanism to implement the random allocation sequence. During the randomization, the researchers restricted participants by blocking to eliminate selection bias and to maintain concealment (Fig. 1).

The participants in REFHP-group were exposed to a 12-session treatment programme which aims to address the psychological and social related problem facing families of children with visual impairment. All assessments and treatments were conducted at Enugu state Nigeria by licensed mental health and rehabilitation counsellors, as well as licensed clinical psychologists. Session one focused on introduction, establishment of rapport, and explanation of the standard of conduct required throughout the

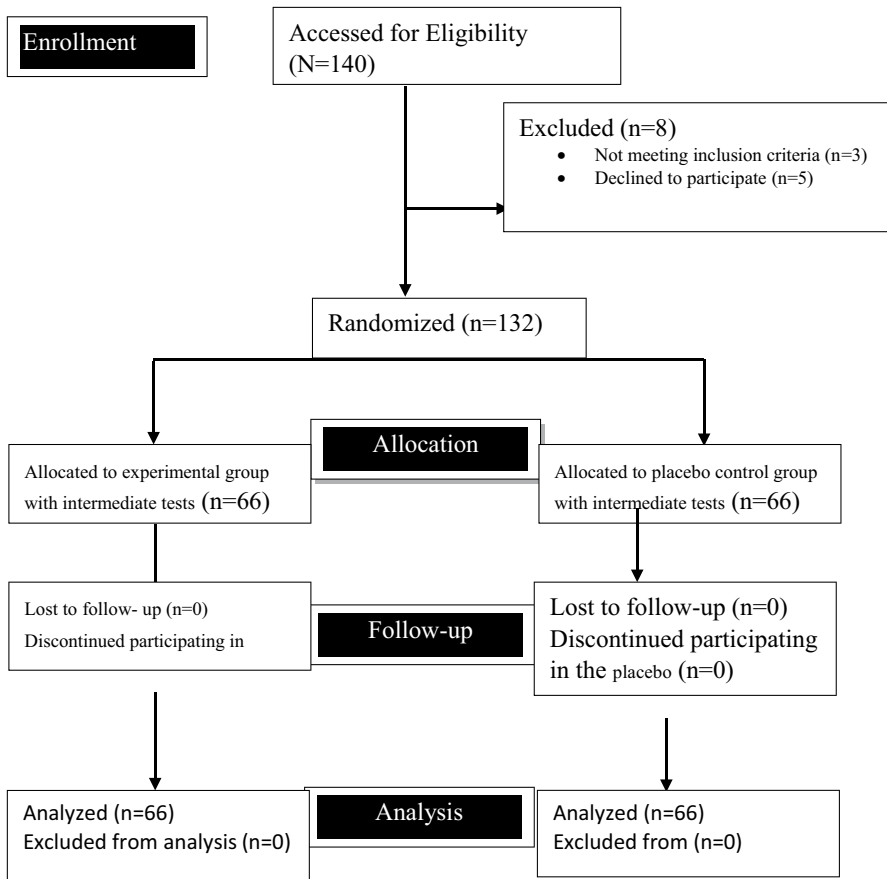


Fig. 1 Consort flow diagram for participants allocation

treatment. Sessions two to three addressed the meaning of visual impairment, family value and dynamics, and quality of family life. Sessions four to five focused on explaining the relationship among family value, quality of family life, and perception of children with visual impairment. During these sessions, participants were taught how the health condition of a child could cause maladaptive responses/behaviours. In session six, the focus was on how to identify negative family value system, poor self-esteem, and poor quality of life. The sessions also looked at how irrational perception of family belief system could enhance frustration, dysfunctional physiological and behavioural reactions. Session seven helped the participants to understand the meaning, focus, and core principles of rational emotive family health, associating the REFHT to family value and quality of family life, how to overcome situations related to negative self-esteem and poor quality of family life among parents of children with visual loss. During session eight, identification and clarification of irrational beliefs, dysfunctional emotional and negative attitudes in parents' care of children with visual loss that create negative family value and poor quality of life responses were addressed. Sessions nine to eleven focused on how to cope with and manage the irrational family beliefs and attitudes affecting quality of family life, how to reflect on reality, dispute faulty inferences and worthlessness, and how to challenge frustration, low self-esteem and inferiority complex associated with families of children with visual impairment. Session 12 focused on reviewing the assignment given to the participants and termination of the treatment. At the end of each session, revision, review of home exercise (completion of self-help form) were also covered. During the intervention, we recorded 100% compliance, probably because of little financial incentive given to individual participants per session. Hence, there was no record of dropouts throughout the study duration and no adverse effect of the treatment intervention was observed. After the treatment session, participants in both groups were evaluated at Time 2 by the researchers. This was to ascertain if there was improvement in their perception of family value and quality of family life. Immediately after the third month (on January 12, 2020), participants in the treatment group returned for follow-up programme which lasted for four weeks, with one meeting done per week. During this programme, the therapists utilized motivational enhancement, motivational interviewing, and other mechanisms to ascertain the coping level of the participants. Following the end of the follow-up activities, the participants in the treatment as well as those in the waitlisted control group were assessed at Time 3. This was a double blinded study, where the data analysts and participants were blinded to enhance concealment and control possible selection bias during the recruitment exercise and data analyses.

As we terminated the study and assessments, the participants assigned to the waitlist control group were reminded to assemble in the treatment venue. When they came, the researchers explained to them that due to emerging COVID-19 pandemic and in compliance to Nigerian government directives, that physical meetings would no longer be possible. Rather the waitlisted control group participants were engaged via WhatsApp platform afterward. Notably, the same Family health model of REBT-programme was

administered by the same therapists using carefully scheduled time slots, activities and techniques.

Data Analysis

The data from Time 1 (before treatment), Time 2 (after treatment) and Time 3 (follow-up) were subjected to statistical analysis using SPSS. Specifically, repeated measures analysis of variance (ANOVA) was used for data analysis. Repeated ANOVA was used by the researchers because: (1) the participants were completely randomized into two: treatment group and one control group; (2) the independent variable with two levels (Rational emotive family health therapy and the waitlisted control group) were categorical; (3) the dependent variables namely Family quality of life (FQoL), Family value measured with personal value scale (PV) were measured as continuous data; (4) Family quality of life and values data at Time 1, Time 2, and Time 3 were simultaneously analyzed as sub-dependent variables for each measure. Cohen's *d* value was used to report the effect size of the intervention on the dependent measure. The intervention had two levels (Rational emotive family health therapy and waitlisted control group), as such the researchers used Cohen's *d* to determine and report the effect size of the intervention on the dependent measures. The assumption of the sphericity of the test statistic was tested using the Mauchly test of sphericity which was not significant for family quality of life as measured FQoL (Mauchly $W=0.985$, $\chi^2=1.958$, $p=0.376$), and family value as measured with FVS (Mauchly $W=0.980$, $\chi^2=2.643$, $p=0.980$) see Tables 1 and 2. These results indicated that the hypotheses was not violated for both family quality of life as measured (FQoL) and family value as measured with PVS data respectively. Thus, the variances of the differences between all combinations of the related measures were equal.

Table 1 Mauchly's Test of Sphericity for Family quality of life (FQoL)

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig	Epsilon ^a		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Time	.985	1.958	2	.376	.985	1.000	.500

Table 2 Mauchly's Test of Sphericity for family value as measured with PVS

Within subjects effect	Mauchly's W	Approx. Chi-square	df	Sig	Epsilon ^a		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Time	.980	2.643	2	.267	.980	1.000	.500

Results

Table 3 shows that the intervention group comprised 30 males (45.5%) and 36 (54.5%) females, while the waitlisted control group comprised 31 males (47.0%) and 35(53.0%) females. From the analyses of results, it can be seen that no significant gender difference was observed among the study participants ($\chi^2=0.030, p=0.861$). Regarding religious affiliation, in the intervention group, 40 participants (60.6%) were of Christian religion, 16 (24.4%) were of Islam religion, 10 (15.2%) were of

Table 3 Demographic characteristics of the participants based on groups

	CBPT Group n (%)	Control group n (%)	Statistic χ^2	Sig
<i>Gender</i>				
Male	30 (45.5)	31 (47.0)	0.030	0.861
Female	36 (54.5)	35 (53.0)		
<i>Religious affiliation</i>				
Christianity	40 (60.6)	33 (60.0)	1.789	0.409
Islam	16 (24.2)	18 (27.3)		
Traditional	10 (15.2)	15 (22.7)		
<i>Years of experience</i>				
5yrs & below	18 (27.3)	20 (30.3)	0.344	0.842
6–10 yrs	26 (39.4)	27 (40.9)		
11yrs & above	22 (33.3)	19 (28.8)		
<i>State of origin</i>				
Enugu	16 (24.2)	14 (21.2)	0.781	0.978
Abia	6 (9.1)	9 (13.6)		
Benue	11 (16.7)	11 (16.7)		
Kogi	11 (16.7)	10 (15.2)		
Anambra	8 (12.1)	8 (12.1)		
Others	14 (21.2)	14 (21.2)		
<i>Educational qualification</i>				
Ph.D Degree	24 (36.4)	12 (18.2)	7.429	0.024
Master's Degree	27 (40.9)	27 (40.9)		
Bachelor Degree	15 (22.7)	27 (40.9)		
<i>Place of primary assignment</i>				
University	18 (27.3)	20 (30.3)	1.211	0.876
Ministry of works	10 (15.2)	10 (15.2)		
Security	10 (15.2)	6 (9.1)		
Bank	10 (15.2)	10 (15.2)		
Secondary school	18 (27.3)	20 (30.3)		
<i>Location of School</i>				
Urban	32 (48.5)	39 (59.1)		
Rural	34 (51.5)	27 (40.9)		

REFHT = Ratiomnal emotive family health therapy, n = number of participant, % = Percentage, χ^2 = Chi-square, sig = Associated probability

other religion. In the waitlist control group, 33 participants (50.0%) were Christians, 18 (27.3%) were Muslims, and 15 (22.7%) were of other religion. No significant difference in religious affiliation was observed among the participants ($\chi^2=1.789$, $p=0.409$). Concerning years of experience, in the intervention group, 18 participants (27.3%) had experience within five years and below, 26 (39.4%) were within 6–10 years, and 22 (33.3%) were within 11 years and above. In the waitlist control group, 20 participants (30.3%) had experience within five years and below, 27 (40.9%) were within 6–10 years, 19 (28.8%) were within eleven years and above. No significant difference in years of experience was observed among the participants ($\chi^2=0.344$, $p=0.842$). On state of origin, in the CBPT group, 16 participants (24.2%) were from Enugu state, six (9.1%) were from Abia state, eleven (16.7%) were from Benue, eleven (16.7%) were from Kogi, eight (12.1%) were from Anambra state and 14 (21.2%) were from other states. In the control group, 14 participants (21.2%) were from Enugu state, nine (13.6%) were from Abia state, eleven (16.7%) were from Benue, ten (15.2%) were from Kogi, eight (12.1%) were from Anambra state and 14 (21.2%) were from other states. No significant difference in state of origin was observed among the participants ($\chi^2=0.781$, $p=0.978$). Regarding educational qualification, in the REFHT group, 24 participants (36.4%) had Ph.D degree, 27 (40.9%) had Master's degree, and 15 (22.7%) had Bachelor's degree. In the control group, 12 participants (18.2%) had Ph.D degree, 27 (40.9%) had Masters' degree, and 27 (40.9%) had Bachelor's degree. Significant difference in educational qualification was observed among the participants ($\chi^2=7.429$, $p=0.024$). Regarding reasons for anxiety, in the intervention group, 18 participants (27.3%) had their place of primary assignment at the university, 10 (15.2%) had their place of primary assignment in the Ministry of Works, ten (15.2%) had their place of primary assignment in security, ten (15.2%) had their place of primary assignment in the bank, and 18 (27.3%) had their place of primary assignment in secondary school. In the control group, 20 participants (30.3%) had their place of primary assignment in the university, ten (15.2%) had their place of primary assignment in the Ministry of Works, six (9.1%) had their place of primary assignment in security, ten (15.5%) had their place of primary assignment in bank, and 20 (30.3%) had their place of primary assignment in secondary school. No significant difference in place of primary assignment was observed among the participants ($\chi^2=1.211$, $p=0.876$). Concerning location of school, in the Family health model of REBT group, 32 participants (48.5%) were from schools in urban area, whereas 34 (51.5%) were from schools in rural area. In the control group, 39 participants (59.1%) were from schools in urban area, and 27 (40.9%) were from schools in rural area. No significant difference in location of school was observed among the participants ($\chi^2=1.493$, $p=0.222$).

In Table 1, Epsilon (ϵ) = 1.000 > 0.75, Huynh–Feldt values were used in interpreting tests of within-subjects effects for the intervention groups was used. Thus, data revealed that there was a significant effect of intervention on participants' family quality of life scores as measured by FQoL, $F(1, 65) = 1801.885$, $p < 0.05$, $\eta_p^2 = 0.933$. This means that participants' family quality of life scores (FQoL) in the control group were significantly different at post-treatment and follow-up measures (Table 4).

Table 4 Demographic and psychological characteristics of each child with VI

	REFHT group n (%)	WC group n (%)	χ^2	Sig
<i>Gender</i>				
Male	24 (55.8)	22 (55.0)	0.006	0.941
Female	19 (44.2)	18 (45.0)		
<i>Age</i>				
4–7 years	12 (27.9)	14 (35.0)	0.536	0.911
8–10 years	10 (23.3)	9 (22.5)		
11–14 years	14 (32.6)	11 (27.5)		
15–18 years	7 (16.2)	6 (15.0)		
Overall Mean Age/SD	9.99 (4.11)		t	
Group Mean Age/SD	10.28 (4.10)	9.67 (4.15)	0.667	0.507
<i>Duration of VI</i>				
0–2	15 (34.9)	10 (25.0)	3.033	0.387
3–5	13 (30.2)	11 (27.5)		
6–8	11 (25.6)	10 (25.0)		
9–11	4 (9.3)	9 (22.0)		
<i>Severity of VI</i>				
Mild	18 (44.9)	15 (37.5)	0.245	0.885
Moderate	12 (27.9)	13 (32.5)		
severe	13 (30.2)	12 (30.0)		
<i>Length of time Children have lived with VI</i>				
Newly Onset	19 (44.2)	22 (55.0)	0.969	0.325
Long time condition	24 (55.8)	18 (45.0)		
<i>Child relationship with parent</i>				
Father and mother	23 (57.5)	23 (57.5)	0.075	0.963
Single parent	11 (25.6)	11 (27.5)		
Guardian	6 (14.0)	6 (15.0)		

REFHT = Rational emotive family health therapy, n = number of participant, % = Percentage, SD = standard deviation, t = Independent sample t-test, χ^2 = Chi-square, sig = Associated probability

In Table 2, Epsilon (ϵ) = 1.000 > 0.75, Huynh–Feldt values were used in interpreting tests of within-subjects effects for the intervention groups was used (Table 5). Thus, data revealed that there was a significant effect of intervention on participants' family value scores as measured by FVS, $F(1, 65) = 190.331.553$, $p < 0.05$, $\eta_p^2 = 0.949$. This means that participants' family value scores (LSAS) in the control group were significantly different at post-treatment and follow-up measures. Further analyses were conducted and presented in Tables 6, 7 and 8.

Table 6 reveals the study outcomes for the participants in the treatment group (Family health model of REBT) compared to the waitlisted control group (WCG) over the three periods. Before the treatment, the result in Table 6 showed that there was no significant difference between the treatments and waitlisted control groups at initial evaluation (Time 1) family quality of life of participants who had

Table 5 Tests of within-subjects effects for the intervention group for (FQoL)

Source		Type III sum of squares	df	Mean square	F	Sig	Partial Eta squared
Time	Sphericity assumed	184,141.823	2	92,070.912	1801.885	.000	.933
	Greenhouse–Geisser	184,141.823	1.970	93,457.771	1801.885	.000	.933
	Huynh–Feldt	184,141.823	2.000	92,070.912	1801.885	.000	.933
	Lower-bound	184,141.823	1.000	184,141.823	1801.885	.000	.933
Time * Groups	Sphericity Assumed	4180.288	2	2090.144	40.905	.000	.239
	Greenhouse–Geisser	4180.288	1.970	2121.628	40.905	.000	.239
	Huynh–Feldt	4180.288	2.000	2090.144	40.905	.000	.239
	Lower-bound	4180.288	1.000	4180.288	40.905	.000	.239
Error(Time)	Sphericity Assumed	13,285.222	260	51.097			
	Greenhouse–Geisser	13,285.222	256.142	51.867			
	Huynh–Feldt	13,285.222	260.000	51.097			
	Lower-bound	13,285.222	130.000	102.194			

Table 6 Tests of within-subjects effects for the intervention group for (PV)

Source		Type III Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Time	Sphericity Assumed	380,662.581	2	190,331.290	2400.888	.000	.949
	Greenhouse–Geisser	380,662.581	1.960	194,190.515	2400.888	.000	.949
	Huynh–Feldt	380,662.581	2.000	190,331.290	2400.888	.000	.949
	Lower-bound	380,662.581	1.000	380,662.581	2400.888	.000	.949
Time * Groups	Sphericity Assumed	6451.823	2	3225.912	40.692	.000	.238
	Greenhouse–Geisser	6451.823	1.960	3291.321	40.692	.000	.238
	Huynh–Feldt	6451.823	2.000	3225.912	40.692	.000	.238
	Lower-bound	6451.823	1.000	6451.823	40.692	.000	.238
Error(Time)	Sphericity Assumed	20,611.596	260	79.275			
	Greenhouse–Geisser	20,611.596	254.833	80.883			
	Huynh–Feldt	20,611.596	260.000	79.275			
	Lower-bound	20,611.596	130.000	158.551			

Table 7 Repeated analysis of variance for the effect of rational emotive family health therapy on family values and quality of family life among parents of children with visual impairment

Measures	Time	Group	Mean(SD)	F	p	d	ΔR ²	95%CI
<i>FQoL</i>								
	Time 1	REFHT	52.47(6.55)	0.916	0.181	0.185	0.003	51.99–54.17
		Control	53.59(6.06)					
	Time 2	REFHT	83.97(7.21)	104.205	0.000	1.594	0.476	75.32–78.09
		Control	69.38(9.30)					
	Time 3	REFHT	110.23(7.77)	48.667	0.000	1.205	0.279	104.39–106.93
		Control	101.29(7.05)					
<i>FVS</i>								
	Time 1	REFHT	71.82(9.25)	0.906	0.343	0.162	0.007	70.78–74.29
		Control	73.48(11.11)					
	Time 2	REFHT	127.98(10.04)	32.686	0.000	0.917	0.323	121.87–125.12
		Control	118.44(10.75)					
	Time 3	REFHT	156.03(7.33)	34.445	0.000	1.679	0.614	145.94–148.65
		Control	137.98(10.21)					

FQoL=family quality of life, *FV*=family value Scale, *Mean (SD)*=Mean (Standard Deviation), *p*=probability value, *d*=Cohen’s d (effect size)

Table 8 Post hoc test for the significant effect of time based on observed means difference using Bonferroni’s pairwise comparisons for FQoL

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig
Time 1	Time 2	-23.644*	.839	.000
	Time 3	-52.727*	.869	.000
Time 2	Time 1	23.644*	.839	.000
	Time 3	-29.083*	.930	.000
Time 3	Time 1	52.727*	.869	.000
	Time 2	29.083*	.930	.000

*. The mean difference is significant at the .05 level

children with visual impairment as measured by FQoL, $F(1, 65)=0.916, p=0.181, d=0.185$. At the post-treatment level (Time 2), intervention had a significant effect on family quality of life of participants who had children with visual impairment as measured by FQoL, $F(1, 65)=104.25, p=0.000, d=0.594$. After the post-treatment, a follow-up (Time 3) result still showed that intervention had a significant effect on family quality of life of participants who had children with visual impairment as measured by FQoL, $F(1, 65)=48.669, p=0.000, d=1.205$. The effect size of the independent variable at Time 2 for the dependent measure (FQoL) was 0.594. This value indicates that treatment variable accounted for moderate effect in increasing family quality of life scores of participants who had children with visual impairment.

Table 6 also shows that there was no significant difference among the treatments and control groups at initial assessment (Time 1) family life of participants

Table 9 Post hoc test for the significant effect of time based on observed means difference using Bonferroni's pairwise comparisons for PV

(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig
Time 1	Time 2	-50.561*	1.090	.000
	Time 3	-74.356*	1.164	.000
Time 2	Time 1	50.561*	1.090	.000
	Time 3	-23.795*	1.030	.000
Time 3	Time 1	74.356*	1.164	.000
	Time 2	23.795*	1.030	.000

*The mean difference is significant at the .05 level

who had children with visual impairment as measured by FVS before the treatment, $F(1, 65) = 0.906$, $p = 0.343$, $d = 0.162$. At the post-treatment level (Time 2), intervention had a significant effect on participants' family life of participants who had children with visual impairment as measured by FVS, $F(1, 65) = 32.680$, $p = 0.000$, $d = 0.917$; and after the post-treatment, a follow-up (Time 3) result still shows that intervention had a significant effect on family life of participants who had children with visual impairment as measured by FVS, $F(1, 65) = 34.445$, $p = 0.000$, $d = 1.679$. The effect size of the independent variable at Time 2 for the dependent measure (FVS) was 0.917. This value indicates that treatment variable accounted for moderate effect in increasing family scores of participants who had children with visual impairment as measured by FVS.

Table 7 gives us the level of significance for differences between the individual time points. It shows that there were significant differences in the family quality of life scores of participants who had children with visual impairment as measured by FQoL between post-treatment and pre-treatment ($\bar{X}_{\text{diff}} = 23.644$, $p = 0.000$), post-treatment and follow-up ($\bar{X}_{\text{diff}} = 29.083$, $p = 0.000$) and between pre-treatment and follow-up ($\bar{X}_{\text{diff}} = 52.727$, $p = 0.000$). This result equally indicates that the family quality of life scores of participants who had children with visual impairment as measured by FQoL increased after the Family health model of REBT-programme.

Table 8 gives us the level of significance for differences between the individual time points. It shows that there were significant differences in the family life scores of participants who had children with visual impairment as measured by PV between post-treatment and pre-treatment ($\bar{X}_{\text{diff}} = 50.561$, $p = 0.000$), post-treatment and follow-up ($\bar{X}_{\text{diff}} = 23.795$, $p = 0.000$) and between pre-treatment and follow-up ($\bar{X}_{\text{diff}} = 74.356$, $p = 0.000$). This result equally indicates that the family life scores of participants who had children with visual impairment as measured by FQoL increased after the Family health model of REBT-programme. The mean difference in the increase of family life is outstanding at all levels of comparison (Table 9).

Discussion

We examined the effect of rational emotive family health therapy on family values and quality of family life among parents of children with visual impairment in Enugu state, Nigeria. It was found that rational emotive family health therapy had a significant positive effect on increasing family values and quality of family life among the study participants in the rational emotive family health therapy group compared to those in the waitlisted control group. The considerable long-term improvement on family values and quality of family life observed among parents of children with visual impairment was attributed to rational emotive family health therapy intervention. The psychological outcomes of this study support Ede et al., (2020a, 2020b) who found that the rational emotive family health therapy is useful in reducing parenting stress among parents of children with autism spectrum disorders. By indication, rational-emotive interventions could be utilized in reducing psychological/nonclinical problems among parents of children with disability, especially if the problem is associated with irrationality and dysfunctionality. Psychological problem such as stress has been previously associated with quality of life (Pisula & Porębowicz-Dörsmann, 2017).

More so, the present findings equally align with previous studies which indicate the effectiveness of psychological treatments in improving the wellbeing of parents of children with disabilities (e.g. Greaves, 1997; Weiss et al., 2015). Like the outcome of this study, a past study reported a significant increase of psychological intervention in improving family value and quality of family life at long period of time (Mitchell, et al., 2012). Our finding also supports Onyechi, et al (2016) who conclude that cognitive-behavioural intervention is effective and a powerful creative coping strategy for cancer patients and their family caregivers.

Like the result of the present study, rational emotive behavioural-driven programme is effective in decreasing irrational parental beliefs associated with severe parenting stress and to teach parents how to cope with stress (Joyce, 1995). Similarly, evidence has shown the strengths of REBT in helping family caregivers to alter irrational beliefs (Obiweluozo et al. 2021; Onyechi et al., 2016). This is more so given the challenges parents are facing during parenting (Biktagirova & Valeeva, 2016), as some of them are in a difficult position leading them to erroneous beliefs. Evidence has reported that children of such families are so complex to parent (Ovcharova, 2010). Raising such special needs children requires both psychological supports like we exemplified in this study. Therefore, Family health model of REBT could improve parents' public life as well as contribute to the protection of family value and lifestyle related to disadvantaged position of the child with visual impairment.

In line with the finding, previous empirical reports have shown a lot of promising and considerable positive impacts of rational emotive behavioural approaches in improving quality of family life among parents of children with visual impairment (Greaves, 1997; Weiss et al., 2015). This was also shown in a study conducted by Cobham et al (1998) that REBT- based approaches reduce the psychological symptoms of parents of children with disability. In essence, if parents have specific

unrealistic perceptions and value about the development of their children with disabilities could affect the social skills of their child (Als et al., 1980). This study has systematically evidenced the fact that Family health model of REBT is useful for such parents. More so, cognitive approach is considered highly effective in sustaining family healthiness and life satisfaction (Anclair et al., 2016). The result of the psychological intervention for parents of children with chronic conditions focus on health-related quality of life; and life satisfaction justifies the efficacy of rational behavioural approach (Anclair et al., 2016). In a related study, Malhotra et al (2012) indicated that the existence of a child with disability negatively affects family relationship and wellness. Such negative attitudes and perceptions could be resolved using a well-promising cognitive behavioural treatment (Abiogu et al., 2020a, 2020b, c; Agah et al 2020; Agah et al., 2021; Ugwuanyi, et al., 2020a, 2020b, 2020c) like family health-model of REBT among family members to enable them to live up to expectation.

This study adds to the body of work dealing with how parents of children with visual impairment mostly find it difficult to interpret their wellness. This could be as a result of psychological depression. Thus, a sound and well packaged therapy like exemplified in the present study could be employed to help those parents to adjust. Equally, in a study conducted by Ma et al, (2019), psycho intervention approach is found to be effective in decreasing misconceptions among people diagnosed with varied illnesses and their families. Hence, erroneous thought by parents concerning disability in the family could negatively affect the family's level of income, impair proper functioning, and increases their suffering (Galletly et al., 2016). Thus, Family health model of REBT could relieve such family of this suffering and enable them to function maximally. Given the significant impact of evidence-based psychological treatment among populations with visual impairment (Utoyo, 2015), Taylor and Renee (2006) validate the richness of rational behavioural therapy in decreasing wrong notions associated with chronic illness and disability. However, caregivers who have not been exposed to cognitive therapy could negatively interpret guilts, shame and express sadness (Reichman et al., 2008). When this happens, Family health model of REBT could be carefully employed to alter the negative and irrational self-thought capable of devaluing family worth, increase family value and quality of family life. Consequently, poor quality of family life originates from irrational thought pattern of parents (Anclair et al., 2009; Whalen et. al. 2011). If a child in a family is disabled and parents negatively interpret the situation, from the REBT principle, family value and quality of family life will automatically be affected (Epstein et al., 2005). In line with this, items contained in the quality of life scale instrument we used indicated that family value and poor quality of family life is associated with parental irrational thought pattern.

Finally, Family health model of REBT is an active evidence-based therapy aimed at altering irrational beliefs associated with parental value and poor quality of life among parents of children with visual impairment (Ede et al., 2020a, 2020b). In line with our findings, Anclair et al (2009) validated the efficacy of REBT after treatment programme on health-related quality of family life. Ede et al., (2020a, 2020b) attest to the effectiveness of Family health model of REBT in reducing the stress of families with disabilities. To this end, Family health model of REBT is recommended to

future researchers as a useful intervention for cushioning the irrational thought and belief of caregivers which often lead to decrease in family value and poor quality of family life. From our findings, Family health model of REBT can be used to train caregivers on how to overcome their life challenges associated with poor quality of life.

Implications

The effectiveness of Family health model of REBT in improving family worth could be useful for family counselors, marriage course instructors, religious leaders and teachers who provide both religious and social services to both families with disabilities and normal growing children. REFH-Therapists should be committed to alter and modify rigid and unrealistic beliefs and improve parents' perceptions about their children who are living with visual impairment. Again, since this approach targeted the health of the parents, it is therefore imperative for national and local health policy to strengthen the need for effective therapeutic interventions, which can foster awareness and improve the quality of life through the application of evidence-based rational-emotive family health therapy. Similarly, mental health professionals with basic knowledge in rational emotive behavioural therapy must address the mental health needs of parents of children with visual impairment as a necessary prerequisite for improving the overall wellness and quality of family life of such parents and members of their families (Jellett et al., 2015). If family mental healthiness is maintained, family value and potential quality of family life will be sustained in the long run (Catalano et al., 2018). Hence, to actualize this, systematic family-oriented intervention is needed (Ooi et al., 2016). Also, there should be an allied-health professional team where rational emotive behavioural experts will collaborate with similar professionals to provide mental health support to parents of children with visual impairment who experience constant negative triggers from family value and poor quality of life.

Future work by rational emotive behavioural therapists could further examine the societal implications of poor negative value and quality of family life among growing youths in the family using Family health model of REBT. If situation involving family value and poor quality of family life are not properly addressed, family members may likely continue to indulge in social withdrawal, social vices, acrimony and rancor which could ultimately lead to stress as well as suicide ideation (Catalano et al., 2018; Stein & Kean, 2000). Finally, this study was carried out only in Enugu state, Nigeria, and in view of this, we recommend that to the Family health model of REBT programme be rolled out to more diverse and geographically spread families by future interventions.

Conclusion and Limitations

The findings of this study suggest that Family health model of REBT is highly therapeutic in improving family value and quality of family life among parents of children with visual impairment. The results have validated the efficacy of Family health model of REBT -principles in improving the mental health of parents of special populations. In essence, the outcome of the study has justified the rationale for implementation of Family health model of REBT in family life. Hence, this study seems to be the first to assess how family values and quality of life could be improved using family health model of REBT. The outcome may be useful to encourage health specialists, family counsellors, and other helping professionals to include rational emotive family health strategies in the issues related to family settings in order to mitigate the harmful effects of negative family values and poor quality of life of family members. The psychological intervention, study design, methods and post-treatment trials attest to significant differences in parental wellness among the families of children with disabilities exposed to Family health model of REBT compared to families in the waitlisted control group. In addition, the study's sample size did not in any could affect the study; this is in line with the assumptions that cognitive therapy is not affected by small sample size. Rather, what is important is the therapist's expertise in the therapeutic relationship (Agah et al., 2020, 2021). Furthermore, the participation and involvement of mothers and fathers in this study signals one of the study's biggest strengths, considering that earlier studies had mostly used mothers of children with disabilities, while neglecting potential moderating roles of the other parent. Besides, the use of blocking and double blinded concealment in reducing threats to internal validity as well as prevention of bias is an additional strength.

Despite the notable contributions to knowledge of this study, the results are to be interpreted with caution. Firstly, the study failed to establish relationship among irrational beliefs of parents of children with visual impairment, family value and quality of family life. Hence, the absence of secondary outcome that would have been ascertained using irrational and rational belief scale could be seen as flaw in this study. Based on this, irrational beliefs were not measured and targeted during data analysis. Secondly, while limiting inclusion to people with substantial email addresses and those with possession of smart mobile phones without, we did not consider some areas with poor network connection which possibly affected their inability to respond to us. Future researchers can investigate further on the effect of rational emotive family health therapy on family values and quality of family life among parents of children with visual impairment in Nigeria and in sub-Saharan African countries.

Declarations

Conflict of interest The authors declare that there is no conflict of interest in terms of authorship and funding of this research.

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Authors and Affiliations

Moses Onyemaechi Ede¹ · Chinedu Ifedi Okeke² · Ngozi H. Chinweuba³ · Sebastian Okechukwu Onah⁴ · Glory M. Nwakpadolu⁵

¹ A Postdoctoral Fellow, School of Education Studies, University of The Free State, Bloemfontein, South Africa

² Head/Host, School of Education Studies, University of The Free State, Bloemfontein, South Africa

³ Department of Educational Foundations, University of Nigeria, Nsukka, Nigeria

⁴ Department of Sociology and Anthropology, University of Nigeria, Nsukka, Nigeria

⁵ Department of Agricultural/Home Science Education, Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria