Effects of rational emotive psychotherapy consort on business education students’ perception about image of technical vocational education and training in South-East Nigeria

Ernest O. Ugwoke, PhDa, Nathaniel Ifeanyi Edede, MEda,∗, Ekahe F. Abanyam, PhDb, Roseline N. Azubuike, PhDc, Solomon U. Agbo, PhDd, Maureen Anayo Madu, PhDd, Augustine NaboOdhums, MABEN, PhDe, Philo Akaeeze, Fredric C. Onah, PhDf, Ogechukwu Onah, PhDf, Evelyn A. Isiwu, MEdg, Babalulu M. Madusaba, MEdg, Emmanuel Nwangwu, PhDg, Dorcas Kuranen-Joko, MEdg, Felicia N. Ezeebuio, Phdeg

Abstract

Background: We determined the effects of rational-emotive psychotherapy on the perception of Business Education Students about TVET Image. Negative perception about TVET by youths, parents and the society has made TVET programs unattractive, uninteresting, less productive and by extension created an unhealthy organizational climate. Improving participants’ perception will assist them to mitigate the effect of irrational beliefs, emotional distress, strengthening their psychosocial wellbeing and occupational health.

Method: This study adopted a pre-test–post-test control group design. Data were collected from 568 participants comprising 104, 137, and 333 from nine federal, state and private owned universities in South-East Nigeria.

Results: The result showed that rational-emotive psychotherapy significantly improved the emotional distress, perceptions of TVET image and positively addressed the organizational climate among participants in the intervention group compared to the participants in the waitlist group. The result also revealed that occupational risk management practices of the participants in the intervention group improved significantly more than those in the waitlist group. From the result, we conclude that TVET institutions can apply the REBT model as an intervention program for improving the perceptions of stakeholders about TVET image in order to increase students’ interest, boost their self-confidence, self-esteem, and zeal for TVET practices.

Conclusion: It was concluded that the REBT-oriented therapy helped to improve the emotional distress, irrational beliefs, and poor perception of the Business Education Students who perceived TVET programs as an inferior and low-esteemed profession.

Abbreviations: ANOVA = analysis of variance, ORMS = Occupational Risks Management Scale, POTVETI = Perceptions of TVET Image, REBT = Rational Emotive Behavior Therapy, TVET = Technical Vocational Education and Training.

Keywords: organizational climate, perceptions, rational-emotive psychotherapy, REBT, TVET image

1. Introduction

Technical vocational education and training (TVET) is a tool for acquiring lifelong employable skills needed in today’s world of work for economic and technological growth of nations.[1,2] TVET is designed to provide individuals the opportunity to improve their general proficiency, particularly in their present and future occupations.[3] It is evident in literature that the developed countries like the USA, China, Japan, and Germany...
attained their economic height in area of industrialization because of their consistent investment in TVET programs.\textsuperscript{[4,5]} The objective of TVET is to assist government in any country to provide employable skills, vocations, science, and technology to meet the country’s present and future socioeconomic needs.\textsuperscript{[6]} Unfortunately, the poor image attributed to TVET by the society in some countries has affected its desire and demand. For instance, in Nigeria, there are evidence in literature that most youths and parents perceive TVET as a second option program for the weak learners (i.e., education for the drop-outs), and as such, most parents do not prefer their children to enroll in TVET programs such as Agricultural Education, Business Education, Industrial Technical Education, and Home Economics Education.\textsuperscript{[7]} Some reports have proved that the main determinants of the poor perceptions of TVET include persistent social stigma attached to TVET programs as a second rate-learning option, poor linkage with industries, and education for the craft folks and artisans.\textsuperscript{[8,9]} The poor image of TVET has in no small measure affected the viability, productivity, and general investment of government in TVET programs.\textsuperscript{[9]}

The low image of TVET has resulted to low students’ enrollment in TVET programs, general apathy by industries to employ TVET graduates, shortage of skilled workers to meet the needs of communities, industries, and the society at large.\textsuperscript{[10]} This by extension has led to high unemployment of the few graduates of TVET, including Business Education graduates, and has brought discouragement to those who would have enrolled into the program in Nigeria and other like-minded countries.\textsuperscript{[11]} Consequently, this scenario has resulted to traumatic depression and emotional distress on TVET students who now perceive that the choice of their career was a wrong one.\textsuperscript{[12]} Such students lack intrinsic motivation to pursue their career.\textsuperscript{[12]} Again, so many of the students due to their low perception of their career and negative organizational climate have resorted to temporary satisfaction by drinking excessive alcohol, engaging in rape, and some attempt committing suicide.\textsuperscript{[9,13]} Parents are frustrated and distressed at seeing their sons and daughters turn to crimes.\textsuperscript{[13,14]}

There is an increasing body of literature emphasizing that adverse effects on emotional distress affects the quality of life that people live.\textsuperscript{[15]} People who experience emotional distress over their career and life suffer severe psychological effects such as anxiety, cardiac activity, perspiration, poor cognitive processes, depression, interpersonal problems, hypertension, adverse muscle tension, and reduction in immune system.\textsuperscript{[16]} All these affect one’s concentration and impair mental creativity, thus resulting to low performance of the students. In addition, there is evidence in literature that people with poor image and low self-esteem often resent their jobs.\textsuperscript{[17,18]} Mental and emotional distress resulting from poor self-image has led to 50% of the TVET enrolled students leaving the TVET program to other programs they considered as more reputable and boom professions.\textsuperscript{[19,20]} A study conducted in England on workers stress levels showed that 83% of the participants suffering from job-related stress; 67% of them revealed that their mental and physical health were adversely affected because of their perception of their job; about 3000 representing half of the participants surveyed affirmed that they consulted doctors due to job-related mental health distress. Out of them, about 5% were hospitalized, while 2% reported to have had self-harm.\textsuperscript{[21]}

There is agreement among the behavioral schools of thought that people who suffer low image develop irrational behaviors.\textsuperscript{[13]} Several authors have noted that students experiencing irrational beliefs often exhibit negative behavioral responses such as withdrawal, aggression, impulsivity, and poor emotional and academic resilience.\textsuperscript{[13]} Irrational belief as it applies to this study refers to the self-defeating thoughts, illogical thinking which TVET students hold concerning their career and life. It includes thoughts such as: “I am a low achiever and cannot make it because of my wrong choice of profession; I must be loved and receive approval from other persons around me and from persons in other professions; It is very awful when things in my career are not working the way I would really have them work for me.” Several authors have pointed out that when such self-defeating thoughts are internalized, it breeds emotional disturbance and trauma on its victims.\textsuperscript{[23]}

Several theories have been propounded about peoples’ self-image, low self-esteem, organizational image, and their effects on productivity and life success.\textsuperscript{[24–26]} Take for instance, Korman\textsuperscript{[24]} hypothesized that if all things being equal, most people will engage in career that are consistent with their self-cognition. According to Korman, individuals will often be motivated to perform jobs in a way that is consistent with their self-image. Similarly, Dipboye\textsuperscript{[25]} in self-enhancement theory noted that low self-esteem people experience inferiority complex, lack confidence about their ability to succeed in career and life, develop emotional distress, irrational beliefs, and may end up as failures in career and life.

Although different interventions such as on-the-job training, formal and nonformal types of learning arrangements and sensitization campaigns have been conducted in the past to improve the perception about the image of TVET and improve students’ distress, yet, those interventions achieved very small effects.\textsuperscript{[27]} For instance, the Nigeria government through the National Youth Service Corps (NYSC) commission has mandated all the NYSC candidates to participate in at least one TVET trade such as merchandizing, accounting and book-keeping, salesmanship, fishery, food and nutrition, clothing and textile, as well as mechanical trades during the 1-year compulsory national service.\textsuperscript{[28]} Unfortunately, most of the youths inactively participate in such programs despite their huge potentials for national economic development.\textsuperscript{[20,27]}

Rational-emotive behavior therapy (REBT) was developed by Albert Ellis as a behavioral intervention that helps people to change their thinking patterns, change long-held negative life philosophy, and gain healthy emotion.\textsuperscript{[29,30]} Ellis\textsuperscript{[29]} noted that REBT and its applications has inclination to theoretical hypotheses on the way peoples’ emotional-behaviors function and how such pattern of behaviors can be altered. REBT is considered appropriate for this study because it could assist TVET students with emotional distress over their career and life. It could aid them in disputing the various dysfunctional beliefs.\textsuperscript{[29]} According to David,\textsuperscript{[31]} REBT focuses on 2 forms of cognition, namely, rational and irrational beliefs. Rational beliefs result in emotions that assist people to achieve their lifetime goals and gain satisfaction in their job.\textsuperscript{[32]} On the contrary, irrational beliefs are harmonious with the peoples’ behavior, which is often reflected in their attitude but can be corrected using psychotherapeutic intervention.\textsuperscript{[33]} There are evidences in literature supporting that psychotherapeutic intervention can improve organizational climate.\textsuperscript{[34,35]}

Organizational climate is a set of measurable properties of the perceived work environment, directly or indirectly, created by persons who live and work in the environment and influences the level of motivation and behavior of the people in the work.
environment. The organizational climate influences productivity, motivation, behavior, and lifestyle of employees and other stakeholders either positively or negatively. Several studies have been conducted on the effects of REBT on organizational climate. Take for instance, Ogbuanya et al. conducted a study to determine the effects of REBT on electronics technology workers’ perceptions of organizational climate and found that the REBT intervention significantly improved the perceptions of the treatment groups on the organizational climate as against the control group. Similarly, Bank conducted a study on the REBT treatment groups on the organizational climate as against the control group. Similarly, Bank conducted a study on the REBT treatment groups on the organizational climate as against the control group.

2. Method

2.1. Ethical approval

This study is guided by the Ethical Principles of Psychologists and Code of Conduct of the American Psychological Association. An approval for the study was obtained from the Faculty of Vocational and Technical Education, University of Nigeria, Nsukka (No: VTE/FEA/0036).

2.2. Design of the Study

The design of the study is randomized pre-test–post-test control group design. The participants were randomly assigned to treatment and waitlist groups. Randomized Pretest-Posttest Control Group Design is considered appropriate in this study because it helps researchers with a means of seeing whether the two study groups are really similar and equivalent. 2

2.2.1. Participants. The participants were 581 Business Education students from 9 universities in Southeast of Nigeria (see Fig. 1). The participants’ demographic characteristics are presented in Table 1. The sample of the study was determined based on a statistical power of 0.93. For the experimental groups, the following input parameters were used: 2 Tails, Effect size d = .63, α err prob = .05, Power (1-β err prob) = 0.95 and Allocation ratio N2/N1 = 1. The statistical tests include (test family – t test, Mean – Difference between 2 independent means (2 groups), Noncentrality parameter δ = 3.6463886, Critical t = 1.9780988, Df = 132, Sample size group 1 = 67, Sample size group 2 = 67, Total sample size = 134 and Actual power = 0.9515195. For the control groups, we used Effect size d = .77, α err prob = .05, Power (1-β err prob) = 0.95 and Allocation ratio N2/N1 = 1. The statistical tests include Noncentrality parameter δ = 3.6324307, Critical t = 1.9872899, Df = 88, Sample size group 1 = 45, Sample size group 2 = 45, Total sample size = 90 and Actual power = 0.9507657 (see Fig. 1). On the basis of the statistical analysis, it was established that 134 and 90 participants for experimental and control groups, respectively, will be sufficient to have the required power to carry the study.

2.3. Measures

Two sets of questionnaires (PTIBQ and ORMS) were used to gather data for the study.

2.3.1. Perceptions of TVET image and irrational beliefs questionnaire (PTIBQ). The PTIBQ is a 33-item questionnaire adapted from Strength-Based Model for counseling youths at-risk by Sapp and Bernard’s Teachers’ Stress Scale by Bernard. The PTIBQ as a self-reporting questionnaire elicited information on how the participants perceived the image of TVET both in their institution and outside as well as the emotional stress they suffer in relation to their career choice. It also includes other factors such as the parental and societal attitudes. Cronbach Alpha reliability method was used to determine the reliability of PTIBQ and a high index of .82 was obtained.

2.3.2. Occupational risks management scale (ORMS). The ORMS was developed by the researchers in line with occupational risk scale propounded by Wecht. British Standard Institutions and Antonucci et al. The instrument was a 56-item questionnaire. The overall reliability coefficient for ORMS is .84α, and .88α for the first and second sub-scales, respectively.

Both PTIBQ and ORMS were face validated by 5 experts, one each from the Departments of Business Education, Industrial and Technical Education, and Agricultural Education, University of Nigeria, Nsukka, while 2 were Psychotherapists from the University of Nigeria Teaching Hospital and Enugu State.

2.3.3. Rational-emotive-behavior-therapy manual (REBTM). The REBTM manual was developed by the researchers and it contained the intervention processes, contents, activities, and duration. The manual was adapted in line with the following scales: REBT Mnemonics by Ellis and Harper, Anxiety...
Disorders and Phobias scale by Beck and Emery, Depression and Panic Scale by Barlow and Cerny; Clark and Salkovskis. Efforts were made to incorporate major quotes by Albert Ellis into CR-REBT manual.

2.4. Procedure
We surveyed 644 Business Education students from nine universities in South-East Nigeria to elicit for eligible participants using 2 sets of self-reporting questionnaires [(Perceptions of TVET Image and Irrational Beliefs Questionnaire (PTIBQ), and Occupational risks management scale (ORMS)]. The recruitment process lasted for 2 months with the help of 5 research assistants. Out of the 644 Business Education students, 581 of them showed high level of emotional distress, high irrational beliefs, and depressions related to the poor image of TVET and perceived wrong career choice. To obtain the baseline data, we conducted a pretest (Time 1) on the participants prior the REBT intervention.
program. Other inclusion criteria benchmarks include availability and willingness to participate, willingness to participate in a sensitization exercise at the TVET secondary schools in the study areas, being a fully admitted student of the TVET institutions studied and must have active email address. Exclusion criteria were based on an individual’s failure to meet any of the inclusion benchmark.

Afterwards, the participants who met the eligibility criteria were randomly assigned to one of the two groups: (TG or WCG) (see Fig. 1). We used simple randomization by giving the participants equal opportunity to pick labeled papers with either of the following inscriptions: “TG” or “WCG.” The randomization process produced a total of 286 for the TG and 295 for the WCG. We eliminated selection bias during participants’ recruitment and randomization by concealing the allocation sequence and assignment from the research assistants and the participants. To reduce the risk of potential bias, we blinded the data analyst and assignment from the research assistants and the participants. The randomization by concealing the allocation sequence and assignment from the research assistants and the participants.

The REBT intervention was applied to the TG only by the researchers and 22 trained REBT practitioners, psychotherapists and psychologists using face-to-face meetings.52 The group meetings held twice a week for 8 consecutive months (April to November) with each session lasting for 2 hours. To ensure regular attendance to the meetings and to sustain participants’ interest, we assigned one of the researchers to send a reminder text message to all the participants a day before the scheduled date and 30 minutes before the start of each meeting.137 However, we recorded 13 (2.44%) drop-out out of the 581 students who were enrolled into the program. Besides, the treatment group was compared with the waitlist control group (by comparing their performances) to determine if any significant change occurred in their emotional distress level, irrational beliefs, and perception of TVET. The participants filled and returned the questionnaires at each assessment time.

### 2.5. Intervention

#### 2.5.1. Rational-emotive-behavior-therapy intervention

The Rational Emotive Psychotherapy Intervention was based on Ellis’ REBT ABCDE mnemonic model by Ellis and Harper.48 The intervention program was delivered through face-to-face contacts at different intervals with constant assignments.

**Pre-intervention (1 week):** First, the participants met with the researchers, trained REBT practitioners/psychotherapists, and psychologists on a face-to-face interaction, which lasted for 4 hours of 2 meetings in a week (Wednesday and Friday). This session covered clinical conceptualization, familiarization, goal clarification, explanation of confidentiality rules, and criterion baseline evaluation of the participants.

**Intervention.** The intervention session was divided into 5 sessions based on the REBT ABCDE mnemonic of REBT theory.

**Phase 1:** A = (Activating Events). The first of the phase 1 meeting was an introduction. It was the first intervention meeting of the researchers, REBT practitioner/psychotherapists, and psychologists with the participants. The session was 2 meetings each week for a period of 1 month (4 weeks) and lasted for 5 hours/week, which include 30 minutes break at every meeting. This training session focused on identifying historic events, perspectives of youth, parents, and the society perception about TVET.

**Phase 2:** B = (Peoples’ Belief Systems). The same period used for phase 1 was used also here. Major focus was on identifying the irrational beliefs that have been held by youth, parents, and the society about TVET. It also involved finding out if candidates enroll willingly into TVET programs? If not, what are the causes and does the causes have any connectivity to the general belief systems of the people about TVET?

**Phase 3:** The session was based on the third mnemonic (i.e., C = Consequences of irrational beliefs). It lasted for a period of 1 month of 3 meetings (week 1, 3, and 4) with each meeting lasting for 90 minutes. Majorly, the meetings focused on the consequences of irrational beliefs to the TVET students, participants identifying risks they had suffered within and without school environment in relation to TVET image (organizational climate), assess the effects of the risk on their personal image, organizational image, and productivity.

**Phase 4:** The phase was centered on the mnemonic D (Disputation) of the REBT theory. It spanned for 2 months of 6 meetings of 2 hours per a meeting. The treatment group was divided into 22 small groups of 13 persons except one group that was 12 persons with one REBT practitioners and psychotherapist/psychologist assigned to handle each group. The session involve: guiding participants on how to dispute and discard irrational beliefs, identify strategies for overcoming it, and revise to a better rational belief.53,34

**Phase 5:** This was the last intervention and was based on the E mnemonic of the REBT. The session lasted for 3 months of 6 meetings with each meeting lasting for 90 minutes. Here, the participants were guided to identify the effects of mood-disorder (depression, dysthymia, and bipolar disorder), taught to develop

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#### Table 1

| Characteristic                | Dimension | TG n (%) | WCG n (%) | χ²   | Sig. |
|------------------------------|-----------|----------|-----------|------|------|
| N                            | Sample    | N 286 (49%) | N=295 (51%) | 0.158 | 0.738 |
| Gender                       | Male      | 154 (53%) | 162 (54%) |      |      |
|                             | Female    | 132 (47%) | 133 (46%) |      |      |
| Age                         | M ± SD    | 39.56±9.65 | 38.88±8.78 | 5.586 | 0.069 |
|                             | Range     | 22–65     | 22–65     |      |      |
| Institution                 | Federal   | 56 (20%)  | 49 (17%)  |      |      |
|                             | State     | 65 (22%)  | 75 (25%)  |      |      |
|                             | Private   | 165 (58%) | 171 (58%) |      |      |
| Educational Qualification   | WAEC/NECO | 163 (57%) | 188 (64%) |      |      |
|                             | NABTEB    | 123 (43%) | 107 (36%) | 0.264 | 0.880 |

Age M = mean; SD = standard deviation; Chi square (x²), TVETI = TVET institutions.

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Age M = mean; SD = standard deviation; Chi square (x²), TVETI = TVET institutions.
self-confidence and how to discard irrational beliefs, and embrace new career philosophy about their career.

**Post Intervention:** Follow-Up 1 and 2 (after 2 and 4 months, respectively). This was aimed at strengthening participants’ confidence on their new beliefs and career philosophies. The phase involves eliciting of feedback from the participants through email, participants sharing experiences with group members, and finally, the researchers administering the post-intervention instruments and retrieving them at the spot to determine the effects of the intervention on the subjects (Fig. 2).

### 2.6. Data analysis

A 2 (group) x 4 (time testing: pre-test, post-test, follow-up 1, and follow-up 2 test) repeated measures analysis of variance (ANOVA) on PTIBQ and ORMS was adopted to determine the effects of the intervention program and to ascertain if there was any improvement in the perception of the participants across the groups (TG and CG) during and after the intervention about the TVET image. Pallant[54] opined that the repeated-measures ANOVA can be used when the same subject is measured under varying conditions or measured at different time points. This was aimed at strengthening participants’ confidence on their new beliefs and career philosophies.

The repeated-measures analysis of variance was performed using SPSS version 22 (IBM Corporation, Armonk NY, USA).

### 3. Results

Table 1 presented the demographic characteristics of the 581 participants (518 Nigerians and 63 from other African countries) made up of the Treatment Group 286 (49%) and Waitlist Group 295 (51%). Table 1 also revealed the gender of the participants with 154 (53%) males and 132 (47%) females for the Treatment Group, while the Waitlist Group consists of 162 (54%) males and 133 (46%) females. The mean age of the Treatment and the Waitlist groups were 39.56 ± 9.65 and 38.88 ± 8.78 years ($x^2 = 5.59, P = .738$), respectively. There was no significant difference based on gender as revealed by the $x^2 = .158, P = .738$ values. Among the treatment group, 165 (58%) were in federal owned institutions, 65 (22%) were from state owned, and 56 (20%) from private-owned institutions. On the contrary, the waitlist group revealed that 171 (58%) were from the federal-owned institutions, 75 (25%) from the state institutions, and 49 (17%) were private-owned institutions. The sampled $t$ test to compare changes across the intervention group and wait-list control groups. In addition, the study used Chi-square ($x^2$) statistic test for differences in participants’ characteristics such as gender, age, and qualification. Data collected were analyzed using SPSS version 22 (IBM Corporation, Armonk NY, USA).

### Table 2

Repeated measure ANOVA on the effect of rational emotive psychotherapy intervention on business education postgraduate and undergraduate students’ emotional distress and perceptions of organizational climate by treatment and time.

| Outcomes | TIME     | Intervention Group (286) | Waitlist Group (295) | Df  | F       | $\eta^2_p$ | Sig  |
|----------|----------|--------------------------|---------------------|-----|---------|------------|------|
| POTVETI  | Pre-test | 1                        | 27.66 ± 2.90        | 26.15 ± 6.79 | (1,580) | 3.26       | .396 | .245 |
|          | Post-test| 2                        | 64.49 ± 11.81       | 28.87 ± 11.09 | (1,580) | 76.56      | .636 | .001 |
|          | Follow-up 1 | 3                       | 77.91 ± 3.01        | 30.26 ± 12.76 | (1,580) | 132.42     | .788 | .001 |
|          | Follow-up 2 | 4                       | 83.64 ± 7.31        | 29.69 ± 13.90 | (1,580) | 140.33     | .792 | .001 |

POTVETI = Perceptions of TVET image (organizational climate), M = mean, SD = standard deviation, Time 1 = Pre-test; Time 2 = Post-test evaluation; Time 3 = first follow-up evaluation; Time 4 = second follow-up evaluation, $\eta^2_p$ = partial eta squared.
educational qualifications of the participants according to groups were as follows: intervention group 163 (57%) hold WAEC/NABTEB certificates, 123 (43%) NABTEB certificate holders. As for the waitlist group, 188 (64%) hold WAEC/NABCO certificates, 107 (36%) NABTEB certificate holders ($x^2 = .264, P = .880$). As for the waitlist group, 188 (64%) hold WAEC/NABCO certificates, 107 (36%) NABTEB certificate holders ($x^2 = .264, P = .880$) (see Table 1).

Table 2 summarizes the result of a 2 groups (TG & WCG) X 4 repeated measure ANOVA conducted to test the hypothesis that there is no significant improvement on the emotional distress and perception of organizational climate by students who received rational emotive psychotherapy intervention compared with those in the waitlist (control) group. At Time 1 (pre-test), the baseline result showed that there was correlation between the groups and emotional distress they suffer. The repeated measure ANOVA results revealed that there were no baseline differences in PTIBQ scores on the emotional distress level between participants in the two groups ($F[1,580] = 3.26, n^2_p = .396, P = .245$). However, post-intervention results revealed significant increases from Time 1 to Time 2 ($F[1,580] = 75.97, P = .000$) for the treatment group indicating that the intervention significantly reduced the emotional distress level of the treatment group, whereas the waitlist control group showed no significant change in score over the same period. Also, the Follow-up tests (Time 3) revealed a significant increase after 2 months ($F[1,580] = 132.42, n^2_p = .788, P = .001$) and 4 months ($F[1,580] = 140.33, n^2_p = .792, P = .001$) in the treatment group but not in the waitlist control group (see Table 2). The plotted graph of the improvement in the participants’ emotional distress and perception on the organizational climate is shown below in Figure 3.

Table 3 summarizes a result of a paired sampled $t$ test conducted to test the effect of the treatment and to test the hypothesis that there is no significant improvement on the emotional distress and perception of organizational climate by students who received rational emotive psychotherapy intervention compared with those in the waitlist (control) group. The result showed that there was no baseline difference on the emotional distress and perception of the participants who received treatment when compared with those in the waitlist group at Time 1 (27.66 ± 2.90). However, there was a significant improvement on Time 1 (post-test) to Time 2 (64.49 ± 11.81), $t(1,580) = 75.97, P = .000$ and to Time 3 (follow-up 1 after 2 months) (77.91 ± 3.01), $t(1,580) = 23.23, P = .001$. There was an improvement in participants’ level of emotional distress as

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### Table 3

| Outcomes  | Intervention Group (286) | Waitlist Group (295) | Df | $t$ | $n^2_p$ | Sig |
|-----------|--------------------------|----------------------|----|-----|--------|-----|
| **POTVETI** | **TIME** | **M ± SD** | **M ± SD** | **(1,580)** | **t** | **(1,580)** | **Sig** |
| Pre-test  | 1 | 27.66 ± 2.90 | 26.15 ± 6.79 | (1,580) | 3.26 | .396 | .894 |
| Post-test | 2 | 64.49 ± 11.81 | 28.87 ± 11.09 | (1,580) | 75.97 | .636 | .000 |
| Follow-up 1 | 3 | 77.91 ± 3.01 | 30.26 ± 12.76 | (1,580) | 23.23 | .788 | .000 |
| Follow-up 2 | 4 | 83.64 ± 7.31 | 29.69 ± 13.90 | (1,580) | 19.15 | .792 | .000 |

*POTVETI = Perceptions of TVET image (organizational climate), M = mean, SD = standard deviation, Time 1 = Pre-test; Time 2 = Post-test evaluation; Time 3 = first follow-up evaluation; Time 4 = second follow-up evaluation, $t =$ paired sampled $t$ test, $n^2_p =$ partial eta squared.*
compared to how they felt about themselves (inferior, a failure and unsuccessful) and the organizational climate (irrational beliefs) they had before and after the intervention.

In addition, results of the Follow 2 (4 months) on the treatment group showed a significant improvement when compared to the waitlist control group. As summarized in Table 4, scores at baseline between the two groups (F (1,580) = 217.89, P = .000) were significantly different. There was a significant treatment x Time interaction effects from Time 1 (58.73 ± 5.52) to Time 2 (111.37 ± 11.92), F (1,580) = 124.33 ± 10.70, (1,580) = 226.59, (1,580) = 24.22, n²p = .788, P = .000) when compared with the waitlist (control) group (Post-test 28.8 ± 11.09), (Follow-up after 2 months 30.26 ± 12.76).

Similarly, an improvement was also recorded on the perception of the treatment group on the organizational risk management practices after 4 months follow-up evaluation from Time 3 (124.33 ± 10.70) to Time 4 (128.09 ± 12.5), t(1,580) = 3.83, n²p = .972, P = .000, but no improvement was observed on the waitlist control group (see Table 5).

Figure 3 revealed that the intervention program significantly improved the treatment group’s perception about TVET image, but no improvement was observed on the side of the waitlist control (Figs. 4 and 5).

Similarly, the Occupational Risks Management Scale of TVET students was observed to have improved significantly in the intervention group, but for the waitlist group, no improvement was observed (see Fig. 6).

A paired sample t test was conducted to test the effect of the intervention and to test the hypothesis one that there is no significant improvement on the occupational risk management practices of students in the intervention group compared with those in the waitlist (control) group. Result in Table 5 summarizes a significant treatment x Time interaction for occupational risk management practices of TVET (t(1,580) = 3.26, h²p = .396, P = .0894). The post-test results showed a high significant improvement between Time 1 (for the treatment group) (58.73 ± 5.52) and Time 2 (111.37 ± 11.92) in occupational risk management practices t(1,580) = 94.32, n²p = .636, P = .000), while the waitlist group had no significant improvement. Again, the follow-up result after 2 months also revealed that there was a significant improvement (i.e., a decrease in organizational risks) in the participants’ occupational risk management practices for the treatment groups (Post-test 111.37 ± 11.92), t(1,580) = 94.32, n²p = .636, P = .000), (Follow-up after 2 months 124.33 ± 10.70, t(1,580) = 24.22, n²p = .788, P = .000) when compared with the waitlist (control) group (Post-test 28.8 ± 11.09), (Follow-up after 2 months 30.26 ± 12.76).

Table 4

| Outcomes                  | Time 1     | Intervention Group | Control Group | Df | f   | Sig  |
|---------------------------|------------|--------------------|---------------|----|-----|------|
| ORSS (Pretest)            | 58.73 ± 5.52 | 49.34 ± 5.35       | (1,580)       | .528 | .675 | .163 |
| ORSS (Posttest)           | 111.37 ± 11.92 | 51.30 ± 12.94      | (1,580)       | .787 | .662 | .000 |
| Follow-up I               | 124.33 ± 10.70 | 52.58 ± 16.88      | (1,580)       | 217.89 | .744 | .000 |
| Follow-up II              | 128.09 ± 12.5 | 53.72 ± 17.65      | (1,580)       | 226.59 | .751 | .000 |

Table 5

| Outcomes                  | TIME       | Intervention Group | Waitlist Group | Df | f   | Sig  |
|---------------------------|------------|--------------------|---------------|----|-----|------|
| POTVETI                   | Pre-test   | 58.73 ± 5.52       | 26.15 ± 6.79  | (1,580) | 3.26 | .396 | .894 |
|                           | Post-test  | 111.37 ± 11.92     | 28.87 ± 11.09 | (1,580) | .9432 | .636 | .000 |
|                           | Follow-up 1| 124.33 ± 10.70     | 30.26 ± 12.76 | (1,580) | 24.22 | .788 | .000 |
|                           | Follow-up 2| 128.09 ± 12.5      | 29.69 ± 13.90 | (1,580) | .383 | .792 | .000 |
A post-hoc analyses was conducted using Bonferroni Holm, and the result presented in Table 6 shows that at Time 1, the emotional distress and perception of organizational climate and risks level between the 2 groups studied were not significantly different. However, there was a significant improvement on the emotional distress and perception of organizational climate by the students who received treatment (CR-REBT) compared with those in the waitlist group, who did not show any significant improvement at Time 2, Time 3, and Time 4. The P values at Time 1 for PTIBQ showed <.534 and <.475 for ORMS but from Time 2, 3, and 4, all the P values showed <.001 on both PTIBQ and ORMS, indicating that there was a general improvement in the students’ perception about TVET image, distress, and irrational belief about their career choice after the treatments.

Second, the post-hoc analyses by Bonferroni-Holm on the ORMS showed that at Time 1, there was no statistically significant difference in level of susceptibility to poor image of TVET on career success and perceived occupational risk.
management practices by the participants of the 2 groups. However, at Time 2, Time 3, Time 4, the result showed that the treatment group improved significantly on their feelings about public acceptance and professional cognizance of their career, but no significant improvement was found among the participants of the waitlist group. This implied that there was a significant improvement (i.e., significant positive decrease in occupational risk) in occupational risk management practices of the treatment groups, but such decrease was not observed on the waitlist group.

4. Discussion

This study aimed at determining the effects of rational-emotive-behavior therapy (REBT) intervention on TVET students’
perceptions of TVET image and occupational risk. The findings showed that REBT program significantly improved the emotional distress and perception of organizational climate of the participants. Again, the study revealed that the changing perception of the intervention group led to behavioral and attitudinal changes which resulted to an improved occupational appreciation. This was revealed in the postintervention and Follow-up I and II assessments. The study also established that the irrational beliefs and poor TVET image held by the participants in the treatment group were improved as against those in the control group.

The findings of this study strengthened the view of Ellis and Becke[53] that rational emotive behavior therapists and counselors can assist clients with behavioral problems to enable them fulfill their life potentials and experience positive behavioral health. The findings of the study are also congruent with Bernard and Pires[22] who maintained that REBT can positively address irrational beliefs that significantly disturb emotions of individuals that cause depression, withdrawal, low esteem, and self-rejection among others to them. The finding is also congruent with Vernon[56] who stated that REBT is used in educational settings to assist students change their irrational beliefs such as inferiority complex, low image, self-pity, and rejections in their professions.

Furthermore, the findings of the study on the TVET image as a possible index to TVET practitioners’ exhibition of irrational beliefs and wrongful thought that they are inferior to their colleagues in other professions is in line with Clement,[57] which maintained that the application of REBT intervention program assists in reducing irrational beliefs of individuals who are having adjustment challenges. Clement[57] further indicated that a change in an individual’s self-defeating beliefs about self or profession can regenerate to a corresponding and speedy decrease in career rejection and distress.

Again, the findings of the study revealed that the career risk management practices of participants in the intervention group improved, while such improvement was not observed in the waitlist control group both during the post-intervention time and follow-up periods. This finding is in alignment with Arnetz et al.[39] who advocated that if an organization focuses on its organizational climate, occupational stress, employee mental health, and efficiency, such effort will result in lowering workers’ level of stress and possibly increase organizational performance and goal attainment. The findings of this study are also in agreement with other studies that promote the use of rational emotive behavior therapy intervention as an instrument for assisting clients for behavioral change.[59] We, therefore, posit that REBT should be applied in occupational risk management at the work environment in Nigeria and other nations of the world to improve stakeholders’ perception about TVET image. Government, TVET institutions, and TVET agencies can improve citizens’ perception about TVET education through an REBT inclusive curriculum.

Furthermore, our finding showed that there was no significant effect of gender disparity or inequality in the study. This finding is not in agreement with the view of Bistamam et al.[60] that REBT therapeutic intervention takes cognizance of the effect of gender roles in a study from the beginning of a therapeutic relationship. However, this finding is in agreement with Corey,[61] Mukangi[62] who maintained that REBT ignores the role played by the gender in therapeutic study. To this end, offering REBT to overcome clients’ emotional distress and irrational beliefs by REBT practitioners and future researchers in the developing countries such as Nigeria and in other nations should be considered indispensable, as the potency to overcome emotional distress depends majorly on the manner people view the stressor and the available resources to overcome it. We, therefore, believe that REBT intervention program is a transformative and therapeutic tool for supporting TVET beneficiaries for selection of jobs and occupations.

4.1. Theoretical implications

Our study has contributed to Rational Emotive Behavior Therapy theory and to the extant literature. REBT is based on the assumption that emotional trauma is an outcome of irrational and illogical thinking patterns of situations and not necessarily a problem of the events itself.[48] We establish in this study that if students embrace TVET with a positive mind set, they can have job and career satisfaction. Again, this study expanded literature on REBT particularly in the areas of adopting the psychotherapy in a clinical treatment of emotional distress and irrational behaviors of TVET students. To the best of our knowledge, this study is the first study to apply REBT on treatment and control groups to determine if irrational beliefs can be reversed to rational beliefs. This study shows a positive interactive effect that participants who received intervention improved better in their emotional distress and perception of their profession than those who did not receive any intervention.

Again, our study added to self-enhancement theory, which postulates that persons with low self-esteem behavioral issues often engage in damage control. We established in our study that many TVET students are faced with the challenges and struggling against professional poor image and low self-esteem. Hence, our study supports self-enhancement theory in that both low and high self-esteem persons have basic needs to strengthen their level of self-esteem.

In addition, our study contributed to prior body of knowledge on organizational climate. The organizational climate in the context of this study is determined by the perception of the people within and outside TVET institution which influence productivity, motivation, behavior, and lifestyle of TVET beneficiaries. Our study strengthened the views of researchers that negative organizational climate can be changed using psychotherapeutic treatment such as REBT.[63,34,35] We empirically proved that TVET students can developed rational beliefs about their career and can influence the youth, parents, and the general public to embrace TVET program as a global tool for poverty alleviation and employment creation.

4.2. Practical implications

From the literature, we found that much research has not been conducted to investigate the effect of REBT on TVET stakeholders and the general perceptions about TVET image. Therefore, the results of our study have great implication to TVET institutions, educators, and employers of labor. For the TVET institutions, they are to ensure that REBT model is integrated into career guidance and counseling of TVET program. To the TVET Educators, the findings of this study has placed a responsibility on them to encourage and motivate the young TVET beneficiaries and guiding them into positive mind sets about the hidden opportunities in TVET.

Empirical evidences have shown that medical and nursing students experience varieties of stressors and are faced with job-
related depressions.\textsuperscript{64,65} Therefore, the medical and nursing professionals can take advantage of the findings of this study by leveraging on the nature of emotional distress response and the therapeutic opportunities of the REBT intervention in reducing the emotional distress levels of their students and practitioners.

4.3. Limitations of the study

One of the major limitations of this study was that the study used only Business Education students in the universities. The students may not have experienced vocational career rejection and low image associated with the profession in the workplace. Similarly, the short time follow-up evaluation may not have revealed the long-term effect of the treatment.

4.4. Suggestion for further studies

This study was conducted in South-East Nigeria; therefore, we suggest that a similar study that will involve students from TVET programs other than Business Education students be conducted in other geo-political zones of Nigeria. As the study used Business Education students in the universities, future studies should include students in other educational levels. An REBT program with a long-term follow-up of 6 months to a 1-year interval should be conducted using a larger population.

5. Conclusion and recommendations

This study determined the effects of the rational-emotive psychotherapy intervention on the perceptions about TVET image and occupational climate of TVET profession. The study contributed to the body of knowledge by providing literature on how therapeutic intervention helps to improve the emotional distress, irrational beliefs, and the low image of TVET. The REBT-oriented therapy assisted to improve the emotional distress, irrational beliefs, and poor perception of the Business Education students who see TVET programs as an inferior and low-esteemed profession. REBT can reduce vocational career risks associated with the poor image of TVET and improve perceptions of TVET practitioners, occupational climate, and career acceptance. In the light of this, TVET administrators should know that promoting students’ mental health is one of the vital strategies to achieving TVET aims and objectives and that is what REBT in this study has contributed to.

Based on the findings of this study, we recommend that TVET educators, career counselors, and psychotherapists as well as psychologists in Nigeria and other countries should assist TVET students including Business Education students to rationally believe in TVET and its potentials by adopting REBT interventions. TVET institutions and industries should campaign and promote TVET education from primary to secondary education level, and through the mass media sensitize the general public on the benefits of skill-education. Government of countries through the ministry of education should enact policies that promote scholarship education and good job placement for TVET graduates, thus promoting the image of TVET and encouraging mass enrollment of the youth into TVET programs.

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Author contributions

Conceptualization: Nathaniel Ifeanyi Edeh.
Data curation: Philo Akaeze.
Formal analysis: Nathaniel Ifeanyi Edeh, Naboth-Odums Augustine.
Investigation: Ernest O. Ugwoke, Solomon U. Agbo, Roseline N. Azubuike, Evelyn A. Isiwu, Emmanuel Nwangwu, Dorcas Kuranen-Joko, Felicia N. Ezebuiko.
Methodology: Ernest O. Ugwoke, Nathaniel Ifeanyi Edeh, Eunice N. Anaene, Ekafe F. Abanayam.
Project administration: Ernest O. Ugwoke, Nathaniel Ifeanyi Edeh.
Supervision: Ernest O. Ugwoke, Nathaniel Ifeanyi Edeh, Solomon U. Agbo, Maureen Anayo Madu, Roseline N. Azubuike, Naboth-Odums Augustine, Fredric C. Onah, Ogechukwu Onah, Babalulu M Madusaba, Dorcas Kuranen-Joko.
Validation: Maureen Anayo Madu, Fredric C. Onah, Ogechukwu Onah, Babalulu M Madusaba, Emmanuel Nwangwu.
Visualization: Maureen Anayo Madu.
Writing – original draft: Nathaniel Ifeanyi Edeh.
Writing – review & editing: Nathaniel Ifeanyi Edeh, Philo Akaeze, Evelyn A. Isiwu.

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