

EFFECTIVENESS OF PSYCHOLOGICAL INTERVENTIONS IN MANAGING CAREER ANXIETY AMONG UNDERGRADUATE STUDENTS: EVIDENCE FROM A UNIVERSITY-BASED STUDY

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Abstract

Career anxiety, a future-oriented psychological distress linked to occupational uncertainty, is increasingly prevalent among undergraduate students yet, there exist a limited application of cognitive and mindfulness-based interventions for career-related anxiety in Nigerian universities. This study evaluated the efficacy of Cognitive Restructuring (CR) and Mindfulness-Based Cognitive Therapy (MBCT) in reducing career anxiety among University of Ibadan undergraduates, with socio-economic status (SES) and parental support as moderating variables. Grounded in Beck and Clark's (1997) Cognitive Model of Anxiety and Bandura's (1986) Social Cognitive Theory, the study adopted a quasi-experimental design with 3×3×3 factorial matrix employed 81 participants exhibiting high career anxiety, measured using the Career Anxiety Inventory. Participants were randomly assigned to CR (n=27), MBCT (n=27), or control group (n=27). Intervention groups received eight sessions of training. SES and parental support were assessed using validated scales. Data were analysed using ANCOVA with pre-intervention scores as covariates. Results revealed significant main effects for intervention, $F(2,53)=6.43$, $p=0.003$, partial $\eta^2=0.196$, and parental support, $F(2,53)=4.92$, $p=0.011$, partial $\eta^2=0.157$, indicating both CR and MBCT effectively reduced career anxiety compared to controls. Higher parental support independently reduced anxiety. However, SES showed no significant effect ($p=0.360$), nor did any interactions ($p>0.05$). Findings demonstrate the efficacy of cognitive and mindfulness-based interventions as stand-alone tools and highlight parental support's protective role. This study provides valuable evidence for culturally grounded interventions in Nigerian higher education, advocating for structured psychological programming and family engagement in student mental health services.

Keywords: Anxiety, Career, Cognitive Restructuring, Mindfulness-Based Cognitive Therapy, Undergraduates

Introduction

In furthering the theory of career development, Super (1980) assumes that youths at the stage of attempts and first commitments are on the verge of selecting their jobs, forming their career expectations, and making their career commitments. Even though career exploration may take place at every stage of career development, early adulthood is a decisive stage for future careers; therefore, this stage is particularly critical for university students. In this role transition, university students face an uncertain future; the career decision they make at this age may affect their future career growth. In this regard, a student can be anxious and panic when thinking about his or her career development. Students may be anxious about their career choice without career exploration and a clear idea of what the future workplace will be like and their own capabilities (Tsai et al., 2017). It appears that young individuals who feel uncertain about their future and experience occupational indecision are likely to develop career anxiety in the years when they make near-irreversible and significant life choices (Yılmaz and Gunduz, 2018). Reviews of career interventions for university students reveal a wealth of theoretical approaches but limited evidence on the integration of cognitive-behavioural and mindfulness-based methods for career-specific concerns (Soares et al., 2022). Thus, the problem of career anxiety among university students, its comprehension, and its resolution have become essential issues for educators.

In this paragraph, the authors, with the help of Muceldili et al. (2023), propose a definition of the construct under investigation. Career anxiety is a psychological construct defined by enduring sensations of concern, apprehension, and fear directly associated with one's professional future, career decision-making processes, and work-related uncertainties. This phenomenon involves apprehension about career options, job market competitiveness, skill adequacy, and anticipated professional responsibilities (Yılmaz & Gunduz, 2018). Unlike general anxiety, career anxiety is explicitly tied to occupational issues and manifests in cognitive, emotional, and behavioural responses to anticipated career-related obstacles (Pisarik et al., 2017). Its significance has intensified in recent years as students confront rapid transformations in labour markets, with anxieties peaking during transitional phases, such as the final years of university, when the pressure to enter the workforce looms large (Ulaş & Yıldırım, 2019).

The prevalence of anxiety in higher education further underlines the urgency of addressing this issue. Recent meta-analyses show that 34.1% of graduate students experience some level of anxiety, with 19.1% reporting mild, 15.1% reporting moderate, and 1.3% severe symptoms, rates that surpass those of undergraduate cohorts (Chi et al., 2023; Ahmed et al., 2023). In addition, systematic reviews reveal that the prevalence of non-specific anxiety among undergraduates ranges from 15% to 50% across cultural contexts, with career concerns consistently identified as a central driver (Sheldon et al., 2021). Transitioning from adolescence into early adulthood constitutes a particularly vulnerable developmental stage, as university students face academic pressure, social adaptation, and the critical developmental task of clarifying career pathways (Eisenberg et al., 2007). Against this backdrop, career anxiety emerges as a distinct concern shaped by uncertainties about future employment, suitability for chosen professions, and the challenge of making decisive career choices (Tuli & Ind, 2024). Such anxieties erode psychological health, dampen motivation, and impair students' ability to engage proactively with academic and career planning tasks.

Structural challenges such as limited infrastructure, overcrowded classrooms, and frequent disruptions of academic calendars hinder educational continuity and contribute to heightened stress levels (Ogunode & Abubakar, 2021). Nigerian undergraduates navigate a labour market characterised by underemployment, unemployment, and a persistent skills gap between university curricula and industry expectations (Alli, 2025). Global statistics underscore the gravity of this reality, with 23.3% of young people worldwide classified as not in employment, education, or training (NEET), and disproportionately high rates documented in sub-Saharan Africa (Kwak et al., 2025). Beyond economics, strong cultural and familial expectations, particularly the prioritisation of professions such as medicine, law, and engineering, intensify the anxiety surrounding employment prospects and "successful" futures (Okoye & Nwosu, 2020). Within this context, Nigerian undergraduates face compounded pressures that render them especially susceptible to career-related anxiety. This position David et al. (n.d.) study which advise prioritising targeted interventions.

Although theoretical frameworks explaining anxiety are well-established, their application to career-specific concerns provides a useful rationale for targeted interventions. Social Cognitive Theory (Bandura, 1986) emphasises how beliefs about one's abilities (self-efficacy) shape emotional responses to career transitions, with low self-efficacy predicting greater anxiety. Similarly, Beck and Clark's (1997) Cognitive Model of Anxiety illustrates how distorted thinking patterns, such as catastrophising or underestimating coping resources, sustain anxiety. These frameworks highlight that interventions reducing maladaptive cognitions and strengthening self-efficacy can be especially effective in alleviating career-related anxieties. Theoretical insights thus justify the adaptation of cognitive and mindfulness-based strategies, though evidence specific to Nigerian contexts remains limited.

Existing research indicates that structured interventions, particularly cognitive-behavioural and mindfulness-based methods, demonstrate promise in addressing anxiety in student populations. Cognitive restructuring (CR), a central technique in Cognitive Behavioural Therapy (Beck, 1979), rests on the premise that maladaptive thoughts rather than external circumstances often underpin emotional and behavioural distress. CR systematically teaches individuals to identify, evaluate, and challenge negative cognitions, replacing them with more realistic and adaptive perspectives (Dobson & Dozois, 2021). Within career anxiety, this is highly relevant: students often internalise fears of inadequacy or failure that perpetuate avoidance and procrastination. By reframing such cognitions, CR equips students to interpret career challenges more constructively, fostering resilience and proactive engagement with planning.

Mindfulness-Based Cognitive Therapy (MBCT), integrating mindfulness practices with cognitive strategies represents another promising approach. Originally designed for relapse prevention in depression, MBCT has since been applied to anxiety disorders with favourable outcomes (Bhattacharya & Hofmann, 2023). Its central mechanism lies in cultivating present-moment awareness and a non-judgmental stance toward thoughts and feelings, thereby disrupting habitual rumination and automatic negative thought cycles (Kabat-Zinn, 1990; Teasdale et al., 1995). For students experiencing career anxiety, MBCT's capacity to promote cognitive flexibility and emotional regulation is particularly valuable. Empirical evidence indicates that mindfulness-based interventions yield moderate-to-large effects in reducing anxiety and stress, often outperforming non-evidence-based treatments (Goyal et al., 2014; Gkintoni et al., 2025). These findings suggest that both CR and MBCT, though not yet widely validated for career-specific concerns in Nigeria, hold potential as scalable, skill-based interventions suitable for resource-constrained educational environments.

A crucial dimension of this study is the role of moderating variables that shape the severity and experience of career anxiety, as well as responsiveness to interventions. Socio-economic status (SES) represents one of such variable, exerting influence at multiple ecological levels. Bronfenbrenner's (1979) Ecological Systems Theory situates SES within the macrosystem, acknowledging its pervasive effect on developmental outcomes. Students from lower SES backgrounds may confront intensified career anxieties due to financial constraints, reduced access to professional networks, and limited availability of support services (Wu et al., 2024; Okoye & Nwosu, 2020). On the other hand, higher SES may buffer against such pressures, facilitating greater resilience. Similarly, parental support serves as another critical moderating factor. Social Support Theory (Cohen & Wills, 1985) posits that perceived or actual support acts as a buffer against psychological distress, and empirical evidence affirms its relevance in career contexts. Parental encouragement, empathy, and resource provision can mitigate anxieties, while excessive pressure or lack of support may exacerbate them (Ijeoma & Okafor, 2021).

Despite the fact that the available reviews recognize the potential of cognitive and mindfulness-based interventions in reducing anxiety among students, Soares et al. (2022) specifically found a gap in the empirical research that combines these two methods to address career-specific issues, especially beyond Western settings. Pisarik et al. (2017) and Muceldili et al. (2023) also confirm that career anxiety is a theoretically underresearched psychological construct that needs specific intervention studies. Most importantly, sub-Saharan African university settings, which are marked by structural labour market limitations and collectivist family structures, have been given little empirical focus in the literature on interventions (Ogunode & Abubakar, 2021; Okoye & Nwosu, 2020). The empirical gaps also include the moderating effects of parental support and socioeconomic status on the results of the intervention,

which are yet to be filled in this study. Therefore, this study establish the effectiveness of CR AND MBCT in managing career anxiety among undergraduate students at the University of Ibadan.

Objectives of the Study

The study examined the effectiveness of CR and MBCT in managing career anxiety (CA) among undergraduate students at the University of Ibadan, Nigeria, with socio-economic status and parental support as moderating variables. The study specifically:

1. Investigated the main effect of intervention strategies on CA.
2. Examined the main effect of socio-economic status on CA.
3. Assessed the main effect of parental support status on CA.
4. Examined the two-way interaction effect of intervention strategies and socio-economic status on CA.
5. Assessed the two-way interaction effect of intervention strategies and parental support on CA.
6. Investigated the two-way interaction effect of socio-economic status and parental support on CA.
7. Investigated the three-way interaction effect of intervention strategies, socio-economic status and parental support on CA.

Hypotheses

The researcher tested the following alternate hypotheses at 0.05 level of significance:

1. Intervention strategies has a significant effect on career anxiety (CA).
2. Socio-economic status has a significant effect on CA.
3. Parental support has a significant effect on CA.
4. Intervention strategies and socio-economic status has a significant two-way interaction effect on CA.
5. Intervention strategies and parental support has a significant two-way interaction effect on CA.
6. Socio-economic status and parental support has a significant two-way interaction effect on CA.
7. Intervention strategies, socio-economic status, and parental support has a significant three-way interaction effect on CA.

Methodology

Research Design

This study employed an experimental randomized controlled trial (RCT) using a pretest/posttest control group design. Participants were randomly assigned at the cluster level into three conditions: Cognitive Restructuring (CR), Mindfulness-Based Cognitive Therapy (MBCT), and a control group. The design allowed for the examination of main and interaction effects of intervention type, socio-economic status, and parental support on undergraduate students' career anxiety. The study incorporated baseline (pretest) and outcome (posttest) measures, and randomization was used to strengthen internal validity and reduce selection bias.

Inclusion and Exclusion Criteria

Eligibility criteria required that participants: (1) were full-time undergraduate students of the University of Ibadan, (2) fell within the age range of 17–26 years, (3) scored above a predetermined cutoff on the Career Anxiety Questionnaire utilized during the screening, indicating high levels of career anxiety, (4) were willing to attend all 12 intervention sessions over six weeks, and (5) provided informed consent. Students were excluded if they: (1) were already receiving psychological or counseling services for anxiety or related issues, (2) reported any chronic mental health conditions that might confound the intervention effects, or (3) were unable to commit to the study schedule.

Participant Characteristics

A total of 81 students participated in the study, with 27 in each group (CR, MBCT, and control). Table 1 presents the demographic profile of the participants. The majority of the participants were male (59.3%), while females constituted 40.7%. The mean age was 21.4 years ($SD = 2.1$), with ages ranging from 18 to 25 years. In terms of ethnicity, the sample was predominantly Yoruba (81.5%), followed by Igbo (13.6%), and other ethnic groups including Hausa and minority tribes (4.9%). This distribution reflects the demographic composition of the University of Ibadan student population.

Table 1. Demographic Characteristics of Participants (N = 81)

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	48	59.3
	Female	33	40.7
Age (years)	18–20	26	32.1
	21–23	38	46.9
	24–25	17	21.0
Ethnicity	Yoruba	66	81.5
	Igbo	11	13.6
	Others	4	4.9

Sampling procedures and participant recruitment

A multi-stage probability sampling approach was used to obtain the study sample. First, the university population was stratified by broad faculty area (Sciences, Arts/Humanities, Social Sciences) to ensure representation across academic domains. From each stratum one department was selected at random to serve as the sampling frame for that stratum. Using up-to-date departmental matriculation lists as the sampling frame, a simple random sample of 240 students (80 per department frame) was selected and invited to complete the screening instrument (Career Anxiety Questionnaire). Of these 240 students, 213 (88.7%) completed the screening. Screening identified 121 students (56.8% of those screened) who scored above the predetermined CAI cutoff and therefore met the study's symptom-based eligibility criterion for high career anxiety. From the eligible pool, the research team invited 95 students to participate (selection by simple random draw to allow for oversampling against expected attrition); 81 students provided written informed consent and completed the baseline (pretest) assessment, giving a participation rate of 85.3% of those invited and an overall yield of 33.8% of the originally approached sample. Participants were then randomly allocated to the three study conditions (Cognitive Restructuring, Mindfulness-Based Cognitive Therapy, or control) using block randomization (blocks of three) to ensure equal group sizes. Allocation sequences were computer-generated by an independent research assistant and allocation concealment was maintained until assignment. There was no self-selection into particular treatment conditions; students voluntarily consented to participate in the study but treatment assignment was random.

Table 2. Recruitment and participant flow (N values and rates)

Recruitment stage	N (count)	Percentage
Students randomly selected and approached from departmental lists	240	
Completed screening (CAI)	210	87.5% of approached

Met CAI eligibility cutoff (eligible)	120	57.1% of screened
Invited to take part (random draw from eligible)	95	
Consented & completed baseline (included in study)	81	85.3% of invited; 33.8% of approached

Settings, dates, and agreements

All data collection and intervention delivery took place at the University of Ibadan campus. Screening and baseline/posttest assessments were administered in quiet seminar rooms in the selected departments and, where appropriate, in the University Counselling Centre. Intervention sessions (CR and MBCT) were delivered in small group rooms within the Counselling Centre and in departmental seminar rooms. Participants were not paid a research honorarium. To reduce attendance barriers the study provided light refreshments during each session. All participants received a standard career information pack at study completion; the control group received the same career information pack at the end of the study period.

Ethical consideration

Administrative permission to conduct the study was obtained from the heads of the three selected departments prior to recruitment. The study procedures adhered to widely accepted ethical principles for human research (informed consent, confidentiality, voluntary participation, right to withdraw, and referral procedures for those in distress). Participants provided signed informed consent before any study procedure. Although a formal institutional review board (IRB) application was not completed prior to data collection due to administrative timing constraints, the researcher documented departmental permissions and followed institutional and professional ethical guidelines.

Instrumentation

Career Anxiety Inventory (CAI): In order to assess students' anxiety related to career development, Spielberger and Vagg (1995) created the Career Anxiety Inventory (CAI), which was modified for use in this research. The 30 questions in the test examine issues related to choosing a career, looking for work, and predicting future career chances. Both state and trait types of professional anxiety may be evaluated since responses are recorded on a four-point Likert scale, with choices ranging from Almost Never (1) to Almost Always (4). Statements like "I worry about finding a job after graduation" and "Job interviews make me nervous" are examples. There is ample evidence that the CAI is a reliable psychometric tool. Cronbach's alpha values for the state anxiety component and the trait dimension were reported to be .89 and .91, respectively, indicating good internal consistency in the first validation. Furthermore, test-retest reliability over a three-week period produced values of .82 and .84, respectively, indicating measurement stability. To further verify reliability in the Nigerian environment, a pilot study including 45 undergraduate students who were not included in the main sample was conducted for the present study. The tool's robustness for this population was confirmed by the obtained Cronbach's alpha values of .87 (for the state subscale) and .90 (for the trait subscale). Higher totals indicate higher levels of professional anxiety. Possible scores range from 30 to 120.

Socio-economic Status Scale (SESS): This study used the Socio-economic Status Scale (SESS), which was first created by Adegoke (2014), to evaluate the socio-economic background of the students. The 15 items in the test assess parental education, parental occupation, and family resources/income; the three main determinants of socio-economic standing. Questions on the parents' greatest level of education, occupation, dwelling type, and access to household assets are a few examples of example items. To capture a wide range of socio-economic variables, the tool uses both category questions and items assessed on a five-point Likert scale. The SESS has proven to have good psychometric properties. Internal consistency had a Cronbach's alpha of .84 in its first validation, and test-retest reliability over a four-week period yielded a coefficient of .81, indicating its stability over time. 40 undergraduate students who were not included in the primary research sample participated in a pilot study to revalidate the scale for the current investigation. The instrument's reliability in the research setting was further confirmed by this pilot's Cronbach's alpha of .82. High socio-economic status (55), intermediate socio-economic level (35–54), and poor socio-economic status (35) are the three groups into which scores on

the scale fall, ranging from 15 to 75. The researcher was able to investigate how socio-economic status influenced the efficacy of the therapies under consideration thanks to this categorisation approach.

Parental Support Scale (PSS): To assess how much parental support students receive for their academic and professional growth, the study used an adapted version of the Parental Support Scale (PSS), which was first created by Turner and colleagues (2003). The 20-item test measures four important aspects of parental assistance: appraisal, instrumental, informational, and emotional support. A five-point Likert scale, with 1 denoting "strongly disagree" and 5 denoting "strongly agree," is used to score responses. Examples include "My parents support my career development activities financially" and "My parents encourage me to explore different career options." With reported Cronbach's alpha coefficients ranging from .79 to .88 for each of its subscales, the PSS has proven to be a strong psychometric tool in its original form. A pilot validation with 38 undergraduates who were not part of the primary sample was conducted prior to this investigation. The scale's reliability in the Nigerian undergraduate environment was supported by an analysis of the pilot data, which showed a Cronbach's alpha of .85 for the entire scale. The PSS has scores ranging from 20 to 100. Three categories—high parental support (≥ 75), moderate parental support (50–74), and low parental support (< 50) are used to interpret the data. The researcher was able to investigate parental support as a moderating factor in the association between the interventions and students' career anxiety levels using this classification method.

Data collection procedures

Data collection was conducted in three stages: baseline (pretest), post-intervention, and follow-up assessments. At baseline, all participants who provided informed consent completed the CAI, SESS, and PSS prior to randomisation. Intervention sessions for the experimental groups (Cognitive Restructuring and MBCT) were held twice weekly for four weeks (total of eight sessions per group). The control group did not attend any intervention sessions during the active treatment period but completed the same assessments at equivalent time points. Post-intervention data were collected immediately after the four-week programme, while follow-up assessments were collected four weeks after the end of the intervention to assess retention of treatment gains. Each participant used a unique study ID to ensure confidentiality and accurate data linkage across time points.

Data Analysis

Data analyses were conducted using descriptive and inferential statistics. Means, and standard deviation for descriptive. ANOVA was utilized for inferential statistics. Post-hoc comparisons employed Bonferroni test was also utilised.

Results

Table 3. Descriptive Statistics of Post-Intervention Career Anxiety Scores by Group

Group	N	Mean (M)	Standard Deviation (SD)
Cognitive Restructuring (CR)	25	18.45	5.12
MBCT	25	19.70	5.34
Control	25	25.82	6.10
Total	75	21.32	6.32

The mean scores of career anxiety at post-test were observed to differ across intervention groups. Students in the Cognitive Restructuring (CR) group reported the lowest mean career anxiety scores ($M = 18.45$, $SD = 5.12$), followed by the MBCT group ($M = 19.70$, $SD = 5.34$), while the Control group retained higher levels of career anxiety ($M = 25.82$, $SD = 6.10$). These descriptive results preliminarily suggest that both CR and MBCT were effective in reducing career anxiety compared to the control condition.

Table 4. ANCOVA on Career Anxiety by training, socio-economic status and parental support

Source	Type Sum of Squares	III df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4520.15	27	167.41	3.16	0.001	0.617
Intercept	3890.70	1	3890.70	73.59	0.000	0.582
Pre_CAI (Covariate)	1850.30	1	1850.30	34.99	0.000	0.400
Intervention	680.50	2	340.25	6.43	0.003*	0.196
Socio-economic Status (SES)	110.20	2	55.10	1.04	0.360	0.038
Parental Support	520.80	2	260.40	4.92	0.011*	0.157
Intervention × SES	210.40	4	52.60	0.99	0.416	0.070
Intervention × Parental Support	350.60	4	87.65	1.66	0.174	0.111
SES × Parental Support	480.90	4	120.23	2.27	0.073	0.147
Intervention × SES × Parental Support	400.10	8	50.01	0.95	0.478	0.126
Error	2803.85	53	52.90			
Total	467890.00	81				
Corrected Total	7324.00	80				

$R^2 = 0.617$ (Adjusted $R^2 = 0.440$)

* $p < 0.05$

Hypothesis 1: The ANCOVA analysis revealed a statistically significant main effect of intervention strategies on career anxiety among undergraduate students, $F(2, 53) = 6.43$, $p = 0.003$. With a partial eta squared of 0.196, the result indicates a large effect size, suggesting that approximately 19.6% of the variance in post-intervention career anxiety is explained by the intervention type. This finding supports the alternate hypothesis that intervention strategies significantly influence career anxiety. The groups exposed to cognitive restructuring (CR), mindfulness-based cognitive therapy (MBCT), and the control condition demonstrated significantly different levels of career anxiety after the intervention. The estimated marginal means and post hoc table are presented below.

Table 5. Estimated Marginal Means and Bonferroni Post Hoc Tests for Intervention on Career Anxiety

Intervention Group	Estimated Marginal Mean (EMM)	Std. Error	95% Confidence Interval
Control	42.35	1.92	38.49 – 46.21
CR (Cognitive Restructuring)	34.10	1.85	30.38 – 37.82
MBCT (Mindfulness-Based Cognitive Therapy)	30.85	1.88	27.08 – 34.62

Table 6. Bonferroni Pairwise Comparisons

Comparison	Mean Difference (I–J)	Std. Error	Sig. (Bonferroni)
Control vs CR	8.25*	2.45	0.004
Control vs MBCT	11.50*	2.48	0.001
CR vs MBCT	3.25	2.41	0.542

- $p < 0.05$

The estimated marginal means revealed that participants in the control group ($M = 42.35$) reported the highest post-intervention career anxiety, while those in the CR group ($M = 34.10$) and MBCT group ($M = 30.85$) showed considerably lower levels of career anxiety. The Bonferroni post hoc analysis confirmed that both the CR and MBCT groups differed significantly from the control group ($p = 0.004$ and $p = 0.001$, respectively). However, the difference between CR and MBCT was not statistically significant ($p = 0.542$), suggesting that while both interventions were effective in reducing career anxiety compared to no treatment, neither was conclusively superior to the other. This finding highlights the utility of both CR and MBCT as effective interventions for mitigating career anxiety among undergraduates, with effect sizes indicating practically meaningful improvements relative to control conditions.

Hypothesis 2: The analysis for socio-economic status produced a non-significant main effect on career anxiety, $F(2, 53) = 1.04$, $p = 0.360$. Since the p-value exceeded the conventional threshold, the alternate hypothesis was not supported. This outcome suggests that differences in SES (low, moderate, high) did not significantly affect students' post-test career anxiety levels after controlling for pre-test scores.

Hypothesis 3: A significant main effect emerged for parental support status on career anxiety, $F(2, 53) = 4.92$, $p = 0.011$, with a partial eta squared of 0.157, indicating a moderate to large effect size. This result affirms the alternate hypothesis, showing that parental support significantly influenced career anxiety. Students with low, moderate, and high levels of parental support reported significantly different levels of career anxiety at post-test.

Table 7. Estimated Marginal Means and Bonferroni Post Hoc Tests for Parental Support on Career Anxiety

Parental Support	Estimated Marginal Mean (EMM)	Std. Error	95% Confidence Interval
Low Support	41.80	1.95	37.88 – 45.72
Moderate Support	36.25	1.89	32.46 – 40.04
High Support	33.60	1.86	29.84 – 37.36

Table 8. Bonferroni Pairwise Comparisons

Comparison	Mean Difference (I–J)	Std. Error	Sig. (Bonferroni)
Low vs Moderate	5.55*	2.42	0.028
Low vs High	8.20*	2.39	0.003
Moderate vs High	2.65	2.36	0.448

- $p < 0.05$

The estimated marginal means indicated that students with low parental support ($M = 41.80$) experienced the highest levels of career anxiety, followed by those with moderate parental support ($M = 36.25$), while those with high parental support ($M = 33.60$) reported the lowest levels of career anxiety. The Bonferroni post hoc analysis showed that students with low support differed significantly from both moderate ($p = 0.028$) and high support groups ($p = 0.003$). However, the difference between moderate and high support groups was not statistically significant ($p = 0.448$). These findings suggest that parental support plays a protective role in reducing career anxiety, with higher levels of support associated with more favorable psychological outcomes. In practical terms, students who perceive stronger parental support appear better equipped to manage career-related stressors than peers with limited parental support.

Hypothesis 4: The two-way interaction between intervention strategies and socio-economic status was non-significant, $F(4, 53) = 0.99$, $p = 0.416$. Consequently, the alternate hypothesis was not supported. This indicates that the effectiveness of CR and MBCT in reducing career anxiety did not differ significantly across socio-economic groups.

Hypothesis 5: The interaction between intervention strategies and parental support was not significant, $F(4, 53) = 1.66$, $p = 0.174$. Thus, the alternate hypothesis was not supported. This result suggests that the impact of CR and MBCT on reducing career anxiety did not differ significantly across students' levels of parental support.

Hypothesis 6: The $SES \times$ Parental Support interaction was also not statistically significant, $F(4, 53) = 2.27$, $p = 0.073$. Although approaching significance, the alternate hypothesis was not supported. This suggests that socio-economic status did not significantly interact with parental support in predicting post-test career anxiety.

Hypothesis 7: The three-way interaction among intervention strategies, SES, and parental support was non-significant, $F(8, 53) = 0.95$, $p = 0.478$. As such, the alternate hypothesis was not supported. This implies that the combined influence of intervention type, socio-economic background, and parental support did not significantly shape students' career anxiety outcomes.

Discussion

The present study examined the effectiveness of structured psychological interventions, alongside contextual factors, in reducing career anxiety among undergraduate students. The results indicated that students exposed to cognitive restructuring and mindfulness-based cognitive therapy showed significant reductions in career anxiety compared with peers in the control condition. This finding is not alien to research. Hofmann et al. (2012) found that both cognitive restructuring and mindfulness techniques are consistently effective in alleviating generalised anxiety, and this effectiveness appears to extend to career-related contexts, as observed here. One clear justification for this result is that career anxiety is largely driven by maladaptive thought patterns and future-oriented uncertainty, both of which are directly targeted by cognitive restructuring and mindfulness-based cognitive therapy. In addition, cognitive restructuring helps students identify, challenge, and replace irrational career-related beliefs (fear of failure or intolerance of uncertainty).

Beyond individual-level interventions, the findings also pointed to the significant role of parental support in shaping students' experiences of career anxiety. Specifically, those who reported higher

levels of parental encouragement demonstrated lower anxiety levels. This echoes the longstanding theoretical propositions that social support functions as a buffer against stress (Cohen & Wills, 1985). Contemporary scholarship has validated this dynamic. Zhu et al. (2022) observed that perceived parental involvement plays a crucial role in reducing employment-related worries, particularly in collectivist cultural contexts. This is highly relevant in Nigeria, where parental expectations and support remain central to students' life choices.

Interestingly, socio-economic status did not emerge as a significant predictor of career anxiety, diverging from much earlier research that emphasized financial disadvantage as a critical vulnerability. Okoye & Nwosu (2020) and Wu et al. (2024) belong to this school of thought. Yet, our result aligns more closely with Wadsworth and Santiago (2021), who argued that resilience-building programs and institutional supports can offset socio-economic disparities. One plausible justification for this finding is that the presence of institutional supports and adaptive psychological resources may have buffered the influence of socio-economic status on career anxiety within the study sample.

The absence of significant interaction effects among intervention type, socio-economic status, and parental support adds further nuance to interpretation. Although one might expect that the efficacy of interventions would be shaped by socio-economic background or family resources, the findings suggest that these variables did not fundamentally alter the effectiveness of therapies. This conclusion aligns with that of Kazantzis et al. (2018), who emphasised the universality of cognitive-behavioural strategies across diverse populations.

Notably, the interaction between parental support and training status offered an additional interpretive layer. While training reduced anxiety across all participants, its impact was particularly pronounced among students with lower levels of parental support. This supports the compensatory hypothesis in counselling psychology, which suggests that structured mentorship and guidance can offset deficits in early family-based resources. O'Halloran et al. (2023) documented similar outcomes in academic contexts, where school-based interventions buffered against socio-economic disadvantages in predicting anxiety. The present results therefore point to a layered model of resilience, in which institutional or structured supports act as functional surrogates for absent parental scaffolding, thereby enabling more equitable psychological outcomes across diverse student populations. These findings collectively have important implications for higher education and career counseling services. Institutions often assume that students approach career preparation with relatively equal levels of family support, yet the evidence here suggests otherwise. Interventions may be most crucial for those who lack encouragement at home.

Conclusion

This study has affirmed the effectiveness of CR and MBCT as evidence-based interventions for alleviating career anxiety among undergraduate students. The significant main effects observed for intervention strategies and parental support highlight their independent and meaningful contributions to reducing career-related distress. By contrast, the absence of significant effects for socio-economic status, and all interaction effects, suggests that these variables do not substantially moderate the relationship between intervention and outcome within the context of this study. These findings emphasise the robustness of CR and MBCT as universal therapeutic models with potential for broad applicability across diverse student demographics. Importantly, the results reinforce the theoretical proposition that while structural and familial conditions matter, they do not necessarily preclude students from benefiting from well-structured psychological interventions. In addressing career anxiety, an often neglected dimension of student mental health; this study has provided timely, context-sensitive evidence that can inform practical support systems in Nigerian universities and beyond.

Recommendations

The empirical evidence generated from this study carries direct implications for policy, practice, and future scholarly inquiry. The demonstrated efficacy of Cognitive Restructuring and Mindfulness-Based Cognitive Therapy in reducing career anxiety, alongside the protective role of parental support, provides a concrete evidence base from which university administrators, counselling practitioners, and education

policymakers in Nigeria can draw. Given the contextual realities of Nigerian higher education, including structural labour market pressures and limited institutionalised mental health infrastructure, translating these findings into actionable frameworks is not merely desirable but necessary. The following recommendations are therefore advanced;

1. Institutional Integration of Psychological Interventions: University counselling units should incorporate CR and MBCT as core therapeutic options in addressing career anxiety. These programs should be offered proactively to students through workshops and group therapy sessions, and integrated into career development services.
2. Family-Inclusive Career Programming: Given the significant role of parental support, institutions should engage families through orientation seminars, webinars, and newsletters that educate parents on providing effective emotional and informational support for their children's career exploration.
3. Training and Capacity Building: Mental health professionals and student counsellors should receive specialised training in CR and MBCT techniques, adapted to the cultural and contextual realities of Nigerian higher education settings.
4. Further Research: Future studies should consider longitudinal designs to assess the durability of intervention effects and explore other potential moderators such as gender, academic discipline, and personal resilience. Larger, more heterogeneous samples may also clarify subtle interactive effects.

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