

Big-Five Personality Traits and Depression Among Parents of Children with Neurodevelopmental Disorders in Makurdi, Nigeria

Fateman Iorlumun¹, Pauline Aiingona Atsehe², Samuel Terzungwe Anhange³ & Aondofa Alejir⁴

¹Postgraduate Student, Department of Psychology,
Rev. Fr. Moses Orshio Adasu University, Makurdi

²Lecturer, Department of Psychology, Rev.
Fr. Moses Orshio Adasu University, Makurdi

³Lecturer, Department of Psychology, Rev.
Fr. Moses Orshio Adasu University, Makurdi

⁴Postgraduate Student, Department of Psychology,
Rev. Fr. Moses Orshio Adasu University, Makurdi

<https://doi.org/10.56201/ijssmr.vol.12no9.2026.pg727.742>

Abstract

Parents of children with neurodevelopmental disorders have over the years suffered from multiple stressors such as the trauma of their children's suffering, financial challenges, physical stress and bleakness of their children not having the desired future. More so, personality differences and irrational beliefs have also shaped parents' inclinations to depression. These factors serve as critical predispositions to depression which are yet to be tested in research among parents of neurodevelopmental disorders. To this end, the study investigated big five personality traits and cognitive behavioural therapy on depression. This study investigated big-five personality traits and depression among parents of children with neuro-developmental disorders in Makurdi, Nigeria. The study adopted cross-sectional survey and quasi-experimental (mix-method) design. This study used simple random sampling technique to draw the 50 parents of children with neuro-developmental disorders. The participants comprised of 17 (24.3%) males and 53 (75.7%) females. Their ages ranged from 26 – 53 years with a mean age of 39.04 years (SD=13.31). The instruments used for data collection include; Big Five Inventory and Beck's Depression Inventory. Data analysis was done using Simple Linear Regression, and Standard multiple regression. Findings indicated that there was a significant negative influence of openness to experience on depression among parents of children with neurodevelopmental disorders in Makurdi Nigeria. There was a significant negative influence of conscientiousness on depression among parents of children with neurodevelopmental disorders in Makurdi Nigeria. There was a significant negative influence of extraversion on depression among parents of children with neurodevelopmental disorders in Makurdi Nigeria. There was a significant negative influence of agreeableness on depression among parents of children with neurodevelopmental disorders in Makurdi Nigeria. There was a significant positive influence of neuroticism on depression among parents of children with neurodevelopmental disorders in Makurdi Nigeria. There was a significant joint influence of the big-five personality traits on depression among parents of children with neurodevelopmental disorders in Makurdi Nigeria. It was concluded that all the dimensions of the Big Five personality traits are significant determinants of depression among parents of children with

neurodevelopmental disorders in Makurdi Nigeria. The recommends among others that the hospital management of Benue State University Teaching Hospital Makurdi should make provision for the clinical assessment of parents of children with neurodevelopmental disorders who present to the hospital. The assessment should pick up parents' level of openness to experience and determine if they need more close support, since high openness indicates higher likelihood of exploring more medical options for treating neurodevelopmental disorders.

Key words: *Big-Five Personality Traits, Depression, Neurodevelopmental Disorders*

Introduction

Depression is a mental health condition affecting over 300 million people globally which representing about 4.4% of the world's population. It occurs across all age groups and is associated with low quality of life, higher medical comorbidities, and elevated mortality. Despite its burden, treatment rates remain low, with relatively few affected individuals receiving adequate care (Park, 2021). Depression may range from mild to severe forms, while subthreshold or subclinical depression occurs when individuals experience depressive symptoms without meeting the full diagnostic criteria (Novak-Pavlic et al., 2022). Even mild depressive symptoms can impair functioning, increase suicide risk, and potentially progress to major depression (Scherer et al., 2019). Such symptoms are particularly relevant among parents caring for children with neurodevelopmental disorders. Unlike short-lived mood fluctuations arising from everyday challenges, depression is more persistent and severe and can significantly interfere with personal, occupational, academic, and family functioning (Vagni et al., 2020). Among parents, depression may affect their mood, social and physical experiences, behavioural functioning, response to their children's needs, quality of support, and motivation to continue caregiving. Common symptoms include persistent weakness, loss of pleasure, feelings of worthlessness, and suicidal thoughts. However, demanding caregiving responsibilities, stigma, and reluctance to seek mental health services may lead parents to conceal their symptoms (Martinez-Monteagudo et al., 2019). This concern is particularly applicable to parents of children with neurodevelopmental disorders, who may have to rationalize or suppress their emotional experiences in order to continue providing care. Globally, depression is among the leading causes of disability and affects approximately 5–6% of adults in every given year, with prevalence often higher among women and adolescents. Women are estimated to be at risk between 1.5 to 3 times more than men to experience depression (Xiong et al., 2021). High rates of depression has been reported in countries such as the United States and United Kingdom, with increasing rates across parts of Asia, including Singapore and Thailand (Scherer et al., 2019). In Sub-Saharan Africa however, depression represents a substantial mental health burden, affecting approximately 29 to 30 million people, with high rates reported in countries such as Uganda, Sudan and Nigeria. Conflict, poverty, and limited mental health resources contribute to this burden (Moffatt et al., 2019). In Nigeria, depression affects approximately 3.9% of the population, representing more than seven million people, with economic hardship, social adversity, and underdiagnosis among contributing factors (Gbadamosi et al., 2022). Depression is also highly prevalent among parents, with estimates ranging from 20% to over 40%, particularly where social support is limited and financial strain, stigma, and prolonged caregiving are present (Yang et al., 2018). Parents of children with neurodevelopmental disorders are particularly vulnerable to depression, with approximately 22–25% reporting depressive symptoms (Scherer et al., 2019). Their depression is associated with substantial psychological distress and may arise from multidimensional caregiving stressors, including emotional and

behavioural difficulties, financial strain, and reduced opportunities for personal growth (Moffatt et al., 2019). Parents of children with Cerebral Palsy, Autism Spectrum Disorder, and Down syndrome are reported to experience increased depression risk (Park, 2021). For example, approximately 31% of parents of children with intellectual disability have been reported to experience moderate depression compared with 7% of parents of children without intellectual disability (Shorey et al., 2020). The severity of parental depression may further depend on the functional and current status of both the child and parent (Alibekova et al., 2022). In Makurdi, where many families are low-income earners, limited access to quality treatment for children with developmental disorders may prolong hospital care and increase the psychological burden on parents. Thus, parental mental health may be influenced by several interacting factors.

One important factor associated with depression is personality. The Big Five personality traits represent relatively consistent individual differences that influence thoughts, feelings, and behaviours (Olanrewaju et al., 2025). These traits are openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. High neuroticism, low conscientiousness, and low extraversion have been associated with depressive symptoms, with neuroticism showing a stronger relationship than conscientiousness or extraversion. Neuroticism reflects a tendency to experience negative emotions such as stress, sadness, and anger; conscientiousness involves responsibility, self-restraint, and purposeful pursuit of goals; extraversion reflects positive emotions, assertiveness, and preference for social activities; openness involves receptiveness to new ideas, emotions, experiences, and intellectual exploration; while agreeableness reflects trust, altruism, consideration, kindness, empathy, and the pursuit of interpersonal harmony. Among these characteristics, high neuroticism has been identified as an important risk factor for depression (Ogungbemi et al., 2024). The Five Factor Model provides an influential theoretical framework for understanding the relationship between personality and depressive symptoms. It conceptualizes personality through five major dimensions. Extraversion encompasses enthusiasm, sociability, decisiveness, activity, adventurousness, and optimism. Agreeableness includes trust, altruism, straightforwardness, compliance, modesty, and empathy. Conscientiousness reflects competence, fairness, organization, diligence, achievement orientation, self-discipline, prudence, and restraint. Neuroticism represents emotional instability and includes anxiety, hostility, vulnerability, self-consciousness, impulsivity, and susceptibility. Openness encompasses imagination, aesthetics, emotional depth, curiosity, creativity, and intellect. Evidence further indicates that conscientiousness may serve a protective role against depression (Lawal et al., 2023). Collectively, these personality dimensions provide an important basis for understanding individual differences in vulnerability to depression among parents of children with neurodevelopmental disorders.

Literature Review

Openness to Experience and Depression

Cai et al. (2024) examined the mediating roles of self-efficacy and walking in the relationship between personality traits and depression among 11,031 Chinese residents, of whom 8,499 were included in the analysis. Using the Ten-Item Personality Inventory, New General Self-Efficacy Scale, Chronic Disease Self-Management Study Measures, and PHQ-9, the researchers employed sequential mediation models. Extraversion, agreeableness, conscientiousness, and emotional stability were negatively associated with depression, while openness was positively associated with depression. Self-efficacy and walking mediated the relationships between most personality traits and depression but did not mediate the openness-depression relationship. The study

suggested that personality traits and behavioural factors such as self-efficacy and walking are relevant to depressive symptoms.

Lee et al. (2024) investigated the relationship between personality traits, depressive symptoms, and resting-state functional connectivity among 153 healthy Germans. Network-based statistics and mediation analyses showed that neuroticism, conscientiousness, openness, and extraversion were significantly associated with depressive symptoms. Functional connectivity networks were associated with neuroticism and conscientiousness, while extraversion-associated networks emerged after controlling for demographic factors. The findings suggested that intrinsic functional connectivity may partly explain the relationship between personality traits and depressive symptoms. Morken et al. (2024) examined within-person associations between depressive symptoms and Big Five personality traits among 817 children aged 10–16 years and their parents in Norway. Using clinical interviews, self-reported personality measures, and a random-intercept cross-lagged panel model, they found that increased neuroticism predicted more depressive symptoms, while increased depressive symptoms predicted increased neuroticism. Depressive symptoms also predicted reductions in openness, extraversion, and, during some age periods, conscientiousness. The study therefore supported both predisposition and scar perspectives, suggesting that personality may contribute to depression while depression may also alter personality characteristics.

Conscientiousness and Depression

Olino (2024) examined pathoplastic effects of personality on depressive symptoms across five cross-sectional samples using moderated nonlinear factor analysis. The findings provided limited evidence that personality, particularly conscientiousness, influenced the structure or manifestation of depression. The study therefore suggested that the relationship between personality and specific depressive symptoms may be relatively limited and warrants further longitudinal investigation.

Wang et al. (2024) investigated Big Five personality traits and depression and anxiety among 860 adolescents and 1,751 young adults in China using network analysis. Neuroticism had a strong activating relationship with depression and anxiety, whereas conscientiousness demonstrated the strongest protective relationship with depression. Extraversion also showed increasing protective effects against depression during adolescence. The findings indicated that personality traits may be useful for identifying individuals at risk and developing targeted interventions.

Kang et al. (2023) examined personality traits and dimensions of mental health among 12,007 participants from the British Household Panel Study. Using confirmatory factor analysis and generalized linear models, they found that neuroticism was positively associated with all dimensions of mental health problems. Extraversion was negatively associated with depression and anxiety, while agreeableness and conscientiousness were negatively associated with social dysfunction, anhedonia, and loss of confidence. Openness was negatively associated with depression and anxiety. The findings supported personality-based explanations of vulnerability and changes in mental health.

Extraversion and Depression

Tayo and Emmanuel (2023) examined Big Five personality traits as predictors of depressive symptoms among 420 undergraduates at Lagos State University using the BFI-10 and BDI-II. Multiple regression and independent-samples *t*-test analyses showed that the five personality traits jointly significantly influenced depression. The study reported significant effects of the personality dimensions, although conscientiousness and sex were not significant predictors in the relevant

analyses. The authors recommended behavioural therapy, emotional support, and social skills training for managing factors associated with depression.

Ho et al. (2022) examined whether personality and coping styles could predict major depressive disorder among 70 patients with MDD and 70 matched healthy controls. Using the Hamilton Depression Rating Scale, Ten-Item Personality Inventory, Brief COPE, logistic regression, and ROC analyses, they found that introversion, poor organization, and neuroticism significantly predicted MDD status. Dysfunctional coping strategies, particularly denial and self-blame, were also significant predictors. The findings demonstrated the relevance of personality and coping styles in distinguishing individuals with and without MDD. Edler et al. (2022) examined personality traits and perceived social support as moderators of depressive symptoms among 1,402 German adults aged 18–31 years. Using accelerometer data, self-reported media use, depressive symptoms, social support, and Big Five personality measures, the researchers found that high media use was positively associated with depressive symptoms. Social support and personality, particularly extraversion, moderated some of these relationships. The findings highlighted the importance of considering individual personality characteristics when examining factors associated with depressive symptoms.

Agreeableness and Depression

Gong et al. (2022) investigated schizotypal personality traits, depression, cognitive appraisal, and suicidality among 2,457 Chinese college students. Higher depression and schizotypal personality traits were observed among students with suicidality, while cognitive reappraisal was lower. Depression mediated the relationship between schizotypal personality traits and suicidality, while cognitive reappraisal negatively affected depressive symptoms. The findings emphasized the role of emotional regulation and depression in the relationship between personality characteristics and suicidality. Leow et al. (2016) examined social support, self-regulation, and Big Five personality traits as predictors of depressive symptoms among 235 college students. Autonomous self-regulation predicted lower depressive symptoms, whereas controlled self-regulation predicted higher symptoms. Higher neuroticism was also associated with more depressive symptoms, while the quality of interpersonal relationships emerged as the strongest predictor. The findings demonstrate the importance of personality and interpersonal factors in understanding depression. Hakulinen et al. (2015) conducted an individual-participant meta-analysis involving 10 prospective cohort studies and 117,899 participants to examine personality traits and depressive symptoms. Low extraversion, high neuroticism, and low conscientiousness were associated with depressive symptoms in both cross-sectional and longitudinal analyses. Depressive symptoms were also associated with subsequent changes in extraversion, neuroticism, agreeableness, conscientiousness, and openness. The findings therefore suggested a reciprocal relationship in which personality traits influence vulnerability to depression while depressive symptoms may also contribute to personality changes.

Neuroticism and Depression

Amano et al. (2023) conducted a randomized clinical trial involving 31 patients with MDD to examine the effects of CBT on pessimistic future thinking. Participants received either CBT or a talking control intervention for 16 weeks. CBT produced greater improvements in aspects of future thinking and dysfunctional attitudes than the control condition. The researchers concluded that future-thinking response patterns may provide an objective indicator of the CBT treatment process, although larger confirmatory trials were recommended.

Wright et al. (2022) evaluated clinician-supported computer-assisted CBT among 175 primary-care patients with depressive symptoms. Participants received either computer-assisted CBT or treatment as usual and were assessed at post-treatment and follow-up. CBT produced significantly greater improvements in PHQ-9 scores and higher response and remission rates than treatment as usual at post-treatment, three-month, and six-month follow-ups. The findings supported the usefulness of computer-assisted CBT for depressive symptoms in diverse primary-care populations.

Big-Five Personality Traits and Depression

Forouzani et al. (2024) examined CBT and psychological hardiness in relation to personality traits and marital relationship quality among 32 couples experiencing marital conflict in Tehran. Using a quasi-experimental pretest-posttest control-group design, the experimental group received eight CBT sessions. The findings showed significant improvements in psychological hardiness and marital relationship quality, while hardiness moderated the relationship between personality traits and quality of life. The study demonstrated the relevance of CBT and personality-related factors in psychological functioning. Abbas et al. (2023) investigated hardiness and CBT in relation to personality traits and depressive symptoms among 90 eligible patients with type 2 diabetes mellitus in Faisalabad. Participants were randomly assigned to CBT or waitlist conditions and assessed before and after treatment. CBT significantly reduced depressive symptoms, diabetes distress, and health anxiety while improving quality of life, treatment adherence, and physical activity. Hardiness also moderated the relationship between personality traits and depressive symptoms, supporting CBT as a useful intervention for depression and related psychological difficulties.

Onyechi et al. (2016) examined cognitive behavioural coaching and hardiness among 80 type 2 diabetic inpatients in Onitsha, Nigeria. Using a randomized pretest-posttest control-group design, participants who received cognitive behavioural coaching experienced significantly greater reductions in depressive symptoms than those in the control group. These improvements remained at six-month follow-up, while hardiness was found to be relevant to the relationship between personality traits and depression. The study recommended evidence-based cognitive-behavioural interventions for improving psychological wellbeing among patients with chronic illness.

Method

Design

This study adopted mix-method research design to investigate big-five personality traits and depression among parents of children with neuro-developmental disorders in Makurdi; effectiveness of cognitive behavioural therapy. The study adopted cross-sectional survey and quasi-experimental design. The design is appropriate because it enables the researcher to test the effect of an intervention and also garner the opinions of parents at one point in time. A quasi-experimental design fits because participants were measured before and after the intervention to assess changes in their depression.

Population

The current population of parents of children with neuro-developmental disorders in Benue State University Teaching Hospital Makurdi is 85. This is the total number of active parents consistently attending hospital appointments at the neurological/paediatric clinic for children with neuro-developmental disorders.

Sample Size Determination

This study used the Krejcie and Morgans' table to determine the sample for the study. Using this table, a sample of 70 parents was deemed representative of a population of 85 parents.

Sampling Technique

This study used simple random sampling technique to draw the 70 parents of children with neuro-developmental disorders in the aforementioned hospital. This sampling technique was deemed appropriate because the researcher gave each parent an equal chance of been chosen for the study. This was achieved using secret balloting where the researcher wrote "In" on 70 papers and squeeze them, wrote "Out" on 15 papers and squeeze them. These two groups of papers were mixed together and the parents were asked to pick one randomly. Those who picked "In" were retained for the study, while those who picked "Out" were excluded from the study. The entire sampling process took two weeks to be completed because some parents did not present for their appointment in the first week of sampling.

Participants

The participants for this study were 70 parents comprising of 17 (24.3%) males and 53 (75.7%) females. Their ages ranged from 26 – 53 years with a mean age of 39.044 years (SD=13.312). Among them, 31 (44.3%) were Tiv, 27 (38.6%) were Idoma while 12 (17.1%) were from other ethnic groups. As for their religion, 55 (78.6%) were Christians while 15 (21.4%) were Muslims. Concerning their marital status, 47 (67.1%) were married, 14 (20%) were Separated/Divorced while 9 (12.9%) were widowed. Considering their duration of parenting, 53 (74.3%) had parented for less than 5 years while 18 (25.7%) had parented for 5 years and above. Lastly, all the parents 70 (100%) were parenting children supported at the Benue State University Teaching Hospital Makurdi.

Instruments

Demographic Variables: The study assessed the respondents' age, sex, ethnic group, religion, marital status and duration of parenting.

Big Five Inventory (BFI): Big-five personality traits were measured using the Big Five Inventory (BFI) developed by John and Srivastava (1999). The instrument has 44 items, rated on a 5-point scale from 1 (strongly disagree) to 5 (strongly agree), covering Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness to Experience. Items marked "R" were reverse-scored. The authors reported an overall Cronbach alpha of .87, with subscale reliabilities of Extraversion $\alpha=.79$, Agreeableness $\alpha=.72$, Conscientiousness $\alpha=.78$, Neuroticism $\alpha=.71$, and Openness $\alpha=.74$. The present study reported an overall alpha of .87, with Openness $\alpha=.84$, Conscientiousness $\alpha=.80$, Extraversion $\alpha=.71$, Agreeableness $\alpha=.82$, and Neuroticism $\alpha=.75$. The instrument underwent face and content validation by two psychology lecturers with expertise in psychometrics. Sample items include: "I see myself as someone who is original, comes up with new ideas" and "I see myself as someone who generates a lot of enthusiasm." The total variance explained was 92.095%, indicating that the questionnaire explained 92% of the personality traits of parents of children with neurodevelopmental disorders in Makurdi, while 7.905% remained unexplained. This confirms the validity of the instrument.

Beck's Depression Inventory: Depression was measured using the Beck Depression Inventory (BDI) developed by Beck et al. (1961), designed to measure the behavioural manifestations of depression. The inventory consists of 21 items, rated on a 0–3 response format with varying responses. It demonstrates high internal consistency, with alpha coefficients of .86 for psychiatric populations and .81 for non-psychiatric populations. The present study reported an alpha coefficient of .82. The instrument underwent face and content validation by two psychology lecturers with expertise in psychometrics. Sample items include: *"I am so sad and unhappy that I can't stand it"* and *"I feel guilty all of the time."* The total variance explained was 87.28%, indicating that the questionnaire explained 87% of the depression experienced by parents of children with neurodevelopmental disorders, while 12.72% remained unexplained. This confirms the validity of the instrument.

Procedure

Data for the study was obtained through direct contact. A letter of introduction from the Department of Psychology, Rev. Fr. Moses Orshio Adasu University, Makurdi, was taken to Benue State Teaching Hospital and Federal Medical Centre, Makurdi, to seek permission. The Federal Medical Centre was used for the pilot study. The ethical committees of the hospitals reviewed the thesis and granted ethical clearance. After permission was granted, data collection commenced. Two postgraduate research assistants and Clinical Psychologists working in the Neurological/Paediatric Clinic for children with special needs were trained on the use of the instruments. The purpose of the study was explained to the parents after a brief mental health talk. Questionnaires were distributed, and participants were instructed on how to complete them. Pens and pencils were provided, and each participant who completed and returned the questionnaire received a piece of diaper as an incentive. Participants completed and returned copies of the questionnaire immediately on the same day, within approximately 45 minutes. Any parent available at the facility who understood the procedure had an equal right to participate. After data collection, three weeks were used to sort, code and analyse the data on Big-Five personality traits and depression among parents of children with neurodevelopmental disorders.

Data Analysis

Data obtained from the administered questionnaire were coded into the IBM Statistical Package for Social Sciences (SPSS) version 25. Demographic characteristics of the respondents were analyzed using descriptive statistics such as frequencies, mean and standard deviation. Correlational statistic was used in estimating the relationship between the variables of the study. In testing the formulated hypotheses, inferential statistical procedure such as simple linear regression was used in testing hypothesis one to five. Standard Multiple linear regression was used in testing hypothesis six. All analysis was performed using Statistical Package for Social Sciences (SPSS) Version 25.

Results

Test of Hypotheses

The hypotheses raised in this study were tested using multiple regression and dependent t-test. The results are presented below:

Table 1: Summary of Simple Linear Regression showing the influence of openness to experience on depression among parents of children with neurodevelopmental disorders

Variables	R	R ²	F	df	β	t	sig.
Constant	.739	.545	81.596	1,68		17.091	.000
Openness to Experience					-.739	-9.033	.000

The result presented in table 2 indicated that there was a significant negative influence of openness to experience on depression among parents of children with neurodevelopmental disorders [$R^2=.545$, $F(1,68)=81.596$, $\beta=-.739$, $t=-9.033$, $p<.001$]. The result further indicated that openness to experience explained 54.5% of the variation in depression. This means that parents' depression levels increase with decreasing levels of openness to experience. Thus, hypothesis one was supported.

Table 2: Summary of Simple Linear Regression showing the influence of conscientiousness on depression among parents of children with neurodevelopmental disorders

Variables	R	R ²	F	df	β	t	sig.
Constant	.865	.749	202.524	1,68		17.372	.000
Conscientiousness					-.865	-14.231	.000

The result presented in table 2 indicated that there was a significant negative influence of conscientiousness on depression among parents of children with neurodevelopmental disorders [$R^2=.749$, $F(1,68)=202.524$, $\beta=-.865$, $t=-14.231$, $p<.001$]. The result further indicated that conscientiousness explained 74.9% of the variation in depression. This means that parents' depression levels increase with decreasing levels of conscientiousness. Thus, hypothesis two was supported.

Table 3: Summary of Simple Linear Regression showing the influence of extraversion on depression among parents of children with neurodevelopmental disorders

Variables	R	R ²	F	df	β	t	sig.
Constant	.585	.343	35.457	1,68		13.508	.000
Extraversion					-.585	-5.955	.000

The result presented in table 4.4 indicated that there was a significant negative influence of extraversion on depression among parents of children with neurodevelopmental disorders [$R^2=.343$, $F(1,68)=35.457$, $\beta=-.585$, $t=-5.955$, $p<.001$]. The result further indicated that extraversion explained 34.3% of the variation in depression. This means that parents' depression levels increase with decreasing levels of extraversion. Thus, hypothesis three was supported.

Table 4: Summary of Simple Linear Regression showing the influence of agreeableness on depression among parents of children with neurodevelopmental disorders

Variables	R	R ²	F	df	β	t	sig.
Constant	.886	.786	249.071	1,68		30.095	.000
Agreeableness					-.886	-15.782	.000

The result presented in table 4 indicated that there was a significant negative influence of agreeableness on depression among parents of children with neurodevelopmental disorders [$R^2=.786$, $F(1,68)=249.071$, $\beta=-.886$, $t=-15.782$, $p<.001$]. The result further indicated that agreeableness explained 78.6% of the variation in depression. This means that parents depression levels increase with decreasing levels of agreeableness. Thus, hypothesis four was supported.

Table 5: Summary of Simple Linear Regression showing the influence of neuroticism on depression among parents of children with neurodevelopmental disorders

Variables	R	R ²	F	df	β	t	sig.
Constant	.736	.541	80.285	1,68		20.695	.000
Neuroticism					.736	8.960	.000

The result presented in table 5 indicated that there was a significant positive influence of neuroticism on depression among parents of children with neurodevelopmental disorders [$R^2=.541$, $F(1,68)=80.285$, $p<.001$]. The result further indicated that neuroticism explained 54.1% of the variation in depression. This means that parents' depression levels increase with their levels of neuroticism. Thus, hypothesis five was supported.

Table 6: Summary of Standard Multiple Regression showing the joint influence of openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism on depression among parents of children with neurodevelopmental disorders

Variables	R	R ²	F	df	β	t	sig.
Constant	.344	.118	12.987	5,64		17.271	.000
Openness to Experience					-.739	-16.332	.000
Conscientiousness					-.408	-11.452	.000
Extraversion					-.209	-13.456	.000
Agreeableness					-.768	-15.809	.000
Neuroticism					.767	13.210	.000

The result presented in table 6 indicated that there was a significant positive influence of big-five personality traits on depression among parents of children with neurodevelopmental disorders [$R^2=.118$, $F(5,64)=12.987$, $p<.001$]. The result further indicated that the big-five personality traits explained 11.8% of the variation in depression. As for the dimensions, openness to experience ($\beta=-.739$, $t=-16.332$, $p<.001$), conscientiousness ($\beta=-.408$, $t=-11.452$, $p<.001$), extraversion ($\beta=-.209$, $t=-13.456$, $p<.001$), agreeableness ($\beta=-.768$, $t=-15.809$, $p<.001$) and neuroticism ($\beta=.767$, $t=13.210$, $p<.001$) made significant contributions to the model. Thus, hypothesis six was supported.

Discussion

Hypothesis One

Hypothesis one examined whether openness to experience would significantly influence depression among parents of children with neurodevelopmental disorders in Makurdi. Findings indicated that openness to experience had a significant negative influence on depression. Openness to experience describes cognitive flexibility, imagination, and receptiveness to new ideas, events and environments. Parents who are open to experience may explore different options for managing challenges, thereby reducing depression. The finding agrees with Lee et al. (2024), who found a significant correlation between openness to experience and depressive symptoms. Morken et al. (2024), who found that increased depressive symptoms forecast reduced openness to experience, and Conversely, Cai et al. (2024) found that openness to experience was positively associated with depression. These discrepancies may be due to differences in sample, design, setting and context. The cognitive flexibility associated with openness to experience may therefore help shape parents' mood, interests, energy levels and emotional stability.

Hypothesis Two

Hypothesis two examined whether conscientiousness would significantly influence depression among parents of children with neurodevelopmental disorders in Makurdi. Findings indicated that conscientiousness had a significant negative influence on depression. Conscientiousness involves responsibility, organization, self-discipline, goal-directed behaviour and adherence to social norms. These attributes may help reduce depressive symptoms. The finding agrees with Olino (2024), who found minimal evidence that conscientiousness is associated with depression, and Wang et al. (2024), who reported that conscientiousness demonstrated the strongest protective effect against depression. Similarly, Kang et al. (2023) found that conscientiousness was negatively related to social dysfunction and anhedonia, which are key features of depression. This finding may be explained by the fact that punctuality, goal-directed behaviour and discipline can help parents achieve their goals and reduce worries and frustrations.

Hypothesis Three

Hypothesis three examined whether extraversion would significantly influence depression among parents of children with neurodevelopmental disorders in Makurdi. Findings indicated that extraversion had a significant negative influence on depression. Extraversion is characterized by sociability, assertiveness, high energy and sensation seeking. These attributes may help parents handle challenges and irrational thoughts that could contribute to depression. The finding agrees with Tayo and Emmanuel (2023), who reported a significant influence of extraversion on depression. Ho et al. (2022) also found that introversion and lack of organizational skills significantly predicted major depressive disorder, while Edler et al. (2022) reported differences in the relationship between physical activity and depressive symptoms among extraverts and introverts. The finding may be explained by the fact that socially active and assertive parents may share their concerns with others and receive support, thereby reducing the likelihood of depression.

Hypothesis Four

Hypothesis four examined whether agreeableness would significantly influence depression among parents of children with neurodevelopmental disorders in Makurdi. Findings indicated that agreeableness had a significant negative influence on depression. Agreeableness involves caring, cooperation and empathy, which may help parents provide attention and care to their children and reduce depressive tendencies. The finding is related to Leow et al. (2016), who found that autonomous self-regulation predicted lower depressive symptoms, while controlled self-regulation predicted higher depressive symptoms. Hakulinen et al. (2015) also found that depressive symptoms were associated with changes in agreeableness. These findings suggest that responsible and empathic parents may be more likely to provide care and attention to their children, which may be associated with lower depression.

Hypothesis Five

Hypothesis five examined whether neuroticism would significantly influence depression among parents of children with neurodevelopmental disorders in Makurdi. Findings indicated that neuroticism had a significant positive influence on depression. Neuroticism is characterized by emotional instability, nervousness and pathological worry. Parents with these characteristics may experience mood changes, hopelessness and reduced interest in previously enjoyable activities, making higher levels of depression more likely. The finding agrees with Amano et al. (2023), who found significant positive associations between neuroticism and depression, and Wright et al.

(2022), who found that emotional instability influenced depressive symptoms. Ede et al. (2020) also reported significant reductions in depressive symptoms among neurotic patients. The finding may therefore be related to emotional instability, worry and nervousness experienced by parents of children with neurodevelopmental disorders.

Hypothesis Six

Hypothesis six examined whether Big-Five personality traits would significantly influence depression among parents of children with neurodevelopmental disorders in Makurdi. Findings indicated that Big-Five personality traits had a significant positive influence on depression. Big-Five personality traits represent individual differences that distinguish one person from another, and some of these differences may be associated with the tendency to experience depression. The finding agrees with Forouzani et al. (2024) also reported an association between personality traits and quality of life. Also, Farrashzadehjelodar and Sadeghi (2024), who found a positive influence of personality traits on depressive symptoms. while Abbas et al. (2023) found that personality traits and depressive symptoms were negatively related. Onyechi et al. (2016) similarly found that personality differences could determine an individual's predisposition to depression. These findings suggest that personality differences may be associated with depression among parents.

Conclusion

The goal of this study was to assess how personality factors are implicated in depression among parents of children with neurodevelopmental disorders in Makurdi, Nigeria. The major finding was that personality traits significantly influenced depression among the parents. All dimensions of the Big Five personality traits: openness to experience, conscientiousness, extraversion, agreeableness and neuroticism showed significant influence on depression, implying that parents with these personality traits may still experience depression while caring for children with neurodevelopmental disorders.

Recommendations

Based on the findings of the study, the following recommendations were made:

- i. Benue State University Teaching Hospital, Makurdi, should provide clinical assessment for parents of children with neurodevelopmental disorders. The assessment should identify parents' levels of openness to experience and determine whether additional support is required, particularly because openness may influence parents' willingness to explore different treatment options.
- ii. Parents' levels of conscientiousness should be assessed consistently, with interventions tailored accordingly to encourage punctuality, commitment and accountability toward the health and wellbeing of their children.
- iii. Clinical psychologists should provide appropriate support to parents who score low on extraversion and agreeableness, as they may experience difficulties with social interaction and caregiving. Such support may have implications for the clinical management and wellbeing of their children.

Contributions to Knowledge

The study made significant contributions to clinical knowledge in the following ways:

- i. The study contributes to the limited research on parents of children with neurodevelopmental disorders by shifting attention from the children to the psychological wellbeing of their parents, who have often received less attention in paediatric research.
- ii. The study identified the Big Five personality traits associated with depression among parents of children with neurodevelopmental disorders and highlighted personality characteristics that clinical psychologists may target when providing psychological support to parents.

References

- Alibekova, R., Chan, C. K., Crape, B., Kadyrzhan'uly, K., Gusmanov, A., An, S., Bulekbayeva, S., Akhmetzhanova, Z., Ainabekova, A. & Yerubayev, Z. (2022). Stress, anxiety and depression in parents of children with autism spectrum disorders in Kazakhstan: Prevalence and associated factors. *Global Mental Health*, 9, 472–482.
- Banyard, H., Behn, A., & Delgadillo, J. (2021). Personality disorders and their relation to treatment outcomes in cognitive behavioural therapy for depression: A systematic review and meta-analysis. *Cognitive Therapy and Research*, 45, 561–576.
- Cai, H., Song, H., Yang, Y., Xiao, Z., Zhang, X., Jiang, F., Liu, H., & Tang, Y. L. (2024). Big-five personality traits and depression: Chain mediation of self-efficacy and walking. *Frontiers in Psychiatry*, 15, 146-158.
- Ede, M. O., Igbo, J. N., Eseadi, C., Ede, K. R., Ezegebe, B. N., Ede, A. O., Ezurike, C., Onwuka, G. T., & Ali, R. B. (2020). Effect of group cognitive behavioural therapy on depressive symptoms in a sample of college adolescents in Nigeria. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 38(3), 306–318. <https://doi.org/10.1007/s10942-019-00327-1>.
- Edler, J., Manz, K., Rojas-Perilla, N., Baumeister, H., & Cohrdes, C. (2022). The role of personality traits and social support in relations of health-related behaviours and depressive symptoms. *BMC Psychiatry*, 22, 1–15.
- Farrashzadehjelogdar, R., & Sadeghi, J. (2024). The effectiveness of cognitive behavioral therapy on psychological symptoms and psychological hardiness in single-parent adolescents. *Mental Health and Lifestyle Journal*, 2(2), 59–65.
- Gbadamosi, I. T., Henneh, I. T., Aluko, O. M., Yawson, E. O., Fokoua, A. R., Koomson, A., Torbi, J., Olorunnado, S. E., Lewu, F. S., Yusha'u, Y., Keji-Taofik, S. T., Biney, R. P., & Tagoe, T. A. (2022). Depression in Sub-Saharan Africa. *IBRO Neuroscience Reports*, 12, 309–322. <https://doi.org/10.1016/j.ibneur.2022.03.005>
- Gong, J., He, Y., Wang, S., & Liu, J. (2022). Emotion regulation and depressive symptoms mediate the association between schizotypal personality traits and suicidality in Chinese college students. *Archives of Suicide Research*, 26(2), 614–625.
- Hakulinen, M., Elovainio, L., Pulkki-Råback, M., Virtanen, M., Kivimäki, M., & Jokela, M. (2015). Personality and depressive symptoms: Individual-participant meta-analysis of 10 cohort studies. *Depression and Anxiety*, 32(7), 461–470.
- Ho, C., Chua, J., & Tay, G. (2022). The diagnostic and predictive potential of personality traits and coping styles in major depressive disorder. *BMC Psychiatry*, 22, 301.
- John, O. P., & Srivastava, S. (1999). The big-five trait taxonomy: history, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: theory and research* (102–138). New York: Guilford Press.
- Kang, W., Steffens, F., Pineda, S., Widuch, K., & Malvaso, A. (2023). Personality traits and dimensions of mental health. *Scientific Reports*, 13, 1–10.
- Lawal, R., Akinsulore, A., Oa, O., Oo, A., Sk, M., & As, A. (2023). Depression and its association with psychological factors among adolescents living with HIV in Southwestern Nigeria. *BMC Psychiatry*, 23(1), 531-555. <https://doi.org/10.1186/s12888-023-04912-8>
- Lee, Z. L., Siew, S. K. H., & Yu, J. (2024). Intrinsic functional connectivity mediates the effect of personality traits on depressive symptoms. *PLoS ONE*, 19(7), 300-362.

- Leow, K., Lee, M., & Lynch, M. (2016). *Big five personality and depressive symptoms: A self-determination theory perspective on students' positive relationships with others*. VISTAS.
- Moffatt, S., Tse-Laurence, M. & Pennington, L. (2019). Experiences of grandparenting disabled children in the UK: A qualitative study of intergenerational relationships. *Journal of Intergeneration Relationship*, 17, 58–73.
- Morken, I., Wichstrøm, L., Steinsbekk, S., & Viddal, K. (2024). Depression and personality traits across adolescence. Within-person analyses of a birth cohort. *Research on Child and Adolescent Psychopathology*, 52, 1275–1287.
- Niemeijer, M., Reinholt, N., Poulsen, S., Bach, B., Christensen, B., Eskildsen, E., Hvenegaard, M., rendt, M., & Arnfred, S. (2023). Trait and symptom change in group cognitive behaviour therapy for anxiety and depression. *Clinical Psychology & Psychotherapy*, 30, 1058–1070.
- Norman, U., Truijens, F., Desmet, M., Smet, M., & Meganck, R. (2024). Impact of personality style changes on CBT and PDT treatment responses in major depression. *Acta Psychologica*, 246, 1–9.
- Novak-Pavlic, M., Abdel, M. S., Rosenbaum, P., Macedo, L. G. & Di-Rezze, B. (2022). A scoping review of the literature on grandparents of children with disabilities. *Disability. Rehabilitation*, 44, 3326–3348.
- Ogungbemi, A. O., Afolabi, B. A., Falade, J., Ajayi, A. A., Ajayi, A. O., Adedire, A., Falope, I. V., Olayemi, O., Afolabi, A. A., Ogungbemi, O. A., & Anjorin, S. S. (2024). Assessment of Depressive Symptoms and Sociodemographic Correlates of Adult Patients Attending a National Health Insurance Clinic at a Tertiary Hospital, Southwest Nigeria. *Journal of the Nigeria Medical Association*, 65(1), 16–30. <https://doi.org/10.60787/nmj-v65i1-448>.
- Olanrewaju, A. K., Onyesi, M., Christian, A., Uwannah, N. C., Obianenue, O. A., Adeoye, A., Iro-Idoro, C. B. & Onifade, O. E. (2025). Personality Types as determinants of Depression and Suicidal Ideation among Undergraduates in a Faith-Based Institution in Ogun State, Nigeria. *South Eastern European Journal of Public Health*, 232–240. <https://doi.org/10.70135/seejph.vi.6813>.
- Olino, T. (2024). Personality and presentation of depression symptoms: A preliminary examination of the pathoplasticity model. *Clinical Psychological Science*, 13(3), 506–519.
- Onyechi, K., Eseadi, C., Okere, A., Onuigbo, L., Umoke, P., Anyaegbunam, N., Otu, S., & Ugorji, N. (2016). Effects of cognitive behavioral coaching on depressive symptoms in a sample of type 2 diabetic inpatients in Nigeria. *Medicine*, 31, 1–7.
- Park, E. (2021). Relationship among gross motor function, parenting stress, sense of control, and depression in mothers of children with cerebral palsy. *International Journal of Environmental Research and Public Health*, 18, 9285.
- Scherer, N., Verhey, I. & Kuper, H. (2019). Depression and anxiety in parents of children with intellectual and developmental disabilities: A systematic review and meta-analysis. *PLoS ONE*, 14, 219-228.
- Shorey, S., Ng, E. D., Haugan, G. & Law, E. (2020). The parenting experiences and needs of Asian primary caregivers of children with autism: A meta-synthesis. *Autism*, 24, 591–604.
- Tayo, S., & Emmanuel, O. (2023). Personality traits as predictors of depressive symptoms among undergraduates in Lagos state. *Corpus Intellectual*, 1, 1–10.

- Wang, X., Wang, Z., Jiang, D., Liu, C., Xing, W., Yuan, Z., Cui, L., Wu, S., & Ren, L. (2025). Personality perspective on depression and anxiety symptoms among Chinese adolescents and young adults: A two-sample network analysis. *BMC Psychiatry*, 25, 241.
- Wright, J., Owen, J., Eells, D., Antle, B., Bishop, L., Girdler, R., Harris, L., Wright, R., Wells, M., Gopalraj, R., Pendleton, M., & Ali, S. (2022). Effect of computer-assisted cognitive behavior therapy vs usual care on depression among adults in primary care: A randomized clinical trial. *JAMA Network Open*, 5(2), 1–13.
- Xiong, N., Yang, L., Yu, Y., Hou, J., Li, J., Li, Y., Liu, H., Zhang, Y. & Jiao, Z. (2021). Investigation of raising burden of children with autism, physical disability and mental disability in China. *Research Development Disability*, 32, 306–311.
- Yang, X., Artman-Meeker, K. & Roberts C. A. (2018). Grandparents of children with intellectual and developmental disabilities: Navigating roles and relationships. *Intellectual Development Disability*, 56, 354–373.