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Health Locus of Control and Dental Anxiety Among Dental Patients in Tertiary Health Institutions in Benue State, Nigeria

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ABSTRACT
Dental anxiety is a psychological barrier that prevents patients from seeking timely dental care, leading to poor oral health and overall well-being. Despite extensive studies on dental anxiety, limited research has explored the role of health locus of control in Benue State, Nigeria. This study examines Health Locus of Control and Dental Anxiety among dental patients in tertiary health institutions in Benue State. A cross-sectional survey design was adopted, with 312 participants (Mean age = 33.53, SD = 13.95) selected using purposive sampling. Data were collected using the Multi-dimensional Health Locus of Control Scale and the modified Dental Anxiety Scale. Simple linear regression analysis showed a weak correlation between internal health locus of control and dental anxiety, while external health locus of control had a weak positive correlation (R = 0.188) with dental anxiety. The recommendations made, among others, include integrating Cognitive Behavioural Therapy (CBT) into dental care and implementing awareness programmes to promote internal health locus of control.

Keywords: Dental anxiety, health locus of control, psychological interventions, tertiary health institutions, Benue State.

I. INTRODUCTION

Over the last decade, the demand for dental services has increased significantly, largely due to heightened awareness among the public about the consequences of poor dental health. This growing awareness has led to a surge in people seeking dental care, yet simultaneously, there has been a global rise in the number of individuals experiencing varying degrees of anxiety related to dental treatment. Recent studies have indicated that dental anxiety is a widespread problem across different countries, presenting a significant challenge to effective and efficient dental care globally (Olufade et al., 2022). For instance, it is estimated that a substantial percentage of Americans, approximately 9–15%, avoid essential dental care due to anxiety and fear associated with dental visits, which translates to millions of people avoiding treatment altogether (Bennett et al., 2023).

Similarly, studies from the United Kingdom reveal that a large proportion of the population, about 64%, exhibits varying levels of anxiety related to dental care (Harper & Nichols, 2017). In China, over 45% of dental patients report dental-related fear, making it a significant concern (Liu & Zhang, 2021). These individuals often find dental procedures so distressing that they exhibit acute anxiety symptoms such as increased sympathetic nervous system output, uneasiness, apprehension, and avoidance when in a dental environment or even in anticipation of dental treatment (Nguyen, 2020). Such responses can significantly impede the delivery of effective dental care, leading to adverse outcomes for both patients and dental professionals.

In Nigeria, dental anxiety is a prevalent issue, with estimates suggesting that up to 25% of the population avoids dental treatment unless they experience symptoms (Eze et al., 2016). This avoidance is often attributed to anxiety, which may lead to rapid deterioration of oral health and the development of preventable oral diseases that may require more invasive procedures later on (Nwosu et al., 2019). The degree of anxiety associated with dental care varies among individuals, with some experiencing more significant difficulties in attending dental appointments than others. This has led to the categorization of dental fear, anxiety, and phobia as distinct, yet related phenomena, with the severity of fear increasing from "fear" through "anxiety" to "phobia" (Wilson & Gregory, 2018).

In Benue State, evidence suggests a significant prevalence of dental anxiety among patients, particularly those attending tertiary hospitals for dental treatment. These patients often manifest severe anxiety symptoms, including nervousness, worry, excessive fear, and irritability, which can have negative consequences for both the patients and the dental care process (Yusuf et al., 2021). It has been observed that fear of the dentist can affect individuals in various ways, from causing physiological reactions such as fear symptoms and post-visit tiredness to influencing behaviours like avoiding dental visits, neglecting oral hygiene, or using self-medication without professional guidance (Akpan & Esin, 2022).

Locus of control, a concept first developed by Julian Rotter in the 1960s, is pivotal in understanding how people perceive their ability to influence events in their lives. This concept is divided into internal and external dimensions. An internal locus of control means that individuals believe they can affect outcomes through their own actions. They perceive both positive and negative events as consequences of their personal behaviour, thereby maintaining a sense of personal control (Rotter, 1966). Conversely, an external locus of control refers to the belief that outcomes are determined by external forces or chance, and not by their own actions (Langer & Rodin, 2017).

Recent studies have shown that people with a high internal HLC are more likely to engage in behaviours that support good health, as they believe their actions can directly influence their health outcomes. In contrast, those with an external HLC may engage in less healthy behaviours, as they perceive their health to be governed by external forces (Seeman & Dubin, 2020). This distinction is crucial for understanding how beliefs about control affect health-related behaviours and overall well-being. Empirical research has found that health locus of control can significantly influence anxiety related to health issues. For instance, individuals with a strong internal HLC have been shown to experience lower levels of anxiety in healthcare settings, as they feel more capable of managing their health (Kumar, et al., 2019). This finding is supported by studies that indicate patients with an internal HLC are more likely to adopt preventive health measures and adhere to treatment plans, reducing their overall anxiety (Lee et al., 2021).

Conversely, individuals with a high external HLC often experience greater anxiety, as they may feel powerless over their health conditions. This can lead to avoidance of medical care and increased health-related distress (Johnson et al., 2018). Research has demonstrated that these individuals may perceive health interventions as ineffective or irrelevant, further exacerbating their anxiety (Smith et al., 2020).

Statement of the Problem

Dental anxiety remains a pervasive and challenging issue that significantly hinders effective dental care, with consequences that extend beyond individual discomfort to impact public health outcomes. Despite improvements in dental practices and heightened awareness about oral health, many individuals continue to experience debilitating fear and anxiety when faced with dental treatments. This fear often leads to the avoidance of necessary care by several people, resulting in exacerbated oral health problems and more complex and costly interventions. In Benue State, Nigeria, this problem is grave, as many patients frequently delay or forego dental care altogether, resulting in severe dental conditions that could have been managed more effectively with timely treatment. This pressing issue underscores the critical need to explore and address the factors contributing to dental anxiety.

II. Statement of the Problem

Dental anxiety is a widespread issue that poses a substantial barrier to effective dental care, affecting both individuals and public health outcomes. Despite advancements in dental care and increased awareness of oral health, many people continue to suffer from intense fear and anxiety related to dental procedures. This fear often leads to avoidance of necessary treatments, exacerbating oral health conditions and resulting in more complex and costly interventions. In Benue State, Nigeria, the situation is particularly concerning, as numerous patients delay or completely avoid seeking dental care, leading to severe dental complications that could have been managed effectively with timely intervention. Understanding and addressing the factors that contribute to dental anxiety is therefore essential for improving oral health outcomes and ensuring better access to dental services. Consequently, the study investigated the influence of health locus of control as a determinant of dental anxiety among dental patients in in tertiary health institutions in Benue State.

III. Aim and Objectives of the Study

The aim of this research is to investigate on the influence of health locus of controlon dental anxiety among dental patients in tertiary health institutions in Benue State. Following this aim, the specific objectives that guided the conduct of the study were to:

i. examine the extent to which internal health locus of control will influence dental anxiety among Dental Patients in Tertiary Health Institutions in Benue State.
ii. examine the extent to which external health locus of control will influence dental anxiety among dental patients in Tertiary Health Institutions in Benue State.

Significance of the Study

The significance of the study to knowledge generation is apparent in as much as it represents pioneer effort especially on the predictors. It will provide scientific knowledge on the role of both internal and external health locus of control in dental anxiety among patients. This knowledge will assist further research in allied study areas as it extends the frontiers of empirical literature on influencers of dental anxiety in Nigeria.

The study will help to encourage inter-professional team work for a Psycho-medical approach to the management of dental patients with dental anxiety which is in line with the emerging holistic treatment model. Medical professionals such as Dentists will become aware of the significance of clinical psychologists in the management of dental patients, especially those with anxiety problems. This will lead to overall promotion and advancement in the delivery of oral health care in Benue State and beyond.

IV. THEORETICAL REVIEW

This study is anchored on the Health Locus of Control Theory by Julian Rotter. Julian Rotter’s Health Locus of Control Theory, introduced in 1966, is based on the broader concept of locus of control, which refers to individuals' beliefs about the extent to which they can control outcomes in their lives. Rotter proposed that people's health beliefs are influenced by either an internal or external locus of control. Those with an internal locus of control believe that their actions and decisions directly influence their health outcomes, while those with an external locus of control attribute their health to external factors such as fate, luck, or the influence of others. This theory suggests that individuals' perceptions of control over their health can significantly impact their health behaviors, coping mechanisms, and emotional responses, including anxiety. The tenets of the theory emphasize that individuals' health outcomes are shaped by their beliefs, which, in turn, influence their psychological and physiological responses to health-related challenges, such as dental procedures (Rotter, 1966).

In the context of the study on the influence of Health Locus of Control on dental anxiety among patients in tertiary health institutions in Benue State, Rotter’s theory is highly applicable. The theory helps explain how patients’ perceptions of control over their health may shape their emotional responses, particularly in dental settings where anxiety is common.By using Rotter’s theory, the study underscores the importance of understanding how locus of control beliefs can either alleviate or exacerbate dental anxiety, providing valuable insights for designing interventions that promote better health outcomes and reduce anxiety among patients in this specific context (Rotter, 1966; Halvari et al., 2020).

V. CONCEPTUAL REVIEW

Dental Anxiety

Hmud and Walsh (2019) define dental anxiety as the fear and apprehension associated with dental visits and procedures, which may cause patients to avoid dental care. This definition underscores that dental anxiety often stems from the anticipation of pain or discomfort during dental procedures, which can lead to significant distress both before and during treatment. The implication here is that the psychological aspect of anxiety can directly impact a patient's willingness to seek necessary care. Also, dental anxiety refers to the fear, apprehension, or nervousness associated with visiting a dentist or undergoing dental procedures (Staff, 2024). This anxiety can range from mild unease to severe phobia, often leading to avoidance of necessary dental care. Unlike general anxiety, which may stem from various life situations or chronic stressors, dental anxiety is specifically linked to the dental environment and procedures. It is typically characterized by an exaggerated sense of fear or dread regarding anticipated pain, discomfort, or negative experiences during treatment.

Dental anxiety can be triggered by multiple factors such as previous traumatic dental experiences, fear of needles or dental instruments, and even the sterile, clinical atmosphere of dental offices. While general anxiety disorders manifest in multiple life domains, dental anxiety is confined to oral health care settings, yet it significantly affects individuals' willingness to seek routine care, thus impacting overall health outcomes (Porritt et al., 2020).When individuals experience dental anxiety, they may postpone or altogether avoid dental visits, which can lead to further deterioration of their oral health. Thus, understanding the roots of this anxiety is crucial for developing effective interventions that can ease patients' fears and encourage them to prioritize their dental health.

Dental anxiety manifests through a range of behavioural and psychological symptoms, profoundly affecting individuals' ability to seek and receive dental care. Behaviourally, avoidance is a key manifestation, as individuals with dental anxiety often postpone or entirely evade dental visits due to fear, exacerbating oral health deterioration over time (Vassend et al., 2021). Other observable behaviours include restlessness, fidgeting, and resistance to treatment, which complicate dental procedures and reinforce the cycle of fear and avoidance. Psychological manifestations are equally significant, with heightened fear, anticipatory anxiety, and catastrophic thoughts preventing patients from engaging with necessary dental care (Armfield, 2019). In severe cases, dental anxiety triggers panic attacks, characterised by extreme distress, shortness of breath, and an overwhelming sense of helplessness (Locker et al., 2020). These psychological symptoms extend beyond mere nervousness, often intertwining with generalised anxiety disorders and leading to long-term health neglect. The interplay between behavioural and psychological dimensions of dental anxiety necessitates targeted interventions, including cognitive-behavioural therapy (CBT) and patient-centred communication strategies, to mitigate its impact and promote better oral health outcomes (Crego et al., 2022).

Health Locus of Control

The health locus of control (HLC) is a psychological framework that describes individuals' beliefs about the extent to which they can control their health outcomes. Wallston et al. (2021) conceptualise HLC as a spectrum, distinguishing between individuals with an internal locus of control—who believe their actions directly impact their health—and those with an external locus of control—who attribute health outcomes to external forces such as fate, healthcare professionals, or circumstances beyond their influence. This dichotomy provides a foundational understanding of how individuals perceive responsibility for their well-being. However, an essential critique of this model lies in its binary classification, which does not fully capture the complexity of human health beliefs. Many individuals exhibit a mixed locus of control, where both personal effort and external factors shape their health decisions.

Clark et al. (2018) introduce another dimension to this discourse by integrating spirituality into the HLC model. They argue that religious beliefs significantly influence health perceptions, with some individuals attributing their well-being to divine intervention. This spiritual orientation often results in health-seeking behaviours that merge medical interventions with faith-based practices. While this perspective enriches the traditional HLC framework by acknowledging non-material influences on health decisions, it also raises concerns about potential health risks when spiritual reliance leads to delayed or avoided medical treatment. This underscores the need for culturally sensitive health interventions that respect religious beliefs while promoting evidence-based medical practices.

A broader interrogation of HLC reveals its intricate role in shaping health behaviours. An internal HLC often correlates with proactive health management, encouraging preventive care measures such as exercise, dietary regulation, and regular medical check-ups. In contrast, an external HLC can sometimes foster passivity, where individuals may feel powerless over their health, relying solely on medical professionals or external factors to determine their well-being (Goodwin & Seide, 2021). Nonetheless, the rigidity of this framework has been challenged, with some scholars suggesting that contextual variables—such as socioeconomic status, education, and cultural background—mediate an individual's health locus of control. These critiques highlight the necessity of a nuanced approach that accounts for these overlapping influences rather than strictly categorising individuals into internal or external HLC orientations.

The impact of HLC on dental anxiety further exemplifies its behavioural implications. Singh et al. (2022) argue that patients with an internal HLC tend to exhibit lower levels of dental anxiety, as they perceive themselves as active participants in their oral health. Their belief in personal agency fosters consistent oral hygiene practices and a willingness to engage with preventive dental care. This perspective aligns with Goodwin and Seide's (2021) findings, which suggest that an internal HLC cultivates a sense of preparedness and self-efficacy, mitigating the psychological distress commonly associated with dental visits. However, this argument assumes that all individuals with an internal HLC respond similarly to dental care, overlooking variations in individual experiences and past traumas that may still induce anxiety despite their proactive orientation.

Conversely, individuals with an external HLC often experience heightened dental anxiety, as they perceive their oral health as being dictated by uncontrollable external forces. This sense of helplessness can deter them from seeking timely dental treatment, thereby exacerbating oral health issues (Vogel et al., 2021). Toma et al. (2023) further elaborate that external HLC patients may attribute their dental problems to luck, fate, or the competence of their dentist, which can intensify feelings of vulnerability during dental procedures. However, a critical limitation of this explanation is its tendency to generalise external HLC individuals as passive recipients of care. Some external HLC patients, particularly those who place trust in healthcare professionals, may still adhere to dental care recommendations without necessarily experiencing heightened anxiety.

From a practical standpoint, understanding a patient's HLC orientation can inform tailored interventions in dental care settings. Afolabi et al. (2022) propose that dentists can reduce anxiety among patients with an external HLC by enhancing their sense of control through clear communication, patient education, and relaxation techniques. Similarly, Akinwunmi et al. (2023) suggest that interventions fostering a more internal HLC—such as reinforcing self-care routines and providing step-by-step explanations of dental procedures—can empower patients to engage more confidently with their oral health. These findings highlight the importance of a patient-centred approach that accommodates diverse HLC orientations rather than promoting a one-size-fits-all model.

In conclusion, the conceptualisation of health locus of control extends beyond a simplistic dichotomy, encompassing a dynamic interplay of psychological, cultural, and situational factors. Its influence on dental anxiety demonstrates how perceptions of control shape health-seeking behaviours and emotional responses to medical interventions.

EMPIRICAL STUDIES

Ajayi and Adeyemo (2020) conducted a related study on the role of health locus of control in dental anxiety among patients in Lagos teaching hospital, Lagos State, Nigeria. The primary objective of their study was to determine how individuals' beliefs about their control over health outcomes affect their anxiety levels when undergoing dental procedures. The study targeted patients seeking dental care in a tertiary health institution, where it was noted that many expressed anxiety during treatment. The researchers employed a descriptive research design and selected a sample of 150 dental patients through random sampling. Data was collected using a combination of the Multidimensional Health Locus of Control (MHLC) scale, which assesses patients' beliefs regarding their control over health, and a Dental Anxiety Scale (DAS). The findings revealed that patients with an external health locus of control, who believed that external factors (such as healthcare professionals or fate) largely determined their health, exhibited higher levels of dental anxiety. Conversely, patients with an internal health locus of control had lower anxiety levels, suggesting that individuals who feel more in control of their health are less anxious during dental visits. In conclusion, the study recommended incorporating strategies to improve patients' internal health locus of control in dental settings.

Ajayi and Adeyemo (2020) established a correlation between external health locus of control and heightened dental anxiety, which aligns with the present study's findings on the influence of locus of control on dental anxiety among patients. However, their study was limited to a single tertiary hospital in Lagos, whereas the current research expands the scope to multiple tertiary health institutions in Benue State, offering a broader contextual analysis.

In a more recent study than that of Ajayi et al. (2021) conducted a similar research Psychological Predictors of Dental Anxiety: Health Locus of Control and Self-Efficacy in Dental Patients in Enugu State, Nigeria. Onyeji and Okwuosa (2021) explored how health locus of control and self-efficacy predict dental anxiety in patients attending tertiary health institutions in Enugu. Their primary aim was to examine whether patients' perceptions of their control over health outcomes and their confidence in managing health-related situations could serve as predictors of dental anxiety. This study was motivated by the observation that psychological factors play a critical role in determining how patients cope with anxiety during medical procedures, including dental care. The study employed a correlational research design, with a sample size of 200 dental patients selected using purposive sampling. Data was collected using the Health Locus of Control Scale and the General Self-Efficacy Scale, alongside the Dental Anxiety Inventory. The results indicated that internal health locus of control was associated with reduced dental anxiety, while external locus of control was linked to higher anxiety levels. In addition, higher self-efficacy significantly predicted lower anxiety, indicating that patients who believed in their ability to manage their health also tended to be less anxious during dental visits.

Onyeji and Okwuosa (2021) established a link between external health locus of control and heightened dental anxiety, while also highlighting the role of self-efficacy in reducing anxiety, aligning with the findings of the present study. However, their research included self-efficacy as a major factor, whereas the current study concentrates exclusively on health locus of control, examining its impact on dental anxiety within a distinct geographical and institutional setting.

Yakubu and Musa (2020) also conducted a related research on Health Locus of Control and Dental Anxiety: A Study among Dental Patients in Kano State, Nigeria. Yakubu and Musa sought to determine how health locus of control influences dental anxiety among patients in tertiary health institutions in Kano. The researchers observed that dental anxiety is a significant barrier to seeking dental care in Nigeria and aimed to identify psychological factors contributing to this issue. The objective was to evaluate whether beliefs about control over health outcomes played a significant role in influencing patients' levels of dental anxiety. Using a cross-sectional design, the researchers sampled 180 dental patients from different institutions in Kano through stratified random sampling. The study relied on the Health Locus of Control Inventory and a dental anxiety questionnaire for data collection. Findings from the study indicated that patients with an external health locus of control, particularly those who believed that their health was largely controlled by medical professionals or chance, reported higher levels of anxiety compared to those with an internal locus of control. The researchers concluded that patients' beliefs about their health control significantly influenced their anxiety during dental procedures.

Yakubu and Musa (2020) identified a strong connection between external health locus of control and increased dental anxiety, which aligns with the findings of the present study. However, while their research was conducted in Kano and included multiple tertiary institutions, the current study focuses specifically on dental patients in Benue State, providing a more localised perspective on the issue.

Additionally, Olowookere and Ogunfowokan (2019) conducted their study on the Influence of Health Locus of Control on Anxiety during Dental Visits in Ibadan, Oyo State, Nigeria. In their study, they examined the influence of health locus of control on anxiety levels during dental visits among patients in Ibadan. Their goal was to explore how patients' beliefs about control over their health affected their anxiety when receiving dental care. This study was prompted by the need to better understand psychological factors that contribute to high levels of anxiety in dental settings, which can deter patients from seeking necessary care. The study utilized a mixed-method approach, selecting a sample of 120 dental patients from the University College Hospital, Ibadan, through convenience sampling. Both qualitative and quantitative methods were employed for data collection, with patients participating in interviews and completing questionnaires based on the Multidimensional Health Locus of Control (MHLC) scale and a Dental Anxiety Scale. The results revealed that patients with an internal health locus of control—those who believed they had control over their health outcomes—reported lower anxiety levels compared to those with an external locus of control. This finding highlights the psychological benefit of fostering a sense of control in patients to reduce anxiety.

The study by Olowookere and Ogunfowokan (2019) correlates with the present study as both explore the influence of health locus of control on dental anxiety, employing similar psychological scales to assess patient anxiety levels. However, the gap lies in the geographical and institutional scope, as the present study focuses on tertiary health institutions in Benue State, Nigeria, providing a broader regional perspective and potentially uncovering contextual differences in health beliefs and anxiety patterns.

Umar and Abubakar (2021) further conducted a study to explore the mediating role of health locus of control in the relationship between health beliefs and dental anxiety among dental patients in Jos. The study aimed to assess how patients' beliefs about health control and responsibility influenced their anxiety during dental procedures. The researchers hypothesized that health locus of control would act as a mediator between general health beliefs and dental anxiety. A survey design was adopted, with a sample of 100 dental patients selected from various clinics in Jos through cluster sampling. The Health Belief Model Scale, MHLC Scale, and Corah Dental Anxiety Scale were used to collect data. Findings revealed that patients' health beliefs significantly influenced their dental anxiety, with external health locus of control serving as a key mediator. Patients who believed that their health was controlled by external factors, such as doctors or chance, experienced higher levels of dental anxiety. This indicated that interventions aimed at shifting patients' locus of control from external to internal could help reduce dental anxiety.

The study by Umar and Abubakar (2021) aligns with the present research as both investigate the role of health locus of control in dental anxiety, utilising similar psychological frameworks and measurement scales. However, the gap lies in the study location and institutional focus, as the present research examines dental patients in tertiary health institutions in Benue State, potentially revealing unique regional and institutional factors influencing health locus of control and dental anxiety.

Research Hypotheses

The following hypotheses were tested in the course of the study:

i. Internal health locus of control will significantly influence dental anxiety among dental patients in Tertiary Health Institutions in Benue State.
ii. Internal health locus of control will significantly influence dental anxiety among dental patients in Tertiary Health Institutions in Benue State.

VI. METHODS

Design

This study adopted a cross-sectional survey approach. This design enables researchers to collect data from a population sample within a short timeframe, facilitating the analysis of relationships or influences among variables and allowing for inferences from the sample to the broader population. Incorporated within this design were two categories of variables: predictor variables (internal and external health locus of control) and the criterion variable (dental anxiety).

Participants

The study included 312 patients experiencing persistent dental issues who sought treatment at three healthcare facilities. These comprised 142 participants (45.5%) from the Federal Medical Centre (FMC), 44 participants (14.1%) from Benue State University Teaching Hospital (BSUTH), and 126 participants (40.4%) from the Nigerian Air Force (NAF) Base Hospital. The gender distribution consisted of 139 males (44.6%) and 173 females (55.4%). Regarding marital status, 138 respondents (44.2%) were single, 155 (49.7%) were married, 5 (1.6%) were divorced, and 14 (4.5%) were widowed. Participants represented diverse religious affiliations, with 285 (91.3%) identifying as Christians, 23 (7.4%) as Muslims, and 4 (1.3%) belonging to other religions. Ethnic representation included 162 Tiv (51.9%), 53 Idoma (17.0%), and 97 individuals (31.1%) from other ethnic groups. Educational backgrounds also varied: 20 participants (6.4%) had only primary education, 98 (31.4%) were secondary school leavers, and 194 (62.2%) held tertiary qualifications.

Instruments

A structured questionnaire was utilised for data collection, incorporating demographic details alongside four standardised measurement tools. A crucial instrument employed was the Multidimensional Health Locus of Control Scale (MHLC), an 18-item validated self-report measure that evaluates beliefs about health outcomes across three dimensions: internal control, chance, and powerful others. This tool, scored on a 6-point Likert scale, has demonstrated reliability (Cronbach's alpha ranging from .67 to .86) and has been successfully applied in Nigerian contexts, including among dental patients. Higher scores on this scale indicate a strong internal health locus of control, whereas lower scores reflect dependence on external influences such as chance or medical professionals.

Dental anxiety was measured using the Modified Dental Anxiety Scale (MDAS), a five-item tool assessing anxiety levels in dental situations on a 5-point Likert scale, with scores spanning from 5 (not anxious) to 25 (extremely anxious). A threshold score of 19 distinguishes high anxiety levels. The MDAS has demonstrated strong reliability (Cronbach's alpha = 0.93) and validity in both global and Nigerian settings, including among dental patients in Makurdi. Due to its established psychometric strengths, the MDAS was deemed suitable for adaptation in this study.

Procedure

Prior to initiating the research, an introductory letter was secured from the Head of the Department of Psychology, Benue State University. This letter was subsequently presented to the Health Research Ethics Committees of the three selected healthcare facilities: Federal Medical Centre, Benue State University Teaching Hospital, and Nigerian Air Force Base Hospital in Makurdi. Upon obtaining ethical clearance, the researcher, along with designated assistants, visited the Dental/Maxillofacial units of these institutions to introduce themselves to both the authorities and the patients. Informed consent was obtained from eligible participants before administering the questionnaire, which required approximately 15 minutes to complete. Data collection spanned from April to September 2024 and was conducted by both the researcher and research assistants. On some occasions, the assistants independently facilitated the administration of questionnaires to respondents.

DATA ANALYSIS

The data collected for this study were analysed using version 21 of the Statistical Package for Social Sciences (SPSS). This software facilitated the coding and statistical examination of quantitative data, enabling the assessment of correlations and predictive relationships among variables.

Results

Hypothesis One: Internal health locus of control will significantly influence dental anxiety among dental patients in Tertiary Health Institutions in Benue State.

Table 1.1: Linear regression showing the influence of Internal health locus of control on dental anxiety among patients' in tertiary health institutions in Benue State.

Variables	R	R^2	F	p-value	α	β	t	p-value
Constant	0.188	0.035	5.66	0.004*	0.05		7.87	0.000
Internal locus of control						-0.004	-0.063	0.949

= statistically significant

The linear regression analysis in Table 1.1 examines the influence of internal health locus of control on dental anxiety among patients in tertiary health institutions in Benue State. The model shows a weak correlation between the variables, with R= 0.188 and R^2= 0.035, indicating that only 3.5% of the variance in dental anxiety is explained by internal health locus of control. The model's F-statistic (F=5.66, p=0.004) is statistically significant, suggesting the overall model is significant at the 0.05 level. However, the regression coefficient for internal health locus of control (β = −0.004, t = −0.063, p=0.949) is not statistically significant, indicating that internal health locus of control does not significantly influence dental anxiety in this context. The constant term is significant (t=7.87, p=0.000), showing other factors not included in the model might explain dental anxiety.

Hypothesis Two: Internal health locus of control will significantly influence dental anxiety among dental patients in Tertiary Health Institutions in Benue State.

Table 1.2: Linear regression showing the influence of external health locus of control on dental anxiety among patients' in Tertiary Health Institutions in Benue State.

Variables	R	R^2	F	p-value	α	β	t	p-value
Constant	0.188	0.035	5.66	0.004*	0.05		7.87	0.000
External locus of control						0.190	3.125	0.002*

= statistically significant

The linear regression analysis in Table 1.2 reveals a weak positive correlation (R = 0.188) between external health locus of control and dental anxiety among patients in tertiary health institutions in Benue State, with 3.5% of the variance in dental anxiety explained by the external health locus of control (R^2 = 0.035). The regression model is statistically significant overall (F = 5.66, p = 0.004), indicating that external health locus of control contributes meaningfully to variations in dental anxiety. The coefficient (β = 0.190) suggests a small positive influence of external health locus of control on dental anxiety, with this relationship being statistically significant (p = 0.002). This implies that individuals with higher external health locus of control may exhibit slightly increased levels of dental anxiety.

VII. DISCUSSION

The findings from hypothesis one indicate a weak and statistically insignificant relationship between internal health locus of control and dental anxiety among patients in tertiary health institutions in Benue State. This suggests that, in this context, patients' beliefs in their personal control over health outcomes do not significantly impact their levels of dental anxiety. This result contrasts with the findings of Ajayi and Adeyemo (2020), who reported that an internal health locus of control was associated with lower dental anxiety among patients in Lagos Teaching Hospital. However, similar to the present study, Olowookere and Ogunfowokan (2019) observed that while internal health locus of control played a role in anxiety levels, other psychological factors might contribute more significantly to dental anxiety. While Rotter's theory suggests that an internal locus of control would correlate with lower health-related anxieties, the present study's findings indicate that internal health locus of control does not significantly influence dental anxiety among the sampled patients. This highlights the need for further research to explore additional factors that may contribute to dental anxiety in this population.

Hypothesis two revealed a weak but statistically significant positive correlation ($R = 0.188$, $p = 0.004$) between external health locus of control and dental anxiety, suggesting that patients with a stronger reliance on external factors are slightly more likely to experience higher levels of dental anxiety. While the explanatory power of the model is limited ($R^2 = 0.035$, 3.5% variance explained), the statistically significant coefficient ($\beta = 0.190$, $p = 0.002$) highlights the importance of external locus of control in influencing dental anxiety. This finding aligns with the studies of Yakubu and Musa (2020) and Umar and Abubakar (2021), both of which established that patients who believed their health was controlled by external forces—such as healthcare providers or fate—tended to experience higher levels of dental anxiety. Similarly, Onyeji and Okwuosa (2021) highlighted that external locus of control was a significant predictor of dental anxiety, further reinforcing the present study's findings. Consequently, these results can be interpreted in light of Julian Rotter's Health Locus of Control Theory, which classifies individuals' perceptions of health control into internal and external orientations. An external health locus of control refers to the belief that external factors such as fate, chance, or the influence of others determine health outcomes, which, as shown in this study, contributes to heightened dental anxiety.

VIII. CONCLUSION

In conclusion, this study examined the influence of health locus of control on dental anxiety among dental patients in tertiary health institutions in Benue State, Nigeria. The findings revealed that internal health locus of control had no significant impact on dental anxiety, suggesting that patients' beliefs in their ability to control their health outcomes did not substantially reduce their dental fears. Conversely, a weak but statistically significant positive correlation was observed between external health locus of control and dental anxiety, indicating that individuals who attribute their health outcomes to external factors, such as fate or powerful others, tend to experience higher levels of anxiety regarding dental treatment. These findings underscore the complexity of dental anxiety and suggest that additional psychological, social, and environmental factors may contribute to patients' fear of dental procedures.

IX. RECOMMENDATIONS

Based on the findings of this study, the following recommendations are proposed to help mitigate dental anxiety among patients:

i. Psychological interventions such as CBT should be incorporated into dental care to help patients reframe negative thoughts, develop coping strategies, and reduce anxiety associated with an external locus of control.
ii. Patients with high dental anxiety should undergo gradual exposure therapy alongside relaxation techniques like deep breathing and guided imagery to ease fear and discomfort.
iii. Awareness programmes should be implemented to educate patients on the benefits of personal control over health behaviours, fostering a shift towards an internal locus of control.
iv. Dental practitioners should receive training on psychological techniques such as empathy-based communication and behavioural interventions to better manage anxious patients.
v. Hospitals should establish support groups where individuals with dental anxiety can share experiences, receive psychological support, and learn coping strategies from peers and professionals.

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