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Functional need for orthognathic treatment



Role of gender on parent's decision on orthodontic treatment



Two Phase Orthodontic Treatment of Class II Division 1 - A Case Report



Abstract Presentation at NAO 2024 Annual Scientific Conference



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Abstract Presentation at NAO 2024 Annual Scientific Conference held in Kano at the Bristols Hotel Palace Hotel, Kano from September 25-26, 2024.

ORAL PRESENTATIONS

ABSTRACT ONE

Oral Health Disparities in Orthodontics

Moninuola A. Ernest

Introduction: There are values for equal opportunity and equality for all citizens in a country. These values are embedded at the core of many national constitutions as the foundation of modern society. One stark manifestation of economic and social inequality is the disparities that exist in oral health status especially Orthodontic care.

The myths concerning Orthodontic treatment are that it is for the exclusive reserve of the rich and poor people are so plagued with poverty and the ravaging associated diseases that facial and dental aesthetics are not their concern. However, this paradigm is changing due to globalization.

Causes: Disparities exist in coverage, availability, and access to Orthodontic oral care services. This may include early diagnosis, prevention, and basic treatment which are grossly inadequate or completely lacking. Var ious causes are Socioeconomic status, Family Income, Occupation, Geographical area-based measures of deprivation, Racial /Ethnicity, Cultural differences, Employment and Education.

Strategies: Removing the myths that promote disparity, expanding the number of health care settings, strengthening the oral health workforce, expanding capabilities of existing providers and promoting models that incorporate other clinicians, improving the knowledge skills and abilities of providers to serve diverse patient population,

supporting the collection of data stratified by sex and race that pertain to Orthodontics, collaboration with essential sectors like social and welfare services, educational services, employment opportunities, debt management and financial planning advice.

Conclusion: There is the need to reduce differences that exist among specific population groups in the attainment of full Orthodontic health potential.

ABSTRACT TWO

Evaluation of Awareness Of Malocclusion And Knowledge Of Orthodontic Treatment Among Secondary School Students in Enugu, South East Nigeria.

Ndukwe AN[a], Okeke AC[a], Obi In[a], Onyejaka Nk[a]

Background: Malocclusion is the malalignment of teeth which affect adolescents and adults psychosocially thus warrants the need for orthodontic treatment.
Aim: To evaluate the awareness of malocclusion and the knowledge of orthodontic treatment among students.
Method: This was a descriptive cross-sectional study in which questionnaires were administered to senior secondary students in a private school. Data obtained was analyzed using SPSS version 21. P-value =0.05 were considered significant.
Results: Two hundred students participated in the study with males 102(51%) and females,98(49%). Although less than half of the students 45% (90) have heard the term "malocclusion", majority of them understood that malalignment of teeth can adversely affect chewing (69%), speaking 70.5% and self-esteem 80.4%. There was no significant difference between males and females in the awareness o malocclusion (p=0.510).
A good number of students 78.2% (154) were aware of orthodontic treatment, even though only 24% (48) had visited the Orthodontist. Significantly more males had visited the orthodontist than females (p= 0.031). One hundred and twelve students (56%)think orthodontic treatment is important for the treatment of malocclusion, however only 36% (72) were willing to undergo treatment. There was no difference between males and females in their willingness for treatment(p=0.372.)
Conclusion: Majority of the students were aware of the effects of malocclusion. Many of them also knew that malocclusion can be managed by orthodontic very few of them were willing to undergo treatment. Therefore, the need for public education to improve the acceptability of orthodontic treatment among the population cannot be overemphasized.
Keywords: *Malocclusion, Orthodontic treatment, Awareness, Knowledge*

ABSTRACT THREE

Knowledge and Attitude of Teachers Towards Orthodontics and Orthodontic Treatment

Odah GE[a],Umeh OD[b], Isiekwe IG[b], DaCosta OO[b], Utomi IL[b], Sanu OO[b]

Background and Aim: Children and adolescents constitute a large numnber of orthodontic patients. Teachers can play a role in introducing orthodontic care to children as they spend a lot of time with them. The aim of this study was to determine the knowledge and attitude of teachers towards orthodontics and orthodontic treatment.
Methods: This was a descriptive cross-sectional study. Data collection was done via a structured questionnaire comprising 33 questions administered to 72 teachers in 2 public schools in Surulere, Lagos State. Descriptive and inferential statistical methods were employed to interpret the data with statistical significance set at P<0.05.
Results: About 76.4% of the teachers were aware of orthodontics with braces (69.4%) being the most identified orthodontic treatment method. About 40% of teachers demonstrated good knowledge about orthodontics while 58% had poor knowledge. Approximately 43.1% believed treatment lasts more than 24 months, while 39.7%believed it spans between 12-24 months. Most respondents (62.5%) agreed that malaligned teeth affect

appearance, reduce confidence (69.4%) and affect speech (61.1%). Most agreed that orthodontic treatment improved oral health (70.8%),appearance (69.4%), and function (61.1%). About half (47.2%) had noticed the need for orthodontic treatment in their students, and had advised them to seek orthodontic care (37.5%). Female teachers exhibited a significantly more positive attitude to orthodontic treatment than the males.
Conclusion: There was general poor knowledge of orthodontics among the teachers with females demonstrating a more positive attitude than males. Teachers can play an important role in motivating students towards accessing orthodontist care.

Keywords: ***Knowledge, Attitude,*** *Teachers, Orthodontics, Orthodontic Treatment*

ABSTRACT FOUR

A Comparative Study on the Accuracy of Manual Cephalometric Analysis versus Digital Cephalometric Analysis - A Pilot Study

Sylvia Etim[a], Marian Otalo Orikpete[b]

Background and Aim*:* There is a recent surge in software and smartphone applications specifically developed for easier cephalometric analysis. This study aims to compare the accuracy and reliability of linear and angular measurements made using a digital tracing (OneCeph) app against the conventional manual tracing
Methods*:* This was a 3- months cross-sectional study of 25 pre-treatment lateral cephalometric radiographs of patients presenting at the orthodontic clinic of UPTH for treatment. Measurements of ten cephalometric parameters [SNA, SNB, ANB, UI to NA (linear and angular), LI to NB (linear and angular), inter-incisal angle, upper lip to S-line and lower lip to S-line] using Steiner's analysis were made both manually and with a smartphone application (OneCeph) and compared statistically. SPSS version 25was used for data analysis with significance level set atp <0.05.Paired t-test was used to compare the measurements obtained by both methods.
Results*:* Lateral cephalometry of twenty-five patients, females (16, 64%), males (9,36%) with mean age 16.68 +/-6.19 years were involved in the study. There was no statistically significant difference in the measurements obtained for the various parameters [SNA, SNB, ANB, Ul to NA (linear and angular), LI to NB angular, inter-incisal angle, upper lip to S-line, and lower lip to S-line] using both methods, except for the Lower incisor to NB linear measurement with P=0.038.
Conclusion*:* The findings of this study suggest that digital cephalometric analysis using the OneCeph app may be a reliable, accurate, and easy-to-use alternative to manual cephalometric analysis.
Keywords*:* Cephalometric analysis, Software, Digital method ,Manual method, OneCeph

ABSTRACT FIVE

Pattern and Trends of Paediatric Tooth Extractions in Kano, Northern Nigeria: Implications For Policy and Practice

Okolo CC,[a*] Malami AB,[a] Mohammed M,[b] Adeyemo YI[a]

Background: The study examined tooth extraction patterns among children in Kano, Northern Nigeria,identifying key reasons and factors. It also explored the implications of these findings for dental policies and practices in the region.
Methods*:* A retrospective analysis of patient records from the paediatric dental clinic at Aminu Kano

Teaching Hospital was conducted for patients treated between January 2021and December 2023. Data were collected on patient demographics, FDI tooth number and tooth type extracted (primary/permanent), and reason for extraction. Descriptive analyses and chi-square tests were performed using SPSS version 20.

Results: A total of 1556 teeth were extracted from 1140 children aged 1 to 16 years (male-to-female ratio 1.1:1). Single tooth extraction accounted for 71.4% of cases, while 28.6% involved multiple tooth extractions. Dental caries was the most prevalent reason for extraction (62.7%), followed by orthodontic reasons (29.6%) and traumatic dental injuries (7.7%). Maxillary anterior teeth were commonly extracted in children aged 1-5years,while mandibular posterior teeth were predominantly extracted in older age groups ($p < 0.05$).Permanent maxillary central incisors and mandibular first molars, as well as deciduous maxillary second molars and mandibular first molars, were the most frequently extracted teeth.

Conclusion: The study identifies dental caries, orthodontic issues, and dental trauma as major causes of tooth extractions. Age-related patterns highlight the importance of targeted preventive strategies, early interventions, and comprehensive dental programs to improve children's oral health in Kano and Northern Nigeria. Access to affordable dental care and evidence-based policies are crucial.

Keywords: Tooth extraction, dental caries, orthodontics, traumatic dental injuries, oral health policy.

ABSTRACT SIX

Artificial Intelligence in Orthodontics: Current Advances and Limitations

Adetola Babalola,[1] Oromakinde Akinwumi,[2] Victor Johnson,[1] Mobolaji Abdulateef ,[3]
Somoye Victor,[1] Nicholas Aderinto[4].

Background and Aim: Orthodontics, a specialized branch of dentistry focused on study and treatment of malocclusion has had further significant technological improvements with the advent of artificial intelligence (Al). Al enhances diagnostic accuracy, treatment planning, and better treatment outcome. This review aims to evaluate the current advances in Al applications within orthodontics and highlight its limitations.

Methods: A narrative review was conducted by searching PubMed, Google Scholar, Cochrane Library, Science Direct, and DOAJ. Relevant studies from 2014 to February 2024 were included, focusing on Al in orthodontic diagnosis, treatment planning, and cephalometric analysis. Studies were filtered for randomized controlled trials, interventional, and observational research.

Results: Nineteen studies were reviewed, showing Al's impact on improving diagnostic accuracy and treatment outcomes in orthodontics. Al systems, such as convolutional and artificial neural networks, demonstrated high accuracy in orthodontic treatment planning, automated cephalometric analysis, and 3D dental model assessments. However, challenges such as data scarcity, bias, and variability in performance during mixed dentition stages were identified.

Conclusion: Al offers transformative potential in orthodontics, particularly in diagnosis and treatment planning. However, limitations regarding data availability and algorithmic reliability need to be addressed. Collaboration among dental professionals and Al researchers is crucial to overcoming these barriers and optimizing Al's application in orthodontic care.

Keywords: Artificial Intelligence, Orthodontics, Diagnosis, Machine Learning, Cephalometrics.

ABSTRACT SEVEN

Pattern Of Malocclusion In Adult Orthodontic Patients Seen In University College Hospital Ibadan A Six Year Review.

Temisanren OT, Lawal OA, Ajibade FA, Nkwocha FG, Kosoko JO, Baraya Zakka G, Ojo AA

Background: The assessment of the different malocclusion patterns, their occurrences,and the treatment need can aid in understanding the problem in a location and help in planning awareness, and preventive and interceptive treatment measures.

Aim: To assess the pattemn of malocclusion among adult patients who presented for treatment at the University College Hospital Ibadan Orthodontic Unit.

Methods: A retrospective study involving patient records from the Orthodontic Clinic at the University College Hospital Ibadan, Nigeria,between September 2013 and December 2019. Patients' Demographic data and information on their dental and occlusal features, were obtained from their hospital records and analyzed using SPSS version 26.

Results: Three hundred and twenty-two patients' records (mean age 26.05(±8.085)) were included in this study showing that 89.4% of the patients sought orthodontic treatment following aesthetic reasons. The majority of the patients (76.7%) had Angle's class I malocclusion, and 87% were skeletal pattern 1. 39.8% presented with midline diastema of varying dimensions.37.3% had an incompetent lip seal, and crowding in the upper arch was 49.7%. Overjet was increased in 25.8% of patients. 35.7% had anterior crossbite. Overbite was decreased in 37.3% of patients, while 22.4% had incomplete overbite.

Conclusion: Aesthetics was the main reason for attendance followed by functional complaints.Angles class I was the most prevalent pattern of malocclusion,followed by Angles class llI malocclusion, compared to Angles class II which was the least prevalent.

ABSTRACT EIGHT

Assessment of Dental Aesthetics and Prevalence of Psychosocial Effects of Malocclusion among Adolescents and Young Adults in Northwestern Nigeria.

Sa'Ad KM,[1] Aborisade AO,[2] Ogbozor BE,[3] Adeyemi TE[4]

Background: Dental aesthetics generally affect individuals' feelings and their perception by the society. Alterations in aesthetics of dentofacial region largely by malocclusion can affect quality of life and psychosocially debilitating to the young people.

Objectives: This study evaluated the prevalence and severity of psychosocial burden among adolescents and young adults with malocclusion in Kano State; it also evaluated the correlation between malocclusion, quality of life and psychosocial impact on affected individuals.

Methods: 316 adolescents and young adults aged 13-25years from selected secondary schools in Kano metropolis and undergraduate students in Bayero University, Kano were assessed for severity of psychosocial burden of malocclusion, psychosocial impact of dental aesthetics and oral health related quality of life (OHRQoL) using self-rated Aesthetic Component (AC) of the Index of Orthodontic Treatment Need (IOTN) and Psychosocial Impact of Dental Aesthetics Questionnaire (PIDAQ) and Oral Health Impact Profile (OHIP-14) questionnaire respectively.Descriptive statistics, Wilcoxon rank sum and Pearson's Chi-squared tests were used for statistical analysis.

Results: Over 63% of the respondents recorded a high PIDAQ grade. 54.7% felt no perceived need for orthodontic treatment, 34.8% reporting a moderate need for treatment and only 10.4% reporting a definite need for treatment. 67.1% expressed nil negative impact of their perceived malocclusion on their OHRQOL while 32.9%reported a negative impact on their OHRQOL. The IOTN-AC is mildly correlated with aesthetic concern (0.13), psychological impact (0.18) and with OHIP-14. However,there is a positive relationship between aesthetic concern and psychosocial impact.

Conclusion: Self-perception of dental esthetics in adolescents and young adults is related to their dental self-confidence, OHRQoL, and their social and psychological well-being.

Keywords: ***Malocclusion,*** *Psychosocial, Dental aesthetics, Oral Health Related Quality of Life (OHRQOL)*

ABSTRACT NINE

Radiographic Assessment of Prevalence and Pattern of Dental Anomalies in A Nigerian Population

daCosta OO, Koledoye OA, Orenuga OO

Lagos University Teaching Hospital, Idi-araba, Lagos, Nigeria

Background: Dental anomalies are pathologies which occur as a result of disturbances during odontogenesis. They are seen in both primary and permanent dentitions with varied prevalence based on geographical area and race. They can be developmental or congenital, they may occur in isolation or part of a syndrome.

Aim: To assess the prevalence, pattern and distribution of dental anomnalies seen in a group of orthodontic and pediatric dental patients.

Methods: This was a descriptive cross-sectionaI study of 1001 dental patients aged 6 to 45 years who attended various dental clinics in Lagos metropolis. Patients'panoramic radiographs were evaluated for the presence of dental anomalies. Data was entered and stored using Microsoft excel and analyzed using IBM Statistical Package for Social Sciences Statistics for window version 26.0

Results: The sample comprised 521 (52%) females and 480 (48%) males with a median age of 10.83 years, interquartile of 8.92-12.75years. A total of 220 participants (22%) had at least one dental anomaly. The most frequent anomaly was impacted teeth 9.8%, followed by hypodontia 6%, microdontia 1.8%,taurodontism 1.1%,ectopic teeth 1%, macrodontia 0.5% and germination 0.3%.

Conclusion: The most common dental anomaly was impacted teeth being the maxillary canines. Anomalies were more common in the maxilla than in the mandible.

Keywords: *Dental anomalies, Panoramic radiographs, Prevalence.*

ABSTRACT TEN

A Report of Soft and Hard Tissue Cephalometric Values of Hausa Fulani Subjects in Kano: A Cross-sectional Study

Oguchi CO,[1] Jibril M,[2] Yahaya A, [2] Adeyemi TE,[2] Alhassan J,[2] Bukar AS

Background and Aim: To analyze and interpret cephalometric measurements from a population of Hausa Fulani patients attending a clinic in Kano, examining potential differences across gender and age groups.

Methods: Cephalometric data from patients (age range: 8-40 years) were analyzed. Descriptive statistics, correlation analysis, independent t-tests for gender comparisons, and one-way ANOV/A for age group comparisons were performed on key cephalometric measurements.

Results: Mean values for key measurements were: SNA 86.26° (±5.56°), SNB 81.39°(±5.67°), and ANB 5.02° (±2.89°). Significant gender differences were found in SNA (p=0.0374), SNB (p=0.0111), and UIFP (p=0.0417). Age-related differences were observed in SNA (p=0.0210), SNB (p=0.0122), and IIA (p=0.0426). Strong correlation was found between SNA and SNB, with moderate negative correlation between SNB and ANB.

Conclusions: The population showed a tendency towards Class II skeletal relationships and vertical growth patterns. Significant gender and age-related differences in certain cephalometric measurements suggest the need for demographic considerations in orthodontic treatment planning for this population.

Keywords: *Cephalometry, Orthodontics, Malocclusion, Facial Bones, Nigeria.*

ABSTRACT ELEVEN

Cleft Care Providers Knowledge and Perception of Cleft Orthodontics In Nigeria

Chikaodi O,[1] Isiekwe I G,[2] Muhammad J,[3] Jamilu A,[3] daCosta O,[2]

Background and Aim: Interdisciplinary team care remains the mainstay of comprehensive management of orofacial clefts. Previous reports have indicated a shortage of some key team members in most cleft teams in Nigeria especially Orthodontists. It is important to determine if this shortage is due to inadequate number of specialists alone or a lack of knowledge of the role of Orthodontists in cleft care. This study aimed to determine the knowledge and awareness of the role of orthodontics in the management of patients with clefts. among cleft care providers in Nigeria.

Methods: This was a cross-sectional study carried out using self-administered questionnaires distributed among members of the Nigerian Association of Cleft lip and palate, during the Annual General meeting held in July 2024. Data analysis was done using SPSS version 20 and summarized using tables and charts.

Results: A total of 100 responses were recorded, with 55% female, and 45%males. Maxillofacial surgeons were present in 88% of the teams, and Orthodontists in 66% of teams reported. While 71% of respondents had worked with an Orthodontist in their team, 54% carried out lip tapping and 52%performed mixed dentition Orthodontics in their centres. Most respondents attached very high importance to Orthodontic procedures in the management of orofacial clefts.

Conclusion: A large proportion of cleft care providers in Nigeria had knowledge of the role of orthodontists in care for patients with orofacial clefts, however, only about half of these had seen any sort of cleft orthodontic service in their centres.

Keywords: ***Orofacial clefts, Team care,*** *Awareness.*

ABSTRACT TWELVE

Pattern Of Malocclusion seen in Orthodontic Patients at the Aminu Kano Teaching Hospital, Kano: A 5-year Retrospective Study

Oguchi C, Muhammad J, Abdulahi II, *Aliyu MA, Adeyemi TE, Yahaya A, Isiekwe IG

Aminu Kano Teaching Hospital, Kano, Nigeria

Background: In the North-Western region of Nigeria, the awareness of dental health and its role in facial beauty is increasing. The aim of this study was to assess the pattern of malocclusion traits in orthodontic patients attending the Aminu Kano Teaching Hospital (AKTH), Kano State, Nigeria.
Methodology: This was a 5-year retrospective cross-sectional study. The study population comprised of all orthodontic patients seen in AKTH between 2018 and 2023.The study was carried out in accordance with the declaration of Helsinki.
Results: A total of 106 patients were seen comprising 66% (70) females and 34% (36)males. The mean age of the patients' seen was 13years. Angles Class I malocclusion was the most common occlusal relationship, seen in 64.2% of the patients, with Class II and Class IlI malocclusion seen in 29.2% and 7.6%, of the patients, respectively. Anterior segment crowding was recorded in 29.2%,while spacing was recorded in 30.1% of the patients seen. About one third of the respondents presented with a deep bite, while 16% presented with an anterior open bite. One third (31.1%) of the patients presented with a history of oral habits, with the commonest being nail-biting habit. About 17% of the patients seen were adults.
Conclusion: A wide variety of occlusal traits were seen in the patients seen in AKTH over a 5year period, with Class I malocclusion and anterior segment crowding being the commonest occlusal traits seen. Most of the patients seen were children, with adults forming less than 20% of the total patient population seen.
Keywords: *Malocclusion, Observational Study, Northwest Nigeria*

ABSTRACT THIRTEEN

Non syndromic Familial Hypodontia in a Nigerian family: A Case Series in LUTH.

Adeloye AY,[1] Utomi I L,[2] Umeh Od[2]

Background: Hypodontia is a multifactorial dental anomaly that can occur in isolation or as part of a genetic syndrome. It is used to describe the phenomenon of congenitally missing teeth. Hypodontia refers to the absence of less than six teeth. It is a dental anomaly commonly associated with malocclusion, unfavourable aesthetics, periodontal damage, insufficient alveolar bone growth, mastication and speech problem. Treatment is usually complex, multidisciplinary and expensive.
Aim: A case series of hypodontia within a family involving a 38-year-old mother and her two daughters, ages 10 years and 7 years who presented at the Orthodontic unit, Lagos University Teaching Hospital [LUTH], with malocclusion.

Method: Clinical examination of the three cases was done with dental mirrors and probes. Informed consent and assent were taken before investigation. Panoramic radiographs were taken to investigate and ascertain the true absence of clinically missing teeth in all 3 cases.
Results: Case 1 reported absence of teeth 12 and 22, whereas case 2 reported absence of teeth 12,22, 44,45 and 35. Case 3 reported absence of teeth 12 and 22.There were no clinical features associated with any syndrome. Final diagnosis of non-syndromic familial hypodontia was made. Agenesis led to malocclusion and aesthetic disturbances. Cases were offered orthodontic treatment with interdisciplinary dental approach.
Conclusion: This report elucidates that hypodontia may be familial. Early detection, diagnosis and management can be planned to reduce the effects of complications associated with congenital absence of teeth.
Keywords: *Congenital absence, familial, hypodontia, incisor, premolars,* ***tooth agenesis.***

Pictures from the Conference











