

Challenges of Residency Training and Early Career Doctors in Nigeria Phase II: Update on Objectives, Design, and Rationale of Study

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Abstract

Background: Early career doctors (ECDs) are a dynamic and highly mobile group of medical and dental practitioners who form a significant proportion of the health workforce in Nigeria. The challenges of residency training and ECDs in Nigeria CHARTING Phase I study explored limited challenges affecting ECDs under the broad themes of demography, workplace issues, and psychosocial issues. The CHARTING II was expanded to provide wider insight into the challenges of ECDs in Nigeria. **Objective:** This protocol aims to provide clear objectives including description of objectives, design, and rationale for the conduct of the proposed CHARTING II study which seeks to explore other components under the various themes of demographic, workplace, psychosocial issues affecting the ECDs in Nigeria, and which were not explored under CHARTING I. **Methodology:** This shall be a mixed study design that will combine qualitative and quantitative methods, to investigate 27 subthemes among 2000 ECDs spread across 31 centers, accredited by the Nigerian Association of Resident Doctors. Participants shall be selected using the multistage sampling method. The primary data will be generated using structured proforma and validated questionnaires, while administrative sources would serve as a source of secondary data. Data will be entered and analyzed using appropriate statistical software. **Conclusion:** CHARTING II study would provide more robust data and insight into the problems encountered by ECDs in Nigeria. This would in turn build a platform for institutional engagement and advocacy in order to drive relevant policies to mitigate these challenges.

Keywords: Early career doctors, Nigeria, residency, resident doctors, training

INTRODUCTION

Early career doctors (ECDs) are doctors below the rank of consultants or principal medical officers (PMO). They

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constitute the membership of the National Association of Resident Doctors (NARD) and remain a significant backbone of the medical workforce in Nigeria.^[1] This group of doctors either provide medical services while getting trained (house officers and resident doctors) or provide services without simultaneous and regimented training (medical and dental officers below the rank of PMO/principal dental officers [PDO]).^[1]

The ECDs in Nigeria are constantly exposed to multifaceted challenges revolving around demographic, workplace, and psychosocial issues which make them contemplate emigration to countries in the search for better job satisfaction working conditions and remuneration, career progression, professional advancement, and improved quality of life.^[2] Tackling these challenges amounts to tackling one of the most significant problems bedeviling the health systems in Nigeria manpower.

Workplace issues refer to challenges confronting ECDs in the workplace and center around practice satisfaction, multidisciplinary team leadership issues, conflict and its resolution, training and skill acquisition, research, work schedules, and other work-related issues.^[1] Practice satisfaction or the lack of it has been reported to have a direct impact on the quality of care offered by practitioners and is an important driver of migration among ECDs.^[3-6]

Globally, health institutions are multidisciplinary in nature and the role of the doctor is central in every health institution, where leadership skills are important attributes expected of a good doctor as the leader of the medical team. Challenges in leadership have been reported among ECDs in Nigeria and a case has been made for the incorporation of well-structured leadership modules in the training of Nigerian doctors at all levels.^[7] Furthermore, the multidimensional nature of interaction of medical doctors with other stakeholders in their workplace is a recipe for conflict, and the need to identify challenges in leadership and conflict management among them cannot be overemphasized for targets in leadership modules to be achieved.^[7,8] Residency training is considered an excellent form of clinical professional development. However, prospective trainees are still faced with training and skill development challenges, poor research knowledge and mentorship, inadequate funding, and institutional support.^[9-12] Furthermore, the psychological ground, the high burden of burnout bedeviling ECDs in Nigeria as shown by a recent systematic review, calls for concern.^[13-17]

In Nigeria, there is no clear policy on the working hours of resident doctors, though the maximum limit of call duty for every doctor in Nigeria is 40 units per month. In reality, however, many ECDs work beyond this upper limit, to meet up with demands of the work amidst a limited workforce.^[1] The spillover result of all these problems is a negative effect on work and nonwork-related productivity of resident doctors.^[13] These issues could be a push factor for brain drain with its consequent strain on the already precarious balance of the demand and supply of ECDs in the country.

Although the CHARTING I study was largely successful, only 11 research themes were explored in about 800 participants across ten residency training centers. The goal of the CHARTING II study is to bridge the identified gaps in knowledge, geopolitical spread, and statistical power of the sample inherent in the first phase of the study. This will hopefully make for better generalization of the results across the country, so that the evidence-based data generated can be used to advocate system-wide reforms.

RESEARCH METHODOLOGY

Study design

The study will use a mixed methods study design (with quantitative and qualitative aspects) to investigate the challenges of ECDs in Nigeria and associated factors.

Study population

The study population includes ECDs who have completed basic training in Medicine and Dentistry/Dental Surgery who are undergoing housemanship, residency training, or below the rank of a PMO/PDO/consultant working in public health institutions.

Study site/location

This study will be carried out in 31 randomly selected public tertiary health institutions, spread across the six geopolitical zones in Nigeria. Nigeria has 36 states distributed across the six geopolitical zones. Within these zones are federal teaching hospitals, state teaching hospitals, federal medical centers, and specialist training institutions. A total of 14 NARD centers exist in the North-West, whereas North-Central and North-East have 13 and 11 centers, respectively. In southern Nigeria, 15 centers are domiciled in the South-West, 12 in the South-South, and 10 centers in the South-East geopolitical zone.

Sampling method (survey)

Multistage sampling will be done for the CHARTING phase II survey similar to previously described for Phase I.^[1] There would be recruitment of all willing and consenting participants from the selected departments in the centers for the study. The recruitment of the centers would be done to include the following geopolitical zones: North-West (5), North-Central (7), North-East (3), South-South (5), South-West (9), South-East (2) [Table 1 and Figure 1]. The response rate of the entire centers would be noted.

Selection of stakeholders/participants and site selection

Qualitative study participants shall be derived from members in the various participating centers. They would be continuously recruited, 6–12 per session for each theme until saturation is reached across all study sites for each theme. Efforts would be made that the participants are spread into at least 1–2 persons in each of the cadre (interns, registrars, senior registrars, medical officers, and senior medical officers) for each focus group discussion.

Table 1: Selected location of early career doctors in the geopolitical zones**List of institutions per geopolitical zone**

North Central – National Hospital, Abuja; Jos University Teaching Hospital, Jos; University of Ilorin Teaching Hospital, Ilorin; Federal Medical Centre, Lokoja; Federal Medical Centre, Bida; University of Abuja Teaching Hospital, Gwagalada; Federal Medical Centre, Jabi

North East – Federal Teaching Hospital, Gombe; Abubakar Tafawa Balewa University Teaching Hospital, Bauchi; University of Maiduguri Teaching Hospital, Maiduguri

North West – Aminu Kano Teaching Hospital, Kano; Usman Fodio University Teaching Hospital, Sokoto; Federal Medical Centre, Katsina; Ahmadu Bello University Teaching Hospital, Zaria; National Eye Centre, Kaduna

South East – Federal Teaching Hospital, Abakaliki; Federal Medical Centre, Umuahia

South South – Irrua Specialist Teaching Hospital, Irrua; Federal Medical Centre, Asaba; Delta State University Teaching Hospital, Oghara; University of Calabar Teaching Hospital, Calabar; University of Port Harcourt Teaching Hospital, Port Harcourt

South West – Federal Teaching Hospital, Ido-Ekiti; Federal Medical Centre, Abeokuta; Olabisi Onabanjo University Teaching Hospital, Sagamu; Federal Medical Centre, Owo; University College Hospital, Ibadan; LAUTECH Teaching Hospital, Ogbomosho; LTH, Osogbo; Obafemi Awolowo University Teaching Hospital, Ile-Ife, Lagos University Teaching Hospital, Lagos

Sample size

A total of 2000 ECDs across the country would be recruited in the survey. This was based on the expected frequency of 50%, to accommodate the nonavailability in some instances, of the prevalence rate of some of the issues to be explored. Confidence limit of 5% was used and the design effect was set at 4, based on the 31 clusters earmarked for the survey. The sample size calculation was done using StatCalc of Epi Info 7™ produced by the Centre for Disease Control and Prevention.^[18]

Inclusion and exclusion criteria

Inclusion and exclusion are as previously published.^[1]

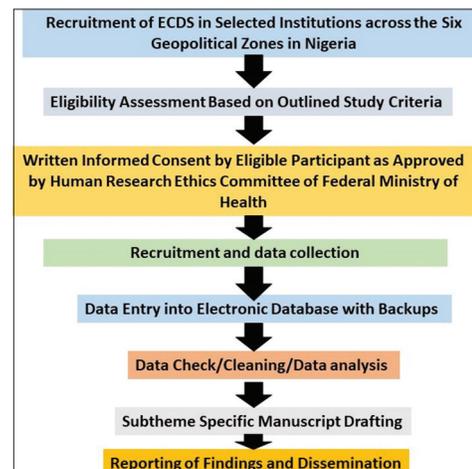
Data collection tools

It will use structured questionnaires, focus group discussions, and secondary administrative data similar to Phase I.^[1]

Data collection procedure/protocol

Study data will be collected using the following collection procedures:

1. Administrative data to determine the numerical strength, distribution, and profile of the members of the NARD in each local branch of the NARD's administrative structure will be collected
2. Individual-level data from the 2000 eligible participants that will be recruited for the study through multistage sampling shall be collected through the structured proforma. Self-administered questionnaires would be used to collect sociodemographic data and the relevant subthemes to be explored in the survey [Table 2, Figures 1]
3. Data will be collected from other migration of ECDs, the supply rate, and the volume of ECDs
4. Focused group discussions, in-depth interviews, and key informant interviews for qualitative data from selected members will be done to explore issues on the following themes “ECDs and workplace preparedness,” “deterrent of workplace standard precautions,” “workplace environment and academic performance,” “quality of training,” “substance abuse,” “mental health of ECDs,” themes, among others.

**Figure 1:** Flowchart depicting schedule for the study^[1]**Focal group discussion/in-depth interview**

Focal group discussion (FGD)/in-depth interview would be conducted in the various centres in the study. Each session of Focused Group Discussion (FGD) would have 6–12 participants in each session. The participants' recruitment into the qualitative arm of the study would be voluntary; only those participants who accepted after the invitation would be allowed to participate. Trained facilitators would collect data during the session of 45–90 min. There will be cessation if participants are tired. The facilitators would use a semi-structured FGD guide which would be carefully designed to encourage the participants to express themselves on the subtheme of discourse.

The discussions would be digitally recorded with the use of an audio recorder (Sony ICD-PX470 digital voice recorder), whereas a smartphone audio recorder was used as a backup/alternate plan, with participants consenting to ensure that the details of the conversations were adequately captured. The various groups would be engaged until data saturation is achieved (i. e., repetitive responses and lack of new information).

Data analysis**Quantitative data**

Collected data will be cleaned, coded, and entered into the

Table 2: Proforma section, synopsis of variables that would be assessed, and tools to be used

Section	Relevant variables to be explored/assessment tool
Quantitative	
Sociodemographic profile of ECDS	Age (at last birthday), gender, ethnicity, religion, marital status, center name, place of undergraduate training, year of graduation, current professional status/designation, level of training, number of years in residency training
Role of social media as learning tools during residency program	Use of social media in medical practice, and barriers to the use of social media in learning
Drivers and predictors of learning among Nigerian resident doctors	Pertinent questions relating to trainee, trainer, and institution-dependent driver to learning among resident doctors
Predictors of the tendency for attrition among residents in residency training	Practice of attrition, ideation, and triggers
Assessment of a training facility for adequate residency training	Training demands and availability in various training facilities
Evaluation of ECDS' perspective of their attitude and practice to patients using health system responsiveness tool: A cross-sectional study	Dignity, autonomy, communication, confidentiality, prompt attention, access to social support networks during care, quality of basic amenities, choice of care provider, and the overall responsiveness of the health system
Depression among ECDS	Use of PHQ-9 tool
Validation using relevant burnout tools	MBI to validate Copenhagen and Oldenburg burnout tool
Burnout assessment	Work environment, single-item MBI, and well-being index questionnaire
Burnout and cardiovascular disease among ECDS	Anthropometric measurement, work and nonwork-related modifiable and nonmodifiable risk factors
Burnout and musculoskeletal disease among ECDS	Anthropometric data and musculoskeletal subscale of subjective health complaint inventory
Burnout and oral health QoL among ECDS	Using validated OHIP and WHO oral health self-assessment methods, and oral health impact profile
Work-life balance and ECDS	Personal, family, and work-life dynamics Any tool?
Role of psychological mental issues on clinical performance of ECDS ECD job satisfaction	Respective mental issues encountered in workplace and the risk factors Stressors, job satisfaction, and ideation experienced by ECDS, and stress coping strategies
Work-ability index	Physical and psychological demands of work, scoring the demands, and related ill health concerns
Qualitative	
Family life and ECDS	Questions relating to interaction between the dynamics of workplace and family life
Perception and attitude of ECDS to disaster preparedness in workplace Deterrent of standard precaution at the workplace	Individual, team, and institutional-based disaster preparedness Understanding of the concept of standard workplace precautions, its practice, and hindrances
Role of work environment on academic performance during residency Workplace environment	Facility-related factors that have contributed to assessment performance Quantitative work demand, emotional demands, role clarity, role conflicts, quality of leadership, social support from colleagues, vertical trust, and physical work concerns
Perception of quality of training	Mentorship (availability, relationship, and impact), expectations from training and environment, challenges
Substance abuse	Job-related factors that expose to substance abuse, likely substance, effect on work and delivery, effect on relationships, available deterrents
Mental health issues among ECDS	State of mental health of ECDS, impact on family and work, attitude colleague exhibiting symptoms of mental challenge, barriers to seeking professional mental attention
Burnout overview	Burnout and work-related perceptions
ECDS health-seeking behaviors	Practice of routine medical checkup, frequency, sick roles and challenges, and possible impediments

PHQ-9: Patient Health Questionnaire-9, MBI: Maslach Burnout Inventory, OHIP: Oral Health Impact Profile, ECDS: Early career doctors, QoL: Quality of life

IBM SPSS Statistics version 23 Chicago, IL, USA. The frequency distribution of all variables will be determined. Test of association between/among quantitative variables will be done using bivariate and multivariate analyses, with the level of statistical significance set at a $P < 0.05$.

Qualitative data

Recorded interviews will be transcribed by two expert transcribers and the generated textual data will be analyzed using thematic approach. Themes and subthemes will be generated and supported with illustrative quotations from the interviews.

Ethical considerations

The approval for modification and extension for the previous study would be sought from the relevant National Ethics Review Committee of the Federal Ministry of Health and institutional approval from the participating institutions. Written informed consent shall be obtained from each prospective participant before participating in the study. The names of participants shall not be recorded to ensure anonymity. The database will be accessed by only approved research team members.

DISCUSSION

The extension and modification of the CHARTING study seek to explore more challenges of residency training among ECDs. CHARTING Study I, which is the largest study among the ECDs in Nigeria, recruited about 800 participants from 10 centers.^[1] Key differences are the increased number of participants, more recruitment centers, and scope of subthemes to be explored. This would not only improve the power of the various outcomes but also exhaustively unravel and provide insight into many of the challenges bewildering ECDs in Nigeria.

The demographic issues to be explored have been expanded to include family life, as against emigration in the initial phase. The current phase would not just explore the profile of the burnout among ECDs but explore the validation of other tools among ECDs. It is anticipated that such validation would provide wider tools to explore these thematic issues among ECDs in the country. Furthermore, it will explore the interplay of these psychosocial factors and oral health, cardiovascular, and musculoskeletal risk. Issues related to the workplace environment, learning among ECDs, and quality of health service provision shall also be explored in this phase of the CHARTING Study.

The strength of the current phase is the larger power and spread of participants which would aid better generalization of the findings. The current phase will generate more evidence; this phase is expected to have 27 subsections in the survey proforma as against 11 sections in the pioneer study. It, therefore, promises to generate much more data and evidence on the challenges of ECDs in Nigeria which should be used for policy formulation among stakeholders in a bid to mitigate these challenges compare to the first phase.^[18,19] Furthermore, the findings shall contribute to the ever-growing body of knowledge of workplace issues among ECDs in our country, and appropriate implementation shall strengthen the nation's health system.^[20]

CONCLUSION

From the foregoing, it is evident that CHARTING PHASE II will give more insight into the numerous challenges that ECDs are fraught within Nigeria. Far-reaching recommendations shall be made in order to mitigate these challenges, improve the quality of life of ECDs, and by extension, the quality of

health-care provision. Finally, if implemented, the health systems of Nigeria and Sub-Saharan Africa will be inevitably be strengthened.

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Conflicts of interest

There are no conflicts of interest.

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