

EXPERIENCES OF INVESTIGATORS IN A TRAINEE-LED RESEARCH COLLABORATION AMONG EARLY CAREER DOCTORS IN NIGERIA (CHARTING STUDY)

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Abstract

Background: Research collaboration platforms are platforms for improving research depths and quality and serve as a resource for rich and expansive data bases with notable outcomes. In addition, they impart on the research skills and professionalism of the collaborators.

Objective: To evaluate the experiences of collaborating investigators in a trainee-led research among early-career doctors (ECDs) in Nigeria.

Materials and Method: An online survey of 43 members of the 2018/2019 Research Collaboration Network (RCN) cohort who doubled as investigators in the CHARTING (Challenges of Residency Training and early career doctors in Nigeria) Phase 1 Study was conducted between January and June, 2020, using a semi-structured questionnaire. Analysis of collected data was done using SPSS version 21 software.

Result: Twenty-two (51.2%) RCN members from 11 collaborating centres (hospitals) across five of six geopolitical zones in Nigeria participated in the study, with the majority (63.6%) of them having affiliations with centres in South-west Nigeria. More than one-fourth of the respondents indicated that they participated in data collection and manuscript drafting processes in the CHARTING Phase 1 Study. Roughly four-tenth of the respondents believed that the outcome of the CHARTING Phase 1 Study would influence policy formulation and planning by stakeholders for the benefit of ECDs in Nigeria.

Conclusion: The CHARTING Phase 1 Study collaboration - a trainee-led research collaboration among early career doctors (ECDs) in Nigeria - improved the research skills of the ECDs involved. Furthermore, the findings recorded in the study is a driver of change in the Nigerian health sector.

Keywords: Nigeria, Health Policy, Research, Early Career Doctors, Health system, Health Education.

Cite this article: Ibiyo M, Ekundayo OO, Kanmodi KK, Olaopa O, Amoo A, Egbuchulem IK, et al. Experiences of investigators in a trainee-led research collaboration among early-career doctors in Nigeria (charting study). *Yen Med J.* 2021;3(1):59–66.

INTRODUCTION

Trainee-led research collaboration networks/groups are organisations, primarily run by trainees who may be early career doctors or medical and/or dental students that undertake multi-centre multi-disciplinary studies.¹⁻⁴ Trainee-led research collaborations are instrumental in pooling and sharing excellent learning and research resources, improving knowledge locally, promoting local initiatives and innovation whilst also establishing an impressive network for partnership.¹⁻⁴

Research collaboration groups impact on the objectives and outcomes of research studies, and also improve the competence of the collaborators themselves, especially with more senior researchers acting as advisors.⁵ It helps to reform attitudes, builds and encourages best practices among the collaborators and equally positions the collaborators to answer cogent research questions appropriately and objectively. With a more and increasing number of guides and reviews being turned out on how to initiate or run a collaborative, there are increasing offshoots of these groups that have taken to new dimensions of establishing networks that facilitate multi-collaborative studies.⁶ These studies are

recording outstanding successes, not only with outcomes but also with the resultant capacity to increase the enthusiasm of trainees participating in such researches.²⁻⁵

The first trainee research collaborative was reportedly a two-year study on Measles in 1986 by general practice trainees coordinated by Essex Faculty of Royal College of General Practitioners.^{3,7} The first true trainee-led research collaborative was one by West Midlands Research Collaborative (WMRC), which is a surgical trainee-led research collaborative based in West Midlands, United Kingdom.^{3,7} It was set up in 2007, and its purpose was to deliver high-quality multi-centre clinical research with the potential to change clinical practice and impact on patient care. The West Midlands Research Collaborative (WMRC) is a forum where collaborative organisations share best practices, pool learning resources and promote the local initiative in partnership amongst networks.²

In Nigeria, the Nigerian Association of Resident Doctors (NARD) formerly called the National Association of Resident Doctors of Nigeria (NARD), in February 2019, initiated the Research Collaboration Network (RCN)

which is the pioneer trainee-led research collaboration in the country.² There were 43 members and 6 advisors; the advisors were trainers who have attained statuses as consultants in various tertiary health institutions which also served as study centres. (<https://nardrcn.com.ng/>). The collaboration initiated and implemented the CHARTING study, which explored various relevant themes among early career doctors.^{2,4} The study has had eleven original reports in peer-review journals, six abstracts, a protocol, a letter to editor and a commentary as at the time of drafting this report.^{2,8-14}

This report was written by consenting collaborators of RCN to structurally share their experiences while initiating, designing, conducting and implementing the CHARTING Phase I Study, a multi-centre and multi-disciplinary study which comprehensively explored various themes among early-career doctors in Nigeria.

MATERIALS AND METHOD

Study Setting

The members of RCN 2018/2019 and by extension CHARTING Study Phase 1 collaborators were the respondents who agreed to share their experiences. A total of 22, out of 43, investigators took part in this study.

Data collections

The lead collaborator with the lead author on this article designed the questionnaire which was shared with other collaborators after an agreement to share experiences while implementing the activities of the group in a structured manner. This questionnaire was formatted into an online survey for the 43 respondents, with 22 respondents (collaborators from CHARTING Phase I

multi-centre study among early-career doctors in 21 centres in Nigeria). The assessment was carried out between January and June 2020.

Respondents from 11 centres across 5 of the 6 geopolitical zones in Nigeria filled the questionnaire used to obtain the information to identify and evaluate the experiences of the participating investigators. Information on the centre and role of respondents, prior participation in multi-centre studies, whether locally or internationally, centre-specific responses to the NARD initiative, personal outlook including perceived key benefits, downsides and empirical challenges of trainee-led research collaborations were obtained. Questions about present attitude and disposition to research, the potential outcome of the study and the most difficult challenge during the study were also included.

Data analysis was done using IBM Statistical Package for Social Sciences, Version 21. Results were then represented with descriptive statistics.

RESULTS

Twenty-two RCN members (51.2%) from 11 centres across the 5 of 6 geopolitical zones out of 43 members participated in this study. Majority of the respondents (63.6%) were from centres located in South-west, Nigeria (Table 1). Over 50% of the respondents were involved in various stages of drafting the protocol, manuscript, review articles and data collection. Only four investigators (18.2%) took on additional roles such as administrative work. Majority of the trainee respondents have never participated in a Nigerian (63.6%) or international (59.1%) multi-centre study before this exposure.

Table 1: Information on centres, the role of investigators, prior participation in multicentre studies, and range of respondents per centre

Variable	Frequency (n)	Percentage (%)
Centre/Site		
University College Hospital, Ibadan	8	36.4
Federal Medical Centre, Abeokuta	2	9.1
Federal Teaching Hospital, Ido Ekiti	2	9.1
Federal Teaching Hospital, Gombe	2	9.1
Obafemi Awolowo University Teaching Hospital Complex, Ile-Ife	2	9.1
Others* (6 centres)	6	27.2

Total	22	100.0
Roles of investigators during the study (n=22)		
Protocol drafting	13	59.1
Administrative work	4	18.2
Data collection	15	68.2
Manuscript drafting	14	63.6
Drafting of original articles	10	45.5
Drafting of review articles	13	59.1
Others	4	18.2
Prior participation in a Nigerian multi-centre study (n=22)		
Yes	8	36.4
No	14	63.6
Prior participation in an international multicentre study (n=22)		
Yes	9	40.9
No	13	59.1
Number of respondents in each centre under the investigator's oversight (n=22)		
Nil	3	13.6
1 – 100	13	59.1
101 – 200	5	22.7
>200	1	4.5

*Others** - Other centres which are Medical Centres in Jabi (Abuja), Katsina, Kebbi and Yenagoa; and the Universities of Jos and Port-Harcourt Teaching Hospitals.

Table 2 shows that the respondents had mixed views about centres response, with 50% having a positive view of their responses (good to excellent) while 45.2% thought the response was either fair or difficult. All participants had positive views about trainee-led research collaboration, with the majority (81.8%) identifying professional development as the key benefit of research collaboration. Almost one-third of the respondents felt there was no downside to trainee-led research collaboration. Funding and centre-associated problems were only seen as the downside by a few (4.5%). Data collection seemed to cause the most (36.4%) challenge to the respondents. Participants were equally diverse about the potential influence and outcome of trainee-led collaborations in terms of provision of data facts, creating awareness (31.8%), policy formulation and implementation (31.8%).

Only eight (36.4%) and nine (40.9%) respondents have had prior participation in multi-centre studies locally and/or internationally, respectively.

All respondents agreed that trainee-led research collaborations remained beneficial and imparted positively on their attitude toward research; however, 18 (81.8%) considered professional development as the key benefit while 2 (9.1%) each considered policy-making or societal development instead.

The perceived downsides of trainee-led research collaboration were: time constraints, availability and meeting up with deadlines (4, 18.2%), collaboration-associated problems (5, 22.7%), questionnaire-related problems (3, 13.6%), differing personal interest (1, 4.5%), centre-associated problems (1, 4.5%), and funding (1, 4.5%). Although comparatively and empirically, the most difficult challenge the respondents faced were: catching up with deadlines (6, 27.3%), catching up with shared information (1, 4.5%), data collection (8, 36.4%), other problems like analysis and editing, collaboration-related issues (3, 13.6%) while 4 (18.2%) had no challenge whatsoever.

Table 2: Centre response, views, key benefits, downsides, empirical challenge, and potential outcome of trainee-led research collaborative.

Variable	Frequency (n)	Percentage (%)
Centres' responses with respect to initiating and conducting the study (n=22)		
No response	1	4.5
Excellent	4	18.2
Good	7	31.8
Fair	6	27.3
Difficult	4	18.2
Personal views about trainee-led research collaborations (n=22)		
Excellent	14	63.6
Good	8	36.4
Key benefit of trainee-led research collaborations (n=22)		
Professional development	18	81.8
Policy development	2	9.1
Societal development	2	9.1
Downside of trainee-led research collaborations (n=22)		
Nil	7	31.8
Timelines and deadlines	3	13.6
Collaboration-associated delays	5	22.7
Questionnaire-related problems	3	13.6
Differing Personal interest	2	9.1
Centre-associated problems	1	4.5
Funding	1	4.5
Challenge during the study (n=22)		
Nil	4	18.2
Timelines and Deadlines	6	27.2
Information	1	4.5
Data collection	8	36.4
Others	3	13.6
Potential Outcome/ Influence of trainee-led research collaborative (n=22)		
Provide data facts and create awareness	7	31.8
Policy formulation	7	31.8
Implementation	7	31.8
No response	1	4.5

All the investigators agreed that the study impacted positively on their attitude, disposition, and enthusiasm towards research.

DISCUSSION

It is worthy of note that research collaboratives have made research endeavours an interesting adventure with more professionals getting involved in large studies because the shared responsibilities make the studies less arduous tasks,

modifies the content objectives, overcomes trivial limitations, and produces impressive outcomes.^{2,3,5} Large studies may not be carried out without large teams from diverse backgrounds. It is also interesting that because of the vastness of these collaborations, studies sometimes are

completed ahead of schedules while creating more interesting research questions for future exploration that impacts the overall research productivity. One of the benefits of research collaboration, especially those involving multi-centre studies, is the ability to improve the external validity of the study such that the findings and have better generalisability.

This report highlights the experiences of the respondents - collaborators of the CHARTING Study who are ECDs and members of the first trainee-led Research Collaborative in sub-Saharan Africa and explore the resultant impact on their attitudes to research afterwards.^{1,9,15} It highlighted active participation and improved research experiences among the collaborators. A unique approach to the report is structuring of their information rather than sharing multiple narrative reports.

From our study, we have shown that trainee-led research collaborative has the capacity for outstanding success and would remain beneficial in our setting.^{2,16} It is clear that more could be achieved in terms of improvement of research scholarship and productivity among ECDs, thereby modestly complementing the effort of postgraduate medical colleges geared at improving the research capacity of ECDs.

In addition, before the respondents' involvement in this study, only about two-fifths (36.4 -40.9%) of the respondents had prior exposure participating in local or international multi-centre studies. It may suffice to highlight the benefit of the opportunity provided to this set of ECDs who had the opportunity of being in a collaborative research setting. We believe that their experiences would significantly increase their capacity in building research teams and more experienced research leaders.^{2,4}

Trainee-led research collaboration in other countries, notably the United Kingdom had generated output from clinical audits, randomised controlled trials, surveys, cohort studies, and systematic reviews. It is believed that the RCN would improve her capacity and provide more expansive designs beyond systematic reviews and surveys.^{4,9,10} The collaborators believed the trainee-led

research imparted good to excellent benefits and the respondents agreed that the study imparted positively on their attitudes, disposition and enthusiasm towards research; and all believed that the experiences were relevant for professional development, policy development and would serve to advance societal progress. This further reinforces the beneficial effect of this initiative as a novel and effective model for healthcare research that would be useful among larger groups of ECDs.⁴ The academic output metrics of the surgical trainee research collaboratives using publication records of surgical trainee-led research collaboratives in the United Kingdom where dissertation endeavour is not critical to the attainment of professional fellowship provide further insight to the benefit of this kind of collaboration.^{17,18} Although, for a place such as Nigeria where desertion is a critical component of a complete residency training, this kind of research collaboration is a good add-on to ECDs academic activities.

Collaborative groups are not without their challenges, although all the respondents rated their experience positive. The most difficult anticipated challenge was weak bonding due to the diverse background of respondents. Others include the pressures of training, that is, the arduous task of expanding knowledge-base whilst acquiring certain required skill as medical professionals; and the challenges of engaging a geographically scattered group with very few face-to-face interface and interactions. The attendant problems span from oversight of the leadership in ensuring participating centres/respondents contribute their allocated quota at the appropriated timeline. Although some centres had difficulty starting which may have affected the overall contribution to the study as observed in the varying component sample sizes, it is worthy of note that the overall objective of the CHARTING study remained unchanged.

Less than one-fifth (13.6%) of the respondents perceived that availability, time constraints and ability to meet up with deadlines were some impedance to smooth operation of trainee-led research collaborative groups. However, a comparative 27.2% had difficulty catching up with

deadlines implemented by the collaborative's leadership, thus indicating that the perceived difficulties and field experiences were quite different and portended a negative change as a result of the respondents' competing engagements. Although about a quarter (22.7%) were of the opinion that collaboration-associated delays were an identified disadvantage of collaborative research, only one respondent mentioned it as the most difficult challenge faced during the study. This suggests that collaboration-associated delays may be an insignificant correlate as regards the success of collaborative research, provided there is a strong body bearing oversight of the larger collaborative group as well as ensuring that timelines are met.^{1,3} In addition, absolute individual discipline, drive, and interest were important for a successful overall outcome.²

Various stakeholders relevant to ECDs must encourage similar initiative along disciplinary and territorial divides to further entrench the research productivity of ECDs. This study was not without limitations hinging on the fact that it is an observational study, and the questionnaire was self-designed and self-administered among the collaborators. However, there appears to be limited options in exploring this novel model in Nigeria. Furthermore, grants and sponsorship for principal and co-respondents to undertake courses in collaborative research would have a significant impact on collaborative activities. In addition, the establishment of specialty-specific trainee-led research collaborations would go a long way in improving research among ECDs.

CONCLUSION

A trainee-led research collaborative, like the CHARTING Phase 1 Study among early-career doctors in Nigeria, positions the participating respondents for improvement in their research skills invariably. In this study, findings showed that participation in the CHARTING Phase 1 Study improved the respondents' professionalism, changed their attitude and outlook to research as individuals, equally built team spirit to achieve the desired objective, and imparted on their overall enthusiasm about the benefits of collaborative research.

Collaborative research does impart professionalism, boosts research enthusiasm and skills among the collaborators while the potential outcome of the study undertaken can affect strategies and methods adopted by target stakeholders. Furthermore, the centralised and far-reaching data collected by respondents would help to project more encompassing generalisations and drive meaningful agenda as regards identifying problems and solutions about studied subject matters.

Beyond now, however, we foresee a larger network of collaboratives in Nigeria, breaking more frontiers and expanding research tentacles in Africa and beyond.

Disclosure: Study concept, design, and approval: All authors, Acquisition, analysis, and interpretation of data: All authors, Drafting of the manuscript: Critical revision of the manuscript for relevant intellectual content: All authors Statistical analysis: MI Administrative, technical, or material support: OA

Acknowledgement: The National Executive Council and Advisors of the Research & Statistics Committee (RSC)/ Research Collaboration Network (RCN) of the Nigerian Association of Resident Doctors (NARD). Funding support from the Nigerian Association of Resident Doctors (NARD).

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