Challenges experienced by Early Career Researchers in Africa

Journal:	<i>Future Science OA</i>
Manuscript ID	Draft
Manuscript Type:	Short Communication
Keywords:	Early Career Researchers, Funding, African Scientists, Career progression, Mentorship

SCHOLARONE™
Manuscripts

Challenges experienced by Early Career Researchers in Africa

Tijjani Salihu Shinkafi

Department of Biochemistry, Faculty of Science, Usmanu Danfodiyo University Sokoto,
PMB 2346, Sokoto, Nigeria

Correspondence to: Dr Tijjani Salihu Shinkafi, PhD, Department of Biochemistry,
Faculty of Science, Usmanu Danfodiyo University Sokoto, PMB 2346, Sokoto, Nigeria

Email: tjshinkee@gmail.com

Abstract

Early career researchers (ECRs) are those researchers or academics (having not more than 8 years post PhD experience) at a very early stage which is the most active phase of research following the award of PhD. African universities have a fewer number of researchers with PhD in the world. Most universities have challenges of funding that could not allow the researchers to carry out research effectively. This necessitates for foreign training. Some government funding agencies such as TETFund and PTDF in Nigeria provide the opportunity to Nigerian researchers to travel to other countries to conduct research leading to the award of PhD. Some other category of researchers remains within the continent or in their country to pursue their PhD degree. When these PhD holders are recruited (Early Career Researchers) to teach and conduct research in Africa they face a number of challenges. The major difficulties that are peculiar to ECRs in Africa are lack of mentorship, funding, laboratory space in addition to other ones that ECRs of developed countries experience such as lack of getting enough time for research, publishing and career progression. Provision should, therefore, be made to support these ECRs to become fully established after completing the PhD otherwise the purpose of the training (PhD) will not be achieved if the scholars ran away from the universities or research institutes.

Keywords: Early Career Researchers, African Scientists, Funding, Mentorship, Career progression

Who are Early Career Researchers?

Early career researchers (ECRs) are those researchers or academics (having not more than 8 years post PhD experience) at a very early stage which is the most active phase of research following the award of PhD. These researchers can be on a tenure track position or not. The tenured track early career researchers can be in the research institutes, universities, polytechnics or colleges. In African universities, the rank of ECRs ranges from Assistant Lecturers to Mostly Lecturer I or occasionally Senior Lecturers (in very rare circumstances). Literally, the ECRs are called postdocs or postdoctoral fellows in developed countries such as the United States and Germany. They are inexperienced researchers who require a lot of guidance, support, mentorship and motivation to ascend through the most difficult and challenging job that requires the ability to maintain a balance between teaching, research and administrative responsibilities after completing a PhD degree¹. African institutions do not pay much attention to ECRs; as a result, they easily get frustrated and lose interest in the job. Some of the challenges faced by the ECRs in Africa include

1. Support, Mentorship and guidance

Most ECR in Africa does not get the required training, mentorship and guidance from experienced scholars in their institution upon assumption of duty. In a study conducted in Malawi with respondents across many African countries, it was found that lack of funding and mentorship from senior scholars are the major challenges encountered by the ECRs of the continent². This orientation is essential especially at the assumption of duty level. At this time the ECRs need guidance the most to be able to overcome some

of the challenges they may encounter. The orientation program is therefore essential to the young academics for them to be able to write good papers and get them published in relevant peer-reviewed journals. In Europe, senior academic usually appear to be more visible in providing guidance and mentorship to ECRs^{3,4}

2. Funding

Funding in research in Africa is very limited and the emphasis is given to mostly senior scholars i.e. Associate professors and Professors. Take for example the case of Nigeria. Funding agencies in Nigeria do not give priority attention to early career researchers. In most countries of the world, institutions and funding agencies accord priority attention to ECRs to enable them to settle down to establish themselves as researchers. Thanks to Institution Based Research Funds (IBR) provided by the Tertiary Institution Trust Fund (Tetfund) reactivated recently which allows Nigerian University researchers to avail a maximum of 2 million naira for research. When you convert this amount to dollars it will be around \$5000 you will realize that the amount cannot be sufficient to conduct a science-based research in a laboratory that is not established. Similarly, the National Research Fund (NRF) also provided by the Tetfund allows a Nigerian to attract a grant of up to 50 million naira at a time. This was not designed to accommodate the ECRs. You need to be a Senior Lecturer and above to be eligible to get the NRF. Researchers, especially in Sciences, Engineering and Medical Sciences etc, cannot publish a good paper in a reputable journal without grant or funding⁵. Researchers who cannot publish perish from the academic environment "publish or perish".

1
2
3 **3. Laboratory space, Chemicals and Reagents**
4
5

6 Ideally, a university lecturer with a PhD degree is supposed to have a well-equipped
7 state of the art laboratory where his students can work. In the laboratory, you can find
8
9 one or two or more postdocs and some PhD students conducting research. The
10
11 postdocs assist in overseeing the PhD students and the laboratory on behalf of the
12
13 supervisor who serves as their overall mentor. There is no way the laboratory can be
14
15 furnished with state of art facilities without funds. The professors in collaboration with
16
17 his students such as the postdocs or ECRs and his colleagues must be able to write
18
19 good proposals for grants. By this way, all the needed facilities such as equipments,
20
21 chemicals and reagent as well as consumables will be purchased for immediate use in
22
23 the laboratory. This scenario is completely absent in Nigeria. Similarly, in African
24
25 countriens getting reagents or chemicals to buy is a problem. Most companies do not
26
27 have representatives in most African countries. This makes supply of important
28
29 chemicals to Africa difficult
30
31
32
33
34
35

36
37 **4. Adjustment after PhD**
38
39

40 Most Nigerian PhD holders in the universities, polytechnics, colleges or research
41
42 institutes in Nigeria were sponsored either through Tetfund or Petroleum Technology
43
44 Development Fund (PTDF) or others abroad. The kind of research facilities and
45
46 techniques they used during their PhD are completely not available in Nigeria. The
47
48 major challenge they first encounter is how to be able to adjust and conduct research in
49
50 this kind of environment where even the light is not stable?
51
52
53

54
55 **5. Difficulty in getting foreign postdoctoral or visiting fellowships**
56
57
58
59
60

Most ECRs who did their PhD at African universities finds it difficult to get a postdoctoral fellowship outside their country. The reason being their inability to find a suitable host mentor or supervisor who will be convinced to work with them. Writing good Statement of Purpose (SOP), good proposal and curriculum vitae is a key to success in getting the postdoctoral fellowship. The skills you acquired during your PhD is very important in getting a postdoctoral fellowship.

6. Too many administrative responsibilities

The duties of academic staff in most cases in African universities are made difficult by combining it with too many administrative responsibilities. For example in my Department presently I'm the Project coordinator (for undergraduate research project), Seminar coordinator (Departmental seminars for both students and academic staff) and students' industrial training experience scheme (SIWES) coordinator in addition to being the New Teaching Laboratories coordinator for the Faculty of Science and Deputy Coordinator for SIWES unit of the university beside my being a member/secretary of numerous committees of the university. When do I get time to conduct research, write good papers or grant application?

Consequences of lack of supporting Early Career Researchers

The consequences of the lack of giving the needed attention to these researchers are enormous.

1. There is a possibility for them to leave the University job at their early stage for a lucrative job. Recently I have seen several of my colleagues with PhD running away from Universities to Central Bank of Nigeria (CBN) and Nigeria Deposit

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Insurance Corporation (NDIC) and even Nigeria National Petroleum Corporation (NNPC). These kinds of jobs are the most preferred jobs in Nigeria because they pay very well. Every PhD holder will prefer to remain in the University environment provided the condition and atmosphere is conducive for him including good salary package. In the university, the PhD holders have a lot of future prospects. Unfortunately, the system does not support the ECRs to grow and become authorities in their domain.

- 2. Similarly, due to lack of support to young academics one day the universities or research institutes in Nigeria will in future lack renowned experts who are supposed to replace the retiring Professors.
- 3. The quality of research conducted in these kinds of institutes will diminish over time because of the lack or shortage of renowned experts.

Recommendations

- 1. The academic environment must be tailored towards preparing the ground for breeding experts in several areas of knowledge. This is only possible when ECRs are given the required support, mentorship and guidance to become established in their fields of interest. The senior academics must volunteer to provide the prerequisite training and guidance to the young upcoming researchers who will likely take over from them in future
- 2. The funding agencies should consider advertising and supporting PhDs (ECRs) who were unable to get tenure track positions with the opportunity to take a postdoctoral fellowship opportunity. In Nigeria, PTDF and TetFund and other funding agencies can initiate to provide young PhD holders who are not

employed to enroll for a postdoctoral training upon completion of PhD. This will certainly reduce the unemployment rate in the country. Few universities in Africa offer postdoctoral opportunities. This is very common in universities of the most developed world. I have since such kind of similar opportunities advertised in South Africa. African Union has also started last year through African Academy of Science named African Postdoctoral Training Initiative (APTI) where in collaboration with National Institute of Health USA, the Melinda Gates Foundation they sponsor at least 10 ECRs of African origin to NIH to undertake a two-year postdoctoral training with a view to train them to become experts of their area of interest in the continent.

Conclusion

Whether in Africa or in the developed countries, ECRs experience challenges during their progression to becoming established researchers. Provision should be there to support these scholars to become fully established after completing the PhD otherwise the purpose of obtaining the training (PhD) will not be achieved if the scholars ran away from the universities or research institutes. The major difficulties that are peculiar to ECRs in Africa are lack of mentorship, funding, laboratory space in addition to other ones that ECRs of developed countries experience such lack of getting enough time for research, publishing and career progression.

Funding

Nil

References

1. Warner CH, Bobo WV, Flynn J. Early career professional development issues for military academic psychiatrists. *Academic psychiatry : the journal of the American Association of Directors of Psychiatric Residency Training and the Association for Academic Psychiatry*. Nov-Dec 2005;29(5):437-442.

2. Kumwenda S, Niang EHA, Orondo PW, et al. Challenges facing young African scientists in their research careers: A qualitative exploratory study. *Malawi medical journal : the journal of Medical Association of Malawi*. Mar 2017;29(1):1-4.

3. Tang EY, Fox H, Gajria C, Modi R. Challenges facing early career primary care researchers across Europe. *Education for primary care : an official publication of the Association of Course Organisers, National Association of GP Tutors, World Organisation of Family Doctors*. Sep 2016;27(5):425-426.

4. Richards GC, Bradley SH, Dagens AB, et al. Challenges facing early-career and mid-career researchers: potential solutions to safeguard the future of evidence-based medicine. *BMJ evidence-based medicine*. Oct 25 2019.

5. van Roekel EH, Loftfield E, Kelly RS, Zeleznik OA, Zanetti KA. Metabolomics in epidemiologic research: challenges and opportunities for early-career epidemiologists. *Metabolomics : Official journal of the Metabolomic Society*. Jan 7 2019;15(1):9.