ORIGINAL ARTICLE

PREPAREDNESS OF FRESH MEDICAL GRADUATES IN UNIVERSITY OF CALABAR TEACHING HOSPITAL, NIGERIA FOR INTERNSHIP RESPONSIBILITIES

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Abstract

Aim: To determine the preparedness of fresh medical graduates in Nigeria for internship responsibilities and advocate for a review of the current medical curriculum.

Methods: This was a cross-sectional descriptive study conducted among interns of the 2019 batch in the University of Calabar Teaching Hospital. The interns completed a self-administered questionnaire from which data was obtained.

Results: There were 103 respondents in this study. The reported feelings—incompetence, confidence, challenging, horrifying, depression—seemed to increase from the first day through the first month on the job. Feeling confused, overwhelmed, and challenged was observed to decrease progressively from day 1 to one month. Feeling stimulated increased in week 1 but dropped at one month.

Conclusion: The fresh medical graduate feels largely inadequately prepared for the new role as a medical intern in the first few weeks of taking on the responsibilities, as evidenced by increased negative feelings. In this study, new interns perceived that medical school had not adequately prepared them for their new job responsibilities. Thus, we advocate a review of the current training curriculum for medical students in Nigeria to produce fit-for-purpose medical interns.

Keywords: medical interns, medical curriculum, fresh graduates

Introduction

A medical intern is a physician-in-training who has completed medical school and has a medical degree but does not yet have a license to practice medicine unsupervised. The different terminologies used for this period include internship, housemanship, and foundation, depending on the country. In several countries, all who have completed basic medical education, which ranges from 4 to 6 years, are required to complete a medical internship before becoming licensed to practice and registered with the medical board of that country.[1] The internship program (housemanship) is for one year in accredited hospitals in Nigeria but two years in other countries like South Africa.[2] It is a structured period when doctors-in-training transit from supervised learning in medical schools to rapidly assuming clinical responsibilities under supervision. It is a 'bridging' period between acquired knowledge and required skills. Internship provides newly qualified doctors with the opportunity to gain competence and experience in teamwork, attitude, values, and basic clinical skills.

Interns are exposed to various aspects of basic clinical procedures, achieved by rotating through the required medical disciplines—Internal Medicine, Surgery, Paediatrics, and Obstetrics and Gynaecology. The interns are required to spend three months each in these four clinical disciplines without any experience in Primary Health Care Centres.[3]

The change from a predominantly observer status as a medical student to the reality of practice, which often extends to administrative duties, is usually quite challenging and daunting but also exciting and significant. It is a period of intense pressure characterized by highly demanding working hours, lack of responsiveness to psychological needs, varying expectations from employers and supervisors, unsatisfactory pay, and ongoing learning and assessment.[2,4] It is also a period where

interns make first career decisions, which is very important, as this may determine whether they want to continue practicing medicine in that organization and country or not.[5]

Medical schools are responsible for preparing students for their internship and should lay the foundation for basic procedural skills which fresh medical graduates require when they face internship and their future careers.[6,7] The list of required skills differs from country to country and between rural and urban areas. The difficulty of preparing a medical curriculum encompassing all required skills is obvious, given the health disparities in the global disease burden. The non-availability of baseline work-ready capabilities they are expected to meet leads to gaps. Adapting and improving undergraduate curricula is helpful but may not eliminate gaps in procedural skills.

In the first few months, interns assume a new role, a new set of responsibilities and expectations. These daily experiences contribute to their future professional identities. There is a dearth of information on this subject in Low- to- Middle-income countries (LMIC). This study aimed to investigate how interns perceive their new status in a clinical setting, and the peculiar challenges of interns in our environment. We also intend to make recommendations to appropriate agencies and advocate for a review of the medical curriculum and current internship model that will be fit for the purpose.

Methodology

This was a cross- sectional descriptive study conducted in the University of Calabar Teaching Hospital (UCTH). The list of the 2019 batch of house officers employed was obtained from the human resource department of the hospital and all were recruited into the study. There were 130 house officers admitted for internship in UCTH, Calabar for that year.

A Self-administered structured questionnaire was utilized and distributed to all the house officers in this study. Information from consecutive house officers in the hospital within a period of one year (2019) was obtained. The questionnaire was designed to obtain demographic characteristics of the interns and information about their feelings in the first month of their internship. Information about computer literacy, adequacy of the internship period, medical school curriculum, professional interests, and plans was obtained. Also included in the questionnaire were questions on the desire to emigrate or leave clinical medicine. Data on hobbies or pastimes, for example, exercise, spending time with friends or family, meditation, or participating in religious or spiritual activities were also obtained. The demographic questionnaire obtained information about participants' age, gender, religion, marital status, and internship year. This questionnaire was drawn up by the research team for this study. It was validated during a pilot study, which was conducted on a group of 10 houses officers in the 2018 batch rounding up their internship in UCTH; who were not part of the present study. The questionnaire was checked for ambiguity, possibility of repeated questions, and questions not providing the answer options needed by respondents. Further. validity of the questionnaire was done by entering, cleaning up the data and checking for data entry error. The result from this pilot study was not published.

Data

Data collected were entered into SPSS version 20. Chi-squared tests, univariate, and multivariate analyses were used as appropriate. All analyses were performed using SPSS for windows version 20. The threshold for statistical significance (α) was set at 0.05 unless otherwise noted. Descriptive statistics were generated for all variables to ensure the normality of distributions. Medians and interquartile ranges were used to describe continuous variables, and proportions were used categorical variables.

Ethical Considerations

Ethical approval was obtained from the Health Research Ethics Committee of University of Calabar Teaching Hospital. Informed consent was obtained from individual participants, and they were free to discontinue at any time without fear of any hurt. The participants' responses were anonymized and data was preserved in a safe place. The interns also gave consent to publish the results of this study.

Results

Socio demographics and computer literacy

One hundred and three out of 130 interns participated; in this study, giving a response rate of 79.2%. Sixty-one (59.2 %) were males. The

majority of participants, 82 (79.6%), were unmarried, while 100 (97.1%) were Christians (Table 1). The mean age of the participants was 28.5 years +/-3.81. Most 99 (96%) of the participants were computer literate.

Table 1: Socio Demographics and Computer Literacy

	Sex n (%)	Marital status n (%)	Religion n (%)	Computer literacy n (%)
	Male 61; (59.2%)	Single 82; (79.6%)	Christianity 100; (97.1%)	Yes 99 (96.1%)
	Female 42; (40.8%)	Married 21; (20.4%)	Others 3; (2.9%)	No 4; (3.9%)
Total	**103; (100%)**	**103; (100%)**	**103; (100%)**	**103; (100%)**

Experience as a House Officer at Day 1, Week 1 and One Month

The reported feelings of incompetence, confidence, horrifying, and depression seemed to increase from the first day to one month (Table 2). Feeling confused, overwhelmed, and challenged was observed to decrease progressively from day 1 to one month. Feeling stimulated increased in week 1 but dropped at one month. The feeling that the work as a house officer is demanding increased at week 1 but dropped at one month.

Table 2: Experience as a House Officer at Day 1, Week 1 and One Month

Experience as a house officer

	First Day n (%)	First Week n (%)	First Month n (%)
Incompetent	4 (3.9)	6 (5.8)	8 (7.8)
Confused	14 (13.6)	1 (1.0)	2 (1.9)
Confident	25 (24.3)	19 (18.4)	44 (42.7)
Stimulating	20 (19.3)	24 (23.3)	21 (20.4)
Challenging	29 (28.2)	23 (22.3)	13 (12.6)
Demanding	5 (4.9)	22 (21.4)	5 (4.9)
Overwhelming	5 (4.9)	3 (2.9)	2 (1.9)
Depressing	0	4 (3.9)	5 (4.9)
Horrifying	0	0	2 (1.9)
N/A	1 (1.0)	1	1
Total	**103 (100)**	**103 (100)**	**103 (100)**

The Chi-square value of 5.17, 6.09 and 11.07 was obtained for first day, first week and first month respectively

Experience with Senior Colleagues

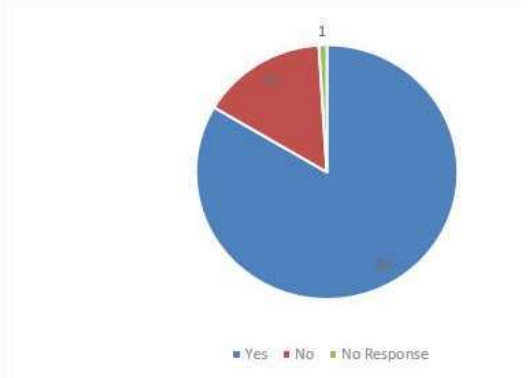
On how they felt with senior colleagues, the level of incompetence, confidence, horrified, depression was highest on day 1 but dropped thereafter (Table 3). None of these changes was statistically significant. The interns felt more stimulated and challenged with each passing day in the presence of senior colleagues.

Table 3: Experience with Senior Colleagues

Experience with Senior colleagues

	First Day n (%)	First Week n (%)	First Month n (%)
Incompetent	44 (42.7)	37 (35.9)	40 (38.8)
Confused	16 (15.5)	19 (18.4)	16 (15.5)
Confident	8 (7.8)	5 (4.9)	1 (1.0)
Stimulating	1 (1.0)	4 (3.9)	6 (5.8)
Challenging	8 (7.8)	10 (9.7)	15 (14.6)
Demanding	0 (0.0)	10 (9.7)	6 (5.8)
Overwhelming	14 (13.6)	9 (8.7)	7 (6.8)
Depressing	3 (2.9)	1 (1.0)	2 (1.9)
Horrifying	8 (7.8)	7 (6.8)	9 (8.7)
N/A	1(1.0)	1 (1.0)	1 (1.0)

Figure 1: Adequacy of the Internship Period



Adequacy of the internship period

Most of the participants, 98 (95.1%), reported that internship is very necessary. The majority of house officers in this study felt that the period of internship is adequate (Figure 1).

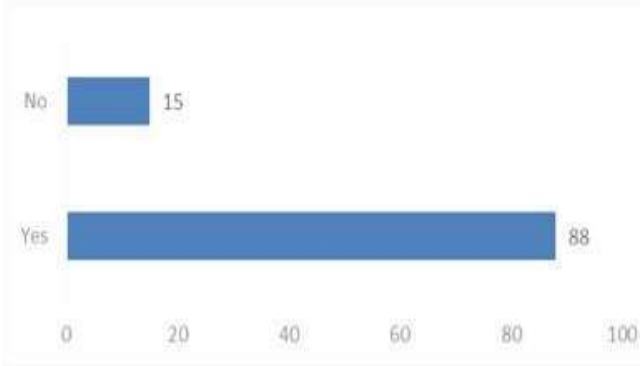
Irrelevant Courses in the Training Curriculum of Medical Students

Most of the participants, 89(86.4%), did not respond to the question on irrelevant courses in the training curriculum of medical students raised in Table 4. However, the participants who responded mentioned entrepreneurship development 3 (2.9%), biochemical structures 1 (1%), trigonometry and citizenship education 1 (1%).

Table 4: Irrelevant Courses in the Training Curriculum of Medical Students

Responses	Frequency	Percent (%)
Biochemical Structures	1	1.0
Community Entry and Community Diagnosis	1	1.0
Entrepreneurship Development	3	2.9
Extra Calls & Extension as Punishment	3	2.9
Muscular Dystrophies	1	1.0
Proper Orientation	1	1.0
Running unnecessary errands and being bullied	2	1.9
Referrals should be made from a Consultant to a Consultant	1	1.0
Trigonometry and Citizenship Education	1	1.0
No Response	89	86.4
Total	**103**	**100**

Figure 2: Interest in Residency Training



Future career of Study participants

Most respondents, 88 (85.4%), expressed interest in pursuing postgraduate training (residency) in medicine (Figure 2).

Interest in Specialties/Subspecialties of Medicine

General surgery topped the list, 20 (22.7%), closely followed by obstetrics and gynecology, 18 (20.5%), as shown in Table 5.

Table 5: Interest in Specialties/Subspecialties of Medicine

Field	Frequency	Percent
Anaesthesia	2	1.9
Cardio Thoracic Surgery	1	1.0
Community Medicine	6	5.9
Otorhinolaryngology	1	1.0
Family Medicine	5	4.9
General Surgery	20	19.4
Internal Medicine	8	7.8
Laboratory Medicine	2	1.9
Obstetrics and Gynaecology	18	17.5
Ophthalmology	7	6.8
Orthopaedics	9	8.7
Paediatrics Surgery	2	1.9
Paediatrics	6	5.8
Radiology	1	1.0
No response	15	14.6
Total	**103**	**100**

Discussion

Medical internship is a transition period that is intense and is also a formative period in the life of a doctor. Trainees begin to take supervised responsibility for patients and to consolidate skills learned in medical school. Their preparedness can be extrapolated if interns report positive key indices

such as competence, confidence, stimulating, and demanding at the beginning of the internship. On the other hand, their poor preparedness may be perceived from negative indices such as confused, depressing, horrifying, challenging, and overwhelming. Furthermore, preparedness for internship may also be viewed from the basic clinical skills acquired during medical school training or regrets of desired skills/training that the intern did not receive during undergraduate training. Our study explored interns' preparedness and experiences based on the indices above and the missed/desired skills within their first month of internship.

Demographic information

There was a male preponderance in this study which is similar to other studies.[8-10] There were more single interns in this study cohort, and this is similar to a study in Enugu with more interns being single.[10] Researchers have reported that marriage has benefits in that it provides intimacy, support, affection, and sex to the intern that reduces the stress of medical training.[11] The average age in this study was 28.5 years, similar to a study in Senegal,[12] but higher than the study in South Africa and Nigeria.[10,13,14] Most of the respondents were Christians; this was expected as the predominant religion where the study was conducted is Christianity.

The respondents were mostly from public medical schools. This is not unusual as tuition and maintenance costs are very high in private and foreign institutions. Most Nigerians cannot afford to send their children and wards to expensive private medical institutions in Nigeria or foreign countries. In addition to the reported poverty statistics in Nigeria,[15] the economic effects of the COVID-19 crisis have led to a national poverty rate forecast to jump from 40.1% in 2019 to 45.2% in 2022, implying that 100.9 million Nigerians will be living in poverty by 2022.[16]

There is no common definition of the "internship experience" across studies.[17] Interns must be asked whether they perceive their training at university as adequate and relevant to the situational demands of being a houseman. The quality of teaching at the training institutions may be gauged by directly asking interns about their perceptions of their clinical skills training.

In this study, 20 (19.4%) participants wished they were comfortable with various aspects of basic clinical and surgical procedures before the commencement of housemanship. This presupposes that they were not adequately prepared for housemanship. This agrees with a study in the United Kingdom where 42% of newly qualified doctors felt their medical school training had not prepared them well for the tasks expected of them at work.[18] Another study showed that fresh medical graduates lacked training in core clinical skills.[19] In yet another study, junior doctors and their educational supervisors agreed that undergraduate training only partially met its objective of preparing students to be doctors.[20] They also wished they had been given orientation where the expectations and job descriptions of medical interns could have been made available to them before the commencement of the internship.

Many studies have reported this exercise to be very useful to fresh medical graduates as it attempts to bridge the medical knowledge and skill gaps, including administrative and hospital policies and work standards.[21,22] The lack of knowledge, experience, or effectiveness undermines confidence, but the ability to apply medical knowledge, skills, and judgment promote or builds confidence in interns.[23] In our study, the interns reported an increased level of confidence from day 1 to one month.

About 42.7% of the interns were confident at the end of the 1st month, and only 7.8% felt they were incompetent. Considering the positive responses of participants concerning the attributes of ''confident'' and ''stimulating'' at the end of 1st month, most (63.1%) respondents seemed prepared for the task of internship. This is in sharp contrast to 17.4% of interns who were either confused, depressed, overwhelmed, incompetent, or horrified at the end of the 1st month. This latter group of interns seemed not to have been adequately prepared for internship training. Another group of interns (17.5%) felt the job was challenging and demanding at the end of 1st month.

Stress and anxiety could manifest as feeling overwhelmed, insecure, or confused. In this study, feeling overwhelmed or confused was highest as a first-day-at-work experience.

A study has reported the start of a house job to be such an overwhelming change,[24] which agrees with

the observations in this study, where the respondents felt overwhelmed at the beginning of their housemanship, and this feeling was less often experienced as they progressed. Anxiety is a common finding amongst medical interns.[25] The feelings experienced by the interns could be attributed to perceived knowledge gaps in putting theory to practice, pressures of medical work culture/professional socialization. Indeed, studies have shown that anxiety is experienced at the onset of a new task or working environment but decreases as one adapts to the work environment and the people. People tend to be acutely sensitive to the fact that their actions are being scrutinized by their peers and senior colleagues, who they perceive to be making continuous judgments of their capabilities.[18,24]

Feelings of depression as a medical intern were observed in this study and reported in many other studies. Generally, doctors suffer increased rates of depression, but medical interns are at even higher risk.[26-29]

Although the interns' experience with senior colleagues was challenging, it was also stimulating and less overwhelming. This is similar to what has been observed in other studies where interns have adequate support from senior colleagues and trainers. Senior colleagues did not make them feel less competent or confused; thus, the interns experienced increased confidence and were less depressed as they progressed on the job. Similar to this study, other studies have reported that making good progress is indicative of interns being part of a well-supported team and also being valued as important members of the health team by senior colleagues, in addition to providing guidance, judgments, and feedback.[24]

Respondents reiterated the necessity of the internship program in this study and the 12-month duration was perceived as adequate in the Nigerian setting. However, they felt that a few topics in their medical curriculum were not relevant to their roles as house officers and would want them expunged from the curricula.

The tendency to continue in the residency program on completion of the internship was quite high. This is similar to many studies. [10,14,30-32] The discipline of highest interest was general surgery, closely followed by obstetrics and gynecology. This is similar to studies in Ibadan and Enugu, where surgery was the most preferred choice of subspecialty.[10,30]

This is different from a multi-center study in Nigeria where thirty-four (26.3%) interns preferred obstetrics and gynecology, while 28 (21.7%) preferred surgery.[14] Many factors determine the choice of specialty, but this study did not explore factors. However, studies have proffered factors such as personal interest, career prospects, appraisal of own skills/aptitudes, altruistic motives, and parental/relative influence.[10,31,32] The shift in disease patterns in the country from acute and infectious diseases to chronic and non-infectious diseases and malignancies may require deliberate action to encourage and generate interest in other specialties.[33]

Conclusion

In conclusion, the Nigerian fresh medical graduate feels largely inadequately prepared for their new roles as medical interns in the first few weeks of assuming the new status and taking on the responsibilities, as evidenced by increased negative feelings (including incompetence, lack of confidence, horror, unfair challenge, and depression). This dropped significantly concerning senior colleagues. New medical interns reported a desire to have had more training in basic competencies in common surgical procedures and clinical skills before the internship period, presupposing that medical school had not adequately prepared them for the new status. The majority perceived that the internship period was needful and the duration was adequate; however, training topics not relevant to their roles should be expunged. The most frequently desired training interest was business and entrepreneurship. Pursuing residency training, especially in general surgery and obstetrics and gynecology were most frequently reported.

Recommendation

We advocate for a review of the training curriculum for medical students aimed at producing fit-for-purpose medical interns.

Conflict of Interest

The authors declare that they have no financial or conflict of interest that may have inappropriately influenced them in writing this article.

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