

## Original Article

## Residency training in Ghana: the residents' perspective

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## SUMMARY

**Background:** Prior to 1973, West African citizens completed postgraduate medical and surgical training abroad, particularly in the United Kingdom. In 2003, the Ghana College of Physicians and Surgeons were established respectively and began to offer specialized training locally. The aim of this study was to obtain and evaluate the views of Medical and Surgical Residents of the GCPS on their training in Ghana.

**Method:** A descriptive cross-sectional study was undertaken whereby a 25 item, self-administered questionnaire, was distributed to 170 residents of Korle Bu and Komfo Anokye Teaching Hospitals in Ghana. Information regarding the residents' sociodemographic characteristics, level of residency, and satisfaction with the programs in terms of clinical supervision, didactic teaching, program duration and research training was collected.

**Results:** 117 residents completed the survey, yielding a response rate of 68.8%. 59.8% were males and 40.2% females. The age of the residents ranged from 25 to 40 years with a mean age of 32.7+1.4 years. Majority of residents (92.3%) were satisfied with the duration of the programs. Slightly more than half of the residents (50.4%) were satisfied with the clinical supervision, however only a third of the respondents (33.3%) were satisfied with the didactic teaching and an even smaller percentage (17.1%) with research training.

**Conclusion:** Whilst majority of residents were satisfied with the duration of the residency program, the perspective of the respondents was that trainees would benefit from additional didactic teaching and increased research exposure.

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## INTRODUCTION

In Ghana, residency training is the basic postgraduate medical/surgical training for fully registered medical doctors and dental surgeons in a chosen specialty of their profession. The duration varies from three to seven years depending on the specialty. During this period, trainees acquire in-depth scientific knowledge and advanced skills under the direct or indirect supervision of a mentor in their chosen professions, enabling the qualified trainees to practice at a specialist or consultant level. The development of specialist training in Ghana has undergone several stages.

Formerly, specialty training in the fields of medicine, surgery, and dentistry and other subspecialties was completed in Europe, particularly in the United Kingdom.

In 1974, the Royal College of Surgeons of England and the Royal College of Physicians (UK) established an examination centre in Accra that allowed candidates to complete the primary examination in Ghana and successful candidates subsequently proceeded to the United Kingdom to continue their specialty training.<sup>1</sup>

Postgraduate surgical training was initiated in West Africa by a Cameroonian Surgeon, Dr. Victor Ngu, who completed his surgical training in the United Kingdom and arrived in Ibadan, Nigeria, in December 1959 to take up a surgical registrar position.<sup>2</sup> With the support of surgeons from English-speaking regions in West Africa, he inaugurated the formation of the Association of Surgeons of West Africa (ASWA) in Ibadan in 1960 to promote and direct the art of surgery, coordinate surgical education, and promote research in the West African sub-region.<sup>2,3</sup> In 1969, the ASWA formed the West African College of Surgeons to promote postgraduate education and training in surgery and in 1973, at its annual meeting in Benin City, Nigeria, the ASWA transferred its functions, assets and liabilities to the West African College of Surgeons and subsequently ceased to exist. A similar college of physicians developed alongside that of the surgeons in the early sixties.<sup>2,3,4</sup> In 1963, physicians from Gambia, Sierra Leone, Ghana and Nigeria formed the Association of Physicians of West Africa (APWA) with Sir Samuel Manuwa as the first President. The objectives of APWA was to promote learning and research among physicians in the sub region in the specialties of internal medicine, paediatrics, psychiatry, pathology and community health.<sup>4</sup>

In 1970, the West African members of the Commonwealth Medical Association proposed to establish postgraduate medical training in the sub-region. This proposal led to the establishment of the West African Health Secretariat (WAHS) by the Governments of Gambia, Ghana, Nigeria, and Sierra Leone in May 1972. In 1974, Liberia, a non-Commonwealth member, joined the WAHS and the name of the organization was changed to the West African Health Community to include this non-commonwealth member. The West African Postgraduate Medical College was inaugurated in 1973 and in 1975 the West African College of Physicians (WACP) and the West African College of Surgeons (WACS) were integrated as the constituent colleges.

Although the faculties and regulations were structured similarly to the British Royal Colleges of Physicians and Surgeons, the examination format was distinctive.<sup>3</sup> The duration of training after successful completion of the primary entrance examination was a minimum of five years in many faculties. The training program was divided into two sections, the Part I and Part II levels. The duration of the Part I program was three years and during this period, the resident was required to rotate through selected disciplines related to the field of specialization prior to taking the Part I examination. The Part II program, on the other hand, was expected to be

concluded within two years of completion of the Part I training,

During which the training candidate was expected to acquire advanced clinical skills and knowledge of the chosen specialty and complete a research dissertation.<sup>5,6</sup> Although several specialists were trained by the WACS, the 40% average passing rate was very low compared to that of other comparable postgraduate programs, such as the American Board of Surgery, which had an average passing rate of 70% to 80%.<sup>6</sup>

In 2001, due to the high attrition rates of residents from the West African postgraduate medical colleges and the exodus of health professionals from Ghana, the Government of Ghana decided to establish the Ghana College of Physicians and Surgeons (GCPS) which received its charter in 2003.<sup>7,8</sup>

Professor Paul Nyame was appointed the foundation Rector. The aims and objectives of the GCPS were to offer structured training programs to postgraduate medical/surgical trainees. Although there were similarities in the faculty structures and the examinations of the WACS and the GCPS, residents registered with the GCPS could exit training after successfully completing Membership examinations. A successful candidate with a membership diploma was eligible to join the specialist grade of the Ministry of Health.<sup>9</sup> The duration of the GCPS fellowship training program was a minimum of two years and was available to all candidates who had successfully passed the membership examination and worked for a minimum of one year in a district hospital. During this training period, the candidate was expected to acquire superior clinical skills, in-depth knowledge in the chosen specialty and complete a research project.<sup>8</sup>

Ten years after the establishment of the GCPS, significant progress had been achieved in medical postgraduate education in Ghana. There had been an increase in the number of specialists in the country, a reduction in the 'brain drain' of health professionals and an increase in the number of doctors and dental surgeons seeking postgraduate training locally.<sup>8</sup> Although substantial progress has been made in local postgraduate medical education, trainers nevertheless require regular feedback from their trainees to improve upon these training programs. This study aims to assess the perspectives of postgraduate medical/surgical residents regarding the GCPS training program. It sought to collect the views of residents regarding the following issues: satisfaction with didactic teaching, research-based training, clinical supervision, duration of the program, challenges associated with the residency program and suggestions on its improvement at the two Teaching Hospitals of Korle-bu and Komfo-Anokye.

## METHODS

### Study design and participants

A descriptive cross-sectional study was conducted among 170 medical and surgical residents of the Korlebu and Komfo-Anokye Teaching Hospitals in 2015. The chief residents of the various divisions were recruited to distribute the questionnaires to the residents registered with the Ghana College of Physicians and Surgeons (GCPS).

The residents were approached during their training sessions and were invited to participate in the study.

They were informed of the objectives of the study and that participation was voluntary and anonymous. They were asked to provide written consent to participate in the study prior to completing the questionnaire.

### The questionnaire

The first part of the 25-item questionnaire included questions of sociodemographic characteristics of the participants. The second part consisted of questions regarding level of residency, and the ratings of the program in terms of duration, clinical supervision, didactic teaching, research training and lastly their recommendations for its improvement. The study was approved by the Ethical and Protocol Review Committee (MS-Et/M.3-P4.2/2005-2006). of the College of Health Sciences, University of Ghana,

### Statistical Analysis

The data were compiled by the authors into Microsoft Excel sheet and then imported into Statistical Package for Social Sciences version 22.0 (SPSS Inc., Chicago IL United States (SPSS) version 22 for statistical analysis. Descriptive statistics and a qualitative analysis were used to evaluate the residents' perspectives of their training.

### Data Collection and Analysis

The 25 item self-administered questionnaires were distributed to 170 present and past residents who accepted to participate in this study. The questions were answered independently by the respondents.

## RESULTS

Out of the 170 questionnaires distributed, 117 were correctly completed giving a response rate of 68.8%. 59.8% were males and 40.2%, females. The age of respondents ranged from 25 to 40 years with a mean age of 32.7+1.4 years. Most respondents (78.6%) were from Korle Bu Teaching Hospital (KBTH).

### Level of Training of Respondents

76% of the respondents were at the membership level of the training, and 19% were at the fellowship level. 5% of the respondents did not state their level of training. The number of residents undergoing the membership training was as follows: first year (29.9%), second year (17.9%), third year (24.8%) and fourth year (3.4%). The fellowship levels were distributed as follows: first year (6.0%), second year (10.3%) and third year (2.6%).

### Distribution of Respondents by Clinical Specialties

In 2015, there were 272 residents registered with the GCPS, with the highest numbers recorded in obstetrics and gynaecology (16,2%), family medicine (13.2%), general surgery (12.5%) and paediatrics (10.3%) (Table 1a.) There was a strong significant gender disparity in the first four faculties of obstetrics and gynaecology, family medicine general surgery and paediatrics. Chi-square of 48.65, df=3 and  $p < 0.001$

**Table 1a** Distribution of registered GCPS residents by clinical specialty (n=272) from archives of GCPS

FACULTY	MALE	FEMALE	TOTAL n (%)
Obstetrics &Gynaecology	39	5	44 (16.2)
Family Medicine	21	15	36 (13.2)
Surgery	27	7	34 (12.5)
Paediatrics	4	24	28 (10.3)
Public Health	14	10	24 (8.8)
Internal Medicine	12	7	19 (7.0)
Radiology	9	8	17 (6.3)
Anaesthesia	2	11	13 (4.8)
Emergency Medicine	10	3	13 (4.8)
Laboratory Medicine	6	6	12 (4.4)
Ophthalmology	3	6	9 (3.3)
Otorhinolaryngology	4	4	8 (2.9)
Dental Surgery	4	3	7 (2.6)
Radiation Oncology	5	0	5 (1.8)
Psychiatry	1	2	3 (1.1)
<b>TOTAL</b>	<b>161</b>	<b>111</b>	<b>272 (100)</b>

The respondents' clinical specialties are listed in Table 1b. Nine clinical specialties out of 15 were recorded.

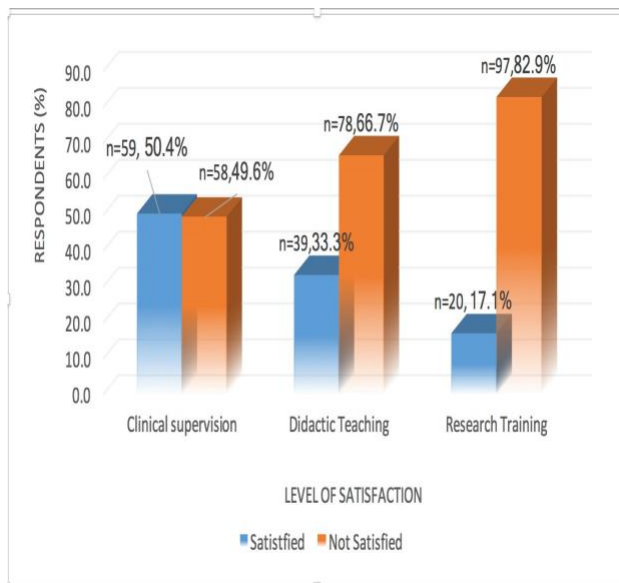
**Table 1b.** Distribution of respondents by clinical specialty (n=117)

Clinical Specialty	Males	Females	TOTAL n (%)
Internal Medicine	13	7	20 (17.1)
Obstetrics &Gynaecology	15	4	19 (16.2)
Paediatrics	4	11	15 (12.8)
General Surgery	10	4	14 (12.0)
Dental Surgery	8	4	12 (10.3)
Laboratory Medicine	6	5	11 (9.4)
Ophthalmology	4	5	9 (7.7)
Family Medicine	4	3	7 (6.0)
Not Stated	3	2	5 (4.3)
Otolaryngology	3	2	5 (4.3)
<b>Total</b>	<b>70</b>	<b>47</b>	<b>117 (100)</b>

Internal medicine had the highest number of respondents (17.1%), followed by obstetrics and gynaecology (16.2%). otolaryngology recorded the smallest number (4.3%) of respondents and there were no respondents from the specialties of anaesthesia, psychiatry, public health, radiology, radiation oncology and emergency medicine.

**Levels of satisfaction with clinical supervision, didactic teaching and research training**

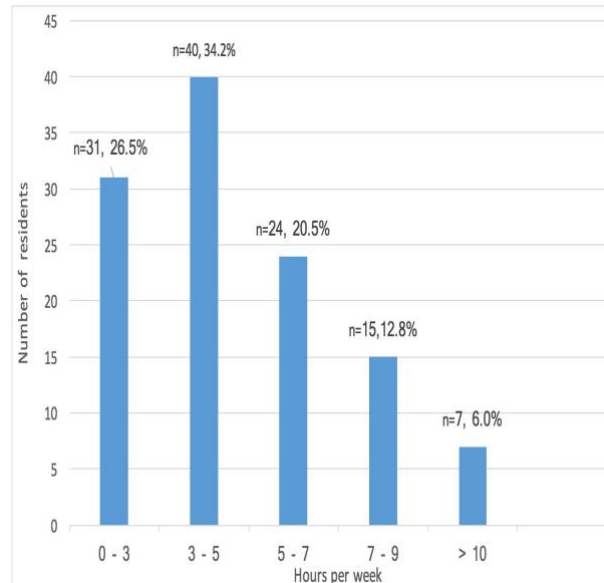
Figure 1. shows the distribution of the level of satisfaction of the respondents. Slightly more than half of the respondents (50.4%) were satisfied with clinical supervision by their supervisors. Two thirds (66.7%) of the respondents were dissatisfied with didactic teaching. Respondents were critical of the perceived inadequate research activity during their training. Only one in five (17.1%) was satisfied with research exposure during their training.



**Figure 1** Frequencies of level of satisfaction with clinical supervision, didactic teaching and research training (n=117)

**Distribution of respondents by hours spent studying per week.**

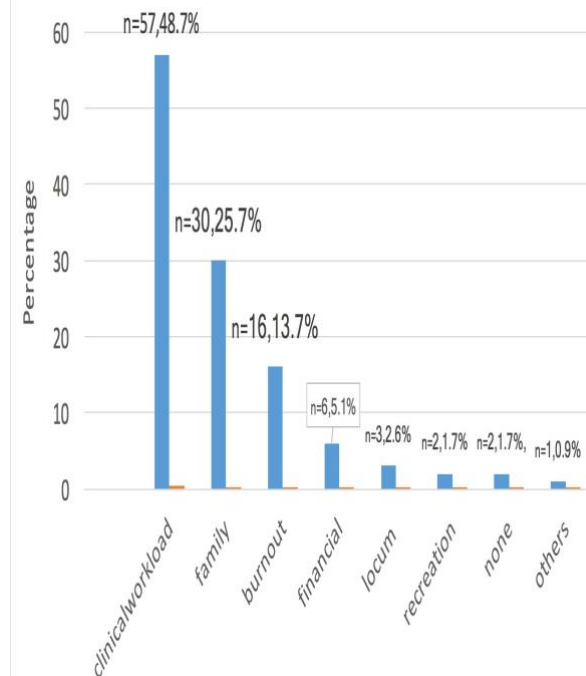
Figure 2 shows the number of hours per week that the respondents spent studying. Majority (34.2%), spent between three and five hours per week studying and 26.5% of respondents spent between zero to three hours studying per week. Only 39.3% respondents spent more than five hours per week studying.



**Figure 2** Distribution of respondents by hours spent studying per week (n=117)

**Major challenges hindering residency training**

Figure 3 shows the training challenges reported by the respondents. Most residents (48.7%) identified the high clinical workload as the most important issue affecting the efficiency of their training.



**Figure 3** Major challenges hindering residency training (n=117)

The clinical workload challenge was followed by family issues (25.6%) and work burnout (13.7%). Other factors identified as distractions included the financial status of the residents (5.1%), involvement in locum work (2.6%) and excessive recreational activities (1.7%).

### Opinion on duration of residency training

It was the opinion of the overwhelming majority of respondents (92.3%) that the duration of the residency training program was satisfactory, while a small percentage (5.1%) thought the program was too long, and an even smaller percentage (2.6%) thought that the duration was too short.

## DISCUSSION

The mean age of the residents included in this study (32.1+1.4 years) was lower than the mean ages reported in similar studies in Nigeria.<sup>10,11</sup> Anyaehie et al.<sup>10</sup> suggested that the mean ages of the Nigerian residents were higher compared to residents in the United States because of limited access to residency training. Ojo et al.<sup>11</sup> reported similar findings to those in the current study and cautioned that doctors of lower mean age groups tended to be unmarried and more likely to seek 'greener pastures' in developed countries if the necessary attractive incentives were not available to keep them in their respective countries. Lassey et al.<sup>9</sup> supported this assertion by observing a remarkable decrease in the number of Ghanaian doctors leaving for 'greener pastures' and the extraordinary stemming of the tide of the 'brain drain' after the pioneering incentive of the establishment of the GCPS.

In this study, there was a strong gender disparity in relation to the chosen specialty in the four most common chosen specialties i.e. general surgery, internal medicine, obstetrics and gynaecology (O&G), and paediatrics. The male predominance in the surgical disciplines of general surgery and O&G may be due to the extreme physical demand of long operating hours which is unattractive to females.

The male predominance in the surgical disciplines of general surgery corresponds to findings in Nigeria<sup>10,11</sup> and Pakistan.<sup>12</sup> In the two Nigerian studies<sup>10,11</sup>, a male predominance of more than 90% was reported among surgical residents while a study from Pakistan<sup>12</sup>, also reported a higher male predominance of 96% among surgical residents. Ojo et al.<sup>10</sup> attributed the insignificant number of females in the surgical disciplines to perceived gender bias, the discrimination experienced by women during surgical clerkships and the lack of role models, particularly same sex role models in surgical training. Anyaehie et al.<sup>10</sup> however, attributed the high percentage of males in surgical residency to the proportionately large

number of males graduating from Nigerian medical schools and subsequently enrolling in residency training. Furthermore, fewer females registered for residency training because of the reported perceived stress and the additional responsibilities of raising a family.

The membership examination of the GCPS is an exit qualification. The trainees must subsequently work outside of the training institutions and are only re-admitted after they satisfy the admission requirements for fellowship training, which may account for the larger number of residents observed at the membership level compared to that at the fellowship level. Another reason for the fewer number of fellowship residents may be due to the extensive nature of the membership course and the associated highly demanding examinations at the end of the program, which serve as a limiting factor to the progression to the fellowship level.

The respondents did not represent all the clinical faculties of the GCPS. The greatest numbers of respondents were from the faculties of internal medicine and obstetrics and gynaecology, while otolaryngology had the lowest number of respondents, which contrasted with a similar study in Pakistan in which most residents were from the department of surgery.<sup>11</sup> In this study, the surgical disciplines were divided into the subspecialties of general surgery, otolaryngology, and ophthalmology, therefore, surgery did not register as the largest faculty as was found in the Pakistani study, which presented a single surgical unit.<sup>12</sup>

The specialties of anaesthesia, psychiatry, public health, radiology, radiation oncology and emergency medicine were not represented in this study. This was due to the overall difficulty of recruiting participants to complete the questionnaire. It is expected that stressing the importance of participating in these studies and the use of the more convenient method of online completion of questionnaires may improve upon the situation.

The aim of medical and surgical residency training is to produce competent specialists with superior skills and in depth knowledge necessary to manage disease conditions at an advanced level. Therefore, the observations in this study and those in previous studies<sup>9,10</sup> conducted in this sub-region indicating that most residents were not satisfied with the didactic teaching and research activities in their training necessitates special attention and a possible re-orientation to meet these important components of postgraduate medical/surgical training.

In contrast, studies conducted in North America,<sup>13,14,15,16,17</sup> revealed that the residents were generally satisfied with didactic teaching, research

activities and mentor-resident relationships because these activities were well delineated across the various residency programs according to the guidelines of the Accreditation Council for Graduate Medical Education.<sup>18</sup>

Specialty training involves the acquisition of ample knowledge and skills. Thus, the residents need adequate study periods for personal reading and library work. Most respondents in this study spent between three and five hours studying per week, which was inadequate for advanced medical knowledge acquisition. Residents need more time for individual study and library activity. Most residents (48.5%) reported that the high clinical workload affected their acquisition of skills. In the United States, in 2010, due to the high workload of trainee residents, the Accreditation Council for Graduate Medical Education proposed an 80-hour limit on the residents' workweek.<sup>18</sup>

Studies in Nigeria and Pakistan also revealed a high clinical workload of postgraduate medical residents. In most developing countries, there are no official limits or monitoring of the work hours spent by the residents. There is a need to establish reasonable limits on the working hours of these residents to reduce fatigue, sleep deprivation and, subsequent patient management errors. Despite the lack of adequate study periods, over 90% of residents were satisfied with the duration of the program and only 2.6% were of the opinion that the program was too short.

#### Recommendations by the Residents

The following interventions were recommended by the respondents to improve upon residency training in Ghana:

1. Formal lectures and journal clubs should be established.
2. The clinical work schedule and library and personal learning periods should be clearly specified.
3. Adequate supplies should be made available to avert the need for some residents of Dental Surgery to procure their own materials to manage patients.
4. More emphasis should be placed on research work and adequate funds should also be made available to encourage research and its dissemination at local and international conferences.

#### Limitation

The convenience sampling method, the relatively small sample size and the lack of respondents from nine faculties might limit the generalizability of the results.

#### CONCLUSION

The establishment of the GCPS has been immensely beneficial in stemming the tide of the 'brain drain' of medical doctors and dental surgeons in Ghana and an overwhelming majority of residents were satisfied with the duration of the residency program.

The perspective of the respondents, nevertheless, was that trainees would benefit from improved didactic teaching and increased research exposure.

#### ACKNOWLEDGEMENT

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