

Assessment of research thesis publication rates among alumni from postgraduate colleges of pharmacists in Ghana – A cross-sectional study

Frempomaa Nelson

Korle Bu Teaching Hospital

Mark Amankwa Harrison

Korle Bu Teaching Hospital

Mercy Naa Adualey Opare-Addo

Kwame Nkrumah University of Science and Technology

Daniel Nii Amoo Ankrah

danielankrah45@gmail.com

University of Cape Coast

Research Article

Keywords: Postgraduate colleges of pharmacists, research, thesis publication, Fellowship, Ghana

Posted Date: October 19th, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-11077523/v1>

License:   This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Additional Declarations: No competing interests reported.

Abstract

Background: Research and publication are pivotal components of residency training at postgraduate colleges of pharmacy. This research aims to assess the current rate of research publications among graduates from the Ghana College of Pharmacists (GCP) and the West African Postgraduate College of Pharmacists (WAPCP) Ghana Chapter, and to identify any barriers to low research publication.

Methodology: This was a cross-sectional study conducted among alumni from the two colleges of pharmacists in Ghana. Kobotoolbox was used to design the questionnaire for data collection and analysis. Data were collected from Whatsapp® platforms for pharmacists only. Further, known alumni from the two colleges were contacted to complete the questionnaire. Data were analysed using STATA I/C version 17.

Results: Results presented involved 70 respondents with a mean age of 46 years (standard deviation (SD) of 7). About 64% of respondents from WAPCP completed the Fellowship programme compared to 29% from the GCP ($p = 0.004$), and 36% of alumni from WAPCP compared to 9% from GCP ($p = 0.009$) had published their thesis. Years since completion of college and level of graduation from college were independently associated with thesis publication. In particular, Fellows were about 9 times as likely to publish their thesis compared to Members. Lack of training on publication was mentioned among barriers to publication.

Conclusion: Publication rates were higher among graduates with Fellowships compared to Memberships. Pharmacists must be given all the necessary support to publish their thesis in the early years (first 3 years) post-qualification.

INTRODUCTION

Professional pharmacists are expected to practice, teach and conduct research. While teaching and practicing can be termed as processes that lead to specified goals, research (leading to publication) addresses gaps, it is a correlate of intellectual property, and therefore, an innovation from the minds of those involved.

The residency training programme of the Ghana College of Pharmacists and the West African Postgraduate College of Pharmacists is an opportunity for residents to acquire competencies in specialized disciplines to advance pharmacy practice [1]. Research and publication are pivotal components of residency training at any college of pharmacists, including the two colleges of pharmacists in Ghana. This is evidenced in the several thesis or dissertation required from residents prior to graduation from the colleges. This research in addition to influencing policy formulation, also adds up to one's medical knowledge [2].

Although these requirements are very important, there is a continuous gap from research completion, prior to graduation and publication among residents of these two colleges. Most residents usually aim at

defending their completed dissertation with only few proceeding to publish in peer-reviewed journals. This minimizes the utilization of the data generated, hence reducing its impact on policy formulation within Sub-Saharan Africa that may contribute to improvement in Global Health. Evidence also suggests that publication rates of some postgraduate research works is less than 10% [3].

In Low and Middle-Income Countries (LMIC) including Ghana, several factors have contributed to this disconnection or gap. Some of these factors include inadequate training in research and scientific writing [4], limited funding for researchers, inadequate mentorship from supervisors of residents and other institutional barriers. Effective mentorship enhances productivity, research quality, and professional networking opportunities. However, Africa's human resources for health's landscape is marked by significant challenges including the brain drain of experienced professionals, outdated research infrastructure, inadequate funding, and the absence of structured mentorship programs for young researchers [5]. Clinical workload also limit time available for research activities as residents prioritize patient-centred care and other clinical presentations over research activities [3].

With the increased application of research funding in addressing health issues within Ghana and West Africa, it is important to carefully evaluate the causes of the gap contributing to the low publication rates among the residents. A well structured gap analysis is therefore required to identify the shortfall between the residents outputs versus the expected outcome to enhance evidence based policy formulation and subsequent practice. The Research Capacity revolves around three key areas namely the individual factors (skills, motivation, knowledge); institutional factors (mentorship, infrastructure, funding) and systemic factors (policies, publication access) [6].

Despite the fact that research forms an integral part of residency training at the Ghana College of Pharmacists and the West African Postgraduate College of Pharmacists, thus far, their publication rates is not encouraging.

This limits data generated, preventing residents from improving their scientific knowledge and impacting their societies through policy formulation. Failure to publish residents research findings exposes the lack of mentorship and weak institutional support required for research capacity building.

Lack of knowledge of the challenges accounting for the gap will result in ineffective research outcome. There is therefore the need to establish a gap analysis to identify the barriers responsible for the lack of publication and implement practical steps that should be taken to improve the publication rates among residents.

STUDY AIM

This research aims to assess the current rate of research publications among graduates from the Ghana College of Pharmacists and the West African Postgraduate College of Pharmacists (Ghana Chapter), to identify the barriers involved and propose interventions for improvement.

METHODS

This study was carried out among Ghanaian pharmacists who have completed either the Ghana College of Pharmacists or the West African Postgraduate College of Pharmacists (GhanaChapter) and are practicing in the public/quasi-public sector or private sector (study population). It did not include all honorary fellows or current students of both Colleges of Pharmacists.

This was a cross-sectional, formative evaluation study done to ascertain the anecdotal impression that Ghana graduates from the two colleges of pharmacists are not transforming their final thesis into manuscripts for publication. It was also done to find out why this previous impression is so (if true), and to proffer workable recommendations for improvement. A questionnaire was designed using the Kobotoolbox, “an intuitive, powerful, and reliable software used to collect, analyze, and manage data for surveys, monitoring, evaluation, and research” [7]. It is a free open-source web-based tool for collecting data, and is easy to use. The questionnaire consisted of seven sections including demography, awareness/knowledge/experience with research publication, motivation to publish, personal challenges, among others. There were limited open-ended questions on limiting factors to publication post-graduation from College. The main outcome variable was binary, and it was about whether the postgraduate college thesis has been published or not. The questionnaire was pretested using eight purposively selected pharmacists who were either members or fellows from the two colleges of pharmacists in Ghana. There were no challenges with completion of the questionnaire from all the eight respondents.

The study sample size was calculated using the Cochrane formula. This is because we considered the study population as large since the aggregated number of pharmacists trained increases every year. We used a Z-score of 1.96 representing the 95% confidence interval and a desired margin of error (precision) of 0.05. A proportion of 5% was used based on Kuttichura et al [8] and Obuku et al [9], who reported that among medical residents the lower-limit of the average proportion for publication of dissertation was 7%. Publication among pharmacists is generally lower than among medical practitioners so we assumed that a lower lower-limit of 5% will be appropriate for the former. Using this figure gave us a sample size of 72.99 (~ 73).

The questionnaire was posted on three social media (Whatsapp only) platforms for pharmacists in Ghana. Two of these platforms were for members of the Government and Hospital Pharmacists Association (GHOSPA) of Ghana (GHOSPA FORUM ONE and GHOSPA FORUM TWO) and the third was for general pharmacists (Pharmacists Forum) in Ghana. To minimize selection bias, the questionnaire was also sent to individual pharmacists who are known to have completed either their specialist or fellowship programmes at the Ghana College of Pharmacists or the West African Postgraduate College of Pharmacists (Ghana Chapter). The questionnaire was first posted on the 16th March 2026 and reminders were made periodically until the sample size was achieved. This lasted for 16 days.

Submitted forms were downloaded from KoboToolbox platform as Excel XLS forms. This was converted to CSV files and transferred to SAS Statistical Software Version 9.4 for data cleaning, variable coding

and arrangement. The data were then exported to STATA I/C Version 17 for statistical analysis.

Continuous data were presented as descriptive statistics such as means and standard deviations, medians, frequencies, and percentages where applicable. Other continuous data like age and years post completion of College were categorized.

Categorical data were presented as proportions and Chi Square (χ^2) was used for comparison. Adjustment was done using Fisher's Exact Test in the case of small numbers. Odds ratio was used to establish association. Mantel-Haenszel odds ratios and binary logistic regression analysis were used to identify association between independent and dependent variables of interest. Crude odds ratios and adjusted odds ratios were calculated. The primary outcome was publication of thesis post completion of College of Pharmacists. For the open-ended question, we identified common themes from the responses. A p-value less than 0.05 was considered as statistically significant. However, in the case of multivariate analysis, a p-value less than 0.1 was considered as significant [10].

RESULTS

The number of responses received was 73. These were received over a period of 16 days. In analyzing these questionnaire, 3 (3/70 = 4%) were dropped due to incompleteness. Participant's age ranged between 32 years and 60 years. The mean age was 45.9 years with a standard deviation (SD) of 6.9. Table 1 shows that 57% of respondents were male compared to female and over 91% were working in the public or quasi-public sector. Clinical Pharmacy was the most preferred specialty recording over 91% among respondents. Table 1 also shows that 64% of respondents from WAPCP had completed the Fellowship programme compared to 29% from the GCP, this was significant (p-values = 0.004). More respondents (56%) from WAPCP said they received training on publication compared to respondents from GCP (38%). When asked if they ever published their thesis after graduation, 36% from WAPCP responded in the affirmative compared to only 9% from GCP (p-value = 0.009). About 13% of graduates from GCP said that they will not publish their thesis if given the necessary support compared to 20% of respondents from the WAPCP.

Table 1
Representation of baseline variables by College attended

Variable	GCP N = 45 (%)	WAPCP N = 25 (%)	P-value
Level of graduation	13 (28.9)	16 (64.0)	0.004
Fellowship	32 (71.1)	9 (36.0)	
Membership			
Faculty of specialization	43 (95.6)	21 (84.0)	0.084*
Clinical Pharmacy	1 (2.2)	1 (4.0)	
Public Health Pharmacy	1 (2.2)	0	
Quality Assurance	0	3 (4.3)	
Social and Administrative Pharmacy			
Sex	28 (62.2)	12 (48.0)	0.249
Male	17 (37.8)	13 (52.0)	
Female			
Place of work	2 (4.4)	0	0.381*
Not working	1 (2.2)	3 (12.0)	
Private Sector	39 (86.7)	20 (80.0)	
Public Sector	3 (6.7)	2 (8.0)	
Quasi-Public Sector			
Aware that thesis is publishable	42 (93.3)	25 (100.0)	0.699*
Yes	1 (2.2)	0	
Not sure	2 (4.4)	0	
No			
Received training on publication	17 (37.8)	14 (56.0)	0.141
Yes	28 (62.2)	11 (44.0)	
No			
Understand how to convert thesis to manuscript	5 (11.1)	6 (24.0)	0.176*
Very well	15 (33.3)	9 (36.0)	
To some extent	19 (42.2)	10 (40.0)	
*Fisher's exact test			

Variable	GCP N = 45 (%)	WAPCP N = 25 (%)	P-value
Not very well	6 (13.3)	0	
Not at all			
Aware of journals relevant to your field	24 (53.3)	13 (52.0)	0.915
Yes	21 (46.7)	12 (48.0)	
No			
Ever published thesis after graduation	4 (8.9)	9 (36.0)	0.009*
Yes	41 (91.1)	16 (64.0)	
No			
Ever published as a first author	8 (17.8)	14 (56.0)	0.001
Yes	37 (82.2)	11 (44.0)	
No			
College encourages publication of thesis	24 (53.3)	15 (60.0)	0.891*
Yes	12 (26.7)	6 (24.0)	
Not sure	9 (20.0)	4 (16.0)	
No			
College organizes workshops on academic writing	0	2 (8.0)	0.296*
Regularly	18 (40.0)	9 (36.0)	
Occasionally	20 (44.4)	9 (36.0)	
Rarely	7 (15.6)	5 (20.0)	
Never			
Level of confidence with academic writing	4 (8.9)	3 (12.0)	0.744*
Very confident	19 (42.2)	12 (48.0)	
Confident	19 (42.2)	10 (40.0)	
Neutral	3 (6.7)	0	
Not confidence			
Can afford publication fees	2 (4.4)	3 (12.0)	0.535*
Yes	26 (57.8)	13 (52.0)	
*Fisher’s exact test			

Variable	GCP N = 45 (%)	WAPCP N = 25 (%)	P-value
Not sure	17 (37.8)	9(36.0)	
No			
Would publish if given adequate support	28 (62.2)	16 (64.0)	0.633*
Yes	11 (24.4)	4 (16.0)	
Not sure	6 (13.3)	5 (20.0)	
No			
*Fisher's exact test			

Table 1

Table 2 shows relationship between the main outcome of interest (whether the thesis has been published after graduation from College) and various independent variables. Those who have completed their Fellowship were about 12 times (odds ratio of 11.92 (95% confidence interval 2.39 to 59.43; p-value = 0.003) as likely to have published their thesis compared to those with Membership. There was no association comparing Clinical Pharmacy graduates to other specializations and whether they have published their thesis after graduation (p-value = 0.343). Those who completed College over 5 years ago were about 6 times (odds ratio of 6.22 (95% confidence interval 1.69 to 22.88; p-value = 0.006) as like to have published their thesis compared to those who completed at most 5 years ago. Those who received training on publication were over twice (odds ratio 2.37 (95% confidence interval 0.69 to 8.14) as likely to publish their thesis after graduation compared to those who did not, but this was not significant (p-value = 0.172). Other variables including sex and mandatory publication were not associated with the main outcome of interest.

Table 2
Association between various independent variables and the primary (main) outcome

Variable	Odds Ratio (95% CI)	P-value
Level of graduation	11.92 (2.39–59.43)	0.003
Fellowship	-	
Membership		
Faculty of specialization	2.41 (0.39–14.83)	0.343
Clinical Pharmacy	-	
Other Specializations		
Sex	1.18 (0.35–3.95)	0.790
Male	-	
Female		
Years since completion of College	6.22 (1.69–22.88)	0.006
More than 5 years ago	-	
At most 5 years ago		
Received training on publication	2.37 (0.69–8.14)	0.172
Yes	-	
No		
Aware of journals relevant to your field	1.73 (0.08–35.62)	0.401
Yes	-	
No		
Place of work	2.41 (0.39–14.83)	0.343
Public sector	-	
Non-Public sector		
College organizes workshops on academic writing	1.78 (0.77–4.10)	0.175
Some form of workshop	-	
Rarely/no workshop		
Level of confidence with academic writing	1.02 (0.31–3.42)	0.972
At least some confidence with academic writing	-	
Not confident with academic writing		

Variable	Odds Ratio (95% CI)	P-value
Level of graduation	11.92 (2.39–59.43)	0.003
Fellowship	-	
Membership		
Faculty of specialization	2.41 (0.39–14.83)	0.343
Clinical Pharmacy	-	
Other Specializations		
Publication should be mandatory	2.94 (0.33–25.84)	0.331
Yes	1.54 (0.12–19.47)	0.739
Not sure	-	
No		

Table 2

Table 3 shows that only the number of years since completion and the level of graduation were independently associated with the main outcome after multivariate analysis at the p-value of 0.1. The crude odds ratios were reduced from 6.22 to 3.90 and 11.92 to 9.01 for years since completion and the level of graduation respectively after adjustment.

Table 3
Independent variables after multivariate analysis

Variable	Crude OR (95% CI)*	P-value	Adjusted OR (95% CI)*	P-value
Years since completion	6.22 (1.69–22.88)	0.006	3.90 (0.94–16.14)	0.06
Level of graduation	11.92 (2.39–59.43)	0.003	9.01 (1.73–46.89)	0.009
*OR=Odds ratio; CI=Confidence Interval				

The bar chart in Fig. 1 shows that the most frequent reason given for inability to publish thesis after graduation from College is lack of training on publication (33.7%). This was followed by lack of funding for publication (21.6%). The least frequent reason was that publication of thesis is too stressful (2.4%).

DISCUSSION

This cross-sectional study tried to ascertain the publication rates of theses among graduates from the two colleges of pharmacists in Ghana, and the reasons for this pattern. It also compared the rates of publication post-graduation between the two postgraduate institutions. There is limited information in

the literature on studies like this among graduates from postgraduate colleges of pharmacists in sub-Saharan Africa.

We found a publication rate of 9% to 36% among graduates from the two postgraduate colleges of pharmacy in Ghana. While there is a dearth of published evidence on publication rate among pharmacists from postgraduate colleges of pharmacists in Africa, evidence exists in some other parts of the world including the United States of America (USA), which has a well-established postgraduate training programme for pharmacists. In a recent study among pharmacists who completed postgraduate residency in Oklahoma (USA), thesis publication was about 52% [11]. In the Oklahoma study, however, an individualized residency research committee and skill development program was implemented to facilitate completion and publication of research projects. This may be lacking in the case of these Ghanaian colleges of pharmacists.

Available literature shows a large gap between dissertation frequency and rate of dissertation publications [12–15]. There is however, a significant variation in reported publication rates [12, 14]. Our findings do not depart from the findings of a meta-analysis of 12 studies, involving 6990 postgraduate pharmacists in the U.S.A, which recorded publication rates of between 1.8% and 36% [12]. Lack of interest in research, knowledge about the publication process and dedicated research preceptor have also been reported as factors accounting for inability to publish [16, 17]. Without a concerted effort, the rate of publication may decline further as the number of postgraduate college trained pharmacists rises. Within the sub-Saharan African region, high publication costs, lack of institutional support, insufficient research skills training and lack of mentorship have been reported as publication barriers among emergency medicine postgraduates [18].

Our findings show that more graduates from the WAPCP completed at the Fellowship level compared to the Membership level. The opposite was the case for graduates from the GCP. The ultimate for attending the College of Pharmacists is to come out as Fellows. It is important to find out why more GCP graduates end up at the Membership level instead of the Fellowship level. There are so many advantages when you complete the College of Pharmacists at the fellowship level compared to the membership level. Fellows in the public service get promoted to senior specialists. Further, Fellows will advance to be consultants once they meet the requirements. These and other advantages need to be clearly explained to students during the course of their study to improve the situation.

Among respondents, thesis publication was found to be significantly higher for graduates from WAPCP compared to their counterparts from the GCP. In addition, this study found that Fellows were about twelve times as likely to publish compared to non-Fellows. This is very important. It implies that students from the colleges of pharmacists should be encouraged to complete their fellowship since this may improve their chances to publish their thesis. It also explains why more publications were seen to come from WAPCP graduates compared to GCP, because more respondents from the former were Fellows. Research capacity has been found to revolve around 3 key areas, one of which is individual skills [6].

Those with Fellowships are more likely to have better skills compared to those with Memberships, and hence, the increased number of publications among the former.

That some graduates from both institutions said they will not publish their thesis if given the necessary support is worrying. Publication is necessary for any higher learning centre. It is a way of adding to the body of evidence globally, and for pharmacists, it helps in improving both the practice and the outcomes of our patients and clients. In addition, it helps to showcase the capabilities of the training institution for training pharmacists at a higher level.

Years since completion of college of pharmacy was found to be an independent predictor for publishing thesis. It takes longer for graduates to publish their work. This may be due to lack of confidence to publish in the early years after graduation. The advantages of publishing soon after graduating are numerous. These include the fact that the information is recent to you, and can easily be remembered and referred to for continuation; the information is new, and you may be the first researcher to publish in that area of practice; your supervisor can easily assist you because the information is recent and easily assessable. In particular, supervisors may get busier with time, because they may be assigned to new students.

Notable reasons given by respondents from open-ended questions as limitations to publishing their thesis include lack of mentorship, motivation and supervision. This is strange because each student has a supervisor who serves as a motivator and a mentor. This calls for better interaction between supervisors and students. Other reasons were insufficient training and policy direction on publication. The Ghana College of Pharmacists and the West African Postgraduate College of Pharmacists have their own peer-reviewed journals for publication that have detailed editorial policy and author's guideline [19, 20]. College residents need to be introduced to these journals early, and be encouraged to transform their thesis to manuscripts for publication.

A major limitation in this study could be due to recall bias because we used all graduates of the two Colleges of Pharmacists in Ghana. Some of them completed over ten years ago and may have forgotten about some of the events that occurred. However, the study was about publications post-graduation, so they cannot be excluded. The use of social media platforms excludes those not present on the platforms. We tried to minimise this selection bias by contacting as many former graduates as possible, known to us, to complete the questionnaire.

CONCLUSION

In this era of Implementation science, it is important that as many postgraduate pharmacists' theses as possible are transformed into manuscripts for publication in peer-reviewed journals. This will improve the body of global knowledge of pharmacy-related issues and consequently, may improve pharmacy practice and patient's health outcomes. As a result of the fast pace at which the pharmaceutical sector is growing, any new information need to be in the public domain in real time to possibly change practice. Pharmacists in Ghana, who enroll with any of the postgraduate colleges of pharmacists, should aspire to

complete their fellowship instead of just ending at the specialist level. Further, these pharmacists must be given all the necessary support to publish their thesis in the early years (first 3 years) post-qualification. Respondents cited a number of barriers that hinder publication of their thesis. It is important to address these to augment publication rates among postgraduate Fellows and Members in the colleges of pharmacists in Ghana.

Abbreviations

CI

Confidence Interval

GCP

Ghana College of Pharmacists

GHOSPA

Government and Hospital Pharmacists Association

LMIC

Low and medium income country/countries

OR

Odds ratio

SD

Standard deviation

USA

United States of America

WAPCP

West Africa Postgraduate College of Pharmacists

Declarations

Ethical statement

This study involved an online survey that looked at thesis publication rates among Ghanaian pharmacists who have completed the postgraduate college of pharmacists in Ghana. It did not involve any form of clinical information or human sample collection. None of the respondents was contacted face-to-face. Any information that will expose their identity was not captured. Questions in this study were centered on whether they have published their thesis after completing any of the colleges of pharmacists in Ghana; if no, why not, and what prevented them from publishing their thesis; when they completed the postgraduate college and their impressions about thesis publication. Participation was voluntarily and data handling was done in accordance with the Ghana Data Protection Act 2012, Act 843. A waiver of informed consent was received from the Korle Bu Teaching Hospital Institution Review Board (Registration No: KBTH-IRB-000293/2026).

Consent for publication

It was stated in the proposal to the KBTH IRB that the data is anonymized and will be published in a peer-reviewed journal. A waiver of informed consent was granted.

Competing interests

None of the authors has any conflicts of interest to declare although all of them are either lecturers or alumni of at least one of the two Colleges of Pharmacists in Ghana.

Funding

This research was not funded.

Author Contribution

Study conceptualization was done by Daniel Ankrah (DA), Mark Amankwah Harrison (MAH) and Frempomaa Nelson (FN). The introduction and literature review were done by DA, MAH, FN, and Mercy Opare-Addow (MO). The study Methodology and investigation were done by all the authors. Formal analysis of the data was done by DA and MAH. Study discussion was done by all the authors. Original draft of manuscript was done by DA and FN, and review and editing of the full manuscript was done by all the authors.

Acknowledgement

The authors are grateful to all pharmacists who completed the questionnaire. The authors thank all administrators of Whatsapp groups for allowing the questionnaire to be advertised on their social media platforms.

Data Availability

The data for the study is available with the Corresponding author. This will be made available to BMC Health Education journal upon request at any time. Meanwhile, the questionnaire for data collection has been attached to this submission.

References

1. Sariem CN, Odesanya RU, Nuwan M, Agwo FY. Pharmacists' role in public health: a residency report. *West Afr J Pharm.* 2023;32(2):80–8. 10.60787/wapcp-32-2-246.

2. Distel AP, Grimpe C, Poetz M. From evidence to impact: the use of scientific research in policy documents. *Res Policy*. 2026;55(3):105426. 10.1016/j.respol.2026.105426.
3. Kamya D, Macharia B, Siika WW, Mbuba CK. A qualitative study exploring graduated medical residents' research experiences, barriers to publication and strategies to improve publication rates from medical residents. *BMC Med Educ*. 2024;24(1):1091. 10.1186/s12909-024-06068-9.
4. Yehia BR, Cronholm PF, Wilson N. Mentorship and pursuit of academic medicine careers: a mixed methods study of residents from diverse backgrounds. *BMC Med Educ*. 2014;14:26. 10.1186/1472-6920-14-26.
5. Nwalieji CA, Onukansi FO, Anokwuru CC, et al. Mentorship in African health and clinical research: addressing barriers and building research capacity. *Hum Resour Health*. 2025;23(1):55. 10.1186/s12960-025-01024-0.
6. Kengia JT, Kalolo A, Barash D, et al. Research capacity, motivators and barriers to conducting research among healthcare providers in Tanzania's public health system: a mixed methods study. *Hum Resour Health*. 2023;21(1):73. 10.1186/s12960-023-00858-w.
7. KoboToolbox. KoboToolbox Data Collection Platform. Kobo Inc. 2026. <https://www.kobotoolbox.org>. Accessed February 5 2026.
8. Kuttichira P, Uni KM, Varghese P. P. Sustained support for a dissertation will facilitate post graduate research publication: an experience from South India. *J Med Educ*. 2020;19(1):e103549. 10.5812/jme.103549
9. Obuku EA, Lavis JN, Kinengyere A, et al. A systematic review on academic research productivity of postgraduate students in low- and middle-income countries. *Health Res Policy Syst*. 2028;16(1):86. 10.1186/s12961-018-0360-7.
10. Greenland S. Modeling and Variable Selection in Epidemiologic Analysis. *Am J Public Health*. 1989;79:340–9.
11. Bennett KK, Fox AN, Miller JL, et al. Publication rates of pharmacy residents involved in a team-based research program. *Am J Health Syst Pharm*. 2022;79(23):2141–9. 10.1093/ajhp/zxac233.
12. Behal ML, Fields PE, Cook AM, Morgan RJ, Flannery AH. Publication of pharmacy resident research projects: a systematic review and meta-analysis. *Am J Health Syst Pharm*. 2024;81(16):713–22. 10.1093/ajhp/zxae091.
13. Miller JL, Lewis TV, Walling J, et al. Publication rates of pediatric-focused resident research projects presented at the Pediatric Pharmacy Association Bruce Parks Memorial Residency Showcase. *J Pediatr Pharmacol Ther*. 2021;26(2):163–71. 10.5863/1551-6776-26.2.163.
14. Antley DL, Nelson LA, Kriz CR, et al. Publication rates and characteristics of PGY2 psychiatric pharmacy resident research projects. *Ment Health Clin*. 2022;12(6):350–5. 10.9740/mhc.2022.12.350.
15. Stranges PM, Vouri SM, Bergfeld F, et al. Pharmacy resident publication success: factors of success based on abstracts from a regional meeting. *Curr Pharm Teach Learn*. 2015;7(6):780–6. 10.1016/j.cptl.2015.08.017.

16. Weathers T, Ercek K, Unni EJ. PGY1 resident research projects: publication rates, project completion policies, perceived values, and barriers. *Curr Pharm Teach Learn*. 2019;11(6):547–56. 10.1016/j.cptl.2019.02.019.

17. Crosley ML, Dumkow LE, Belfer JJ, VanLangen KM. Perceptions of PGY1 pharmacy resident research, final projects, and associated publication outcomes. *Am J Health Syst Pharm*. 2024;81(3):e106–12. 10.1093/ajhp/zxad272.

18. Medarakini HG, Kilindimo SS, Sawe HR et al. Barriers and facilitators to dissertation publication among emergency medicine postgraduates in Tanzania: a 12-year analysis. *BMC Med Educ*. 2026;26:1298. 10.1186/s12909-026-09642-5

19. Editorial Policy and Authors Guidelines. The GCP Journal. <https://gcpharm.edu.gh/wp-content/uploads/2022/01/Editorial-Policy.pdf>. Accessed June 1 2026.

20. West African Journal of Pharmacy. <https://wapcpjournal.org.ng/index.php/home>. Accessed June 1 2026.

Figures

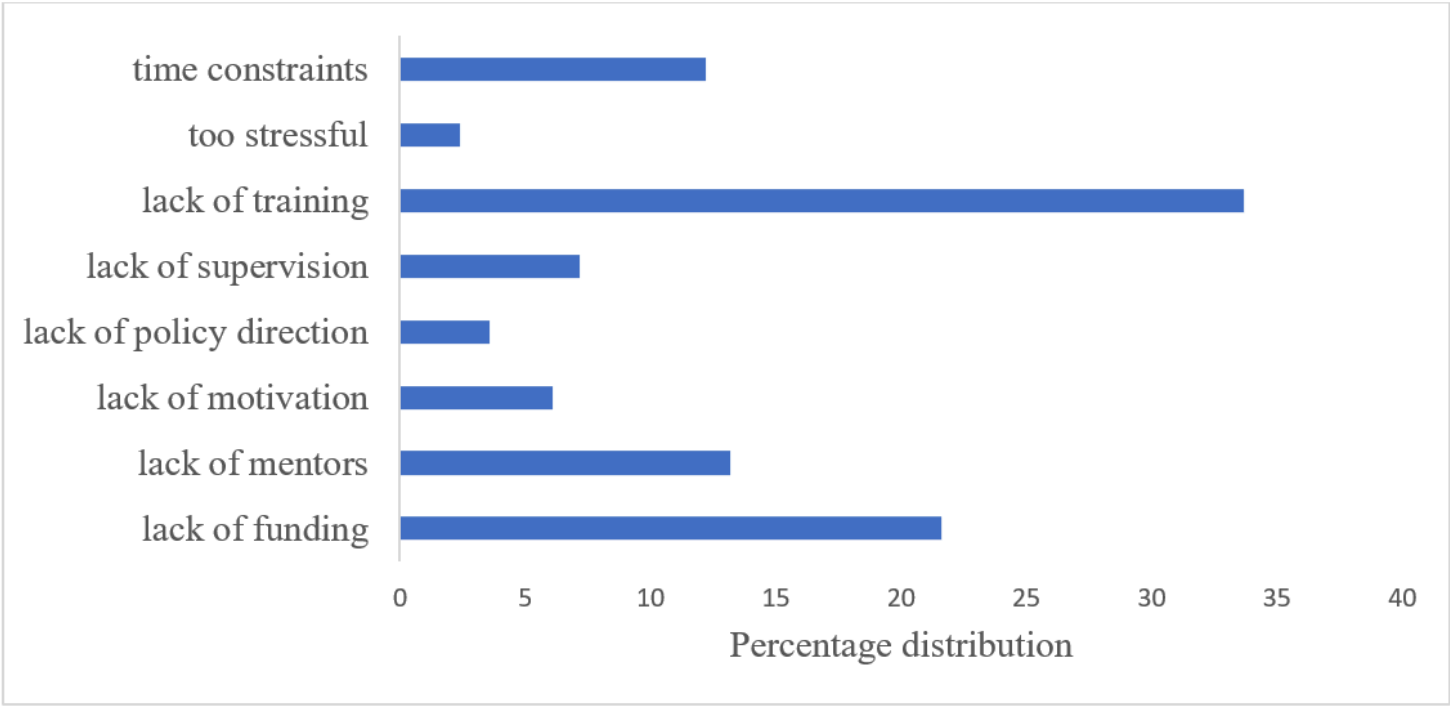


Figure 1

Reasons given as limitations to publication of thesis after graduation from College