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**Was Pharmacy Their Preferred Choice? Assessing Pharmacy Students’ Motivation to Study Pharmacy, Attitudes and Future Career Intentions in Sierra Leone**

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Was Pharmacy Their Preferred Choice? Assessing Pharmacy Students’ Motivation to Study Pharmacy, Attitudes and Future Career Intentions in Sierra Leone

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Abstract

Background: There is a dearth of skilled pharmaceutical workforce in the African region, and this is partly due to a limited number of prospective students entering the profession. An understanding of the factors that influence the choice of pharmacy as a career is needed to attract highly motivated and skilled individuals into the profession. Therefore, the objective of this study was to assess pharmacy students’ motivation to study pharmacy, their attitude and future career intentions in Sierra Leone.

Methods: A cross-sectional questionnaire-based survey of undergraduate pharmacy students enrolled at the College of Medicine, and Allied Health Sciences, University of Sierra Leone (COMAHS-USL) was carried out between May and June 2015. Descriptive statistics, as well as chi-square and Fisher exact two-tailed tests were used to analyze the data.

Results: Close to a quarter (24.3%) of pharmacy students surveyed chose pharmacy as their preferred major. The choice of pharmacy as a preferred major was common among first-year students, (p = 0.001), those who were married (p < 0.001) and have had pharmacy practice experience (p < 0.001). Motivation for choosing pharmacy was assessed based on three domains (education, personal and career-related factors). Students cited a subject teacher at school/College (66.7%) as the most education-related influence, while friends and family members (61.1%) was the major personal-related factor. Also, students considered the desire for self-employment in a healthcare related job (27.8%), and excellent career opportunities (27.8%) as the major career-related factors that influenced their choice of pharmacy as a preferred major. Medicine was the first choice of study among the majority (95%) of students that chose pharmacy as a second choice when seeking admission into the university. Pharmacy students demonstrated a positive attitude toward the profession, and considered drug manufacturing (47.3%) and hospital pharmacy (43.2%) as the most desirable future career options.

List of abbreviations: COMAHS-USL, College of Medicine and Allied Health Sciences, University of Sierra Leone; MOHS, Ministry of health and sanitation

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Conclusion: This study concluded that pharmacy was never the first choice of study for most pharmacy students that participated in this study. Educational authorities and other stakeholders should bear in mind the factors that influenced students’ choices of pharmacy and the public perception of the profession when designing and implementing future recruitment strategies aimed at attracting qualified and highly motivated individuals with a passion for the profession of pharmacy.

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Keywords: Motivation to study; Attitude; Career Intentions; Pharmacy students; Sierra Leone

1. Introduction

Weak healthcare systems and the shortage of a skilled healthcare workforce are among the factors responsible for poor health outcomes seen in developing countries despite the significant advances in medicine and public health. A recent pharmacy workforce report highlighted a dearth of pharmacy professionals in Africa. For instance, there were approximately seven pharmacists per 100,000 of the population in Ghana in 2009. Similar findings were observed in Tanzania and Sudan. The Pharmacy Board of Sierra Leone (PBSL) data for 2005 suggested that there were two pharmacists per 100,000 populations in Sierra Leone. As at 2015, 167 pharmacists were serving a population of 7 million people in Sierra Leone with a ratio of one pharmacist to approximately 42,000 people. This critical human resource shortage severely undermines equitable access to, and rational use of quality essential medicines.

Although attrition of qualified pharmacists is also a contributing factor to the shortage of this cadre of health professionals, the small number of people opting to enter the profession is perhaps the likely reason for a dearth of skilled health professional especially in the allied health professions in Africa. Growth in the country's population led to a huge demand for healthcare including pharmaceutical services and coupled with the pharmacy profession's quest to incorporate the new reality of practice create the dire need for more competent pharmacy professionals. Currently, there is a hundred percent employment rate for pharmacists both in public and private sectors in Sierra Leone. Also, employers of pharmacists especially in the private sector (community pharmacy) still report the continued lack of pharmacists to fill unoccupied positions. Unfortunately, over the years, pharmacy education and the healthcare system in Sierra Leone, have not adequately responded to this growing demand. For instance, the College Of Medicine and Allied Health Sciences, University of Sierra Leone (COMAHS-USL) is the only tertiary institution in the country that runs a five-year undergraduate pharmacy program. The enrolment rate per year ranged from 15–20 students. (Personal communication). As a way to increase the number of people entering the profession, the 2005 university Act allowed for the pharmacy technician school to upgrade its certificate course to a diploma program to cater for those who are less qualified to enter the bachelor degree program. Graduates from the Diploma program were expected to join the degree program after some practice experience. However, anecdotal evidence suggests that most did not continue into the bachelor's program either due to family or work commitments and or lack of funds.

Recruitment strategies such as, but not limited to career fairs, campus visits, recruitment ambassador programs, pre-pharmacy clubs, leadership and mentoring academies, boot camps have been shown to have an enormous impact on the number prospective candidate opting to enter the profession. In Africa, strategies such pre-pharmacy and other bridging programs, public engagement through radio and television, partnering with government and private sector to provide financial aid like student loans, or scholarship have been proposed. The success of these approaches, however, would largely depend on a deeper understanding of the various factors that influence an applicant's choice of pharmacy as a career path.

A review of the available literature suggests that the proportion of students who selected pharmacy as their first choice of study ranged from 39% to 51.1% in Africa; and 71.5% to 77.4% in advanced economies like the United Kingdom and the United States. Other studies have identified several motivational factors that influenced prospective students to choose pharmacy as their first career choice. One study conducted in the United Arab Emirates for example, identified the passion for helping people and being interested in science as key motivators. Another set of studies in Ethiopia and the United Kingdom posited that being good at, or interest to study the sciences in high school, were key influencers.
job prospects, need to be part of healthcare delivery system as the most important determinants for choosing to study pharmacy. Peer and family influence have also been noted as a reason for pursuing pharmacy as a career path. Studies in the United States and Britain have identified race and sex as factors influencing the choice of pharmacy as a major. Asian Americans for instance, were more likely to choose pharmacy as their major than Caucasians, blacks and Hispanics. Also, Caucasians cited career opportunities and entry level positions as their primary influencers. Concerning sex, females students identified selflessness as a key motivator.

For those that did not choose pharmacy as their first choice of study, most had chosen medicine as their preferred choice. This trend appears consistent globally, and it lends credence to the notion that the medical profession continues to enjoy widespread popularity and respect among the public. However, attitude towards pharmacy as a profession, even among those who did not choose pharmacy as their first choice, remains positive. One study conducted in Ethiopia reported an attitudinal score of 3.69 ± 1.8 on a scale of 1–5. An Australian study reported a similar finding.

Post-graduation career preferences and the reasons for these preferences have been studied extensively among pharmacy students over the years. A study conducted in Malaysia found that students in public universities preferred to work in the hospital setting while their counterparts in private universities favoured working in a community pharmacy setting. Financial reward was the key determinant for their career choices. Also, in Nigeria, South Africa and Ethiopia, hospital pharmacy was the most preferred area of practice among pharmacy students. In the Nigerian study, for instance, job flexibility for women and remuneration for males were the key influencers. In the South African study, given back to the community was cited as the most important reason for their choice. Intern pharmacists shared similar career preferences in Sierra Leone. On the other hand, a study in the United States indicated that community pharmacy was the preferred choice of most students immediately after graduation. Work environment was considered a key factor for their choice.

Few published studies have assessed the motivations, attitudes and career intentions of pharmacy students in Africa. To our knowledge, no such study has been done in Sierra Leone. This study is therefore conducted to fill this nascent knowledge gap with the aim of assessing pharmacy student’s motivation to study pharmacy, their attitude and future career intentions.

2. Methodology

2.1. Study design, setting and population

We conducted a cross-sectional study among undergraduate pharmacy students at the College of Medicine and Allied health Sciences University of Sierra Leone (COMAHS-USL). COMAHS-USL is the only tertiary institution in Sierra Leone that offers a five-year undergraduate degree program in pharmacy. At the time of conducting this study, there were 95 enrolled undergraduate pharmacy students (year 1–5) for the 2014–2015 academic year, and they constituted the study population. This study was carried out between May and July 2015.

2.2. Study questionnaire

A structured questionnaire for this study was adapted and developed based on previous studies that assessed similar outcome variables considered in this survey. The questionnaire was peer-reviewed by five faculty members at the Faculty of Pharmaceutical Sciences College of Medicine and allied health sciences, University of Sierra Leone (COMAHS-USL) to establish face validity. To further establish content validity, we piloted the questionnaire among ten pharmacy students who were subsequently excluded from the final analysis. Modifications to the survey questionnaire were made based on the feedback from both faculty and students.

The questionnaire consisted of four sections. The first part looked at demographic information from students which includes: age, sex, year of study, religion, marital status, and prior pharmacy experience. The second section sought to assess students’ motivation and desire to study pharmacy as a first choice career option. We asked whether pharmacy was the first choice field of study using a “Yes or No” option. If yes, they were invited to choose from a list of factors categorised into three themes that they think influenced their decision the most. Students’ desire to study pharmacy, and becoming a pharmacist was assessed based on responses on a four-point Likert scale with descriptors ranging from very strong to not at all strong. The third section assessed students’ attitude using a series of statements on a five-point Likert scale with point descriptors ranging from strongly disagree at one extreme to strongly agree at the other extreme. The
fourth section of the questionnaire assessed future career aspirations of students, by asking them to choose from a list of areas of pharmacy practice they would prefer to work after graduation.

2.3. Data collection and ethical approval

After explaining the purpose and scope of the study, questionnaires were self-administered in class to every student who verbally consented to participate in the study. They were allowed to fill the questionnaire within 15–20 min. Their privacy and confidentiality were assured. It was made known to them that their participation was entirely voluntary and that they reserved the right to withdraw their participation at any time while filling the questionnaire. Approval for the study was also granted by the research and ethics committee of the COMAHS-USL before the study commenced.

2.4. Variable measurement and data analysis

Data from all completed questionnaires were analysed using SPSS version 16 (Chicago IL Inc). Proportions and percentages were used to represent categorical variables. Pearson’s chi-square and Fisher Exact two-tailed tests were employed to determine associations between dependent outcome variables (choice of pharmacy as first choice major and attitude of students towards the profession) and independent demographic variables. P < 0.05 was considered statistical significance.

3. Results

3.1. Pharmacy student choice of pharmacy as preferred major in association with respondent’s demographics

The response rate was 77.9% (74/95). Most of the students were male (67.6%), single (82.4%). Less than a quarter (24.3%) of students chose pharmacy as their preferred major. There was a significant association between pharmacy as a preferred major and first year of study (p = 0.001), married participants (p < 0.001) and those with prior pharmacy practice experience (p < 0.001). (Table 1). Among the fifty-six pharmacy students whose preferred choice was not Pharmacy, nearly all 55 (98.2%) selected medicine as their first choice when they applied for admission at COMAHS-USL. Only one selected medical laboratory technology.

3.2. Pharmacy students’ motivational factors that influence the choice of pharmacy as a preferred major

Table 2 looks at the most important influences for those who chose pharmacy as their major when they enrolled at COMAHS-USL. We categorised these influencers under specific themes described as education related, personal or family, and career-oriented
goals. Under education related influences, students cited a subject or teacher at school/college as the primary motivator (66.7%). Students considered family and friends as the most significant contributor under personal related influences (61.1%). A job with good career opportunities (27.8%), an opportunity for self-employment (27.8%), and working in a healthcare profession with patients (16.7%) were the most valuable career-oriented factors that influenced students’ choice of pharmacy.

3.3. Desire to study pharmacy and be a pharmacist

Over half of the students had no desire to study pharmacy (58.1%) or become a pharmacist (59.5%) when they entered COMAHS. On the other hand, the desire to study pharmacy at the time of entry was more common among the first year students ($p=0.017$), those who were married ($p<0.001$), and have had a prior pharmacy practice experience ($p<0.001$). The desire to be a pharmacist at the time of entry was significantly associated with marital status ($p=0.005$) and previous pharmacy practice experience ($p<0.001$).

3.4. Attitude of pharmacy students about pharmacy as a career

Approximately two-thirds of participants (60.8%) stated they are proud to tell others they are studying pharmacy. Also, nearly three-quarters (70.3%) noted that they are committed to the values and ideals of the pharmacy profession. Also, slightly more three-quarters (75.7%) stated that pharmacy is an ideal job for a career in life. A significant association was observed between being proud to tell others that they are pharmacy students, being committed to the ideals of the profession, students’ intention to undertake further studies after graduation and their prior pharmacy experience. Students with previous pharmacy experience were more than willing to tell others about what they are studying ($p=0.002$) and more committed to the ideals of the profession ($p=0.026$) but less interested in pursuing a second degree after graduation ($p=0.003$). Also, those above the age of 30 years were more of the belief that pharmacy was the ideal profession ($p=0.015$) for them and wanted a career in pharmacy ($p=0.015$) (Table 3).

3.5. Future career options of pharmacy students

Nearly half (47.3%) of pharmacy students intended to work in drug manufacturing after graduation. The next most common career options were hospital pharmacy (43.2%), academia/research (33.8%) and regulatory/administrative pharmacy (32.4%) respectively. Community pharmacy (10.8%) including marketing and sales were the less preferred career options.

4. Discussion

The present study attempted to assess whether pharmacy was the first choice for pharmacy students admitted to COMAHS – USL and to discern their motivations for this preference. It also evaluated their attitude towards pharmacy as a profession in general, as
well as the perceptions of their friends and family towards the pharmacy profession. Also, it assessed their career intentions after graduation.

Nearly one-quarter of pharmacy students indicated that pharmacy was their first choice or preferred major when they applied to study at COMAHS-USL. This result is lower than that reported in similar studies in Ethiopia, South Africa, England and USA. The difference in figures, in particular between those in Africa and the UK, is probably linked to low public awareness and appreciation of pharmacy as a valued health care profession in developing nations. The fact that only a few students opted to study pharmacy might help explain the reasons for the dearth of pharmacists in Sierra Leone. Currently, there are more pharmaceutical outlets manned by few pharmacists, and most of them reside in the city. Such disparity adversely affects the adequate provision of pharmaceutical service which in-turn affects the image of the profession and discourage people in wanting to enter the pharmacy. First-year students, those who were married and have had prior pharmacy experience were more likely to have selected pharmacy as their preferred major. Such a relationship was not surprising as most first-year pharmacy students currently enrolled at COMAHS-USL as compared to the other classes (year 2–5) were married, and do have prior pharmacy practice experience. The reason for such a unique profile is linked to mere coincidence in that first-year students enrolled in the Pharmacy program for the 2014–2015 academic year had worked several years as a pharmacy technician. Interestingly, these students were the ones that showed a significant association with the desire to study pharmacy and being a pharmacist when they applied to study at COMAHS-USL. Also, these sets of students were more comfortable in disclosing to others their course of study and more willing to uphold the ideals and values of the pharmacy profession. The fact that most of them were practising as pharmacy technicians gave them the advantage of being fully cognizant of both the opportunities and limitations of the profession. They were therefore well positioned to make informed decisions and choices. It shows that prospective students with prior knowledge and understanding of the profession are more likely to choose pharmacy as their first choice. This underscores the need for prior engagement of prospective candidates especially those in high school. Strategies such as career fairs, campus visits, recruitment ambassador programs, pre-pharmacy clubs, leadership and mentoring academics, as well as educational programs on radio and television, can

<table>
<thead>
<tr>
<th>Statements</th>
<th>Strongly Agree (n=107)</th>
<th>Strongly Disagree (n=30)</th>
<th>Disagree (n=60)</th>
<th>Agree (n=76)</th>
<th>Neutral (n=66)</th>
<th>p-value</th>
<th>Sex (P-value)</th>
<th>Year of study (p-value)</th>
<th>Marital status (p-value)</th>
<th>Religion (p-value)</th>
<th>Prior pharmacy practice experience (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am proud to tell others that I am studying Pharmacy.</td>
<td>34(31.6)</td>
<td>3(2.8)</td>
<td>15(14)</td>
<td>22(20.7)</td>
<td>14(13.1)</td>
<td>0.675</td>
<td>0.570</td>
<td>0.047</td>
<td>0.008</td>
<td>0.094</td>
<td>0.003</td>
</tr>
<tr>
<td>I am strongly committed to the values and ideals of the pharmacy profession.</td>
<td>34(31.6)</td>
<td>3(2.8)</td>
<td>15(14)</td>
<td>22(20.7)</td>
<td>14(13.1)</td>
<td>0.675</td>
<td>0.570</td>
<td>0.047</td>
<td>0.008</td>
<td>0.094</td>
<td>0.003</td>
</tr>
<tr>
<td>Being a pharmacist is an important part of who I want to be</td>
<td>34(31.6)</td>
<td>3(2.8)</td>
<td>15(14)</td>
<td>22(20.7)</td>
<td>14(13.1)</td>
<td>0.675</td>
<td>0.570</td>
<td>0.047</td>
<td>0.008</td>
<td>0.094</td>
<td>0.003</td>
</tr>
<tr>
<td>If I could do it all again I would choose to study for the same profession.</td>
<td>34(31.6)</td>
<td>3(2.8)</td>
<td>15(14)</td>
<td>22(20.7)</td>
<td>14(13.1)</td>
<td>0.675</td>
<td>0.570</td>
<td>0.047</td>
<td>0.008</td>
<td>0.094</td>
<td>0.003</td>
</tr>
<tr>
<td>I want a career in pharmacy</td>
<td>34(31.6)</td>
<td>3(2.8)</td>
<td>15(14)</td>
<td>22(20.7)</td>
<td>14(13.1)</td>
<td>0.675</td>
<td>0.570</td>
<td>0.047</td>
<td>0.008</td>
<td>0.094</td>
<td>0.003</td>
</tr>
<tr>
<td>I intend to undertake a second degree after completing pharmacy</td>
<td>34(31.6)</td>
<td>3(2.8)</td>
<td>15(14)</td>
<td>22(20.7)</td>
<td>14(13.1)</td>
<td>0.675</td>
<td>0.570</td>
<td>0.047</td>
<td>0.008</td>
<td>0.094</td>
<td>0.003</td>
</tr>
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</table>
serve as an efficient platform to increase knowledge about pharmacy and at the same time recruit more people into the profession.

For those that chose pharmacy as their preferred major in this study, factors influencing their decision were considered under three broad themes: educational, personal, and career-related goals. The key educational motivators were a subject teacher at school followed by university prospectus. The least was radio or TV educational program on Pharmacy. Such finding may be explain in that most students for which pharmacy was their first preference were pharmacy technicians and that most would have been encouraged by their lecturers/tutors to pursue a degree based on their performance. The fact that radio and TV programs were the least cited educational factor highlights little public engagement about pharmacy and its role in the healthcare delivery. With little public knowledge about pharmacy as in most African countries, university authorities and pharmacy professional bodies such as the Pharmaceutical Society of Sierra Leone should consider the frequent use of mass media to raise public knowledge and awareness about the profession. Such strategy is expected to help attract prospective candidates into the profession. Our result seems to be consistent with findings by Jesson and colleagues. Our finding that family and friends followed by pharmacy work experience were the most important personal influences for choosing Pharmacy resonates with previous results reported in the UK but contrasted with reports from studies carried out in the United Arab Emirates and Malaysia. It is not unusual to attribute the difference in results to a variation in the study design, especially on how students’ influences were assessed. Our finding highlights the enormous influence of family and friends in choosing a career path. This indicates that recruitment strategies should target not only prospective candidates but also their relatives and friends. With regards to career-related goals, our finding suggests that pharmacy students placed more premium on job security and stability and little on the image of the profession, altruism and public service. This result also mirrors with the ones reported by Jesson and colleagues, but contrasted with those reported by Sharif et al. and Willis et al. Patient care, the image of the profession and community service are often cited as fundamental tenets of most healthcare professions that attract public respect. It is, therefore, safe to assume that the less importance placed on these attributes negatively affects the public image of the profession. The national health sector strategic plan emphasised the need for equity and community participation in health service in which the healthcare professional is a community advocate for change. Such policy direction has implications for the pharmacy profession in which the reported career-related motivators were largely influenced by personal growth and job security rather than selflessness and community service. A re-orientation of professional practice to one that promotes altruism and community service will have a positive impact on the societal view of pharmacy as a profession. Such shift in pharmacy practice will help attract more people into the profession.

The majority of pharmacy students whose first choice of was not pharmacy indicated that their preferred choice was medicine. Our result confirms similar finding reported in a UK study of students who chose pharmacy as their second choice. These students are not unique in their choices. The high intellectual rigour and the selfless nature of medicine have attracted more people into the profession. Our finding further confirms the stereotypic image of medicine as the most revered and valued health care profession by the public as it is thought to save lives, promote and protect public health. As such, it is always the first choice of study among prospective students who want a career in the healthcare domain. Family and friends perception play a role in a student's selection of a career, and that might have had an impact on most pharmacy students’ decision to choose medicine over pharmacy when they applied to enter university in this study. Educational outreach programs using mass media, school visits, college fairs that target the general public and senior high school science students are highly needed to increase awareness and change the general perception of the public towards the profession. However, a change in public or societal mindset about the profession of pharmacy goes beyond engaging the public but, also making real actionable changes to the manner in which the pharmacy profession is currently practised. A paradigm shift from the traditional forms of training and practice of pharmacy to an expanded service model that is more patient-focused will go a long way in changing the negative perception of the public. The recent change in the pharmacy curriculum from a product –focus to a more patient-focus is a step in the right direction. Such a change in the mode of learning will help produce competent pharmacy graduates that can contribute meaningfully to patient care and public health. This will help improve the profession’s image and contribute to motivating students to choose the profession of pharmacy.

Pharmacy students showed a positive attitude towards the profession which is consistent with
previous studies conducted in England, Ghana and Ethiopia. The positive attitude demonstrated by these students might be as a result of their current understanding of the nature and scope of the profession. Although that might be the case, the fact that students without pharmacy practice experience were more likely not to disclose their course of study to others and are unwilling to uphold the ideals and values of the profession show how individual and public knowledge can affect student attitude toward the pharmacy profession. Pharmacy educators and other stakeholders do not only have the responsibility to educate students but the public as well. Also, the dire need for a change in current pharmacy practice model is required. Our study also showed that students with previous pharmacy practice experience were less interested in postgraduate studies. The lack of interest to undertake postgraduate studies in this group of students is likely as a result of the fact that they considered themselves too old and or that family and work commitments limit their chances to pursue further studies.

Surprisingly, nearly half of respondents intend going into drug manufacturing after graduation. The next most common pharmacy practice areas were hospital, academia, and regulatory affairs. Community pharmacy, including sales and marketing, were the least future careers chosen by pharmacy students. Our results are different from previous studies conducted elsewhere in which either hospital or community pharmacy was the preferred career choice. It is surprising that most students in our study chose drug manufacturing as their preferred career option since this area of pharmacy practice is not currently absent in Sierra Leone at the moment. Possible reasons might be the perceived respect and huge remuneration that goes with that field of pharmacy practice. Also, this might change with time as students get a better understanding of the various career options in pharmacy. However, further studies need to be conducted to understand further the interplay of factors that may account for such preference. As in most studies carried out in Africa, hospital pharmacy was the next most intended career choice. A previous survey conducted in Sierra Leone among pharmacy interns has established this fact. The desire among pharmacy students to actively involved in patient care looks promising for the future of pharmacy in Sierra Leone. The recent change in the curriculum that incorporates the current reality of pharmacy practice will help to produce future pharmacists with the required skill and competency in providing patient care. This will contribute to transforming pharmacy into a valued healthcare profession that attracts public admiration. Pharmacy educators and professional organisations should continue to work towards creating a practice that is more patient centred in a bid to luring more qualified individuals into the profession.

Community pharmacy usually represents the face of the profession to the public. The way in which community pharmacies are run not only affects public perception of the profession, but it also impacts the career choices of future pharmacy professionals. Community pharmacy including sales and marketing were the least preferred future career choice in our study. As in most African countries, community pharmacy in Sierra Leone is less professionally driven with the businessman being in control of most activities. Coupled with the ineffective regulation of these premises, most students do not fancy working in such an area of pharmacy. New legislations and guidelines, especially with regards to ownership and management of a pharmacy outlet, are required to help institute the tenets of good pharmacy practice. Also, existing laws and regulations need to be strengthened with strict implementation protocols.

Key limitations of this study are that it failed to examine why pharmacy was not the first choice for those that did not choose it as their preferred choice and the reasons for pharmacy student's career choice. A key strength of this study is that our findings are representative of the views of pharmacy students in Sierra Leone enrolled in the 2014–2015 academic year since COMAHS-USL is the only institution that offers undergraduate training in pharmacy. As the profession currently suffers a dearth in the number of skilled workforce, findings from our study will inform and guide the design of recruitment strategies geared toward bringing more qualified people into the profession. It will also help identify areas of training and practice that need to be improved for the profession to contribute meaningfully to the healthcare delivery system of Sierra Leone.

5. Conclusion

Our study indicates that pharmacy was not the first choice area of study for most pharmacy students. University authorities, the pharmaceutical society of Sierra Leone and other stakeholders, should bear in mind these factors that motivate students to choose pharmacy when developing recruitment strategies geared towards attracting qualified and highly motivated individuals into the pharmacy profession.
Authors’ contributions

PBJ conceived of the study, contributed to its design, supervised data collection, analyzed and interpreted the data as well as wrote the initial draft of the manuscript. MNPB & AJB participated in the study design and data interpretation and contributed to the intellectual content of the manuscript. TSB, AJK and ML contributed to the literature search and data collection. SQJ contributed to study design, manuscript review and editing. All authors read and approved the final version of the manuscript.

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Conflict of interest

The authors have declared no conflicts of interest whatsoever on the research, authorship, and publication of this article.

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