

American Journal of Humanities and Social Sciences Research (AJHSSR)

e-ISSN: 2378-703X

Volume-4, Issue-4-pp-180-185

www.ajhssr.com

Research Paper

Open Access

Exploring the challenges facing pharmacy education, an experience of Southern Tanzania

First author, Revocatus Marigana Makaranga¹ (PHD Student), Corresponding author Prof. Cao Yang^{2*}

¹ China Pharmaceutical University

Department of Social and Administrative Pharmacy

Zipcode; 211198 NANJING P.R CHINA

^{2*} China Pharmaceutical University

Department of Social and Administrative Pharmacy

Zipcode; 211198 NANJING P.R CHINA

Abstract; Aim; the aim of this study was to explore the challenges facing pharmacy education in Tanzanian pharmacy schools located in southern region of the country.

Methods; this was a qualitative study using questionnaires, and it was conducted at Top One College of Health and Allied Sciences, in southern part of Tanzania, 67 participants were involved in this study, they were students studying pharmacy technician course, data was analyzed using thematic analysis method.

Results; indicated that pharmacy schools in Southern Tanzania faced challenges that mostly were institutional related challenges, which are few teachers, few teaching hospitals, lack of books in the library, poor internet connectivity, and curriculum related problems, though there challenges that were directly related to students like financial problems, computer illiteracy, poor knowledge of English language, poverty, and lack of employment after studies.

Conclusion; institutional related challenges are still a big concern in pharmacy education in schools found in Southern Tanzania. It has been realized that the only way to produce pharmacists who can properly contribute to the health care delivery is to move to the tertiary education sector, that is the doctor of pharmacy program.

Key words; *challenges, explore, experience, pharmacy education*

I. INTRODUCTION

The program leading to the award of bachelor pharmacy degree was established in 1974 as a department of pharmacy in the faculty of medicine with assistance of a grant from the British council. The first intake of 16 students were supposed to take most of their basic science courses at the main campus of the University of Dares salaam, together with B.sc general, B.sc education and B.sc geology students, 15 of these students graduated later in the year 1977, and most of the lecturers who taught the course were expatriates from Britain, Kenya and Malawi.

The faculty of pharmacy was established in 1991 under the constituent college of the university of Dares salaam, which became the Muhimbili University College of Health Sciences(MUCHS) in 2000, the faculty of pharmacy was accorded a school status for preparation for its expansion in the year 2003. The school continues to exist after the establishment of Muhimbili University of Health and Allied sciences(MUHAS), the school has currently a total of more than 30 academicians (<https://eduloaded.com/tz/muhimbili,2019>). As the demand to improve the health sector in Tanzania was becoming higher, then in September 2007 ST John's University of Tanzania(SJUT) was established (<https://tzscholars.com/sjut,2019>) and in September 2010 Catholic University of Health and Allied Sciences(CUHAS) also established the school of pharmacy, the university also offers other various undergraduate programs(www.bugando.ac.tz,2019). There are also other colleges that train pharmacy technicians as there is an increasing demand for pharmaceutical services in Tanzania especially in rural areas([www.udahilportal.com",2019](http://www.udahilportal.com)) Since the establishment of pharmacy schools in Tanzania, the training has been facing several challenges which are of particular concern, one of the main challenges that pharmacy education in the developing countries which need to be addressed is the issue infrastructure and highly competent manpower requirements for the emerging schools of pharmacy to assure quality of the products. The pharmacy workforce would need to acquire additional training and skills and sensitivity to be able to deal with the evolving challenges from the practice(Ikoji et al 2014), shortage of

pharmacy faculty, especially in private colleges and under qualified pharmacists in practice, this results in poor standards and generally impedes progress into the new era of clinical pharmacy. On a governmental level, difficulties have been caused by a failure of appropriate planning and monitoring, and confusion caused by curricula. A further problem lies not only in the large number of pharmacists who are not qualified to practice, but also in the lack of continuing education opportunities available to them (Yaser et al. 2014). For instance the problems of postgraduate education in Nigeria have been identified to include inability of students to graduate at stipulated time due to lack of functional equipment, finance, and quality of supervision (Duze 2010) lack of clinical preceptors, shortage of pharmacists, and an under-resourced health care setting with high patient burdens remained a big challenge in many developing African countries (Jane et al. 2018).

However this article explores the challenges facing pharmacy education in Southern Tanzania, it shows if the challenges are a threat to the international pharmaceutical federation (FIP) and WHO which developed the concept of the "seven star pharmacist", which states that a well-rounded pharmacist should be a compassionate care giver, decision maker, active communicator, lifelong learner, and good manager, and should possess good leadership qualities and the ability to be a teacher and researcher (Aburuz et al. 2012). According to WHO, future pharmacists must possess specific knowledge, attitudes, skills and behaviors in support of their roles (salim et al. 2016, Katoue et al. 2014). Due to the increasing demand for pharmacists in public health, WHO recommends a ratio of one pharmacist per 2000 population in order for optimal health care to be delivered. Besides their pivotal role in public health, pharmacists can also act as advisors to physicians and nurses and contribute to policy decisions (Elhaji et al. 2016). The southern part of Tanzania has only two colleges that train pharmacy technicians, one is a public college and the other is the privately owned college ("www.udahiliportal.com", 2019). Thus the aim of this study was to explore the challenges facing pharmacy education in Tanzanian pharmacy schools located in southern part of the country, and find out the causes and nature of the problems and provide positive solutions for them.

II. METHODS

A qualitative approach was used to collect data, 67 students were involved in the study, a guided questionnaire was provided to students to answer questions regarding the challenges associated with pharmacy education, this study was done at Top One college of Health Sciences which trains pharmaceutical technicians, the study was conducted in SEPTEMBER 2019, the college is located at Ruvuma region, Southern part of Tanzania. The written consent form explained the aim of the study and assured the participants that no personal identifiers will be collected and they could be identified by numbers. Once the participants consented to participate then data was collected and analyzed using the thematic analysis method, this study was considered to be part of an academic activity, so ethical approval from the college was not required but the researchers were mindful of the ethical issues and the study was conducted to the highest ethical standards.

III. RESULTS

The themes identified during data analysis were; institutional related challenges, student related challenges and pharmacy practice after studies.

Institutional related challenges; the most reported challenges constituted the institutional related ones, these challenges were reported by approximately three quarter of the responders, which included insufficient number of teachers, books and laboratory equipment, lack of pharmaceutical facilities at the campus to enhance easy practical learning, few teaching hospitals, and unfriendly environment for learning.

"Teachers are not sufficient as well as books, we also learn few drugs" (student no.26)

"The books are not sufficient, that is they do not suffice the number of students and the environment is not friendly for learning" (student no.37)

The equipment used in learning are not sufficient and there are no enough places like hospital for practices (student no.66). "teaching staffs are not sufficient ,I normally get learning assistance from my colleagues, library and internet sources" (student no.2).

"Teaching staff are not sufficient and it obliges them to use non class hours so as to accomplish the teaching load" (student no.41).

"We are being insisted to use the library and search material online, but internet services at our college is not reliable and the library has few books" (student no.46).

"Staffs are not sufficient, but at least they help us by using extra time and producing handouts" (student no.46).

"Unreliable internet connectivity and frequent electricity cutoff makes the learning environment unfriendly" (student no.39).

Students also mentioned issues related to curriculum, in Tanzania the curriculum is set by the college and gets approval by the national accreditation council for technical education (NACTE), the interviewees reported on their training in hospital and said that they are closely guided by their teachers on how to make the

prescription of drugs though they are not allowed to make prescription for patients as they are not qualified for practice, and they pointed out that time for training was inadequate.

"Yes we do have hospital rounds spanning for two months at the end of the academic year, but this time is too short for me to understand clinical practices"(student no.49).

"The training involves hospital rounds for approximately two months"(student no.58).

"Yes I will start the hospital rounds in July and it will span for one month and half"(student no.60)

"The learning in the hospital is very interesting though time is not enough"(student no.9)

"Two months training in the hospital is not enough, I propose time for the training to be extended"(student no.21).

"First of all time allocated for training is not sufficient as the course have many things to be covered"(student no.62).

Another theme identified during data analysis was student related challenges; this study revealed that there were challenges related to financial issues that in one way or another compromised the pharmacy education, and there was an issue of computer illiteracy and poor knowledge of English language, two third of the participants reported to have financial problems that affected their studies, challenges were mostly linked with the payment of school fees and other program related costs such as buying important equipment for their studies, students at this college are self-funded.

Lack of finances gives me hard times because sometimes you come across with something that needs money to be accomplished but you have nothing in your pocket"(student no.1).

"First pharmacy studies are hard they need patience, secondly, missing classes because I have not paid school fees"(student no.49).

"Paying school fees is very challenging to me ,and most of the time I keep worrying on how I will cover the debt, this affects me psychologically"(student no.29).

"I was told by the instructor to purchase a stethoscope for clinical use, but I could not manage because I had no money"(student no.16)

"My studies were suspended because I failed to complete payment of my school fees, this real pained me"(student no.30).

"Most of our teachers are insisting us to have our personal portable computer, but I cannot afford to buy it ,so this gives me problem when we are given soft copy notes to read"(student no.9).

Another challenge related to students, that was reported by few responders was directly linked to personal learning capabilities and/or attitude, lack of computer skills and English language incompetency.

"Using computers in learning is very challenging to me because I have never used a computer"(student no.67).

"I do not know how to use a computer, even if the teacher provides me a soft copy of notes I can't read it"(student no.55).

"First of all English language to me is a problem, I can't understand using a computer"(student no.62).

Another theme identified in this study was pharmacy practice after studies; responders appeared to have different responses on how and where they expect to use their education they receive after completing their studies. Many linked the application of the attained knowledge and skills with their desire to help the community but without being specific on how will such ambition be achieved.

"After completing my studies, I expect to use the knowledge and skills I will have acquired to help those in need of service"(student no.30).

"My expectation is to become a pharmacist that I may lender my service so as to help the society and the country at large"(student no.44).

Another large group of interviewees reported that they expected to practice their knowledge in either private or public sector, but many responders said that only few are luck to be employed in public sector, also few responders were expecting to employ themselves through establishing and running their pharmacies.

"I expect to establish my own pharmacy or work on various hospital to generate my income"(student no.61).

"I wish to get an employment in the public sector but unfortunately very few are being employed there, the employment in public sector is permanent"(student no.7)

"It's the third year now since my friend finished studies, but he has not secured employment in the public sector, he works with private pharmacies"(student no.14).

"My expectation is to open a big pharmacy that will provide service to many people"(student no.57).

Lastly a few of interviewees reported that they expect to further their studies in pharmacy education so that they might become experts in this field, other responders were also expecting to further their studies to higher levels but they wish to first secure employment so as to build their financial capabilities.

"My expectation after completing my studies is to enroll into higher studies that I may become a prominent pharmacist"(student no.59).

"I do expect to be employed and there after I will enroll into higher studies like bachelor of pharmacy program and master's degree"(student no.31).

"I expect to be employed by the government ,but later on I plan to employ myself while furthering my studies to higher levels"(student no.4).

IV. DISCUSSION

In Tanzania ,pharmacy education encounters a lot of challenges especially in schools found in southern Tanzania, as revealed from this study which was conducted at Top One College of Health and Allied Sciences, the most challenges addressed were institutional related challenges which were mentioned by many interviewees and these included insufficient number of teachers, insufficient books and laboratory equipment, lack of pharmaceutical facilities at the campus to enhance easy practical learning and few teaching hospitals ,the responders also raised concern regarding the curriculum as they said that the time they spend in hospitals is inadequate, these challenges are more similar to the findings of a research that was conducted in Yemen and it revealed out that many Yemenis are not satisfied with the pharmacy curriculum, there was no electronic learning in the public higher education sector, lack of clinical pharmacy and pharmacy practice courses, as well as lack of qualified lecturers in the private colleges, students also lack computers in their place of study and do not have access to the internet(Yaser.et.al.2014) These challenges give an implication that pharmacy schools in southern Tanzania produce pharmacists lacking a clinical role as many students raised concern about their clinical training, some of the participants mentioned. *"These books are not sufficient, that is they do not suffice the number of students and the environment is not friendly for learning"(student no.37). "The equipment used in learning are not sufficient and there are no enough places like hospitals for practices"(student no.66).Teaching staffs are not sufficient, I normally get learning assistance from my colleagues, library and internet sources"(student no.2). "Yes we do have hospital rounds spanning for two months, but this time is too short for me to understand clinical practices"(student no.48).* Financial constraints also were revealed from this study as a challenge facing pharmacy education in Southern Tanzania, it affected students in many ways as some dropped studies due to failure to payment of schools fees, this is linked to poverty facing many citizens in the African continent, referring from a study conducted in Nigeria which showed that many postgraduate students failed to complete their studies on time because of financial problems(Duze, 2010),this shows a similarity in finding regarding the financial problems in the African setting, as some responders mentioned. *"My studies were suspended because I failed to complete payment of my school fees, this real disappointed me"(student no.30). "Most of our teachers are insisting us to have our personal portable computers, but I cannot afford to buy it, so this gives me a problem when we are given soft copy notes to read"(student no.9).* Computer illiteracy and poor knowledge of English language was also found as a challenge of pharmacy education and these in turn gave an obstacle in imparting knowledge of pharmacy to students, as some students said. *"Using computers in learning is very challenging to me because I have never used a computer"(student no.67). "I do not know how to use a computer, even if the teacher provides me a soft copy of notes I can't read it"(student no.55). "First of all English language to me is a problem, I can't understand using a computer"(student no.62).* These were one of the interesting results revealed from this study though mentioned by few students, as computer knowledge is very important at this era of development, this shows that there is a need to put more emphasis on computer knowledge as well as English language at the primary level of education. Pharmacy practice after studies was also explored in this study and showed that many responders are expecting to be employed in public sector, though some are of the opinion of being working in private sector by either opening their big pharmacies or being employed in private pharmacies, but lack of employment is a big concern in many developing countries including Tanzania, as revealed from the literature there are numerous challenges and barriers faced by pharmacists to implement and maintain sustainable pharmaceutical care services(Fang et.al,2011,Elhajj et.al,2016,Alanaz et.al,2016). This has been supported by some of the responders as they said. *"I wish to get an employment in the public sector but unfortunately very few are being employed there, the employment in public sector is permanent"(student no.7). "It's the third year now since my friend finished studies, but he has not secured employment in the public sector, he works with private pharmacies"(student no.14). "My expectation is to open a big pharmacy that will provide service to many people"(student no.57).*

The study has also showed that the southern part of Tanzania has only two pharmacy schools that train pharmacy technicians, one is a public institution and the other one is the private college, and this possibly contributes to the shortage of pharmacists in the country as suggested from the literature that most developing countries are struggling with the shortage of pharmacists(Bilal et al.2017,Azhar et.al.2009,Salim et.al.2016,Katoue et.al 2014,Elhajj et.al.2016) inadequate education and training for pharmacists(Bilal et.al.2017,Aburuz et.al.2012,Salim et.al.2016,Elhajj et.al.2016)and support from other health care professionals(Aburuz et.al 2012,Salim et.al 2016,Elhajj et al.2016).It has been noted that ,if these challenges continue to exist without targeted proper intervention, they will pose a threat towards producing a "seven star pharmacist" as declared by FIP and WHO.

Generally pharmacy education in developing countries encounters a lot of problems and these could be overcome by increasing employment opportunities for pharmacists, improving educational programs, and

facilitating effective collaboration with other health professionals (Jane et al. 2018). In Tanzania, the government has introduced the industrialization policy since 2016, this plan addresses industrial revolution for economic growth as well as poverty reduction by improving livelihoods in a way that it will transform the society and its people, through this policy more emphasis is put on investment in pharmaceutical industries which will increase employment opportunities for pharmacists (www.mof.go.tz, 2019) and also the government is constructing new health facilities at district levels as well as health centers, all these aim at increasing employment and also improve the health sector (www.moh.go.tz, 2019). On the other hand the government of Tanzania should also provide grants and loans to students studying pharmacy technician course in the country as it has been revealed that some students drop studies because of failure to pay school fees, currently the government provides loans and grants to students studying bachelor of pharmacy degree, and postgraduate studies related to clinical practice. However it is essential that adequate education and extensive training of pharmacists is provided by the tertiary education sector in developing countries, and there is a need to shape the pharmaceutical care and pharmacy education, as well as to increase the international exposure, infrastructure, and highly competent manpower needs to be addressed in the schools of pharmacy so as to assure quality of products (www.udahiliportal.com, 2019). The prospects of pharmacy education are intrinsically linked with the education and training of pharmacists to respond to the medicine related needs of the patients and offering solutions to these challenges would make the pharmacists relevant, it has been realized that the only way to be relevant to the patients and properly contribute to the health care delivery is to move to the doctor of pharmacy program (Ogaji et al. 2014), there is also lack of clinical pharmacists to accompany students in clinical training, but though there is a need of interaction among different health care professionals in delivering health care (Jane et al. 2018).

V. CONCLUSION

The aim of this study was to explore the challenges facing pharmacy education in pharmacy schools located in southern Tanzania, as well the pharmacy practice after their studies, this study revealed that institutional related challenges are still a big problem, also poverty was revealed as a threat to pharmacy education, regarding pharmacy practice, this study has revealed out that there is still a problem of unemployment in the public sector, regarding continuing education few students think of continuing with higher levels of education, it has also been realized that the only way to have competent pharmacists as declared by FIP and WHO is to move to the doctor of pharmacy programs and should be provided by tertiary education sector.

VI. ACKNOWLEDGEMENT

The authors wish to thank the management of Top One College of Health Sciences for allowing this study to be conducted.

Conflict of interest;

The authors declare that there is no conflict of interest that is associated with this research paper.

REFERENCES

- [1] <https://eduloaded.com/tz/muhimbili-university-muhas-prospectus>, assessed on 14th nov, 2019.
- [2] <https://tzscolars.com/sjut-prospectus>, retrieved on 16th nov, 2019.
- [3] https://www.bugando.ac.tz/pdf/CUHAS_PROSPECTUS_2018_2019.pdf, assessed on 14th nov, 2019.
- [4] www.udahiliportal.com/nacte/pharmacyschools, retrieved on 14th nov 2019.
- [5] Ikoji, J., Ogaji, Titus, M., Onemus, W., and Julius, W. Development of pharmacy education in Kenya universities to date, *African journal of pharmacy and pharmacology*, vol. 10(18), pp. 385-392.
- [6] Yaser Mohammed Al-Worafi, PhD, The challenges of pharmacy education in Yemen, *American journal of pharmaceutical education* 2014; 78(8) article 146.
- [7] Duzé CO. An analysis of problems encountered by postgraduate students in Nigerian universities. *J Soc Sci* 2010; 22; 129-37.
- [8] Jane MC, Shirley-Anne B, South African pharmacy students perspectives of a hospital based experiential learning program, *pharmacy education*, 2018, 18(1) 29-40
- [9] Aburuz S, Al ghazawi M, Synder A. Pharmaceutical care in a community based practice setting in Jordan; where are we now with our attitudes and perceived barriers? *Int. J. Pharm Pract.* 2012; 20(2); 71-9.
- [10] Salim A.M, Elhada A.H, Elgizoli B. Exploring clinical pharmacists perception of their impact on health care in Khartoum state, Sudan. *J Res Pharm Pract.* 2016; 5(4); 272-8
- [11] Katoue M.G, Awad AI, Shwinghammer TL, Kombian SB, Pharmaceutical health care in Kuwait; hospital pharmacists perspectives. *Int J Clin Pharm.* 2014; 36(6); 1170-8.
- [12] EL Hajj MS, AL Saeed HS, Khaja M. Qatar pharmacists understanding, attitudes, practice, and perceived barriers related to providing pharmaceutical care. *Int J Clin Pharm.* 2016; 38(2); 330-43.

- [13] Fang Y, Yang S, Zhou S, Feng B, Ni Y, Zhang K, Pharmacists perception of pharmaceutical care in community pharmacy; a questionnaire survey in Northwest China. *Health Soc Care Community*, 2011;19(2);189-97.
- [14] Fang Y, Yang S, Zhou S, Jiang M, Liu J, Community pharmacy practice in China ;past, present and future. *Int J Clin Pharm*. 2013;35(4);520-8
- [15] Parthasarathi G, Ramesh M, Nyfort-Hansen K, Nagavi BG, Clinical pharmacy in South Indian teaching hospital. *Ann Pharmacother*. 2002;36(5)927-32.
- [16] Basak SC, Van Mil JWF, Sathyanarayana D, The changing roles of community pharmacies; perception of reality in India. *Pharm World Sci*. 2009;31(6);612-8.
- [17] Alanazi A, Alfadi A, Hussain A,; Pharmaceutical care in the community pharmacies of Saudi Arabia; present status and possibilities for improvement. *Saudi J Med Sci*. 2016;4(1);9-14.
- [18] Bilal AI, Tilahun Z, Gebretekle GB, Ayalneh B, Hailemeskel B, Engidawork E. Current status, challenges and the way forward for clinical pharmacy service in Ethiopian public hospitals; *BMC Health Serv Res*. 2017;17(1);359.
- [19] Azhar S, Hassali MA, Ibrahim MIM, Ahmad M, Masood I, Shafie AA. The role of pharmacists in developing countries; the current scenario in Pakistan. *Human resource Health*. 2009;7(1);54.
- [20] <https://www.mof.go.tz/mofdocs/msemaji/five/2016/2017-2020/21.pdf>; assessed on 26th August 2019.
- [21] <http://www.moh.go.tz>. assessed on 26th August 2019.
- [22] Ogaji JI, Ojabo CE, Pharmacy education in Nigeria, the journey so far; *ArchPharmaPract* 2014;5;47-60.