

PLACE OF INTERNSHIP AND WORKPLACE PREFERENCES AMONG MEDICAL DOCTORS IN TANZANIA; PERSPECTIVES OF INTERN DOCTORS

Mariam Izengo¹, Larry Akoko¹, Elizabeth Ngonyani¹, Obadia Nyongole¹ and Nathanael Sirili^{2*}

¹Department of Surgery, Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania.

²Department of Development Studies, Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania.

Received date: 08 November 2019

Revised date: 29 November 2019

Accepted date: 19 December 2019

*Corresponding author: Nathanael Sirili

Department of Development Studies, Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania.

ABSTRACT

Background: Tanzania, like many low and middle-income countries, is suffering from a critical shortage and mal-distribution of doctors favouring the urban areas. By 2015, only 25% of doctors were in rural Tanzania where over 70% of the population lives. This study sought to explore the workplace preferences among intern doctors from three selected regions in Tanzania. **Methodology:** A cross-sectional study was carried out among intern doctors working at Muhimbili National Hospital, St. Francis referral hospital, St. Joseph Hospital Peramiho and Songea Regional Referral Hospital from July to August 2016. Data analysis was done using SPSS version 21 and statistical significance was set at a p-value of ≤ 0.05 . **Results:** One hundred and fifty-four intern doctors filled in a self-administered questionnaire for this study. Majority of the interns (68.2%) were ready to work in urban setting over rural areas despite the location of upbringing and schooling. Undertaking an internship in a rural setting was statistically associated with readiness to work in rural areas. Furthermore, better urban facilities physical infrastructure and many incentives contributed to the readiness to work in urban areas over rural areas. **Conclusion:** The findings of this study are in line with many other studies that revealed that many doctors prefer to work in urban areas due to economic and career opportunities over rural areas. Place of internship adds on the potential for rural practices among the newly graduating doctors.

KEYWORDS: Intern doctors, medical graduates, work preference, rural, urban, attraction, retention, placement, internship.

BACKGROUND

The readiness of a skilled health workforce to work in rural areas is among the major impediments for the attainment of the sustainable development goal number three in many countries globally.^[1] Estimates show that, while the world population is divided into two halves between rural and urban areas, only 25% of doctors and 38% of nurses are working in rural areas.^[2,3] As for other parts of the world, Tanzania is suffering an overall health workforce shortage of over 50%.^[4] While the World Health Organization set a threshold of 1 doctor per 10,000 populations,^[5] many parts of the world are far below this threshold.^[1]

Together with the critical shortage of health workforce, geographical maldistribution worldwide is another obstacle to the realization of good health outcomes for all.^[1] Within regions and countries, the rural-urban divide is a nearly acceptable long-term phenomenon.^[6-9] Africa, home to less than 15% of the world's population

and 25% global burden of diseases; it houses only 3% of the global health workforce that is not equitably distributed between the rural and urban areas.^[1] Although we have not found recent information on the number of new health workers required in Africa, about ten years ago, Africa needed at least one million new health workers.^[3] The shortage of adequate and equitably distributed health workforce is attributed to many factors including failure to train enough, failure to employ, failure to attract them to some places and failure to retain them within the country and within their workplace.^[10]

By 2014, estimates showed that Tanzania had 1 doctor for a population of around 20,000.^[11] Furthermore, by 2015, Tanzania had only 25% of doctors and 55% of nurses in rural areas where 75% of her population resides.^[12] Although for decades, the main challenge was a small number of doctors graduating from the medical schools; of recent, the increased number of medical schools in the country has produced a considerably large

number of doctors to flood the market.^[7] With an increased number of graduating doctors, other pressing challenges have emerged. Failure to offer employment to all graduating doctors in the country, reluctance to pick-up rural posts and failure to retain the posted doctors in rural places,^[13-17] The latter is probably the major contributors to the geographical imbalance of doctors as for other health workers between rural and urban areas.

While vast literature exists on rural retention of health workers,^[9,10,13,15,18-23] there is a dearth of literature on the rural preference of workplace to among just graduated health workers in Tanzania including doctors. Furthermore, there is evidence that job preferences influence the retention of the health workforce, those who are placed to jobs and places of their preferences are likely to stay than their counterparts.^[8] However, given similar situations to different groups of graduates from different contexts, may also result in different job preferences. For instance, while graduates in Thailand would prefer rural jobs, their counterparts in Kenya and South Africa would not, given similar economic situations.^[24] It is, therefore, imperative to understand the rural preferences of the graduates in Tanzania and thus device mechanisms on how to take into consideration their preferences in order to redress the critical health workforce challenges in Tanzania.

The rural-urban job preference among intern doctors is the central focus of this study as a proxy to other graduates in the health sector. Therefore, this study seeks to explore the workplace preferences among intern doctors from three selected regions in Tanzania.

METHODOLOGY

Study design and setting: A cross-sectional study was out from July to August 2016 at four hospitals located in Dar es Salaam (Muhimbili National Hospital), Kilombero District (St. Francis Referral Hospital), and St. Joseph Hospital Peramiho and Songea Regional Referral Hospital. These hospitals were purposefully selected to include hospitals in urban and rural areas. Furthermore, the selection intended to include public and private hospitals.

Study population: this study included the intern doctors who were in their last month of internship.

Table1: Demographic distribution of the participants (n=154).

Demography		Frequency (%)
Age	20-24	10(6.5)
	25-29	138(89.6)
	30+	6(3.9)
Sex	Male	102(66.2)
	Female	52(33.8)
Marital Status	Single	113(73.4)
	Married	41(26.6)
Previous employment before medical school	Employed in a rural area	11 (7.1)
	Employed in an urban area	7 (4.5)
	Never employed	136 (88.3)

Sample size: From the four sites, Yamane formula was used to obtain a sample size of intern doctors from a total of 244 intern doctors who were at their last month of internship.

$$n = N / (1 + Ne^2)$$

$$n = 244 / (1 + 244(0.05 * 0.05))$$

$$n = 152$$

Adding 10%, non-response rate a minimum of 167 intern doctors were targeted.

Data collection: Swahili self-administered questionnaire was given to each intern who was at his/her last months of internship and collected after 24 hours. The questionnaire contained questions on socio-demography, place of upbringing, place of high schools and university, preferred setting for future work as a medical doctor, and reasons for the choice of workplace.

Data analysis: After checking for completeness, data were entered into SPSS version 21 for analysis. Categorical variables were summarized into frequencies and proportions. Preference between rural and urban was tested by cross-tabulations by comparing proportions and a significant difference was considered when $p\text{-value} \leq 0.05$.

Ethical issues: Ethical clearance was obtained from the Senate Research and Ethics Committee of the Muhimbili University of Health and Allied Sciences, Tanzania. All study participants signed an informed consent that was attached to the self-administered questionnaire. The informed consent detailed on the objective of the study, what participation entailed, rights of the participants, risks involved, benefits of participation and contacts for further inquiry.

RESULTS

One hundred and fifty-four, which is over 90% of all distributed questionnaires (167) were filled and collected within 24 hours. Out of these, 102(66.2%) were from male respondents. Majority of the respondents, 138 (89.6%) were aged between 24 and 29 years and only 6(3.9%) were aged above 30 years. Most of the respondents were not married (73.4%). [Table 1]

Reasons for urban and rural post preferences

One hundred and five, 68.2% preferred urban posts for medical practice in their medical career. Presence of improved hospital infrastructures was mentioned by 39 (37.1%) as the major reason for an urban setting preference [Table 2]. Opportunity to engage in

agriculture was the main reason for preference to rural practice being stated by 63% of all doctors who preferred rural practice [Table 2].

Table2: Reasons for urban and rural post preferences.

Reasons		Frequency (%)
Setting	Urban	105(68.2)
	Rural	49(31.8)
Rural Reasons	Opportunities for agricultural activities	31(63.3)
	Less cost of living	10(20.4)
	Dislike of overcrowding in urban	8(16.3)
Urban reasons	Improved hospital infrastructures	39(37.1)
	Opportunities for entrepreneurship	14(13.3)
	Improved social services	28(26.7)
	Opportunities for career development	24(22.9)

Life background and workplace preference

More than half of the respondents (58.1%) were raised in urban areas. Although proportionately more interns with urban upbringing (75%) had wanted to work in urban setting compared with their counterparts with rural upbringing (57%), place of upbringing was not statistically significantly associated with the preference of workplace (p-value 0.16). Place of the internship was statistically significantly associated with the preference of the workplace (p-value 0.000).

respondents from both settings had a preference for urban work, the place of education was not statistically associated with the preference of future workplace.

Most of the respondents had urban education background 141 (91.6%), however, although a higher proportion of

For those who were previously employed in urban areas, five (73%) out of the seven preferred to remain in urban areas and eight (71.4%) out of the 11 interns who were previously employed in rural areas, preferred to remain in the rural areas. However, for both groups, the place of previous employment was not statistically significantly associated with the preference of future workplace (P-value 0.069).

Table 3: Life background and future workplace preference.

Characteristic		Preference for the future workplace		Total	p-value
		Urban	Rural		
Place of upbringing	Urban	68(75.6)	22(24.4)	90(58.4)	0.16
	Rural	37(57.8)	27(42.2)	64(41.6)	
Place of higher education	Urban	98(69.5)	43(30.5)	141(91.6)	0.246
	Rural	7(53.8)	6(46.2)	13(8.4)	
Place of internship	Urban	78(83.0)	16(17.0)	94(61.0)	0.000
	Rural	27(45.0)	33(55.0)	60(39)	
Previous employment	Urban	8(72.7)	3(27.3)	11(61.1)	0.069
	Rural	2(28.6)	5(71.4)	7(38.9)	

DISCUSSION

We aimed to explore the workplace preferences among intern doctors from three selected regions in Tanzania. It is worth noting that rural in this study did not mean working in a village but rather a district headquarters and sometimes a regional headquarters.

available rural-urban divide where less than 30% of doctors are in rural areas^[11] Less preference of working in rural areas is not unique to Tanzania, this situation is also reflected in other parts of the world.^[25,26] Even though the majority are unwilling to serve in rural communities, efforts to place these few should be prompt to tap into their interest. Despite the findings that there is a small proportion that would willingly wish to go for rural practice, a study by Sirili et al.^[17] in 2019 revealed that even those who prefer to go to rural areas, their preferences are not honoured by the government during the work placement. Furthermore, some reports and

We found that medical graduates from Tanzania are less motivated toward serving in ‘rural’ setting as compared to the urban setting. Only (31.8%) show a willingness to working in rural areas. This finding reflects the current

studies have shown that despite the increased number of graduates to over 1000, the government was recruiting less than 50% of all graduates.^[7] In contrary to our findings, only 16% of Indian medical doctors would prefer to work in rural areas.^[25] Most of the countries with a high rural preference had pull mechanisms in place rather than push mechanisms.^[6] Among the pull factors were good salaries and adequate facilities in the workplace.^[8,27]

The fear of losing clinical skills as found in this study is similar to what was found another study by Blaauw *et al* on intervention to attract nurses to rural areas.^[28] Although not specifically researched in this study, it is our feelings that the fear of losing the skills by young doctors is connected to the fact that they trained in referral and tertiary facilities where there is immediate support and thus continued sharpening of their skills rather than going to the rural areas where there is limited support. We postulate that more placements at lower levels during training would better prepare these doctors with appropriate skills and thus minimize the fear of losing their skills by working in rural settings. Our postulate is backed up with findings from studies done in Australia which showed that rural placement during medical training was associated with increased rural retention of graduates.^[25]

Improved social services in urban areas carry a greater impact on influencing urban practice choice in our country. If it happens that, social services become improved in the way comparable to urban areas, majority medical graduates would choose rural areas with improved social services as it was reported by students from Ghana and India.^[29,30] But for recreational opportunities to reach similar levels need the whole economy of the country to be responsive. Areas with less development index should thus be regarded as hard to reach/work in areas and motivation packages should be designed. Motivation packages should include both financial and non-financial incentives.^[31]

Even though proportionately most of the medical students grew up in urban settings, those who had rural background were significant. But importantly, having a rural background was associated with more likelihood of taking up employment in a rural area compared to the urban background. These findings are in line with those documented by Grobler *et al*,^[32] who stated rural background was associated with retention of workers in rural areas. This calls for improvement in sciences education in rural schools to be able to join medical schools.

Other factors studied include the easy opportunity for further studies and income: further education largely available in urban cities is easier and cheap for those working in the cities. With dwindling scholarships from the government, prospective students are expected: to pay for their own fees from small salaries; resettle

families or separated families with salary redistribution. This forces many to opt for work in cities that have training institutions. Good scholarship schemes for those working in rural areas have the potential to attract rural placements and retention as has been shown in India.^[33] Opportunities for earning extra income as revealed in this study is similar to what was documented by Sirili *et al*,^[18] where the majority of the doctors in rural areas wanted to go back to urban areas where there are more economic opportunities for supplementing their income. With the expansion of insurance schemes, it is high-time for intra-mural private practice in rural facilities to supplement the income of those who are willing to go and work in rural places and forego the income-generating opportunities in town.

Organization of internship has the opportunity to increase rural placement. Although not exclusively studied by this study, we feel that adding a rural attachment component in the internship placement would yield good outcomes for rural practice preferences. This has been shown to have a significant impact on the choice of future placement by other studies.^[25,30] Furthermore, adding a component on rural placement during internship would temporarily resolve the shortage of health workforce at the districts level while working on long-lasting solutions.

CONCLUSION

The findings of this study underscore the importance of workplace preferences on job attraction and retention. At the current state, only 1 in 3 of intern doctors would accept rural posting as a place of future placement. Availability of economic opportunities and opportunities for further studies play a major role in preference for rural practice. Increased rural attachments during medical training, admission of students with rural backgrounds and organization of internship placement add on the potential for rural practices among the newly graduating doctors. Further studies are needed on the feasibility of re-organizing the internship to include a rural attachment and its potentials to the retention of doctors in rural and underserved areas in the African context.

ACKNOWLEDGEMENT

The authors would like to acknowledge all interns and hospital heads for granting permission to conduct this study. We would also like to acknowledge Mrs Agatha Swai for assisting with clerical work.

Competing Interest

The authors have no competing interests to declare.

Authors Contribution

LA, MI, ON and NS designed the study, MI collected data, LA, MI, ON and NS analyzed the data. LA and EN wrote draft zero manuscript, NS and ON revised,

improved and finalized the manuscript. All authors approved the manuscript for publication.

Funding/Declarations

The research was made possible by a small research grant from the Ministry of Education in Tanzania towards undergraduate student's elective research.

REFERENCES

1. Truth AU. No Health without a workforce. World Health Organization (WHO) Report. 2013 Nov.
2. UN D. World urbanization prospects: The 2014 revision. United Nations Department of Economics and Social Affairs, Population Division: New York, NY, USA. 2015.
3. Anyangwe S, Mtonga C. Inequities in the global health workforce: the greatest impediment to health in sub-Saharan Africa. *International journal of environmental research and public health*. 2007 Jun;4(2):93-100.
4. URT. Ministry of Health and Social Welfare. Human Resource for Health Strategic Plan 2014-2019. Dar es Salaam. The United Republic of Tanzania. 2014.
5. O'Brien P, Gostin LO. Health worker shortages and global justice. *Health Worker Shortages and Global Justice*, Millbank Memorial Fund. 2011 Nov 28.
6. Azer SA, Simmons D, Elliott SL. Rural training and the state of rural health services: effect of rural background on the perception and attitude of first-year medical students at the University of Melbourne. *Australian Journal of Rural Health*. 2001 Aug;9(4):178-85.
7. Sirili N, Kiwara A, Gasto F, Goicolea I, Hurtig AK. Training and deployment of medical doctors in Tanzania post-1990s health sector reforms: assessing the achievements. *Human resources for health*. 2017 Dec;15(1): 27.
8. Lehmann U, Dieleman M, Martineau T. Staffing remote rural areas in middle-and low-income countries: a literature review of attraction and retention. *BMC health services research*. 2008 Dec; 8(1): 19.
9. Shemdoe A, Mbaruku G, Dillip A, Bradley S, William J, Wason D, Hildon ZJ. Explaining retention of healthcare workers in Tanzania: moving on, coming to 'look, see and go', or stay?. *Human resources for health*. 2016 Dec;14(1):2.
10. Sirili N. *Health workforce development post-1990s health sector reforms: the case of medical doctors in Tanzania* (Doctoral dissertation, Umeå universitet).
11. URT. Ministry of Health and Social Welfare. Mid-Term Review of the Health Sector Strategic Plan III 2009 – 2015, Main Report. Dar es Salaam. The United Republic of Tanzania. 2013.
12. URT. Ministry of Health and Social Welfare. Final Evaluation Report for Human Resource for Health Strategic Plan 2008-2013. Dar es Salaam. The United Republic of Tanzania. 2014.
13. Manzi F, Schellenberg JA, Hutton G, Wyss K, Mbuya C, Shirima K, Mshinda H, Tanner M, Schellenberg D. Human resources for health care delivery in Tanzania: a multifaceted problem. *Human resources for health*, 2012 Dec; 10(1): 3.
14. Sirili N, Angwara K, Simba D. Challenges towards realization of health care sector goals of Tanzania development vision 2025, training and deployment of graduate Human resource for health. *East Afr J Public Health*, 2013 Jun; 9(2): 476-86.
15. Sirili N, Kiwara A, Nyongole O, Frumence G, Semakafu A, Hurtig AK. Addressing the human resource for health crisis in Tanzania: the lost in transition syndrome. *Tanzania journal of health research*, 2014; 16(2).
16. Mkoka DA, Mahiti GR, Kiwara A, Mwangu M, Goicolea I, Hurtig AK. "Once the government employs you, it forgets you": Health workers' and managers' perspectives on factors influencing working conditions for provision of maternal health care services in a rural district of Tanzania. *Human resources for health*, 2015 Dec; 13(1): 77.
17. Sirili N, Frumence G, Kiwara A, Mwangu M, Goicolea I, Hurtig AK. "Doctors ready to be posted are jobless on the street..." the deployment process and shortage of doctors in Tanzania. *Human resources for health*, 2019 Dec; 17(1): 11.
18. Sirili N, Frumence G, Kiwara A, Mwangu M, Anaeli A, Nyamhanga T, Goicolea I, Hurtig AK. Retention of medical doctors at the district level: a qualitative study of experiences from Tanzania. *BMC health services research*, 2018 Dec; 18(1): 260.
19. Eley D, Baker P. Does recruitment lead to retention? Rural Clinical School training experiences and subsequent intern choices. *Rural and Remote Health*, 2006 Feb 3; 6(1).
20. Playford D, Larson A, Wheatland B. Going country: rural student placement factors associated with future rural employment in nursing and allied health. *Australian Journal of Rural Health*, 2006 Feb; 14(1): 14-9.
21. El Hassan YA. *Career Plans of Nursing Graduates of the Academy of Health Sciences*. Sudan (Doctoral dissertation, University of Gezira).
22. Manzi F, Schellenberg JA, Hutton G, Wyss K, Mbuya C, Shirima K, Mshinda H, Tanner M, Schellenberg D. Human resources for health care delivery in Tanzania: a multifaceted problem. *Human resources for health*, 2012 Dec; 10(1): 3.
23. URT. Ministry of Health and Social Welfare. Human Resource For Health Country Profile 2013/2014. Dar es Salaam. The United Republic of Tanzania, 2014.
24. Kinfu Y, Dal Poz MR, Mercer H, Evans DB. The health worker shortage in Africa: are enough physicians and nurses being trained?.
25. Stagg P, Greenhill J, Worley PS. A new model to understand the career choice and practice location decisions of medical graduates. *Rural Remote Health*, 2009 Oct 1; 9(4): 1245.
26. Wilson N, Couper I, De Vries E, Reid S, Fish T, Marais B. Inequitable distribution of healthcare

- professionals to rural and remote areas. *Rural Remote Health*, 2009; 9(1060): 1-21.
27. Daniels ZM, VanLeit BJ, Skipper BJ, Sanders ML, Rhyne RL. Factors in recruiting and retaining health professionals for rural practice. *The Journal of Rural Health*, 2007 Jan; 23(1): 62-71.
 28. Blaauw D, Erasmus E, Pagaiya N, Tangcharoensathein V, Mullei K, Mudhune S, Goodman C, English M, Lagarde M. Policy interventions that attract nurses to rural areas: a multicountry discrete choice experiment. *Bulletin of the World Health Organization*, 2010; 88: 350-6.
 29. Nallala S, Swain S, Das S, Kasam SK, Pati S. Why medical students do not like to join rural health service? An exploratory study in India. *Journal of family & community medicine*, 2015 May; 22(2): 111.
 30. Kruk ME, Johnson JC, Gyakobo M, Agyei-Baffour P, Asabir K, Kotha SR, Kwansah J, Nakua E, Snow RC, Dzodzomenyo M. Rural practice preferences among medical students in Ghana: a discrete choice experiment. *Bulletin of the World Health Organization*, 2010; 88: 333-41.
 31. Dambisya YM. A review of non-financial incentives for health worker retention in east and southern Africa. South Africa: Health Systems Research Group, Department of Pharmacy, School of Health Sciences, University of Limpopo, 2007 May.
 32. Grobler L, Marais BJ, Mabunda S. Interventions for increasing the proportion of health professionals practising in rural and other underserved areas. *Cochrane database of systematic reviews*, 2015; (6).
 33. Verma P, Ford JA, Stuart A, Howe A, Everington S, Steel N. A systematic review of strategies to recruit and retain primary care doctors. *BMC health services research*, 2016 Dec; 16(1): 126.