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Addressing the human resource for health crisis in Tanzania: the lost in transition syndrome

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Abstract: Tanzania is experiencing a serious Human Resource for Health (HRH) crisis. Shortages are 87.5% and 67% in private and public hospitals, respectively. Mal-distribution and brain drain compound the shortage. The objective of this study was to improve knowledge on the HRH status in Tanzania by analyzing what happens to the number of medical doctors (MD) and doctor of dental surgery (DDS) degree graduates during the transition period from graduation, internship to appointment. We analyzed secondary data to get the number of MDs and DDS; who graduated from 2001 to 2010, the number registered for internship from 2005 to 2010 and the number allowed for recruitment by government permits from 2006 to 2010. Self administered questionnaires were provided to 91 MDs and DDS who were pursuing postgraduate studies at Muhimbili University of Health and Allied Sciences during this study who went through the graduation-internship-appointment (GIA) period to get the insight of the challenges surrounding the MDs and DDS during the GIA period. From 2001 to 2010 a total of 2,248 medical doctors and 198 dental surgeons graduated from five local training institutions and abroad. From 2005 to 2010 a total of 1691 (97.13%) and 186 (126.53%) of all graduates in MD and DDS, respectively, registered for internship. The 2007/2008 recruitment permit allowed only 37.7% (80/218) and 25.0% (7/27) of the MDs and DDS graduated in 2006, respectively. The 2009/2010 recruitment permit allowed 265 MDs (85.48%) out of 310 graduates of 2008. In 2010/2011 permission for MDs was 57.58% (190/ 330) of graduates of 2009 and in 2011/2012 permission for MDs was for 61.03% ((249/408) graduates of 2010. From this analysis the recruitment permits in 2007/2008, 2009/2010, 2010/2011 1nd 2011/2012 could not offer permission for employment of 482 (38.10%) of all MDs graduated in the subsequent years. Major challenges associated with the GIA period included place of accommodation, allowance (for internship) or salary delay (for first appointment), difficulty working environment, limited carrier opportunities and concern for job security. The failure to enforce mandatory registration for internship and failure to absorb all produced MDs and DDS results to loss of a substantial number of these graduates during the graduation-internship-appointment period. To solve this problem, it is recommended to establish better human resource for health management system.

Keywords: human resource, graduate, recruitment, transition period, retention, Tanzania

Introduction

Health of any nation depends much on the comprehensiveness of its health system. The health system is well established if there is harmonious interconnection among its building blocks; governance, human resources, information system, medicine and pharmaceutical technology, financing and service delivery (WHO, 2010). Of the six health system building blocks, human resource for health (HRH) is central and a cross-cutting block to all other building blocks. HRH is defined as all people engaged in actions whose primary intent is to enhance health. These human resources include clinical staff such as physicians, nurses, pharmacists and dentists, as well as management and support staff – those who do not

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deliver services directly but are essential to the performance of health systems, such as managers, ambulance drivers and accountants (WHO, 2010).

The population in Tanzania has grown tremendously from about 10 million people in 1961 to more than 44 million in 2012 (NBS, 2013). The country has been growing in all sectors including health though not in a uniform pattern. The health care sector among other challenges is faced by a serious HRH crisis. There is a global crisis in the health workforce, expressed in acute shortages and maldistribution of health workers, geographically and professionally. This massive global shortage, though imprecise quantitatively, is estimated at more than 4 million workers (Bangdiwala *et al.*, 2010). Africa bears one-third of the global burden of diseases but contain only 3% of the global health workforce. In sub-Saharan Africa where the shortage is most acute, an addition of 820,000 doctors, nurses and midwives are needed (Conway *et al.,* 2007). In most developing countries, the health workforce is concentrated in major towns and cities, while rural areas, on average, contain only 23% of the country's doctors and 38% of its nurses (Anyangwe & Mtonga, 2007) . Imbalances exist not only in the total numbers and geographical distribution of health workers, but also in the skills mix of available health workers (Kinoti & Livesley, 2004). Among other causes of the crisis is the difficult in recruiting, retaining and managing health workers (MoHSW/IHI/NIMR/WHO, 2013).

Tanzania is among the 57 (36 are in Sub-Saharan Africa) countries in the world with serious human resource for health crisis (WHO, 2006). The shortage is not uniform in the country; rural areas are more affected than urban areas. By 2006 the country was experiencing a shortage of HRH of 65% at all levels of the health care sector (MoHSW, 2008a). By 2010 the doctors (medical doctors and specialist doctors) to population ratio stood at 1:64,000. However, this was not uniform in the country as it varies from 1:22,000 in Arusha to 1:308,000 in Kigoma (TDHS, 2011). The documented ratio in 2013 is 1:20,000(MoHSW/IHI/NIMR/WHO, 2013). All these ratios are far low from the World Health Organization (WHO) recommendation of doctor to population ratio of 1:5,000 (Makasa, 2009).

Tanzania had only one publicly owned medical school from 1963 to late 1990s when the major health sector reforms took place in the country. Such reforms allowed the establishment of private Medical Schools, which started to emerge in early 2000s. With increased training institutions the annual number of graduate medical doctors in the country has increased from less than 100 in late 2000 to above 400 in 2010 (MUHAS,KCMC, HKMU,IMTU,BUCHS, 2001-2010). Though the country is still having only one Dental School; their number those graduating annually has also increased gradually (MUHAS, 2001-2010). However the increase in production of these graduates is not clearly reflected in the areas of service deliveries. The situation in the districts has almost remained the same; characterised by critical shortage, mal-distribution and high attrition rates.

In Tanzania soon after graduation all the Medical Doctors and Dental Surgeons are supposed to undertake a one year internship programme at a hospital accredited by the government. This calls for the graduates to be provisionally registered for one year for the internship where they work under supervision of senior and experienced health care professionals (URT, 2002). Upon successfully completion of the internship, they are issued with a certificate from the hospital where they undertook their internships. This certificate is presented to the Medical Council of Tanganyika for temporary registration. However this process though mandated by the law has not been enforced by the fact that one may opt not to go on with clinical practices and hence opt for other well paying jobs that do not mandate internship certificate or registration and hence bypass the internship programme. Having completed the internship programme and registration process a graduate will have to wait for the jobs' posts to be advertised and hence apply. This process is not uniform and

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sometimes it takes months before it is completed. The number of health workers to be recruited depends on the number allowed by the recruitment permits from the Government.

The role of MoHSW among others is to accommodate all graduates in MD and DDS who appeared for internship and post them to respective hospitals for internship programme. Then the MoHSW recruits and posts all those who apply for employment in the public sector, depending on the total number of new employees allowed by recruitment permits. This study was, therefore, carried out in to analyze what happens to the number of the Medical Doctors and Dental Surgeons from the period from graduation to internship and finally first appointment and how it escalates the HRH crisis in Tanzania.

Materials and Methods

Study setting and design

The study was conducted in Tanzania to include five major health training institutions (one public and four private) and in Ministry of Health and Social Welfare. The study involved analysis of secondary data from the training institutions, Ministry of Health and Social Welfare, Medical Council of Tanzania and President's Office Public Service Management. The training institutions involved in this study were Catholic University of Health and Allied Sciences (CUHAS), Hubert Kairuki Memorial University (HKMU), International Medical and Technology University (IMTU), Tumaini University-KCMC College and Muhimbili University of Health and Allied Sciences (MUHAS) - the only public university in this study.

Data collection

Data on MD and DDS graduated in Tanzania were extracted from graduation books from the five training institutions covering a period of 2001 to 2010 (Box 1). The number of MDs and DDS graduated abroad was obtained from the Ministry of Health and Social Welfare. We used the register from Medical council of Tanganyika to document the number of MDs and DDS that were provisionally registered for internship from 2005 to 2010.We analyzed the recruitment permits to document the number of MDs and DDS allowed for recruitment in 2007/2008, 2009/2010, 2010/2011 and 2011/2012. A self-administered questionnaire was used to get the insight of the challenges facing the MDs and DDS during the GIA period.

Box 1: Data source

Universities

Bugando University College of Health Sciences, Graduation Books, 2008-2010
Hubert Kairuki Memorial University, Graduation Books, 2003-2010
International Medical and Technological University, Graduation Books, 2001-2010
Kilimanjaro Medical Centre, Tumaini University, Graduation Books, 2002-2010
Muhimbili University of Health and Allied Science, Graduation Books, 2001-2010

Government Ministries

President Office Public Service Management, Recruitment Permits and distribution for Health Sector cadres, 2006, 2007, 2009, 2010, 2011
Medical Council of Tanganyika

Data analysis

For the self administered questionnaires, the questionnaire were coded and filled in the responses to a computer. Data analysis was done using Epi-info computer software 2000.

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Ethical considerations

Muhimbili University of Health and Allied Sciences issued ethical clearance for conducting this study. Permission to conduct the study was obtained from MoHSW and from heads of the respective Institutions. Verbal informed consent was obtained from each postgraduate student prior to administration of the questionnaire after being offered explanation and clearance letters regarding the subject.

Results

Graduated Medical Doctors and Dental Surgeons from 2001 to 2010

For the period of 10 years from 2001 to 2010 a total of 2248 Medical Doctors and 198 Dental surgeons graduated from five local training institutions and abroad. Of the locally trained Medical Doctors 63.55% and 100% Dental Surgeons were from the public training institution (MUHAS). During the same period MUHAS trained a total of 188 dental surgeons. This is the only training institution that trains Dental Surgeons in Tanzania. From 2001 to 2010 a total of 226 Medical Doctors and 10 Dental surgeons graduated from abroad.

Table 1: Medical doctors graduated in Tanzania from 2001 to 2010

Institution	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
MUHAS	56	61	105	103	122	134	175	201	173	155	1,285
KCMC	-	15	11	11	11	27	24	24	39	71	233
IMTU	04	12	-	-	39	34	27	-	26	76	218
HKMU	-	-	04	12	20	08	26	42	50	70	232
BUCHS	-	-	-	-	-	-	-	09	24	21	54
Total	60	88	120	126	192	203	252	276	312	393	2,022

Source: Graduation books from the five Training institutions from 2001 to 2010

Medical Doctors and Dental Surgeons appeared for internship programme from 2005 to 2010

From 2005 to 2010 a total of 1691 Medical Doctors and 186 Dental surgeons were provisionally registered for the internship programme. During this period a total of 1741 Medical Doctors and 147 Dental Surgeons graduated locally and abroad.

Table 2: Medical Doctors and Dental Surgeons registered for Internship from 2005 to 2010

Year	2005	2006	2007	2008	2009	2010	Total
MDs	182	192	309	311	273	424	1691
DDS	12	24	24	48	45	33	186
Total	194	216	333	359	318	457	1877

Source: (MCT, 2010)

Recruitment of Medical Doctors and Dental Surgeons post internship

The recruitment process in public sector in Tanzania is centrally handled by the President's Office Public Service Management (POPSM). This department issues recruitment permits to other institutions indicating how many new employees and of what capacity should be recruited. The issuing of permits follows after conducting need assessments in respective units (ministries, institutes, regions, districts, municipals etc) which are done through MoHSW. Number permitted for recruitment obtained from President's Office-Public Service Management for the period of four years a total of 416 (34.67%) Medical Doctors out of 1200 who appeared for internship were not recruited. During the same period 66 (5.21%) of the graduated Medical Doctors did not appear for the internship programme (Table 3).

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Table 3: Recruitment of Medical Doctors and Dental Surgeons for the recent past four years

Year	Cadre	No. graduated	No. joined internship	No. permitted for recruitment	No. (%) lost
2006	MD	218	192	80 (2007/2008)	138 (63.30%)
	DDS	27	24	07	20 (74.07%)
2008	MD	310	311	265 (2009/2010)	45 (14.52%)
	DDS	34	48	42	-12 (-35.29%)
2009	MD	330	273	190 (2010/2011)	140 (42.42%)
	DDS	29	45	28	01 (3.45%)
2010	MD	408	424	249 (2011/2012)	159 (38.9%)
	DDS	22	33	33	-11 (-50.0%)

The number graduated and those of slots for recruitment are compared at a difference of one year interval (table 3). The reason for this is the fact that after graduation the MDs and DDS appear for one year internship programme which is part of their training and not employment. This make them readily available for employment one year post their graduation. To estimate the magnitude of the number lost in transition comparison was made from the year of graduation to the first appointment. This was done by the fact that post graduation the MDs and DDS can do other jobs as doctors but limited not to practice clinical services until they are registered by their professional councils post internship. It is again post graduation where they no longer belong to the training institutions but to MoHSW who is again their main employer post internship. The graduates who could not appear for internship immediately resulted to increase in number of interns compared to the number of graduates in subsequent years. The number lost in some years carried negative values to indicate that the government was aware that not all graduates were absorbed in the immediate subsequent year and hence issued large number of slots for recruitment compared to the graduates in the immediate previous year.

Challenges across internship and first appointment

A total of 91 Medical Doctors and Dental Surgeons who were pursuing postgraduate studies at MUHAS who previously went through the graduation-internship and first appointment period filled in a questionnaire. Majority of those who filled in the questionnaire were Medical doctors in background (95%), of all the respondents; 92.31% were employed and majority were in government employments (89.29%). Among all respondents, 57 (67.86%) worked in the public sector as their first appointment. Among these respondents majority of those whose first appointment was with the private sector later on joined the government sector compared to those who moved from government to private (57.14% vs. 3.51%). About 10.71% of the respondents were from the private sector.

Table 4: Experience of accommodation and allowance/salary delay challenges across internship and first appointment

Variable	Response	Frequency (%)	
		Internship (N=91)	First appointment (N=61)
Place of accommodation	Prepared house/ hostel	26 (28.57%)	20 (32.79%)
	Guest/Hotel	07 (7.69%)	28 (45.90%)
	Relatives/Friends/Family	58 (63.74%)	13 (21.31%)
First allowance/ salary	End of first month	22 (24.18%)	15 (24.59%)
	Within 3 months	60 (65.93%)	21 (34.42%)
	Beyond 3 months but within 6 months	02 (2.20%)	05 (8.20%)
	Beyond 6 months	07 (7.69%)	20 (32.79%)

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The internship and first appointment periods were accompanied by many challenges. Major challenges reported from those from the public sector included; difficulty working environment to include both infrastructure and equipment, place of accommodation and allowance or salary delay during their first months after reporting to working stations. From the private sector the major challenges reported were; limited opportunities for carrier path and concerns for job security. Lack of accommodation and delays in payment of allowance/salary delays were the other experienced challenges (Table 4).

Discussion

The critical shortage of trained health staff Tanzania is a major challenge facing the health sector. This is aggravated by low motivation and mal-distribution (Munga & Mbilinyi, 2008; Kwesigabo *et al*., 2012) of the few available staff. The findings from this study show that after graduating, candidates apply for provisional registration which qualifies them to appear for internship programme. This is a requirement by the law (URT, 2002). However, there is failure in enforcement of the mandatory registration as stated by the law. This has provided room for some of the graduates to escape the medical professional field by doing other well paying jobs out of the medical or dental practice for several years before going back into practice. In 2013 about 8.2% of traced doctors were outside the country, over one-third were not practising clinical medicine (Sikika/MAT, 2013).The loss of some of MDs who did not appear for internship in just a period of four years necessitates enforcement of mandatory registration. Failure to do so creates room for voluntary registration process which in turn fuels the HRH crisis in the country. It is our views that registration process be made mandatory and it should start immediately before graduation by synchronizing the registration process with the graduation process.

The increased the number of graduates in the country is a good start towards dealing with the HRH crisis. This calls for absorption of all the produced graduates and retain them in the respective working stations. In Tanzania the private sector in health care is not well established and hence it can only absorb a small number of medical doctors and dental surgeons. The fact that more permits are granted to employ dental surgeons than what is available indicates lack of co-ordination among the trainer and the employer (Sirili *et al.*, 2013; Munga & Mwangu, 2013). A number of studies have shown that human resource planning in the health sector is poor resulting into acute shortage, maldistribution and poor performance (Green, 1992; Nyoni *et al*., 2006). This situation is likely to be contributed by the fact that health personnel training is largely the responsibility of Ministry responsible for Education and that health planners are unable to influence medical training curricula, student intakes and outputs (Dambisya, 2007;Munga & Mwangu, 2013).

The government of Tanzania through its Ministry of Health clearly states the importance of recruitment of a well trained health workforce for realization of Global and National Development Goals (MoHSW, 2007, 2008b). However with constrained budget the recruitment of all graduates in MD has not being possible. The country has being setting less than 11% of its total budget to the health care during the recent past (MoHSW, 2008b); this is contrary to what was recommended in the Abuja declaration of setting 15% of the budgets to the health services (http://www.who.int/healthsystems/publications/Abuja10.pdf). Deliberate efforts are needed by the government to recruit all the produced graduates if the realization of the set goals by the country in health and other global goals are to be realized. As a matter of fact, in 2011, Tanzanian Government introduced full scholarships to medical students (http://www.universityworldnews.com/article.php). This initiative should be the motive behind making sure that all graduates in medical sciences are assured of employment.

The findings of this study suggests that majority of the MDs preferred to work in the public sector than in private sector. Although some of the respondents declared that they

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were well paid in the private sector compared to the public sector they also admitted that there were limited opportunities for continuing education in private sector compared to those in public sector. However we cannot draw conclusion about this as we had a selected group which was already pursuing postgraduate studies. Some workers have identified both financial and non-financial factors to influence the motivation of medical staff in their preference of the employer (Iswante, 2008; Munga & Mbilinyi, 2008).

The Graduation-Internship-Appointment period has never being smooth in Tanzania. The graduates who appeared for internship and appointment in the public sector faced a lot of challenges including lack of accommodation and salary delays. These and other challenges like lack of appropriate facilities, shortage of HRH available in the respective working stations cause hardships and limit the smooth running of their duties. The findings of this study are consistent with previous findings that among other contributors of HRH crisis in Tanzania are low output from the training institutions, failure to absorb all produced HRH, chronic underfunding of the health sector and weak HRH management system (Maestad, 2006). To-date, similar challenges are facing the country. Failure to absorb these graduates in other words sends a message for them to seek for employment elsewhere. On the other hand, failure to retain them, fuels up the brain drain as (Muula, 2006; Mills *et al.*, 2011; Cometto *et al.* 2013).

They reveal that the increase in number of the MDs and DDS graduating from the training institutions is not enough to address the shortage of MDs and DDS in the country. These findings open room for other studies to explore how the losses in the transition period and their causes can be addressed. Our findings are limited to conclude that the actual number of MDs lost in this period is 482 by the fact that the number allowed for recruitment by the recruitment permits is not necessarily equals the number recruited. In other words we might have underestimated the loss.

In conclusion, the failure to enforce mandatory registration for internship and failure to absorb all produced MDs and DDS results to loss of a substantial number of these graduates during the graduation-internship-appointment period. This loss contributes significantly to the HRH crisis in Tanzania. The solution to this is within reach. Massive investment by the government in training of Medical Doctors and Dental surgeons together with their deployment is inevitable in dealing with the loss in the country. All graduating Medical Doctors and Dental Surgeons should be channelled directly from training institutions to the MCT for registration and directly to places of internship and first appointment without applying at their own will. Accommodation arrangements, timely allowances/ salaries and difficult working environment should be dealt with by joint efforts by MoHSW, Ministry of Finance and the receiving stations for the Interns and new employees. As pointed out by Munga & Mwangu (2013) integrated partnership of the Ministry of Health with other stakeholders is needed in order to pull all the available resources in order to achieve a common goal. Co-ordination among the trainers, employers and other health sector stakeholders is a good starting point in addressing the loss of Medical Doctors and Dental Surgeons during the GIA period. We recommend further studies to explore and address the challenges faced by the MDs and DDS during the period from graduation-internship to first appointment. We feel that by addressing these challenges it will minimize losses as it will attract many of MDs and DDS to join and continue with clinical practices.

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