Human resources for health and social work in Sub-Saharan Africa - International comparison of demographic aspects

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Abstract

To increase the quantity and quality of health and social work labor force relates to many SDG goals and targets. Using census data available through IPUMS International, health and social work labor force is analyzed and compared between countries in Sub-Saharan Africa and other regions of the world. Health and social work labor force comprises from 0.3% to 4.4 % of total labor force in Sub-Saharan Africa, which is low compared to high income countries, but similar range of Asian countries. Due to the high labor participation of women in general in Sub-Saharan Africa, the disparity of women and men in the health and social work labor force is not as noticed compared to Asia. The health and social work labor force is young, concentrated in urban area, and not always increasing chronologically. The abundance of domestic workers should be considered positively to fill the gap of the demand and supply especially for the long-term care in the future. As census data cover all people and readily available, it should be utilized more.

keywords : health and social work, labor force, census, Sub-Saharan Africa

1. Background

With SDGs (Sustainable Development Goals), the global efforts are directed to promote development not only on health and education but also for decent work while leaving no one behind. Based on the SDGs online survey, 463,828 respondents assumed that the most important goal is Goal 3 (Good Health and Well-Being for people), followed by Goal 8 (Decent Work and Economic Growth) (UN SDG Action Campaign 2019). Under the Sub-Saharan African context, how to turn the strong population increase into demographic dividend depends on the employment and job security of the healthy and educated human resources.

Total population, working age population as well as labour force in Sub-Saharan Africa are increasing. Among those employed, the health and social work industry should

be booming. The need for the workforce for health and social work is important to promote health, but they also contribute to provide decent work. Africa is the only region of the world which has the increased health worker need-based shortages between 2013 to 2030 (WHO 2016) and there is a strong need to increase. In addition, facing the increasing number of older persons, which is estimated to be double in 20 years and triple in 30 years (WHO 2017, UN/DESA/PD 2019), there will be increasing need for the long-term care workers which are included in the industry of social work. Another important issue for the health and social work is that the sector is a leading employer of women and thus involve gender equality issues (Horton et al. 2016).

Based on these importance of health and social work labor force, this study seeks to analyze the actual situation of health and social work labor force in the sub-Saharan African countries and compare with countries in other regions of the world.

2. Data

Out of 51 Sub-Saharan countries, IPUMS International provides 22 Sub-Saharan countries census microdata (covering 75.1% of total population of Sub-Saharan African countries as of 2010) of which 19 countries provide employment information disaggregated by industry and/or occupation in addition to the basic demographics. Using these 19 countries data, health and social work labor force information is compiled and compared.

Since the 3rd revision of International Standard Industrial Classification (ISIC) made in 1989, health and social work was incorporated among 17 major categories of industry. As this industry category is widely used in census, the health and social work industry is chosen as the target industry.

On the other hand, census classifies the labor force by occupation. In the data obtained, the International Standard Classification of Occupations (ISCO) are used as occupational category along with country defined ones. Here, typical occupations of health and social work sector such as doctor, nurse, personal care worker are chosen to represent the health and social work industry.

3. Results

3.1. Health and social work labor force by industry and occupation

Among 19 countries, 15 countries census data have industry-wise health and social work labor force information and another set of 15 countries have occupation-wise health and social work labor force information, as shown in Table 1. Apart from Benin, the

number of persons engaged in health and social work occupation tends to be smaller than the number of persons employed in health and social work industry. This can be explained that the industry includes also secretary, driver, cook or other general occupations. However, the occupation category differs from country to country which might miss out some of the occupations not counted. Also, occupation categories differ from country to country which does not allow international comparison in strict sense. Hence in this study, health and social industry labor force is uses as the primary definition and occupation defined labor force is used only for countries without the industry defined data.

Table 1 The health and social work labor force

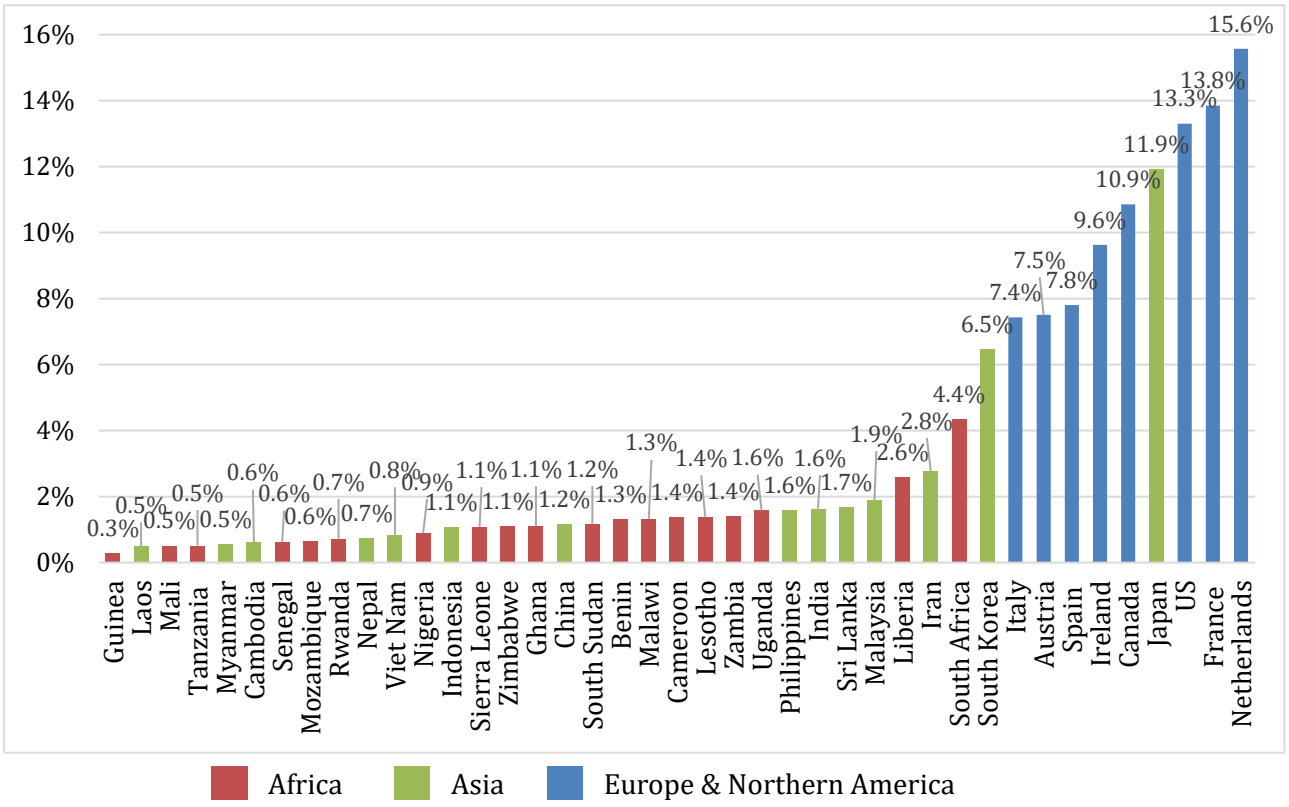
No	Country	Year	Industry	Occupation	Total labor force	Total population	a/c	b/c	a/d	b/d
			(a)	(b)	(c)	(d)	%	%	%	%
1	Benin	2013	42,780	47,250	3,272,100	10,096,930	1.3%	1.4%	0.4%	0.5%
2	Cameroon	2005		68,870	4,967,890	17,723,590		1.4%		0.4%
3	Ghana	2010	124,480		11,179,850	24,662,890	1.1%		0.5%	
4	Guinea	1996		9,130	3,343,690	7,290,710		0.3%		0.1%
5	Lesotho	2006	7,000	5,520	503,960	1,802,080	1.4%	1.1%	0.4%	0.3%
6	Liberia	2008	26,630		1,025,410	3,480,570	2.6%		0.8%	
7	Malawi	2008	55,980	22,260	4,221,790	13,419,770	1.3%	0.5%	0.4%	0.2%
8	Mali	2009	28,590	25,570	5,594,330	14,518,560	0.5%	0.5%	0.2%	0.2%
9	Mozambique	2007	51,350	37,470	8,015,850	20,470,480	0.6%	0.5%	0.3%	0.2%
10	Nigeria	2010	630,184	599,450	69,995,040	159,201,568	0.9%	0.9%	0.4%	0.4%
11	Rwanda	2012	30,930	22,950	4,275,650	10,383,690	0.7%	0.5%	0.3%	0.2%
12	Senegal	2002		19,820	3,209,530	9,945,620		0.6%		0.2%
13	Sierra Leone	2004	21,480		1,978,470	4,942,980	1.1%		0.4%	
14	South Africa	2007	536,224	398,233	12,319,236	47,173,595	4.4%	3.2%	1.1%	0.8%
15	South Sudan	2008	39,031	38,610	3,306,868	7,700,997	1.2%	1.2%	0.5%	0.5%
16	Tanzania	2012	93,772		18,251,162	44,023,118	0.5%		0.2%	
17	Uganda	2002	118,770	49,520	7,508,910	24,974,490	1.6%	0.7%	0.5%	0.2%
18	Zambia	2010	54,240	38,340	3,885,520	13,219,730	1.4%	1.0%	0.4%	0.3%
19	Zimbabwe	2012		50,620	4,615,980	13,093,760		1.1%		0.4%

Data source : Minnesota Population Center. Integrated Public Use Microdata Series, International: Version 7.2 [dataset]. Minneapolis, MN: IPUMS, 2019. https://doi.org/10.18128/D020.V7.2, hereinafter referred to as "IPUMS International".

The health and social work labor force as expressed as the proportion to total labor force is calculated and compared, together with countries of other regions (Figure 1). In Sub-Saharan Africa, South Africa's 4.4% is the highest followed by Liberia (2.6%), but

these rates are much smaller than the rates in high income countries such as in European and Northern American regions. On the other hand, the low rates are found both for Asian countries such as Laos, Myanmar, Cambodia, and Sub-Saharan African countries such as Guinea, Mali, Senegal. As the range of proportion is similar, Asia and Sub-Saharan Africa are sharing common challenges.

Figure 1 Health and social work labor force (% of total labor force)



Data source : Censuses through IPUMS International or national statistics offices, the most recent available year.

3.2. Detailed industry composition of health and social work labor force

According to the ISIC Revision 4 (UN/DESA/SD 2008), human health and social work industry is further divided by three divisions (Table 2).

Table 2 Detailed structure of human health and social work activities in ISIC Revision 4

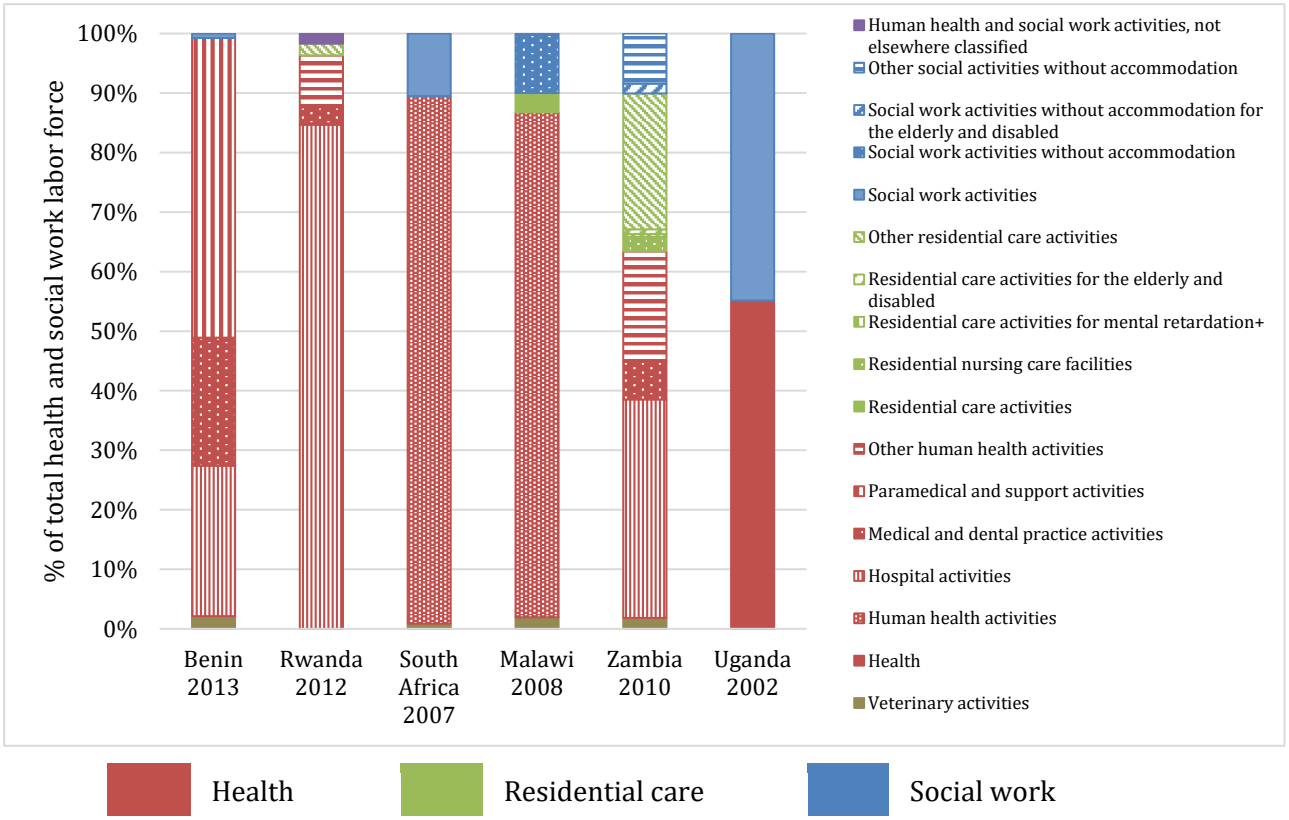
	Group	Class	Description
Division 86			**Human health activities (Health)**
	861	8610	Hospital activities
	862	8620	Medical and dental practice activities
	869	8690	Other human health activities
Division 87			**Residential care activities (Social work)**
	871	8710	Residential nursing care facilities
	872	8720	Residential care activities for mental retardation, mental health, and substance
	873	8730	Residential care activities for the elderly and disabled
	879	8790	Other residential care activities
Division 88			**Social work activities without accommodation (Social work)**
	881	8810	Social work activities without accommodation for the elderly and disabled
	889	8890	Other social work activities without accommodation

Source: UN/DESA/SD (2008)

Six countries out of 15 countries provide health and social work detailed industry labor force information but they do not necessarily use the ISIC category. Some countries (Benin, South Africa, Malawi, Zambia) include veterinary activities in health and social work, in accordance with ISIC Revision 3. The number employed in veterinary activities are small, comprising from 0.9% (South Africa) to 2.1%(Benin) of total health and social work labor force, hence here, the veterinary activities labor force was included in the health and social work.

In Asia, there is a general trend that the health division comprise almost all of health and social work labor force (Hayashi et al. 2019) but apparently it is not the case for Sub-Saharan Africa. Among the six Sub-Saharan African countries, the majority of Benin and Rwandan health and social work labor force is health (97.1% and 96.3% respectively), most in South Africa (88.6%) and Malawi (84.8%), in contrast with Zambia (61.6%) and Uganda (55.2%) where the residential care activities and social work comprise close to half of health and social work labor force.

Figure 2 Composition of health and social work industry



Data source : Population censuses through IPUMS International

3.3. Detailed occupation composition of health and social work labor force

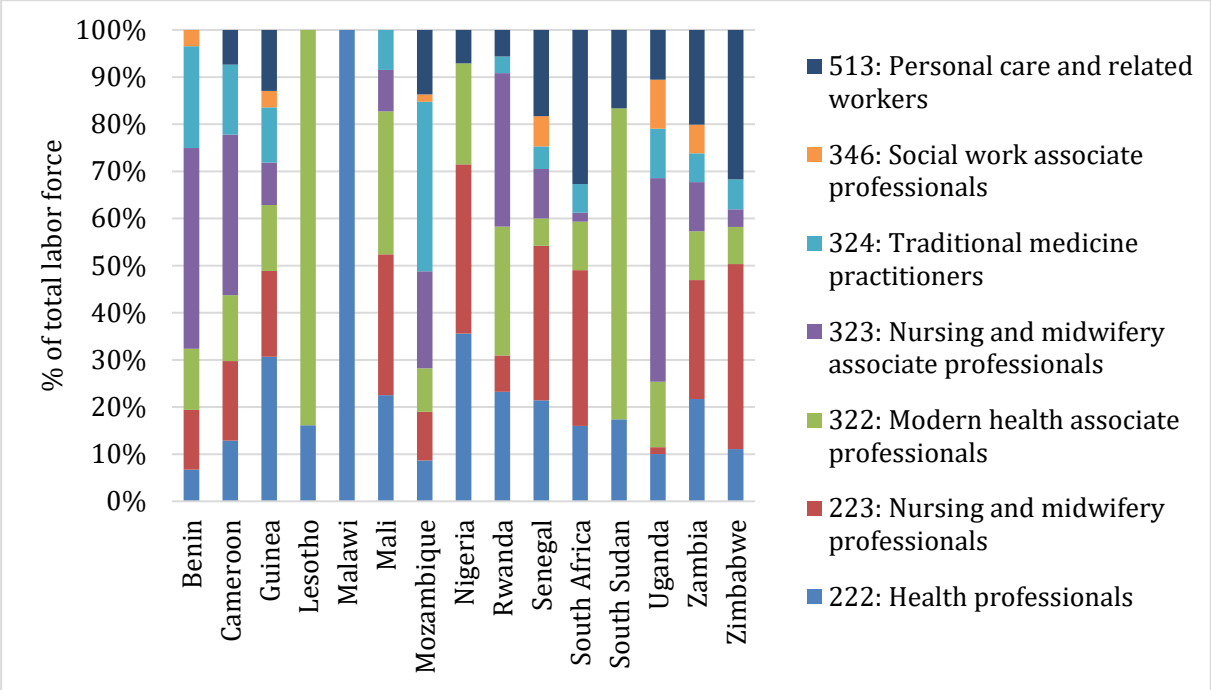
The detailed occupation category also differs from country to country. There are 50 different occupation names appear in the 15 countries census data (Table 3), but they can be grouped into categories defined in ISCO (ILO 2012). However, country comparison is difficult (Figure 3).

Table 3 Occupation names used

222: Health professionals (except nursing) Life science professionals Life science and health professionals Doctor Anesthesiologist Medical workers Pharmacist Physicians and similar, n.e.c.
223: Nursing and midwifery professionals Nurse Registered nurse Nurse, n.e.c. Midwife Licensed nurse Specialized mid-wife
322: Modern health associate professionals (except nursing) Health associate professionals Technicians and related life sciences and health Other medical scientists and life sciences Other health professionals Intermediate occupations of modern medicine (except nursing) Medical and pharmaceutical technicians Maintenance services for health center Life science and health associate professionals Laboratory operator Health care and social action middle manager Other health associate professionals Traveling health agent Health worker Health technician Laboratory technician Other health personnel not elsewhere classified Pill dispenser Health officer Other junior health care worker
323: Nursing and midwifery associate professionals Nursing and midwifery (intermediate level) Matrone Nursing assistant or caregiver Delivery attendant or matron
324: Traditional medicine practitioners and faith healers Traditional and complementary medicine associate professionals Practitioner of traditional medicine and healers Traditional and complementary medicine professionals Traditional medicine practitioners and healers Traditional healer
346: Social work associate professionals Social worker Specialists in social work, social sciences, and humanities, n.e.c.
513: Personal care and related workers

Data source : Population censuses through IPUMS International, the most recent available year.

Figure 3 Composition of health and social work occupation

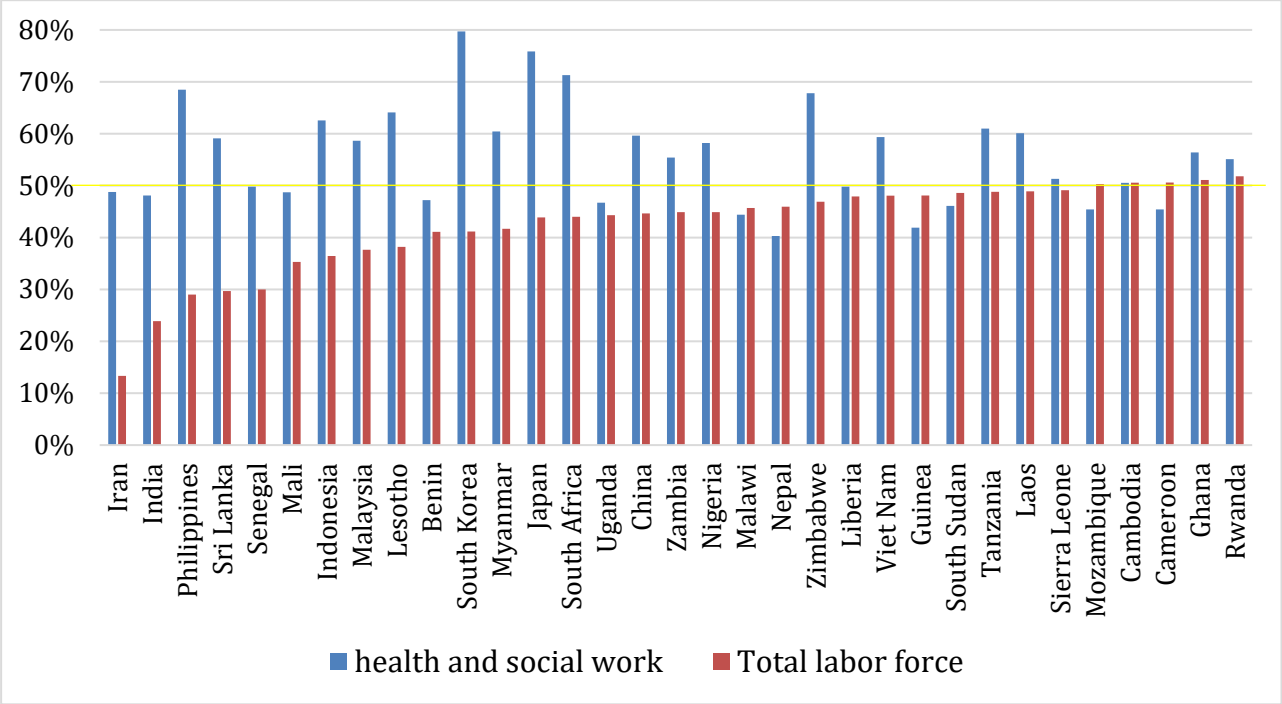


Data source : Population censuses through IPUMS International, the most recent available year.

3.4. Gender aspect of health and social work labor force

In many of the Asian countries, health and social work labor force is female dominated. In case of Sub-Saharan Africa, the situation is slightly different. The female proportion of health and social work labor force is more than half only in 8 countries. In Rwanda, famous for its high ranking of gender equality, or in Ghana, the total workforce as well as health and social sector workforce is slightly above the 50% and the female proportions of health and social work and total labor force is not so different. For countries with lower female labor participation in Sub-Saharan Africa or Asia, it tends to have much higher female proportion of health and social work labor force compared to total labor force. This is to say, the health and social work sector needs both men and women, and in countries where the female labor participation is low, there is a female concentration in the health and social work.

Figure 4 Female proportion of labor force

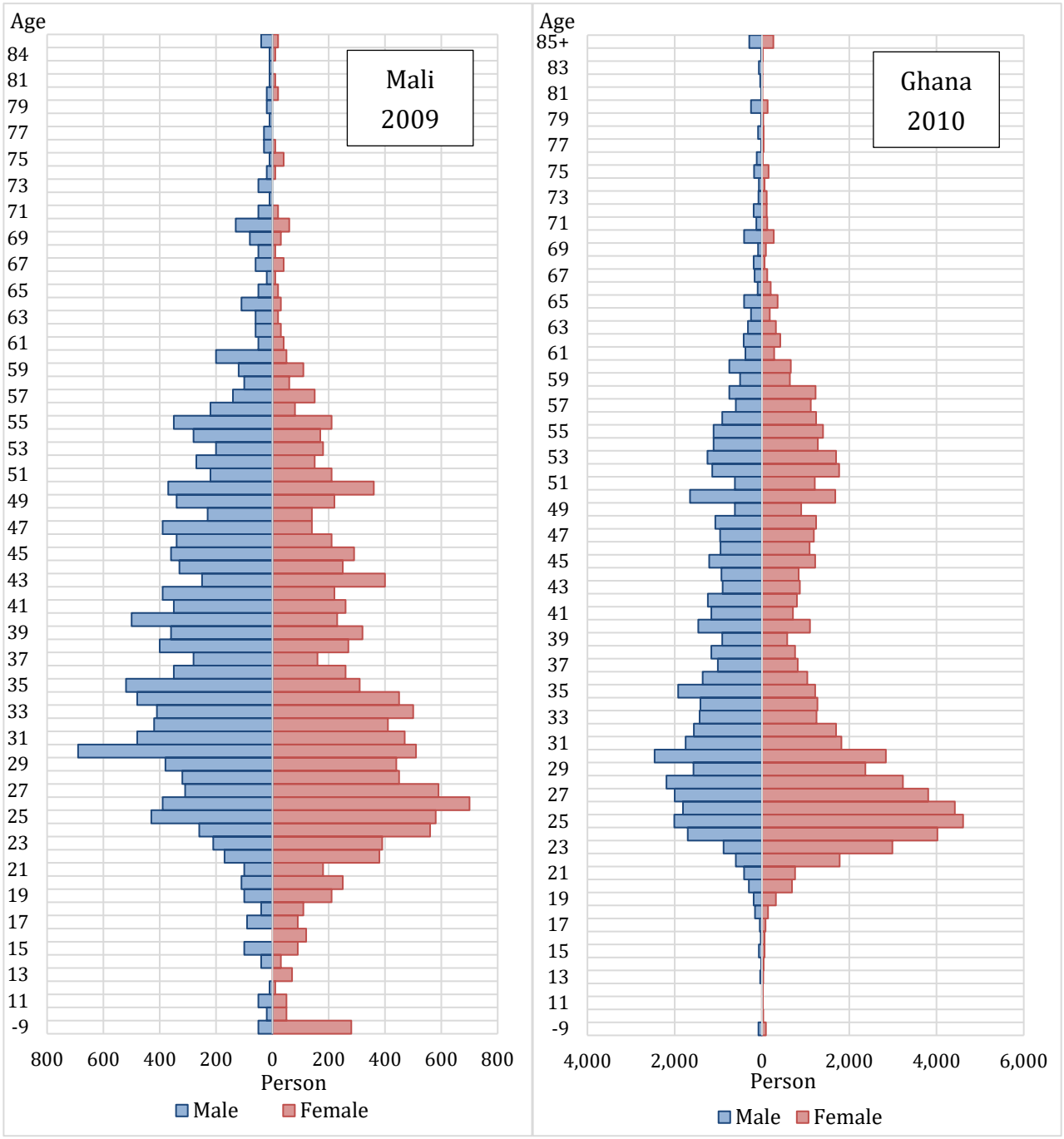


Data source : Censuses through IPUMS International or national statistics offices, the most recent available year.

3.5. Age structure of health and social work labor force

As for the age structure of health and social work labor force, from the example of Mali and Ghana, there is a peak in in the young women aged around 25 years old, a bit younger than the young men's peak around 30 years old. There is a deficit in the age around 40 years old for both men and women. After that age, the numbers increase. So far, the cause of decrease in the middle age around 40 is not identifiable. In the future, due to the shortage of health workforce, it is important to retain the young generation already engaged in this sector. In both countries, there are extreme young (the youngest counted is 5 years old in Ghana) and extreme old (the oldest counted is 95 in Ghana). They might be due to mis-reporting but considering that the data cleaning process are double-bind, by national statistics office and IPUMS International, it is reflecting the reality.

Figure 5 Age structure of health and social work labor force



Data source : Population censuses through IPUMS International

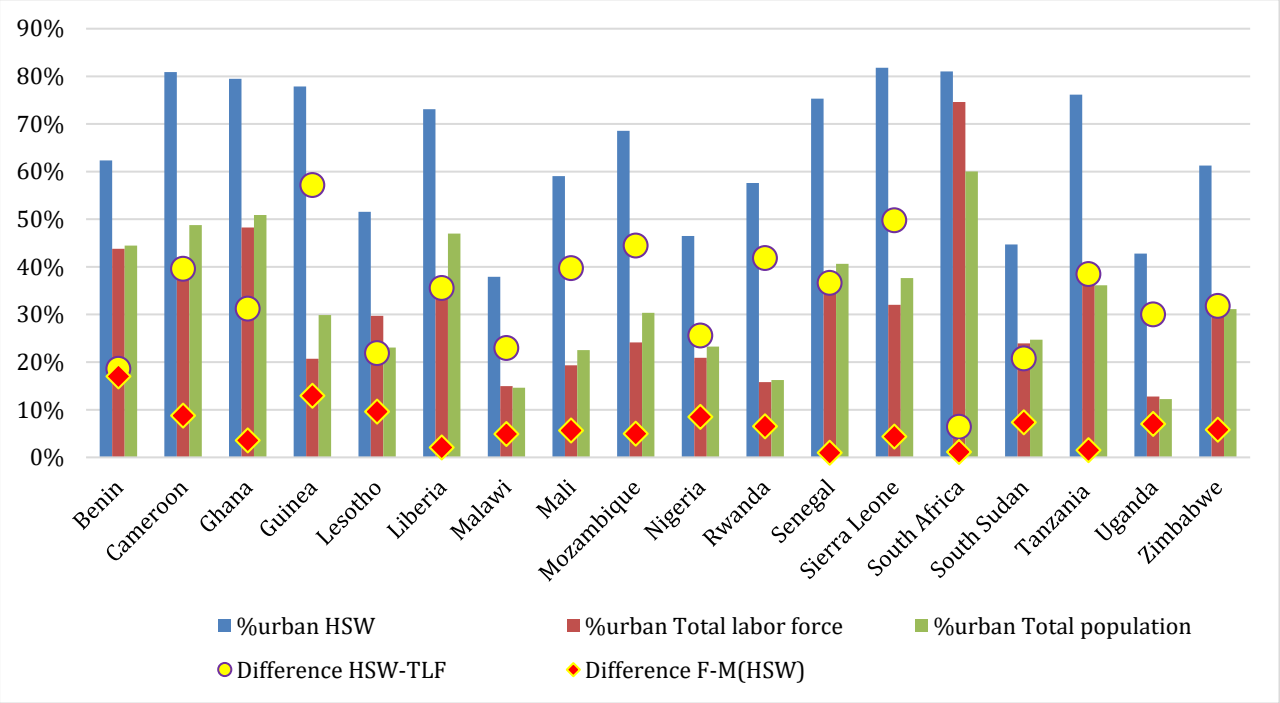
3.6. Urban-rural disparity

It is a well-known fact that the health workforce notably doctors, nurses or midwives are in shortage especially in rural area. This is also the case in Sub-Saharan Africa and confirmed with data. Figure 6 shows the proportion of urban dweller among the health and social work labor force, total labor force and total population. The urban

proportion is much higher in health and social work labor force than total labor force or total population. The difference extends as high as 57 % point in Guinea or 50% in Sierra Leone.

Another important aspect is that there is female concentration in urban area for the health and social work labor force. For example in Benin, 71% of female health and social work labor force are in urban area compared to male's 54%, which gives 17% disparity between women and men. It suggests a situation that the better educated women employed in health and social work remained in urban area. This phenomena is not only for health and social work industry, nor for Sub-Saharan Africa.

Figure 6 Urban proportion



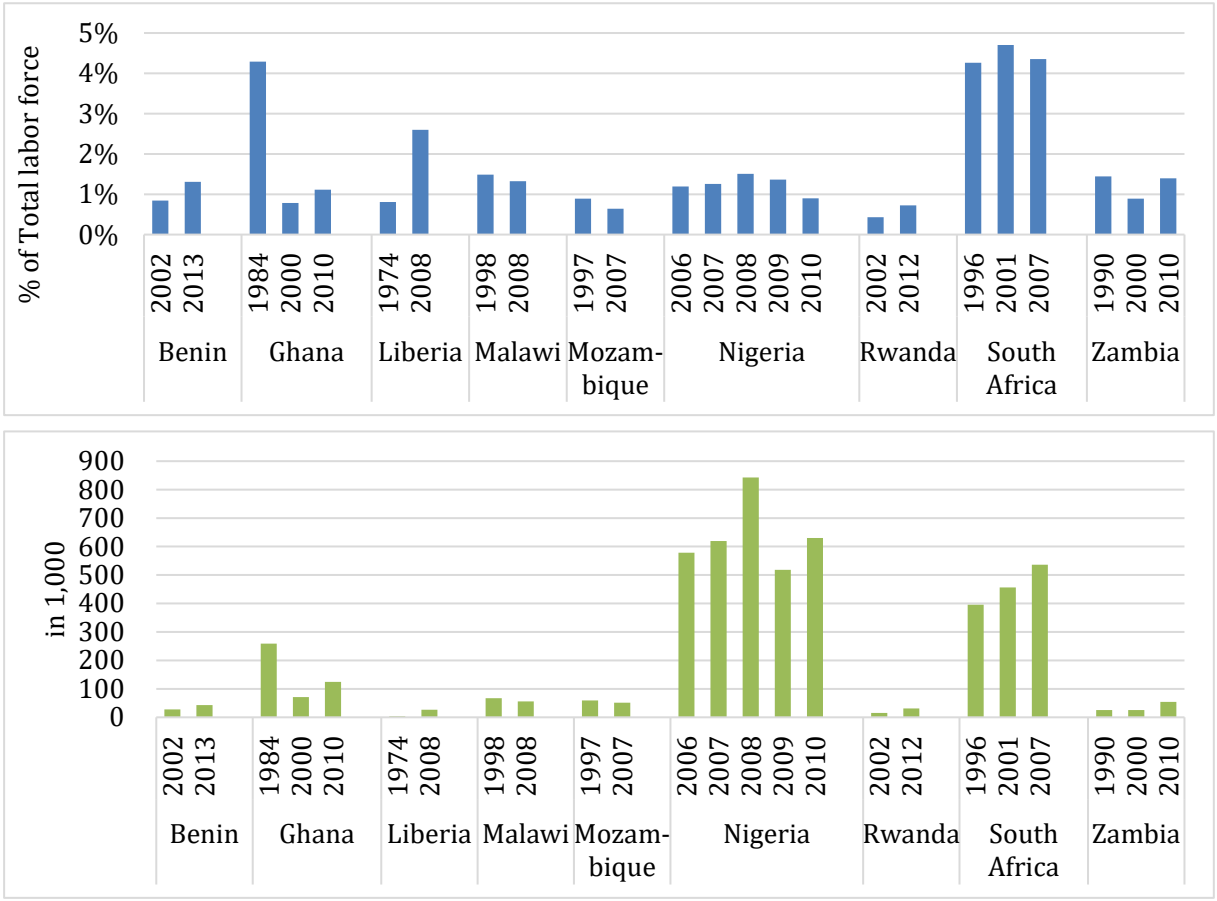
Note : Health and social work (HSW) by industry, by occupation if no data of industry.
Data source : Population censuses through IPUMS International, the most recent available year.

3.7. Trend over time

The health and social work labor force is not always increasing in 9 Sub-Saharan African countries with data. In Benin, Liberia, Rwanda, the proportion to the total labor force as well as absolute number increased, although there are only two time points. In South Africa and Zambia, the proportion to the labor force did not increase continuously but the absolute number increased over time. It means that the increase of health and social work labor force does not catch up the speed of increase of total labor force. In Malawi and Mozambique, both proportion to total labor force and absolute number

decreased over time. The decrease is found for men aged 25 years and over in 1997/1998. Ghana and Nigeria trends show some irregularities. The causes of these trends are to be examined further.

Figure 7 Trend over time of health and social work labor force



Data source : Population censuses through IPUMS International.

4. Discussion

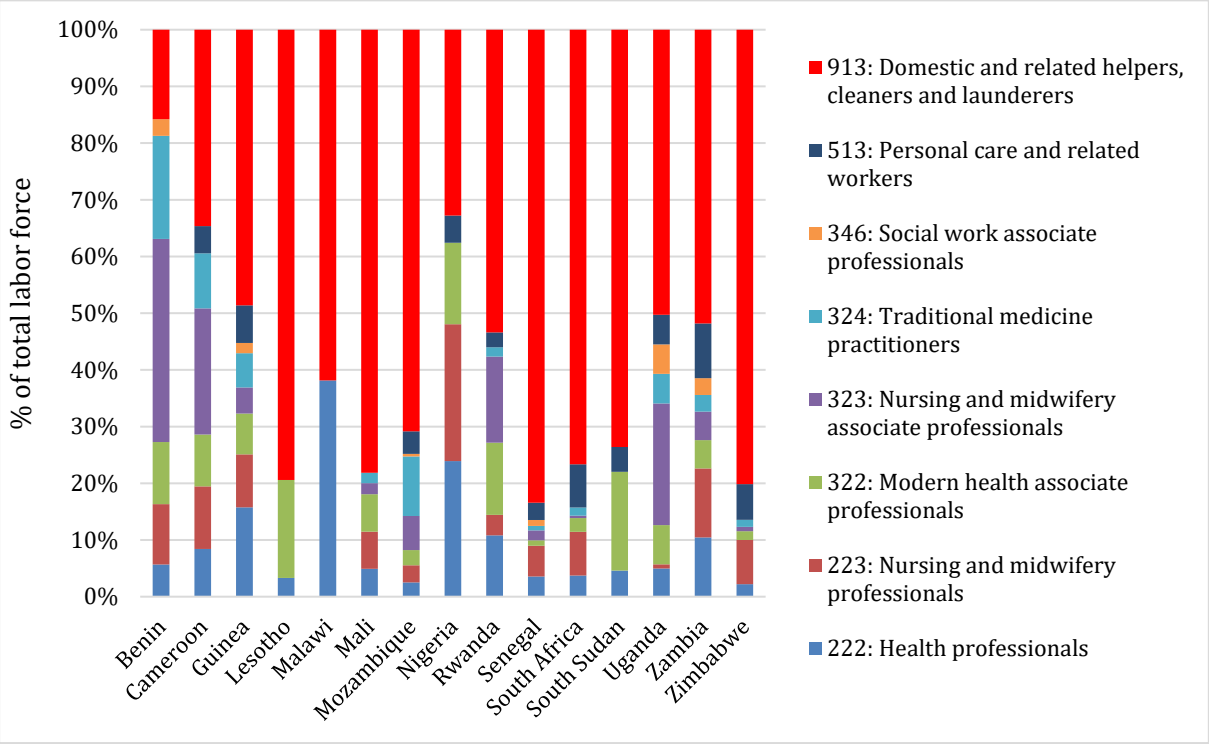
4.1. Health and social work labor force vs domestic worker

It is certain that there is and will be a shortage of health and social work labor force in Sub-Saharan Africa, in view of increasing population, especially increasing number of older persons who need health and long-term care. The health professionals for medical care should be properly trained and retention measures should be taken. As for long-term care, it is not certain if there is a proper occupation who are engaged in that service at present in Sub-Saharan Africa.

In Asia in some of the countries, such as China, domestic workers are engaged in long-term care (Hayashi et al. 2019; Ministry of Commerce of China 2017). The number

working as domestic workers is high in Sub-Saharan countries and in some countries, there are much more domestic workers than the health and social work labor force as a whole (Figure 8). The long-term care for the older persons is supposed to be in charge of family member in Asia and Africa but in view of changing household structure, increasing number of older persons living alone and increasing number of older persons who need care, the family alone cannot be sufficient to meet the demand of care. The domestic workers are already counted in census which suggests that it has become already a sector of industry, even though it might be informal, low skilled and/or rudimentary. To guarantee decent work for all, even for domestic workers is an important task stipulated in SDGs, a special attention should be paid for this sector.

Figure 8 Domestic workers and health and social work labor force

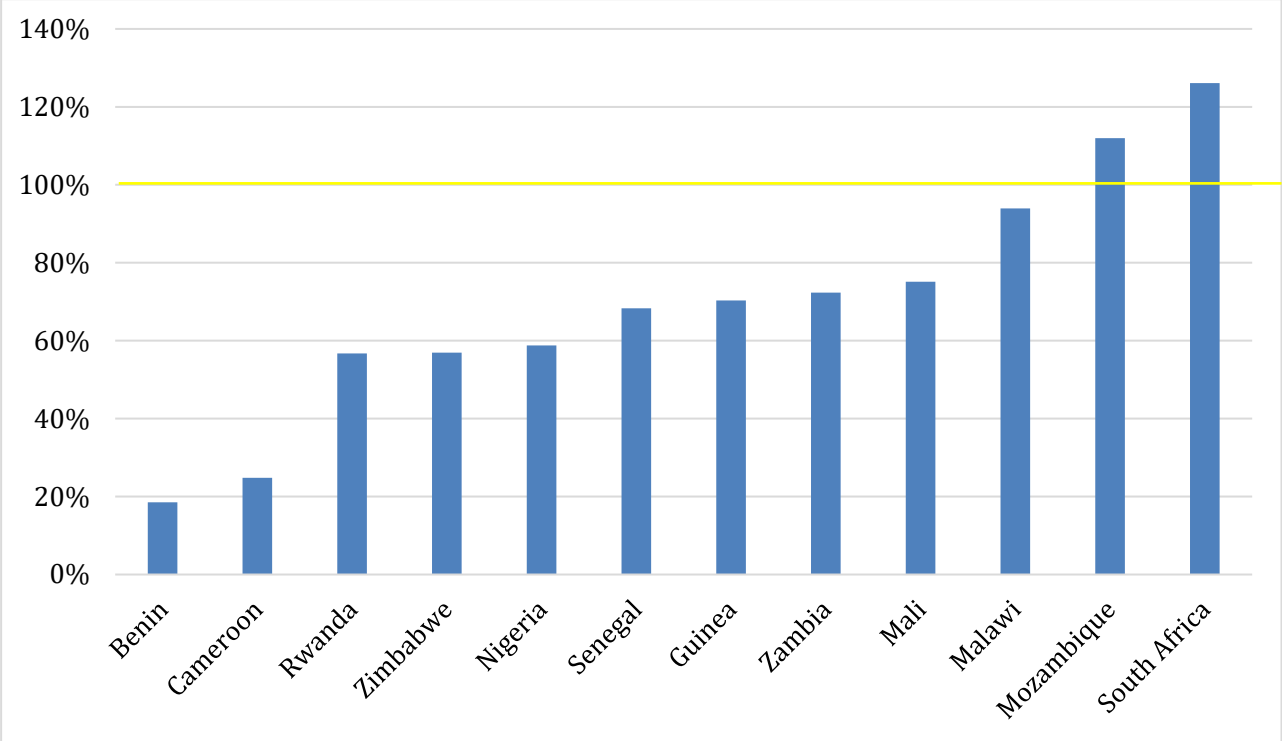


Data source : Population censuses through IPUMS International

4.2. Census vs WHO/MOH data

The Global Health Observatory of WHO provide health workforce database which are based on the reports from country's responsible authorities mainly Ministry of Health. The census data employed in this study naturally differ from those. When both data sources are compared, census data normally give larger number (Figure 9).

Figure 9 WHO health workforce database / Census health and social work by occupation



Data source : Population censuses through IPUMS International and WHO Global Health Observatory.

The coverage and mode of registering and counting health and social work professions might not be the easy task for the ministries in charge, hence it will be also difficult for WHO to collect and compile those data. Already existing national surveys such as census or labour force survey should be utilized maximumly. Instead of creating expensive and labour intensive database in one ministry, a collaborative mechanism within a country facilitating the communication between the ministries in charge of health, labour, social work and statistics will give better information base needed for the health and social work sector development.

5. Way forward

The health and social work labor force is still very limited in Sub-Saharan Africa. It is not so female dominated as in Asian countries, but it is young and urban concentrated. Among the countries with data, the trend over time differs; there are even countries where both proportion and number decrease, such as Malawi and Mozambique, which the reasons should be investigated further. Even only with census data, cohort change analysis by various demographic indicators might give clue.

The international migration of health and social work labor force is an issue. As the most of the Sub-Saharan countries are the source and sending country, the data should be

analyzed together with data of high income, receiving countries. In Asia, AHWIN (Asia Health and Well-being INitiative, https://www.ahwin.org/) is in place to promote the regional health and long-term care system development through enhanced mobility of workforce, the similar intra and inter-regional endeavor should be promoted for Sub-Saharan African health and social work labor force.

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