MORTALITY AND CAUSE OF DEATH PROFILE FOR DEATHS FROM THE CIVIL REGISTRATION SYSTEM: 2017 FACTS AND FIGURES

RESEARCH ARTICLE

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The Department of National Registration Passport and Citizenship is mandated to register vital events including deaths and causes of deaths. However, death registration is still low at less than 20 percent nationwide. About 65 percent of the deaths occur in health facilities while 35 percent take place outside health facilities. HIV was the leading cause of death, accounting for about 24 percent of all health facility deaths in 2017. Gestation and fetal growth disorders were the most common among children in the age group 0-4 years. With respect to non-communicable diseases, 29 percent of the deaths were caused by cardiovascular diseases. Road traffic accidents accounted for about 29 percent of the external causes of death.

I. Background

The Department of National Registration Passport and Citizenship (DNRPC) is the Civil Registration authority in Zambia, whose mandate is to register all vital events occurring in Zambia as established in the Births and Deaths Registration Act (Cap 51) of the laws of Zambia (1). Despite the legal basis of the system and 40 years of implementation, less than 20 percent of all deaths are registered (2). The Sample Vital Registration with Verbal Autopsy (SAVVY) reports that approximately 53 percent of deaths occur in health facilities and 47 percent outside of health facilities (3). Statistics on mortality and causes of death assist in the formulation of evidence-based health policies and decision-making as well as implementation of cost-effective health interventions (4).

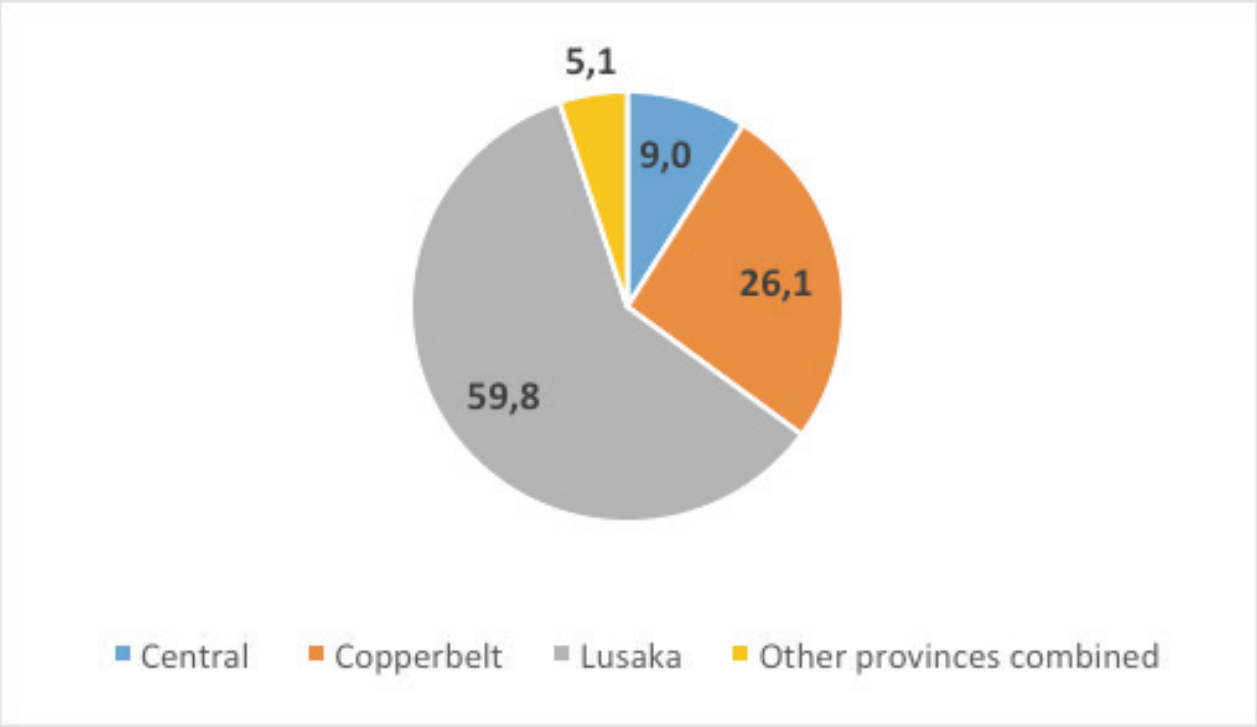
II. Importance of Information on Cause of Death

Efforts are being made to increase death registration coverage in Zambia. Various interventions are being implemented with the support of cooperating partners, including the Bloomberg Data for Health Initiative (BD4HI). Training of medical doctors and ICD-10 Coders are among the interventions aimed at improving the quality of Cause of Death (COD) certification and coding, respectively. Currently, a pilot study on verbal autopsy which involves the collection of probable causes of death is taking place outside some selected health facilities in Lusaka. Such deaths are unlikely to be certified; hence, no health information is recorded. Other interventions on improving coverage include the improvement in health facility reporting of all deaths, use of village administrative systems to facilitate the registration of community deaths, reviewing of laws pertaining to death registration and the use of Enterprise Architecture (EA) to strengthen the processes in death registration. This paper presents findings on deaths occurring in health facilities. The deaths were routinely registered in 2017 and had Medical Certificates of Cause of Death (MCCDs).

III. Distribution of Deaths

Out of 29,164 routinely registered deaths in 2017 the majority, of deaths, occurred in health facilities accounting for 64.7 percent, 32.2 percent occurred outside health facilities and 0.3 percent occurred in others places such as hospices/ retirement homes.

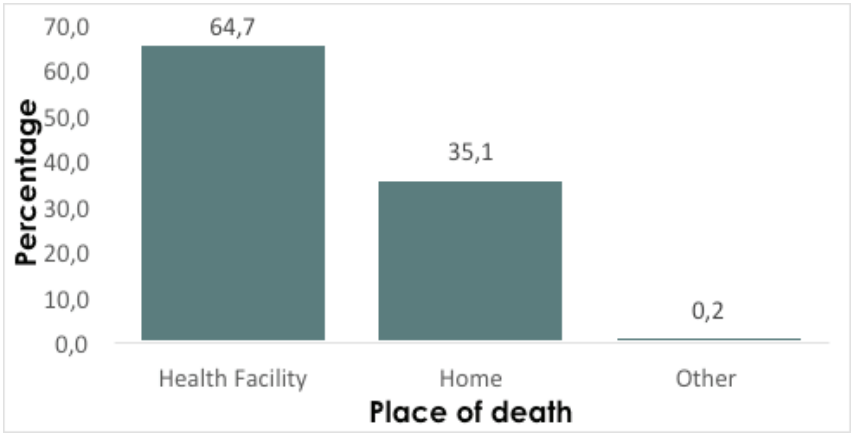
Fig 1: Distribution of deaths registered in 2017



n = 29,164

Figure 1 above shows percentage distribution of the 29,164 deaths registered in 2017 at DNRPC. The majority of deaths (59.8 percent) were from Lusaka, followed by Copperbelt (26.1 percent) and Central (9 percent). The remaining provinces had a combined total of 5.1 percent.

Figure 2: Place of Death



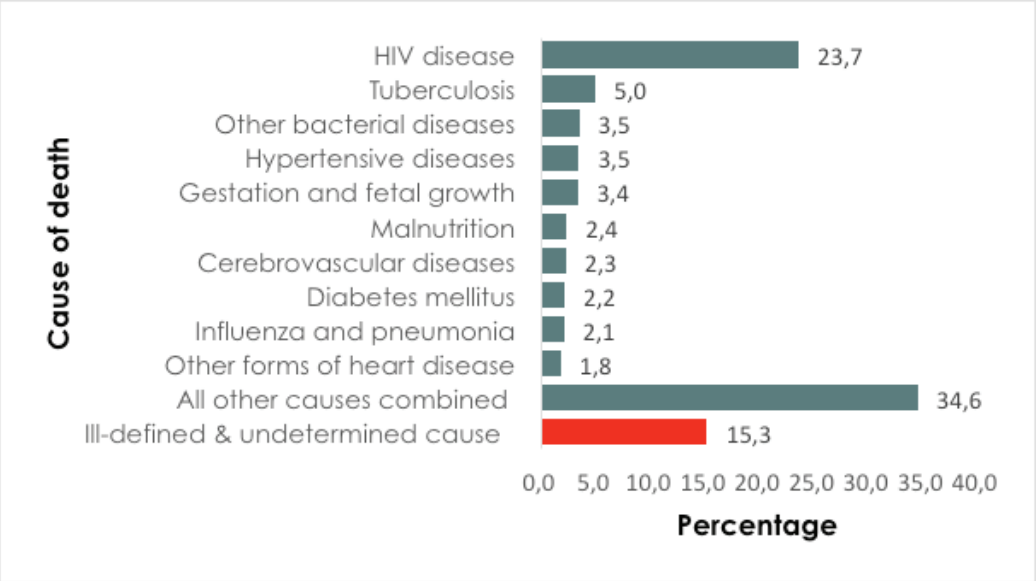
n=29,164

Figure 2 displays a total of 29,164 deaths registered in 2017 by place of death. About 18,869 deaths representing 67.5 percent of deaths occurred in health facilities, 10,237 deaths (35.1 percent) at home and 58 deaths (0.2 percent) in other places, including hospices and retirement homes.

IV. Causes of Death in Health Facilities

The extent and pattern of distribution of causes of death can inform policy and stimulate programme planning and implementation.

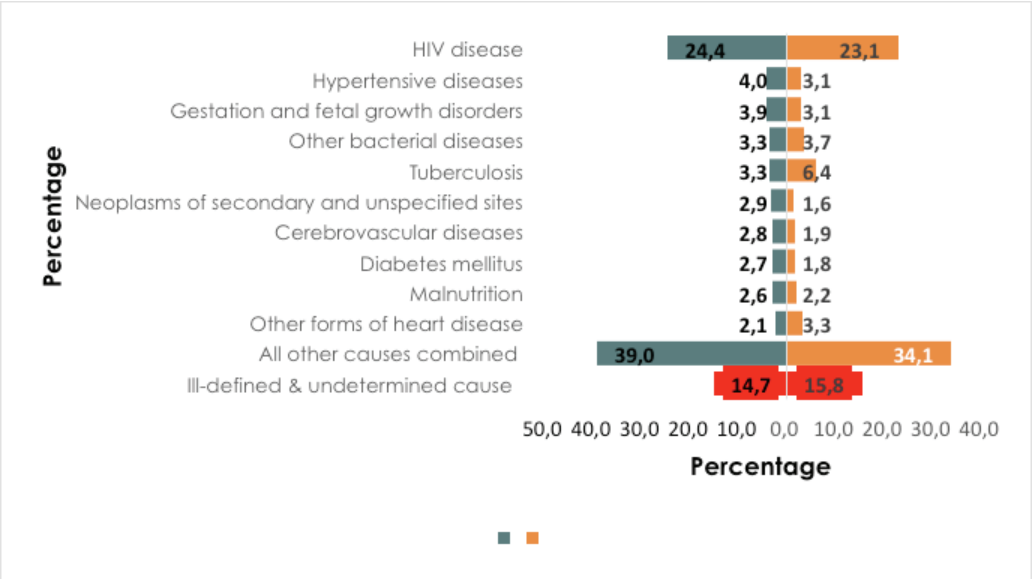
Fig 3: Causes of Death Distribution among Males and Females Combined (All Ages)



n = 18,875

Figure 3 gives the leading causes of death for both sexes and all ages. Among the ten leading causes of death, HIV disease was the most prominent, representing 23.7 percent, followed by tuberculosis, representing 5 percent. Other bacterial and hypertensive diseases accounted for about 3.5 percent each.

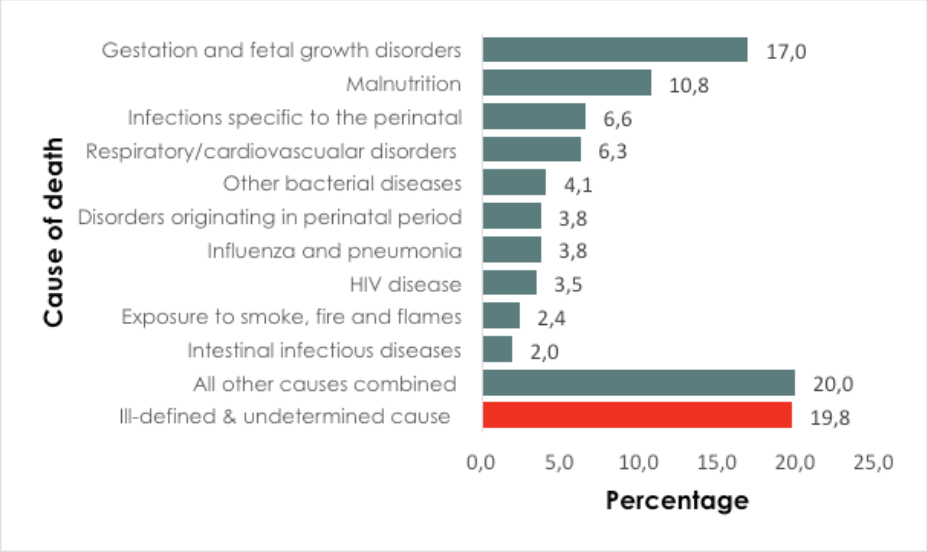
Figure 4: Leading Cause of Death Distribution by Sex (all ages)



Female = 8,398
Male = 10,477

Figure 4 shows that HIV disease was the leading cause of death in 2017 for both females and males, thus, 24.4 and 23.1 percent, respectively. For females, the next leading causes of death were hypertensive diseases, causing 4 percent of the deaths, gestation and fetal growth disorders, accounting for 3.9 percent, and tuberculosis and other bacterial diseases, each accounting for 3.3 percent. The distributions of causes of death are similar for males and females, with minor variations. However, percentages of all other causes of death were about 5 percent higher among women compared with men.

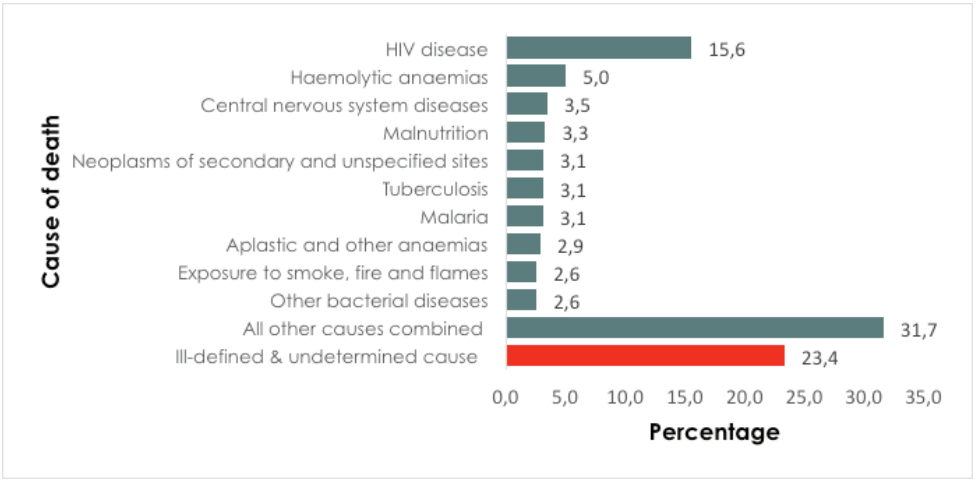
Figure 5: Leading Causes of Death among Children Aged 0-4 Years



n = 3,577

Among the leading causes of death for children aged 0-4 years, out of 3,577 deaths, 17 percent were related to gestation and fetal growth disorders, followed by malnutrition, which accounted for 10.8 percent, infections specific to the perinatal period, accounting for about 6.6 percent, respiratory and cardiovascular disorders, accounting for 6.3 percent, and other bacterial diseases, accounting for 4.1 percent. Other disorders originating in the perinatal period and Influenza including Pneumonia accounted for 3.8 percent each. HIV disease accounted for 3.5 percent of deaths. Deaths due to fires were 2.4 percent and intestinal infectious diseases amounted to 2.0 percent. Undetermined causes of deaths were 19.8 percent of the total number of deaths in this age group.

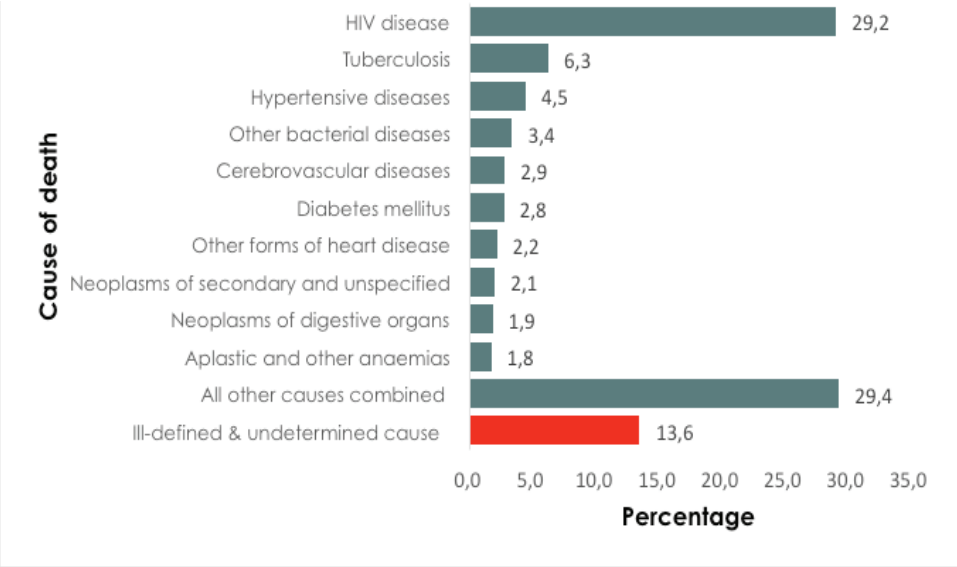
Figure 5: Leading Causes of Death Among Children Aged 5-14 Years



n = 577

Figure 5 shows that deaths caused by HIV disease among those aged 5-14 years had the highest occurrence at about 15.6 percent, followed by Haemolytic anaemia, accounting for 5 percent of deaths. Central nervous system diseases contributed 3.5 percent of deaths. Tuberculosis, malaria and neoplasms of secondary and unspecified sites each accounted for 3.1 percent. All other causes combined accounted for 31.7 percent.

Fig 6: Leading Causes of Death among Adults Aged 15+ Years

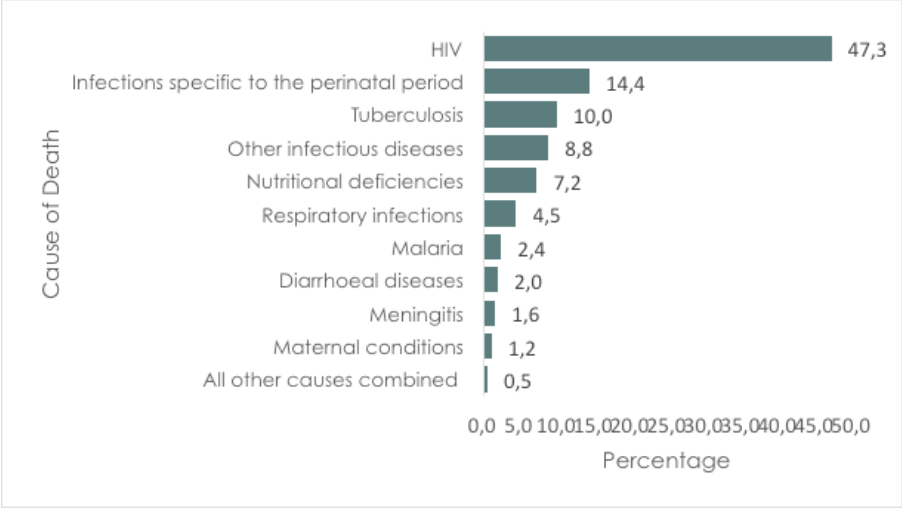


n = 14,439

In Figure 6 above, out of 14, 439 deaths, HIV disease was the highest leading cause of death in the 15 and older age group, as it was in those aged 5 to 14. However, the percentage of HIV deaths in those aged 15 and older is much higher at about 29.2 percent compared to 15.6 percent in those aged 5 to 14. Tuberculosis caused about 6.3 percent of deaths, followed by hypertensive diseases, which caused 4.5 percent. Other bacterial diseases were responsible for 3.4 percent of deaths. Cerebrovascular diseases and diabetes mellitus caused 2.9 and 2.8 percent of deaths, respectively. All other causes combined accounted for 29.4 percent, while ill-defined and undetermined causes accounted for about 13.6 percent.

Communicable Diseases

Fig 7: Leading Causes of Death Due to Communicable, Maternal, Perinatal and Nutritional Conditions

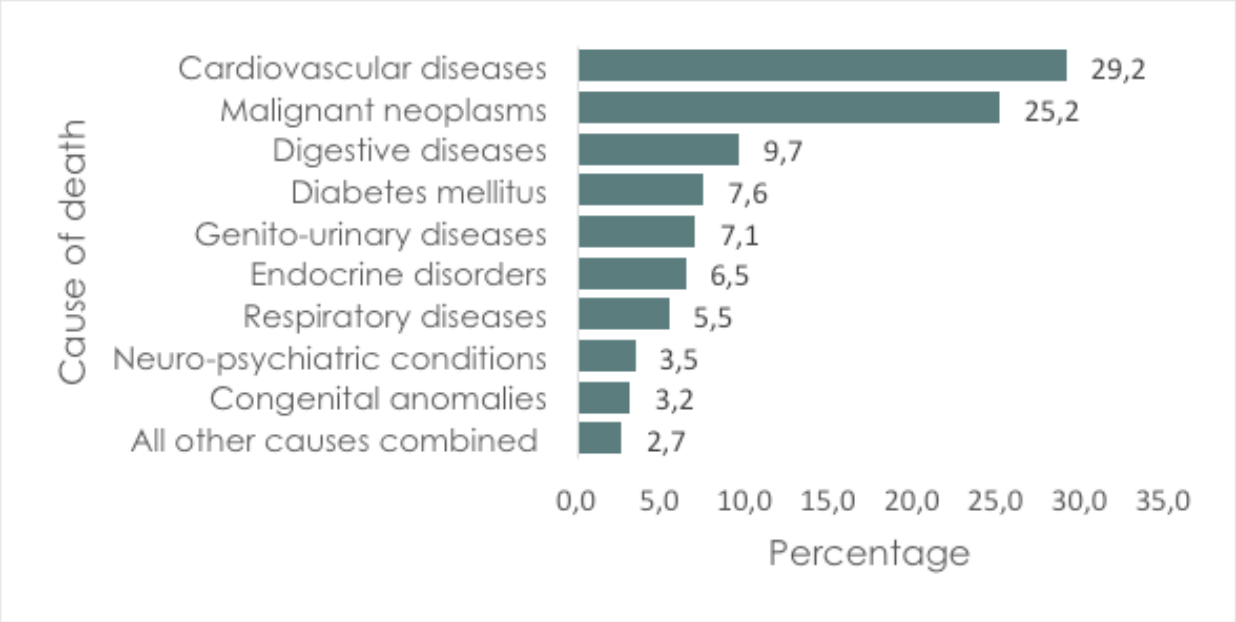


n= 11,543

Figure 7 gives the leading causes of death due to communicable diseases for both sexes and all ages. Among the ten leading causes of death was HIV, representing 47.3 percent of deaths, followed by infections during the perinatal period, accounting for about 14.4 percent. Tuberculosis represented 10 percent of deaths, followed by other infectious diseases and nutritional deficiencies, at 8.8 percent and 7.2 percent, respectively.

Non-Communicable Diseases

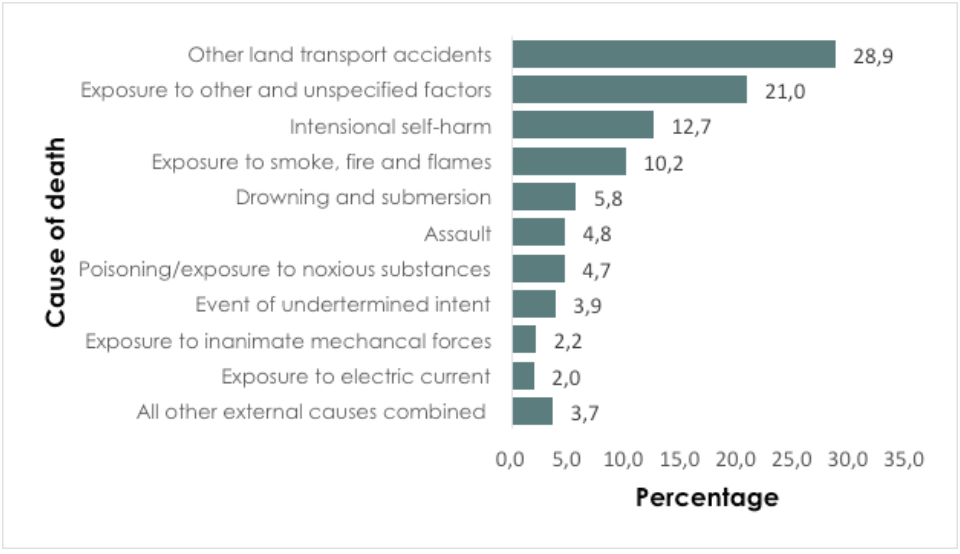
Fig 8: Percentage Distribution of Deaths Due to Non-Communicable Causes



n = 6,633

About 5,437 deaths were caused by non-communicable diseases. About 29.2 percent were due to cardiovascular diseases, followed by 25.2 percent due to malignant neoplasms. Digestive diseases caused 9.7 percent of deaths, followed by diabetes mellitus, with 7.6 percent of the deaths, genito-urinary diseases, with 7.1 percent, and endocrine disorders, with 6.5 percent. All other causes combined only caused 2.7 percent of the deaths. There were no ill-defined or undetermined causes of death in this category.

Fig 9: Percentage Distribution of Leading Deaths Due to External Causes



n = 699

In Figure 9, there were about 699 deaths due to external causes. The highest percentage of deaths, about 28.9 percent, were caused by other land transport accidents, followed by 21 percent of deaths caused by exposure to other and unspecified factors, 12.7 percent caused by intentional self-harm, 10.2 percent due to exposure to smoke, fire and flames, and 5.8 percent due to drowning and submersion.

Fig 10: Percentage Distribution of Deaths Due to HIV Disease by Sex and Age Groups

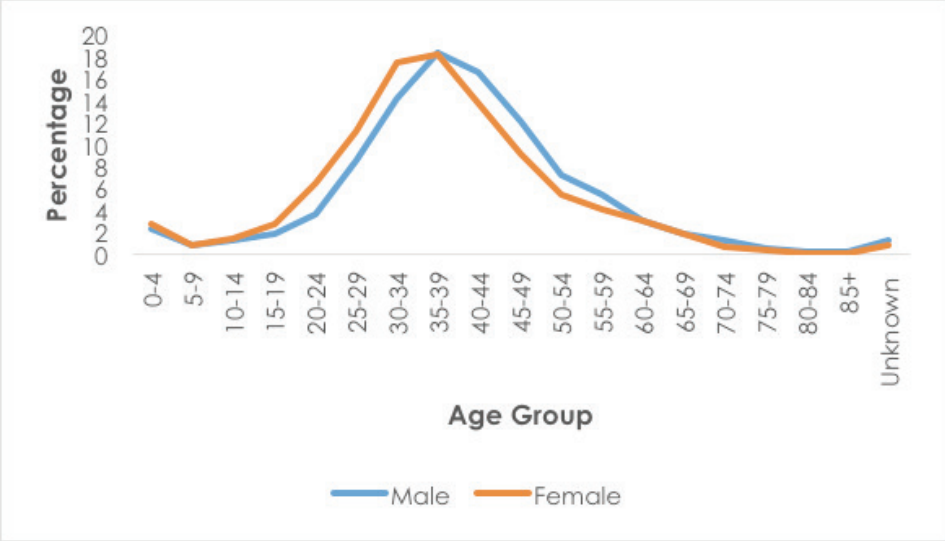


Figure 10 displays the distribution of deaths due to HIV disease. There was a decline of deaths due to HIV from ages 0-4 to ages 5-9. Thereafter, there was an increase in deaths for both males and females, peaking at age group 35-39. There were generally more deaths among females in age groups younger than 35-39 while deaths among males exceeded those of females for age group 64-69 and older.

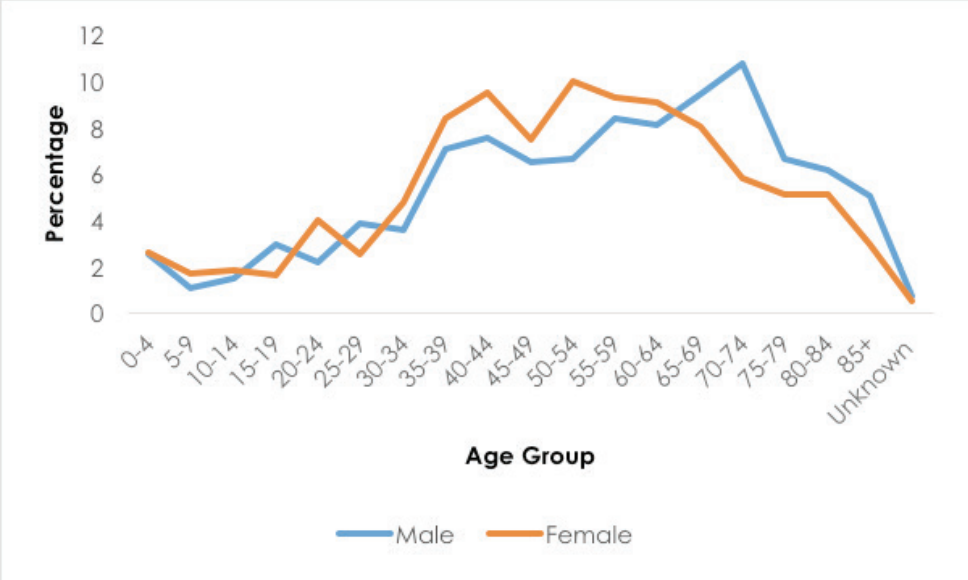


Figure 11 shows the distribution of deaths due to neoplasms. There were generally more deaths among females between age groups 30-34 and 65-69. Deaths among males were higher in age groups 65-69 to 85 and over.

V. Conclusion

A large proportion of deaths, 32 percent routinely registered in 2017, occurred outside health facilities. The leading cause of deaths occurring in health facilities among both males and females was HIV disease, accounting for about 23.7 percent. About 5 percent of deaths in all age groups were due to tuberculosis, which was the second highest cause of death for all ages. Gestation and fetal growth disorders caused about 17 percent of deaths among children under five, followed by Malnutrition, which was the second highest cause of death at about 10.8 percent of all child deaths. Road traffic accidents contributed about 28.9 percent of deaths and were the leading cause of all external deaths. The rate of deaths from non-communicable disease was about 29 percent.

Although the information on numbers of deaths is not complete for the whole country, the information was a basis for producing useful relative distributions of the leading causes of death by age groups. As recommended at the meeting of African Ministers responsible for civil registration, it is imperative for countries to analyse whatever data were available on vital events(5). It is against this background that we opted to analyse the available data, which revealed some useful distributions and patterns. There is, however, need for improvement of the reporting of deaths and their causes in all health facilities.

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