

The Standardized Mortality Ratio due to Man Made Disaster in Ethiopia

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Abstract:

Man-made disasters have an element of human intent involving a failure of a man-made system, as opposed to natural disasters resulting from natural hazards. Man-made disasters include crime, arson, civil disorder, terrorism, war, biological/chemical threat, cyber-attacks, etc.

Key Word: crime; arson; civil disorder; terrorism, war; biological/chemical threat; cyber-attacks

Introduction

Man-Made Disaster

Man-made disasters have an element of human intent involving a failure of a man-made system, as opposed to natural disasters resulting from natural hazards. Man-made disasters include crime, arson, civil disorder, terrorism, war, biological/chemical threat, cyber-attacks, etc. From the above listed manmade disasters, Terrorism is the recent and a major cause of human loses in Ethiopia. The Tigray People Liberation Front Terrorists group is a cause for a significant number of deaths of civilians in many areas of Ethiopia among these Mai kadara, Galicoma, Chena, Kobo, Wuchale, Meresa, Gayenete, Deberezebet and Kombolcha are the major places where many death of civilians occurred by Tigray People Liberation Front Terrorists group

Terrorism

Terrorism is the use of force or violence against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion, or ransom.

Terrorists often use threats to create fear among the public to try to convince citizens that their government is powerless to prevent terrorism and to get immediate publicity for their causes (1).

In Ethiopia, from October 2020 up to now (November 2021 Man Made Disaster occurred particularly by Tigray People Liberation Front Terrorists group in many parts of the country especially in Amhara and Afar Regions of Ethiopia

The Standardized Mortality Ratio (SMR) is a measure of mortality in a study population, relative to mortality in a reference population.

The SMR indicates the relative excess or decrement in the actual mortality experience in the study population with respect to what might have been expected had it experienced the force of mortality in the standard (or reference) population. (2)

We calculate the SMR in two places of Ethiopia

1. Mai kadara, Amhara region
2. Galicome, Afar region



of observed death due to manmade disaster (killing by TPLF Terrorist group) In Mai kadara, Amhara Region is 600 whereas 242 observed deaths in Galicoma, Afar Region.

The total estimated population of Mai kadara is 45,000 and Galicoma is 36,816 (3-5)

We use Ethiopia population as standard population in order to compare deaths rate due to Manmade disaster (killing by TPLF Terrorist group based on ethnicity) of this two place to standard population (Ethiopia, crude death rate)

We calculate expected deaths by multiplying study population with crude death rate (standard rate) of Ethiopia in 2020 which is 6.3 per 1,000

Expected death in Mai kadara is $45,000 \times 6.3 / 1000 = 283.5$

Expected death in Galicoma is $36,813 \times 6.3 / 1000 = 231.92$

Standard mortality ratio = observed death / expected death x 100
Standard mortality ratio for Mai kadara is 212%
 $600 / 283.5 = 2.12 = 212\%$

In Mai kadara ,Amhara Region , 112% more deaths occurred than would have been expected

Standard mortality ratio for Galicoma

$242 / 231.92 = 1.043 = 104.3\%$

In Galicoma ,Afar region 4% more deaths occurred than would have been expected

We have calculated the expected death from the total study population and not using the usual formula that is adding the expected death from each age group in the study population because we did not find the population size in each age group of the study population

The standard mortality ratio is a hypothetical rate and our finding is approximate that is we have used high expected death so our standard mortality ratio is lower than it would be calculated by adding expected deaths from each age group in the study population

Our finding shows there is a significant number of deaths of civilians due to Manmade disaster (killing by TPLF Terrorist group based on ethnicity) in these two places Mai kadara , Amhara region and Galicoma ,Afar region of Ethiopia.

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