# Self-Immolation in Sub-Saharan Africa

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## 1 Introduction

Sub-Saharan Africa is a culturally diverse continental region located south of the Sahara Desert (see Fig. 1), consisting of 48 countries (see Table 1) with a total population of approximately 1.1 billion. Although the United Nations, World Bank and International Monetary Fund listings of countries in this region do not perfectly align, we will refer to Sub-Saharan Africa as all of Africa, including its island nations, except for the North Africa Arab League countries. Chapter 9 in this book addresses the epidemic of self-immolation in North Africa separately.

Suicide by self-immolation is prevalent in developing countries worldwide, accounting for as many as 40–60% of all suicides in some regions [1], primarily affecting women in low-and-middle-income countries, and of clinical and public health relevance in Asia, Africa, and immigrant populations globally [2].

Self-immolation attracts scientific and popular interest, with vast international media coverage and an accumulating literature identifying several transcultural, demographic, psychiatric, and socioeconomic factors that apparently contribute to

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**Fig. 1** Sub-Saharan Africa

suicide risk [3, 4]. Despite the fact that self-immolation is considered a major public health concern and there is a large growing body of research devoted to it, the scarcity of scientific literature on self-immolations in the low- and middle-income countries of Sub-Saharan Africa is problematic. This chapter will review the few scientific studies that exist and provide clinical guidance.

Both cultural and psychiatric factors are associated with self-immolation [5] and the behavior is sometimes considered to have religious overtones [6]. In south Asian cultures self-immolation is a traditional or cultural form of suicide, as in the practice of *Sati* by Hindu widows who burn themselves in the funeral pyres of their husbands [7]. Self-immolations in the Tibetan diaspora and those triggering the *Arab Spring* are politically and altruistically motivated, and often prompted by human rights violations and accumulating psychosocial distress. Psychosocial and psychiatric factors identified as predictive of self-immolations in other regions of the world include poverty, lower level of education, female gender, married status, crowded home environments, intimate partner abuse and other violence in the household, posttraumatic and stressor related disorders, harmful use of substances and major depression [8]. These factors may also play a role in self-immolations in Sub-Saharan Africa. This chapter will review the epidemiology and transcultural aspects of self-immolation in Sub-Saharan Africa, identify and provide an overview of common predisposing and protective factors, and propose culturally informed strategies that might be relevant for the design and implementation of suicide prevention programs.

**Table 1** Countries in Sub-Saharan Africa—Demographic, Social, Health and Economic Indicators[a]

| Country | Population (million) | Life expectancy (years) | Secondary school enrollment (%) | GNI per capita | HIV prevalence (ages 15–49) (%) |
|---|---|---|---|---|---|
| Angola | 31 | 59.9 | 50.7 | $3370 | 2.0 |
| Benin | 11.5 | 61.2 | 59.0 | $870 | 1.0 |
| Botswana | 2.3 | 68.8 | 80.4 | $7750 | 20.3 |
| Burkina Faso | 19.8 | 60.8 | 40.7 | $670 | 0.7 |
| Burundi | 11.2 | 60.9 | 48.5 | $280 | 1.0 |
| Cabo Verde | 0.5 | 72.6 | 88.2 | $3420 | 0.6 |
| Cameroon | 25.2 | 58.5 | 60.1 | $1440 | 3.6 |
| Central African Republic | 4.7 | 52.2 | 17.1 | $490 | 3.6 |
| Chad | 1.5 | 53.7 | 22.6 | $670 | 1.3 |
| Comoros | 0.8 | 63.9 | 59.5 | $1380 | 0.1 |
| Congo, Dem. Rep. | 84.1 | 60.0 | 46.2 | $490 | 0.8 |
| Congo, Rep. | 5.2 | 64.0 | 52.6 | $1640 | 2.6 |
| Cote D'Ivoire | 25.1 | 57.0 | 51.0 | $1600 | 2.6 |
| Equatorial Guinea | 1.3 | 58.1 | 23.5 | $6840 | 7.1 |
| Eritrea | 3.2 | 65.5 | 47.7 | $720 | 0.7 |
| Eswatini | 1.1 | 58.3 | 82.4 | $3930 | 27.3 |
| Ethiopia | 109.2 | 65.9 | 34.9 | $790 | 1.0 |
| Gabon | 2.1 | 65.8 | 53.1 | $6830 | 3.8 |
| Gambia | 2.3 | 61.4 | 50.1 | $710 | 1.9 |
| Ghana | 29.8 | 63.5 | 64.6 | $2130 | 1.7 |
| Guinea | 12.4 | 60.7 | 39.3 | $850 | 1.4 |
| Guinea-Bissau | 1.9 | 57.7 | 34.2 | $750 | 3.5 |
| Kenya | 51.4 | 65.9 | 56.8 | $1620 | 4.7 |
| Lesotho | 2.1 | 52.9 | 62.0 | $1390 | 23.6 |
| Liberia | 4.8 | 63.3 | 37.9 | $610 | 0.3 |
| Madagascar | 26.3 | 66.3 | 36.5 | $510 | 0.3 |
| Malawi | 18.1 | 63.3 | 40.3 | $360 | 9.2 |
| Mali | 19.1 | 58.5 | 41.0 | $840 | 1.4 |
| Mauritania | 4.4 | 64.5 | 36.8 | $1160 | 0.2 |
| Mauritius | 1.3 | 74.5 | 95.1 | $12,050 | 1.3 |
| Mozambique | 29.5 | 59.3 | 35.4 | $460 | 12.6 |
| Namibia | 2.5 | 63.0 | 65.8 | $5220 | 11.8 |
| Niger | 22.4 | 61.6 | 24.3 | $390 | 0.3 |
| Nigeria | 196 | 54.0 | 42.0 | $1960 | 1.5 |
| Rwanda | 12.3 | 68.3 | 40.9 | $780 | 2.5 |
| Sao Tome and Principe | 0.21 | 69.9 | 89.3 | $1890 | N/A |

(continued)

**Table 1** (continued)

| Country | Population (million) | Life expectancy (years) | Secondary school enrollment (%) | GNI per capita | HIV prevalence (ages 15–49) (%) |
|---|---|---|---|---|---|
| Senegal | 15.9 | 67.4 | 43.7 | $1410 | 0.4 |
| Seychelles | 0.1 | 74.3 | 81.4 | $15,600 | N/A |
| Sierra Leone | 7.6 | 53.9 | 41.8 | $490 | 0.5 |
| Somalia | 15 | 56.7 | 5.9 | N/A | 0.1 |
| South Africa | 57.8 | 63.5 | 100 | $5750 | 20.4 |
| South Sudan | 11 | 57.4 | 11.0 | $1130 | 2.5 |
| Sudan | 41.8 | 64.9 | 46.6 | $1560 | 0.2 |
| Tanzania | 56.3 | 64.5 | 29.4 | $1020 | 4.6 |
| Togo | 7.9 | 60.5 | 61.8 | $660 | 2.3 |
| Uganda | 42.7 | 62.5 | 24.6 | $6205 | 5.7 |
| Zambia | 17.4 | 63.0 | N/A | $1430 | 12.3 |
| Zimbabwe | 14.4 | 60.8 | 52.4 | $1790 | 12.7 |
| Total/averages | 1.1 Billion | 60.9 | 43.4 | $1517 | 4 |

[a]Data from the World Bank: https://databank.worldbank.org/source/world-development-indicators (accessed 8 April 2020)

## 2 Epidemiology

### *2.1 Extent of Self-Immolation in Sub-Saharan Africa*

Based on published literature, self-immolation appears to be a relatively uncommon method for suicide in Sub-Saharan Africa except in certain regions or countries. Over the past 25 years, only six studies exist that include some reporting on cases of self-immolation, of which three reported further on the epidemiology of these cases. Four of the studies analyzed data from Durban [9, 10] and Pretoria [11, 12] in *South Africa*, while the remaining two gathered data from the cities of Harare in *Zimbabwe* [13] and Sokoto in *Nigeria* [14]. The studies in Harare and Sokoto reported on data from burn units, while the remaining studies focused on data from post-mortem investigations. For the studies based on post-mortem investigations, data were included from all mortuaries in the respective cities – three in Durban and one in Pretoria. Based on relatively more representative mortuary-based data (versus burn-unit data that is limited to non-fatal cases at admission), the largest proportion of suicide cases due to self-immolation was found in the city of Durban, accounting for 69 (9.9%) of all 696 suicides over a 5-year period from 1996–2000 [10]. While the proportion was similar across the 5 years, a further study for the city showed much lower proportions in later years of 2% (of 465 total suicides in 2006) and 1% (of 497 total suicides in 2007 [9]. For the city of Pretoria, similar proportions of 2.9% (of 1018 suicide cases over a 4-year period from 1997–2000) [12] and 2.4% (of 957 suicides over a 4-year period from 2007–2010) [11] were a result of self-immolation.

Based on reviews across various parts of the world, self-immolation is a relatively uncommon method of suicide in high-income countries of Europe and the United States, accounting for approximately 1% of all suicides, including many from immigrant populations [1, 4]. Based on burn unit data and like for earlier years in Durban, self-immolation accounted for roughly one-tenth (11%) of all attempted suicide admissions at the Harare burn unit in 1998. Additionally, of 47 patients admitted for self-inflicted burns over a 4-year period from 1995–1998, 32 (68%) were fatal [13].

### *2.2 Demographics of Self-Immolators in Sub-Saharan Africa*

A salient feature of the epidemiology of self-immolation is the preponderance of women and persons with socio-economic disadvantage. Women account for approximately three-quarter (76.8%) and nearly two-thirds (63.3%) of self-immolation cases in the cities of Durban and Pretoria, respectively [13]. In addition, women are significantly more likely than men to use self-immolation as a method of suicide. In Pretoria, self-immolation accounted for nearly one tenth (8.4%) of all suicides in women compared to 1.4% of suicides in men [12]. Similarly, in Harare, self-immolation accounted for 14.3% of suicides in women versus 5.5% of suicides in men [13].

In Sokoto, the women to men ratio of self-immolators over a 5-year period was 6:1 [14]. Individuals from historically disadvantaged Black and Indian population groups account for the vast majority of self-immolation cases in Durban (81.2% and 17.4%, respectively). In Pretoria, roughly one-third of all suicides among Black women (16 of 47 cases) were a result of self-immolation.

The predominance of women who self-immolate in these sub-Saharan settings is consistent with that reported in many other less developed countries [1, 3, 4, 15]. The association between socio-economic disadvantage and self-immolation has also been reported in several other international settings [1, 15, 16].

## 3 Risk Factors for Self-Immolation in Sub-Saharan Africa

The literature on self-immolation points to a range of risk factors for self-immolation that may be considered under the following three broad categories:

1. Enabling situational factors such as social vulnerability, cultural context and availability of the means to undertake the act of self-immolation.
2. Precipitating factors such as marital conflict or political protests.
3. Individual-level predisposing factors such as psychiatric illnesses, harmful use of substances, and possibly HIV infection.

Given the extreme nature of the act of self-immolation and distinctiveness from other modes of suicide, however, it is also likely that these acts arise from a combination and interacting effect of the above factors.

## 3.1 Enabling Factors

In the study in Durban, all suicides occurred inside a house [10], which is distinctively different to cases in other countries where self-immolations tend to occur in public areas as an expression of public protest or political dissent. The choice of a private home setting may relate to social isolation and affective states of shame and perceived burdensomeness, as well as the person's clear intention to end life and be unlikely to be helped by others [4, 16].

The predominance of private homes as the setting for self-immolation events, along with suicidal persons generally being young women from historically disadvantaged population groups, may be indicative of living situations underpinned by *social vulnerability*. For example, low levels of education and literacy and economic disempowerment have been shown to be strongly linked to self-immolation [1, 14–16].

Social vulnerability is especially an important consideration among young married women in some cultural contexts where economic disempowerment, with women being highly dependent on their spouses or in-laws [16], is more of the driving force for suicide than experiences of absolute poverty. This experience of dependency may also be coupled with familial pressures of having a successful marriage [16], which may also relate to cultural beliefs and expectations associated with the black and Indian suicides of women in the study from Durban [10].

Easy *access to flammable liquids* is a strong correlate to acts of self-immolation [1, 3, 17]. Of note is that 83% and 98% of victims used paraffin to set themselves on fire in Durban [10] and Harare [13], respectively. Paraffin is generally used in low-income settings as a fuel for cooking and heating and is also cheaper than petrol and other variants.

## 3.2 Predisposing Factors

In the Harare study [13] that included findings on psychiatric history, only three cases (6.4%) had a documented psychiatric illness and all of these were diagnosed to have schizophrenia. Psychiatric conditions among persons who self-immolate that are prevalent in high-income countries include affective and psychotic disorders, major depressive disorders, psychoses, and substance use disorders [4, 15]. Adjustment disorders and posttraumatic stress disorders are frequently underdiagnosed and may be of relevance in persons who self-immolate worldwide [18, 19].

A potential predisposing factor that merits further study is the relationship between HIV infection and suicide [20], a known independent risk factor for suicide worldwide, and how this could interphase with self-immolation in Sub-Saharan African countries with high prevalence of HIV multimorbidities. There is no literature on self-immolation in HIV, but there is some literature establishing an association with fire setting, either accidental fire setting or triggered by behavioural disinhibition, in persons with HIV dementia [21–23].

### *3.3 Precipitating Factors*

The experience of social vulnerability may also be underpinned by marital and family conflict [1, 3, 15, 16] along with associated domestic violence that would serve as a powerful precipitant to the act of self-immolation, especially among those who face other predisposing and enabling factors as discussed above. For example, from the study in Harare [13], conflict in marital, family and love relationships including problems with in-laws accounted for the majority (60%) of all circumstances leading to the self-immolation event.

The association between negative affective states and suicide (see Chap. 11) may be transdiagnostic and merits close attention. Affective states that correlate with suicide include hopelessness, anxiety, anger, perceived burdensomeness, thwarted belongingness, guilt, shame, and loneliness.

## 4 Transcultural Aspects of Self-Immolation in Sub-Saharan Africa

Study results of predisposing and protective factors of suicide are variable across different cultures [24]. These differences in diverse populations may also determine the various methods of suicide chosen by suicidal persons across cultures [25]. While psychosocial, economic and health related factors generally determine suicide risk, the method of suicide is usually related to access to means [26] but could also be triggered by contagion and culturally endorsed attitudes.

Self-immolation as a means of suicide has cultural and social undercurrents [1]. For instance, African-Americans and Asian-Americans living in the United States of America are more likely to choose self-immolation as a method of suicide [27]. Some studies show that suicide risk among immigrants matches that of the host country after acculturation and assimilation takes place [28–30]. Immigrants may also be at higher risk soon after arrival in their host country if faced with disappointment, loneliness, nostalgia and traumatic experiences during relocation. In addition, suicide rates of disenfranchised ethnic minorities or social groups could be elevated as a result of xenophobia and socioeconomic deprivation. Clarke and

Lester [31] propose a psychodynamic formulation of self-immolation that heavily weighs in the symbolic aspects of suicide by burning. The intensely dramatic nature of self-immolation is an impressionable means of registering protest or expressing individual personal distress or displeasure with prevailing authority [32]. Persons who experienced some form of governmental or social injustice and unsuccessfully attempted to seek rectification may choose self-immolation in an effort to release psychic tension and distress [33]. Many of the self-immolations that triggered the *Arab Spring* were not politically motivated *per se*. Dissatisfied individuals, repeatedly bullied and tormented by authorities or corrupt bureaucracies, reached their threshold of distress opting to publicly self-immolate as a fiery and rageful act of revenge and protest. The spectacle of these self-immolations ignited the collective psyche fueling revolt and manifestations that led to social and political transitions (see Chap. 9 for a description of the index self-immolations in Tunisia that spread throughout North Africa and beyond during the *Arab Spring*) [34]. Another social dynamic of self-immolation relates to self-sacrifice and altruism, although perhaps this is not a relevant psychosocial factor in suicides in Sub-Saharan Africa.

Losing touch with reality and collective states of dissociation [35] characterize isolated instances of mass immolations. In the year 2000 a mass self-immolation took place in Uganda, in a border town near Congo and Rwanda, when a cult-like sect that emphasized apocalypticism, called the Movement for the Restoration of the Ten Commandments of God and led by Joseph Kibweteere, predicted the end of times and set themselves on fire inside a church, killing up to 800 people in the largest mass suicide of this century [36, 37]. Sociocultural forces that preceded this deadly event include the political instability of the region, overthrow of Idi Amin, civil war, genocide against the Tutsi, and the AIDS pandemic, together with the rise of post-Catholic fundamentalist groups that broke away with the Roman Catholic Church.

*Necklacing* is of historical importance in South Africa and may persist in the collective psyche of its population, perhaps as a unique cultural factor that may encourage suicide by burning. A fate reserved for traitors by anti-apartheid activists, *necklacing* consisted of placing a rubber motor vehicle tire around a person's neck and arms, filled or doused with gasoline, and set on fire in a public execution for others to watch the person burn in agony as the tire melted and helped incinerate the body. Death by fire via *necklacing* was a powerful weapon against collaborators of the apartheid regime in the 1980s. Recent reports document that it is still practiced against common criminals as a form of punishment, mob justice and vigilantism [38].

The prevalence of self-immolation in some developing countries still surpasses that of the developed countries [3, 4, 10]. It is quite apt to assume that the prevalence of self-immolation in Sub-Saharan Africa might be underestimated due to underreporting [39]. A major proportion of documented cases are from either postmortem or hospital based reviews [40]. Many cases of self-immolation that resulted in deaths may not have presented at the hospitals or recorded as such. Another reason for under reporting in sub-Saharan Africa is the criminalization of suicidal behavior.

Proponents of decriminalization of suicide argue that majority of persons who attempt suicide have an underlining mental illness [41]. Negative attitudes towards suicide add to the stigma of mental disorders, alienation and criminalization of the mentally ill [42].

## 5 Suicide Prevention in Sub-Saharan Africa

To prevent self-immolation requires a multifaceted approach including education, clinical services, legal enforcement and advocacy. Cultural standardized assessment tools are needed to screen for risk of suicide and psychiatric disorders [15]. A clinical approach to suicide prevention should consider the role of cultural differences, age and gender, imitation and intent, religion and spirituality [3].

Researchers have proposed several strategies for suicide prevention, including the training of general practitioners and community leaders in the recognition, identification and treatment of at-risk individuals such as those with mental disorders, and awareness campaigns to enhance public education help-seeking behavior. The training of gatekeepers and community facilitators in recognizing suicidality and helping at-risk people to access appropriate services is essential. Improvement of healthcare services is needed targeting people at risk, including organizational measures such as making adequate inpatient and outpatient aftercare available to people discharged from burn units or with family history of self-immolation. The training of journalists in responsible reporting of self-immolation or the imposing of media blackouts with internet and hotline support could help mitigate suicide by contagion [43–45].

Suicide prevention requires learning to elicit a thorough suicide history. The only treatment for suicide is prevention. Prevention involves reduction of psychological distress and that we establish important trusting relationships, restore hope and help individuals find meaning in life. Timely application of psychotherapeutic, psychosocial and pharmacological interventions can prevent death by suicide [20]. In the absence of trained mental health professionals, general practitioners and all healthcare workers, as well as community role models, need to take the lead to help identify persons at risk for suicide and create a safety network to protect them during a time of crisis.

## 6 Conclusion

Suicide by self-immolation in Sub-Saharan Africa is of concern in certain areas, as documented by studies in Zimbabwe, South Africa and Nigeria, and anecdotally or from clinical experience in other countries. Biopsychosocial correlates of self-immolation include poverty, low education, intimate partner violence, family and romantic turmoil, marital discord, HIV infection, mood disorders, psychosis,

posttraumatic and stressor related disorders, and harmful use of substances. All of these are considered risk factors for suicide in other parts of the world as well. Self-immolation suicides in Sub-Saharan Africa, unlike in North Africa and some regions in Asia, are generally apolitical and not associated with self-sacrifice to protest societal injustices. A transcultural understanding of the enabling, predisposing and precipitating determinants of self-immolation may help inform suicide prevention strategies in developing countries in the continent of Africa.

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