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Review Article

Thirty years on with an HIV epidemic in Zimbabwe (1985–2015)

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ABSTRACT

Zimbabwe, like many of her neighbours, is going through an HIV epidemic since 1985. It is imperative to assess progress with epidemic over the past three decades. We conducted a systematic review of reports in Pubmed/ScienceDirect, and a number of sentinel surveillance reports published by local and international organisations that have dealt with HIV/AIDS in the country, including the National AIDS Council of Zimbabwe, Ministry of Health and Child Welfare of Zimbabwe, UNAIDS and World Health Organisation. Thirty-five original research articles and 16 review articles, 4 surveillance reports and 2 conference reports met our inclusion criteria. The first 5 years of the epidemic were characterised by an exponential increase in prevalence (65-fold) and incidence (up to 13-fold) which were fuelled by high risk sexual behaviour. Comprehensive AIDS programmes that were launched between mid-1990s and 2015 and high mortality over the same period are thought to have played a role in slowing down the epidemic since the mid-2000s. Increased uptake of antiretroviral therapy (ART) and prevention-of-mother-to-child-transmission (PMTCT) (95%) prophylaxis accounted for a 70% drop in HIV-related mortality between 2003 and 2013. However, the epidemic has been characterised by a low paediatric ART coverage (35% in 2011 to 46.12% in 2013) and a recent increase in adolescent HIV prevalence. The epidemic has been driven by a number of social factors that include the local traditional beliefs and customs. A more holistic approach which deals with the epidemic in its socio-political context is required to effectively lower the country's HIV burden.

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1. Introduction

The aim of this review is to appraise the epidemiological, socio-cultural and political factors that have influenced the human immunodeficiency virus (HIV) epidemic in Zimbabwe over the past three decades (1985–2015). A timeline of the epidemic, from onset in 1985 until 2015, was established in the context of epidemiological evidence, emerging trends and social ecology. Particular attention was paid to issues of chronology, relativity and completeness of epidemiological evidence. The goal of the review is to provide a holistic analysis that identifies the epidemic as a sum total of its component parts, which have evolved together in space and time. This paper therefore serves as an essential resource to assess progress with the epidemic in the country.

A number of theories have been put forward to explain the origins of HIV, which were refuted as mere conspiracies [1,2] without offering evidence to the contrary. It is not known when the first case of HIV arrived in the country. What is known is that the first case of AIDS in the country was detected 1985 [3,4]. The HIV infection is characterised a relatively long incubation period that lasts between three to eight weeks, or 9 months to 20 years until first symptoms of AIDS appear, a long latency period (up to 10 years) [5] and an ill-defined infectious stage. If detection of the first AIDS case in the country was in 1985, then the disease should have landed in the country weeks, up to a decade, earlier. Anecdotal evidence demonstrates the occurrence of an unidentified AIDS-like African spell or a 'sexually transmitted illness' known as *runyoka* in Shona language and as *ulunyoka* in Ndebele, which presented in its victims with weight loss and high mortality. This review is not concerned the origins of HIV or how it arrived in the country, but offers a bird's-eye view of the epidemic for a better understanding of how it has evolved over time.

At least 1.3 million of the country's 13 million people were reported to have been infected by HIV from onset until 2012

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[6]. The current prevalence of HIV, in 2015, among the country's adult population (15–49 years age group) is estimated at 15.2%, which is one of the highest in the Southern African region. The first decade into the epidemic saw exponential increases in HIV incidence and prevalence rates, which were fuelled by high risk sexual behaviour [7,8] and characterised by high mortality [9], the latter being a result of lack of ART at the time. The Government of Zimbabwe, non-governmental organisations and all grassroots players in the HIV field launched awareness campaigns, which included advertisements in both print and electronic media, which could have contributed to an improved understanding of the disease, improved sexual behaviour, reduced stigma and greater uptake of HIV tests and therapy [8,10]. However, campaigns alone could not have played a central role in reducing the incidence of HIV in the population. The observed decline in incidence, and hence prevalence, could have been due to a number of factors that included increased uptake of condoms, increased uptake of HIV diagnoses and a number of related factors. Improved sexual behaviour, especially between 1995 and 2015 was accompanied by a gentle fall in HIV incidence and prevalence rates. HIV-associated mortality rate assumed a downward trend from mid-2000s as a result of increased access to ART and a reduction in new infections, which in turn was linked to increased awareness and reduced sexual risk. Additionally, Zimbabwe went through economic attrition, especially around year 2008, which is implicated for the massive emigration of Zimbabweans to countries in the region and further afield. Gregson et al. [10] asserted that migration of Zimbabweans to the diaspora since the late 1990s could have led to 'selective out-migration of HIV-positive individuals', which in turn could have contributed to the decline in HIV prevalence. Efforts to control the HIV infection were greatly stifled by its unique biology that is characterised by long incubation period, a long latency period and an ill-defined infectious stage. For a disease that has gripped the country for the past three decades, with potential to grip the country for decades to come, it is important to view it multidimensional event which is influenced by complex social networks that fuel risky sexual behaviour and new infections.

Despite the challenges highlighted above, including a high adult HIV prevalence in 2015 (15.2%) following an increase from 14.1% in 2010, the country attained 93% coverage in its PMTCT programme and 95% coverage of adult ART for its eligible population by 2013 (UNAIDS, 2013), thereby meeting the United Nations' Millennium Development Goal 6 as set out in the year 2000. The wider access to HIV therapy, and care and support services in the country have helped to explain the recent decline in the HIV incidence rate from a peak of 5.21% in 1994 to 0.86% in 2012 [11]. Despite these gains, AIDS continues to claim at least 40,000 lives per annum (2013), despite a drop from 123,000 in 2006 [13].

2. Methods

This treatise is a systematic review of secondary data that is available from publicly available sources, including Pubmed/ ScienceDirect, and a number of reports by key local and international organisations that have dealt with HIV/AIDS in the country, including the National AIDS Council of Zimbabwe, Ministry of Health and Child Welfare of Zimbabwe, UNAIDS and World Health Organisation. HIV/AIDS research in the country has remained grossly underfunded, as such data on the epidemic is characterised by significant gaps. Secondary data were processed into graphs to track trends in the HIV/AIDS epidemic, which, in turn, were modelled into a framework that shows the inherent inter-linkages within the epidemic. This study assessed the role of a number of factors including mortality, awareness of the disease, the uptake of ART, PMTCT and protective methods (condom use), sexual behaviour, gender, cultural beliefs and practices including

complementary and alternative medicine (CAM), and social attributes that underlie the salient trends in the epidemic.

3. Results

3.1. The onset of an HIV epidemic in Zimbabwe

Based on anecdotal evidence, a condition known as *runyoka* in Shona or *ulunyoka* in Ndebele is known to have occurred frequently in men prior to the detection of the first AIDS case in 1985. Based on African beliefs, *runyoka* is a disease that affects a man who had sexual intercourse with another man's wife or girlfriend, when the latter would have, clandestinely, been treated by their husband/ boyfriend to prevent the woman from having sex with other men. The symptoms of *runyoka* included wasting which quickly culminated in death. When the HIV epidemic assumed an upward spiral in the 1990s (Fig. 1), incidences of the *runyoka* 'epidemic' could have declined in the population. Could this have been HIV that was not yet detected? The occurrence of *runyoka*, like all other spells, cannot be verified using scientific methods. Additionally, the contribution of this background epidemic on the spread of HIV was not reported anywhere in literature.

The first case of AIDS was Diagnosed in a Northern District of the country in 1985 [14]. There is evidence to show that research on HIV-1 Type C (HIV-1C), the strain that is endemic in Southern Africa, commenced in the country in 1986 [15]. HIV-1C is thought to have originated in Kinshasa, Democratic Republic of Congo in the 1920s [16]. However, the most recent common ancestor of the HIV-1C epidemic in Southern Africa is inferred, using Bayesian phylogenetic inference analyses, to date back to 1973 [14]. Attempts to decipher the origins of HIV-1C are clouded by a dearth of concrete data and the high rates of recombination that characterise the virus' genome [17].

3.2. Changes in HIV prevalence and incidence rates

The onset of the HIV epidemic in the country (1985–1990s) was marked by exponential increases in prevalence (up to 65-fold) and incidence (up to 13-fold) (Fig. 1). Notably, both incidence and prevalence of HIV peaked in early 1990s before reaching their respective plateaus in early 2000s, which was followed by a downward trend from mid-2000s onwards. The reduction in HIV incidence and prevalence coincided with increased awareness of the disease in the country [18]. From the early years of the epidemic, awareness campaigns were launched at every level of the country's society, including the Government of Zimbabwe, international health organisations, civil society, business, religious sector and AIDS service organisations. HIV-associated mortality increased by 200% between 1993 and mid-2000s, before assuming the downward trend that occurred from mid-2000s onwards (Fig. 2). A peak in

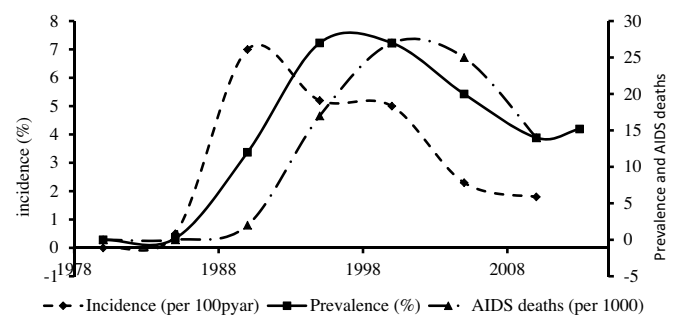


Fig. 1. HIV prevalence (per 100 person years), incidence (%) AIDS deaths (per 1000) and in the adult population of Zimbabwe (15–49 age group) between 1985 and 2013. Adapted from Halperin et al. (2011) [12] and UNAIDS (2013) [11].

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