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Indigenous knowledge of medicinal plants used for the treatment of cancer

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BACKGROUND

The global burden of cancer continues to increase in both developed and developing countries. This is largely attributed to a growing aged population as both the numbers of people and life expectancies increase. Another important factor is the adoption of lifestyles that increase the risk of developing cancer (Jemal et al., 2011). Lifestyle choices, such as smoking tobacco, consuming alcohol, being physically inactive and eating unhealthily, contribute to the upsurge in cancer cases. Siegel, Naishadham and Jemal (2012) estimated that about 1,638,910 new incidences of cancer and about 577,190 deaths due to cancer occurred worldwide in 2012. They further estimated that 56% of the cancer cases and 64% of cancer-related deaths occurred in developing countries (Jemal et al., 2011), indicating that the developing world is gradually having to shoulder more of the burden and where cancer survival rates tend to be lower.

The most common form of cancer in females is breast cancer, which accounted for 1,383,500 new cases in 2008, while lung cancer is the leading cause of morbidity in males, with 1,095,200 new cases estimated for 2008 (Jemal et al., 2011). These trends are similar in developed and developing countries (Jemal et al., 2011).

The Namibian National Cancer Registry (2011) reported a total of 6,363 neoplasms between 2006 and 2009. Of these, just over half (50.4%) were diagnosed in females. Within the four-year period, breast (27.6%) and cervix (17.1%) carcinomas were the most prevalent in females, while Kaposi sarcoma (22.1%) and prostate (19.2%) cancers were the most common malignancies in males. This marked a remarkable increase in the incidence of almost all types of cancer (>280 more cases per year) since the previous report (Namibian National Cancer Registry, 2009).

Namibia is one of the countries severely affected by the HIV (human immunodeficiency virus) and AIDS (acquired immunodeficiency syndrome) crisis, which has grown to a full-blown epidemic since the first diagnosed case in 1986. Estimates suggest that between 210,000 and 290,000 people in Namibia were infected with HIV by the end of 2013 (UNAIDS, 2013). They have an increased chance of developing Kaposi sarcoma, eye cancer and non-Hodgkin's lymphoma (Namibian Cancer Registry, 2011). Kaposi's sarcoma is now the leading cause of morbidity due to cancer in men and the third-most common cancer in women in Namibia. However, since the introduction of highly active antiretroviral therapies (Jemal et al., 2011) with increased coverage (Chinsembu & Hedimbi, 2010), the rate of increment of the three HIV-associated cancers has declined considerably, in Namibia and elsewhere.

In Namibia, the World Health Organization (WHO) reported that the proportion of Namibia's population living in urban areas had increased steadily from 28% in 1990 to 37% in 2009 (WHO, 2011). The report further notes that Namibians have high rates of alcohol consumption (about 6.5 ℓ of pure alcohol per annum) and tobacco use (24.1% of males and 9.5% of females use tobacco-derived products). WHO (2011) also reported a physician and nurse/midwife density of 3.7 and 27.8 per 10,000 people, respectively, for the period 2000–2010 for the country's population of 2.2 million people. These low rates of qualified healthcare personnel in Namibia are, however, higher than in many developing countries.

ETHNOMEDICINES

Plants have been used for the treatment of different ailments in humans and animals from time immemorial, according to archaeological records (Day, 2013). WHO (2002) estimates that over 80% of rural and urban African populations use plant-based products for primary healthcare. Users of these traditional medicines often self-medicate. There is a widespread misconception about the safety of medicinal plants and derived herbal supplements with many users of herbal products believing that the components of traditional medicines have undergone a long period of evaluation in nature. 'Natural', however, does not necessarily mean 'safe'. Furthermore, it is imperative that traditional healers have a good understanding of the plants they use and can identify them. For example, a Chinese weight-loss remedy caused serious renal failure among users because a nephrotoxic plant, *Aristolochia fangchi* was substituted for *Stephania tetrandra* or *Magnolia officinalis* (Nortier et al., 2000; Vivekanand, 2010). Nevertheless, an increased usage of traditional medicine or complementary and alternative medicine is observed in countries such as China, Chile and Colombia, amongst others. In Chile and Colombia, over 71% and 40% of the population, respectively, depend on traditional or nonconventional means for primary healthcare provision.