

# Alcohol and tobacco use in adolescents and young adults in Zimbabwe

Ross G. Cooper

Physiologist, 22 Kimble Grove, Pype Hayes, Erdington, Birmingham B24 0RW, UK

**Abstract:** The review attempts to gain an insight into concurrent cigarette and alcohol usage, in the absence or association with a poor diet in Zimbabwean adolescents and young people, and proposes Christian perspectives towards nursing intervention. Current figures for alcohol and tobacco usage are unavailable in Zimbabwe given that it has a virtually completely collapsed economy, particularly the health infrastructure. Drug use was the highest among students of private schools; the use of alcohol (and tobacco) increased with increasing socio-economic status; an increase in lifetime alcohol prevalence amongst rural students; and an increased frequency of alcohol (and cannabis) use among boys. In men, the risk of tobacco-associated incidence of oesophageal cancer rose 5.7 times amongst smokers of  $\geq 15$  g/day, and in women 4.0 times vs. those who never smoked. Rural secondary school pupils showed an 18.5% prevalence rate of tobacco usage. Numerous Scriptures are given to assist Christian counseling. Nurses need a team approach that revises their understanding of alcohol and tobacco dependency and the methods used to treat it, directed by a competent manager. Education, follow-up sessions and non-pharmacological treatment interventions are also essential in the recovery process.

**Key words:** alcohol, interventions, nurse, teenager, tobacco, Zimbabwe

## INTRODUCTION

Tobacco was first introduced into Africa by the Turks via Egypt in the 16<sup>th</sup> century [1]. Cigarette smoking has largely replaced the traditional pipe and men were regarded those who smoked, although the advent of advertising has seen a dramatic rise in the number of women smokers [1]. Comparisons of alcohol and tobacco usage amongst sub-populations have been reported [2] and the harmful effects of alcohol [3-10] and nicotine [11, 12] on renal function were investigated. A study of the concurrent intake of nicotine and ethanol has also been published [13]. Preliminary investigations on healthy diets were recently presented [14, 15].

In Africa, excluding Zimbabwe, a number of questionnaire-based studies were completed among students [16, 17] and workers [18] imbibed alcohol/tobacco. Akin to all these studies is the theme of how exactly does the intake of alcohol and/or nicotine, in the absence or association with a poor diet, affect a young person's quality of life? Zimbabwe (capital city: Harare), a former British colony called Rhodesia, attained its independence on 18 April 1980. However, given the current harsh economic climate in the country, (150,000% inflation, International Monetary Fund, January 2008), medicated treatment may be severely limited, and numerous patients will be malnourished, and for certain, some may be resorting to cheap liquor to alleviate their stress. With massive shortages of Zimbabwe dollars it is difficult to imagine how one could engage in and recover from an addiction. Indeed, exposure to people, places and things associated with prior drug-using experiences may result in overwhelming cravings, and mental illness and withdrawal lead to craving if the users associate use

with relief of symptoms [19]. It may be hard for a young woman to break the smoking habit, given the successfully ingrained marketing association of cigarette use and independence, self-reliance, weight control, stress management, social progress and popularity, personal attractiveness, autonomy, self-fulfillment, youth, happiness, personal success, health, and active, vigorous and strenuous lifestyles [20]. Alcohol use may be associated with a dissociation of memories of childhood sexual abuse [21] and severe adolescent traumatic experience [22]. The association of mood change and relapse has been investigated [23]. Personal commitment augmented by familial, community, spiritual and educational support are useful mechanisms for the recovering alcoholic [24].

The aim of the current article was to explore the literature available concerning the intake and/or abuse of alcohol and tobacco in Zimbabwean adolescents and young people, and propose Christian perspectives towards nursing intervention.

## METHODS

The criteria used to select articles to be included were both theoretically and practically motivated, and adopted from the proposed criteria listed below:

- Positive selection of literature was determined by appropriateness of methodology; adequacy of subject numbers; specificity of sex and/or age of subjects; and statistically significant response rates to survey questionnaires.
- The time frame used was 1960-2008, inclusive.
- A multi-factorial overview of the factors concerning alcohol and cigarette use were elucidated. It was presumed that collective articles detailing known factors of usage/abuse were not necessarily correlated with functionality and health.

Corresponding author: Dr. Ross G. Cooper, Physiologist, 22 Kimble Grove, Pype Hayes, Erdington, Birmingham B24 0RW, UK.  
E-mail: rgcooperuk@yahoo.com

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- Compilation of materials began with published literature, or easily accessible academic research.
- Articles were accessible from on-line sources, including PubMed and Medline. Research strategy was refined using particular search terms, including: alcohol and/or tobacco and Zimbabwe.

Details in articles were then categorised under alcohol use; tobacco use; and consequences, treatment and preventative medicine. Scriptures used in Christian counselling were derived from pastoral websites, book loans and face-to-face/ e-mail discussions with Christian leaders and/or pastors, and chaplains.

## RESULTS

Current figures for alcohol and tobacco usage are unavailable in Zimbabwe, given the virtually complete collapse of its economy, particularly the health infrastructure. In April 2009, having adopted the South African Rand (ZAR) and the United States Dollar (US\$) as legal tender, shops became filled with food, utensils, clothes, and other commodities. The average man in the street, however, complained that although things were better, the lack of sufficient funds precluded the purchase of sufficient food. The street exchange rate of 9 ZAR for 1 US\$ in the shops meant that the value of US\$ spending went further, although the public were wary of spending due to the lack of change in shops. Another worry was the influx of forged US\$ notes [25]. Personal observations following a visit there revealed that the shops were full of food and alcohol. It was interesting to note that the local lagers were still being manufactured, e.g. *Lion* and *Castle*.

**Units of alcohol and alcohol dependence.** One unit of alcohol is defined as 10 mL or ca. 8 g of ethanol (ethyl alcohol). A half pint of ordinary beer (4%) (284 mL) contains about 1 unit of alcohol, as does a small glass (125 mL) of 8% wine. Generally, the number of units of alcohol can be calculated by multiplying the volume of the drink (mL) by its percentage alcohol rating, and dividing by 1,000. As the volume of alcoholic drinks is becoming increasingly shown in centiliters, discerning the number of units in a drink can be as simple as multiplying volume by percentage (converted into a fraction of 1). The problem drinker is one who causes or experiences physical, psychological and/or social harm from drinking alcohol. Heavy drinkers are those who drink significantly more in terms of quantity and/or frequency than is safe. Binge drinkers drink excessively in short bouts, usually 24-48 hours, separately by extensive periods of abstinence. Alcohol dependence is a physical dependence on or addiction to alcohol [26].

**HIV, screening tests and alcohol usage.** A population-based survey of 9,480 adults revealed that 50% of men, but only 4% of women, had been to a beer hall in the last month. They reported higher levels of sexual behaviour and stronger associations with commercial sex than those who had not been to a beer hall. A recent visit to a beer hall was also associated with HIV infection (men: odds ratio [OR] = 1.9, P < 0.001; women: OR = 1.7, P = 0.001) and with ever having experienced urethral/vaginal discharge or genital sores. Only 225 respondents experienced an HIV revention activity at a beer hall in the last 6 months [27].

Tests were carried out on 105 volunteers who had a mean (s.d.) age of 34.9 (7.3) years. Prevalence of alcohol use was 30.5% (n = 34.95% CI = 21.7 to 39.3). Most of the patients with a CD<sub>4</sub> cell count of less than 200 mm<sup>3</sup> did not use alcohol (p = 0.023) according to the 6 month follow ups. There were no significant mean differences between users and nonusers of alcohol regarding the levels of both plasma viremia and CD<sub>4</sub> cell count. This suggested no relationship between alcohol use in persons with HIV-I infection, and progression of disease to AIDS [28].

The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) was developed for the World Health Organization (WHO) by an international group of substance abuse researchers to detect psychoactive substance use and related problems in primary care patients. This study, partly conducted in Zimbabwe, used a total of 236 volunteer participants who completed test and retest interviews in 9 collaborating sites. Slightly over half of the sample (53.6%) were males. The mean age of the sample was 34 years and had completed, on average, 10 years of education. The average test-retest reliability coefficients (kappas) ranged from a high of 0.90 (consistency of reporting 'ever' use of substance) to a low of 0.58 (regretted what was done under the influence of substance) [29].

**Alcohol use amongst teenagers/young adults in Zimbabwe.** In Zimbabwe, the commonly consumed traditional beers include a 7-day beverage called *doro rematanda*, a by-product of this beer called *muchaiwa*, and a 1-day brewed drink called *chikokiyana* [30]. Mean alcohol concentration in traditional beer was 4.1 g/100mL vs. 2.8 g/100mL in *muchaiwa* and 3.6 g/100mL in *chikokiyana* [30]. African beer consumption was significantly higher in cirrhotic patients than in teetotallers [31]. In three commercially-produced beers, the mean alcohol concentration was 3.5 (opaque beer), 4.7 (*Zambezi*) and 5.0 (*Castle Lager*) g/100mL. Alcohol consumption is more directly related to social pathology [32]. Amongst males, a drinker would consume an average of 10 or more units of alcohol [33].

By the age of 13, males were more likely to have experimented with alcohol and cigarette usage [34]. One study showed that subjects in their lifetime would consume >1,000L of traditional beer, with possible implications of iron overload [35]. A study on adolescent drug use assessed by teachers showed that alcohol use was the most serious drug problem [36]. The study was extended to alcohol use amongst secondary school teachers where beer drinking was found to be high among men, potentiating negative influences on the habits of students [37]. An earlier study on rural secondary pupils indicated that alcohol was the most commonly consumed substance (34.9%, n=1000) [38].

A time-line study of secondary school pupils in 1990 (n=2581) and 1994 (n=3061) showed that drug use was highest among students of private schools; the use of alcohol (and tobacco) increased with increasing socio-economic status; an increase in life-time alcohol prevalence amongst rural students; and an increased frequency of alcohol (and cannabis) use among boys [39]. In a study of 2,783 students, alcohol consumption was more common amongst urban dwellers, particularly in private schools, suggestive of a greater western influence [40]. Drug use increased with age, particularly in urban schools, and involved both sexes [41]. A questionnaire assessment on 285 secondary school pupils showed that 17%

had used alcohol during the week prior to completing the questionnaire [42]. Approximately 34% stated they would use alcohol in the next year, and 17% reported that their parents would approve their partaking of alcohol [42]. An interesting study on cultural orientation investigation using determination of language, mass media and music preferences, revealed two distinct factors of Western and Zimbabwean orientation, the latter being associated with a lower use of alcohol [37]. Other surveys determined that male students set significantly higher levels of alcohol consumption [43] than females, both of which stated inappropriate reasons for alcohol use [44]. A study of 194 psychiatric patients aged 16-55 yr in Harare Central Hospital revealed a 28.4% incidence of alcohol abuse [45].

**Tobacco use among teenagers/young adults in Zimbabwe.** Tobacco production following farm invasions and a poorly-functioning Ministry of Health are likely to have adverse effects on cigarette availability in Zimbabwe and the export of tobacco [46]. A study of the incidence of lip cancer was presented in 14 cases in Zimbabwe with a 42.9% admittance rate of smoking (and alcohol consumption) among the patients [47]. Examination of the clinical records of 428 patients with oral malignant neoplasms showed that 45% of the patients admitted tobacco (and alcohol) consumption, of whom 95% were males [48]. In men, the risk of tobacco-associated incidence of oesophageal cancer rose 5.7 times among smokers of  $\geq 15$  g/day, and in women 4.0 times vs. those who never smoked [49]. It was not clear, however, if there was any delineation of age. Maternal biomass smoke exposure may also have adverse effects resulting in reduced birth weights [50]. Many current smokers want to give up the habit; however, very few are able to attend a cessation programme [51]. Most young people recall being taught about the dangers of smoking in school, but advertising ensured they became addicted. There is insufficient anti-tobacco advertising [51]. Rural secondary school pupils showed an 18.5% prevalence rate of tobacco usage ( $n=1000$ ) [38]. In a study of 285 students, 8% had used tobacco in the previous week, 16% said they would use tobacco during the following year, and with the parental approval of 13.6% [42]. Zimbabwean women have a higher prevalence of hypertension, even in the absence of tobacco usage [52]. Psychiatric admissions revealed a 27.6% prevalence of tobacco abuse ( $n=194$ ) [45].

**Consequences, treatment and preventative medicine.** One study assessed and emphasised the importance of drug awareness promotion among student nurses in rural secondary schools [53]. Drug use and abuse materials focused on short- and long-term effects; social influences of acquisition, maintenance and cessation; and social pressure resistance training via problem-solving and decision-making [53]. Students in schools should be educated about the cancer risks inherent with chronic cigarette smoking. For example, in men, tobacco smoking is associated with increased risks of lung cancer (OR, 5.2) and oesophageal cancer (OR 5.6) in the highest consumption category of 15g tobacco/day vs. non-smokers [54]. Smoking has been shown to have significant current and future health risks for Africans and interacts with other environmental factors, such as tuberculosis and workplace pollutants, e.g. vanadium pentoxide [55], to increased rates of cancer and other diseases which result in strains on health services [56]. In Africa, bladder cancer, myocardial

infarction and chronic bronchitis are also attributable to smoking [1]. Alcohol consumption may be associated with a significant risk factor in alcohol consumption, although a modified diet to include less-refined cereal products and higher intakes of vegetables and fruit reduces chances [57]. Long-term alcohol consumption predisposes the development of gout, dilated cardiomyopathy, epilepsy, hypertension [58], and elevated blood pressure [59]. Alcohol consumption and STD risk come in tandem [60]. High stress levels and associated increases in alcohol consumption in developing countries [61], in conjunction with the bad economical situations in Zimbabwe, mean that it is hard to initiate recovery programmes. It has been suggested that national and local governments, international bodies, non-government organisations, and global marketing companies should create a greater public awareness of the Alcohol and Tobacco Use Working Group 2002 [29]. The reality, however, is that such policies require substantial funding, much of which is unavailable. Religious teaching advocates the removal or limitation of consumption. More restrictive norms in Spirit-type churches on alcohol consumption significantly reduce the mortality rate [62]. A study conducted on counselling in young adults revealed that alcohol and drugs were rarely discussed [63].

**Christian counselling – Word and Scriptural Therapy.** The following section does not advocate a method nor discount other religious interventions. It is therefore not meant to be a source of religious contention, but rather one method that patients prefer by choice for their therapy.

Discussions with administrators on four pastoral websites, 17 active Christian leaders and/or pastors, two Catholic chaplains, and one Church of England chaplain, revealed scriptures from both the Old and New Testaments that could be used by the Christian nurse when ministering to or counselling the patient.

It was pointed out that although teenagers may not always want to listen, one should tell them anyway, and then leave for God to work in their hearts. Clearly, the need for prayer prior to the session is essential. One pastor suggested the use of a statement inspired by Bishop Hugh Latimer [c. 1485-1555] speaking to Bishop Nicholas Ridley [c. 1500-1555]):

May we by God's Grace burn for Christ and be such a light in the places God has placed us, that God would be glorified and the flames of His Spirit never be put out [64].

One argument that may be put forward is that God created the molecules in alcohol and tobacco, and therefore there is nothing inherently wrong with partaking of them. There is, however, more to it than that, as emphasised by another Christian leader who alliterated that alcohol and tobacco consumption, and eating, are not inherently "wrong" in themselves. It is, however, their mastery / control / overwhelmingness which are wrong, as it sets itself up in place of the One who alone should control and motivate our lives. A Catholic chaplain suggested that Christian ideas about respect for the human person, and therefore the human body, particularly avoiding abuse thereof should be mentioned.

An e-mail discussion with a Christian in the USA revealed that he regarded addictions as a complex system of undesirable behaviours that affect people at many levels. We know people seek medication and counselling for combatting addictions, with varying levels of success. God can resolve addictions for

people, if they seek His help. People must have good support systems for quitting and staying free of addictions, and this is integral to the better programmes that deal with addictive behaviours. If an alcoholic or smoker, for instance, is sincere about being free of the habit, that person will often need to change some friends or acquaintances. Being accountable to people who are likewise committed to a good resolution is important. There are many insightful scriptures in Proverbs about the outcomes for fools and their companions; people with addictive issues are certainly being fooled in some areas of their lives. Facing up to root causes of particular behaviours (e.g. peer pressure, dealing with stress, loneliness, guilt, etc.) is usually therapeutic, and can help with the prognosis for resolving or managing the issue. God heals both instantly, and by degree over the course of time, and having a 'Word therapy' programme is vital, provided the individual is willing to consider God's authority, ability and willingness to make them whole, from the inside out.

The case might be made for Jesus drinking a little, socially, as a 'friend of sinners', and perhaps at the wedding in Cana where He caused the water to become wine. But the Gospels and the New Testament do not insinuate that He was never drunk, and we do not see Paul advising Timothy to drink a lot of wine "for his stomach's sake" for frequent gut ailments. In *Ephesians 5:18*, we are told not to be drunk with wine, but to be filled with the Spirit. There are also similarities between drunkenness and using drugs (controlled, or outright illegal), with the outcomes of impaired judgment, wasted time, opportunities and resources. Nicotine is no less a waster, in that it is more widespread. *Isaiah 5:11* warns about staying up late at night and drinking a surfeit of wine. *Proverbs 23: 29-32* warns us not to be deceived by the short-term desires of alcohol, as later it has very harmful effects on our bodies. The spiritual component of addiction and with replacing old patterns of thoughts and behaviour with God's prescriptions can be derived from *2 Corinthians 2:3-5* and *Philippians 4:6-8*. Recommendations were also made to a person seeking deliverance from an addiction via fasting from some or all foods, for periods of time, in coordination with Word therapy and prayer (*Matthew 6:17* and *Acts 13*). There is more to be found about fasting in the Old Testament, where the benefits are either implied or expressly stated. Willpower, or the resolve to, is best developed over time, where a modest goal of, perhaps, one day without food or drinks other than water, can be attempted. Fasting may need to be cleared with a doctor, depending on the person's overall condition and medication regimen that might exist.

One book lent to me discusses the art of soul winning, embedded in which are numerous references to Scripture [66]. One must have concern for the unsaved and for those suffering from self-abuse. Certainly, if the person is feeling guilty and wants in his/her heart to repent and embark on an effective recovery programme, it is the job of the Christian nurse counsellor to be well versed in Scripture; to ask Jesus to deal with difficulties which hinder them; and to engage in prayer and faith that God will cure the most difficult of cases.

**Other methods of counselling, success rates and motivation of nurses.** Organisations like *Toc-Hand Alcoholics Anonymous* (AA) have also contributed to treating alcohol and tobacco use and abuse. However, their organisations are

found operating as evening meetings in cities rather than in rural areas where the need is probably greater. Most patients diagnosed with alcohol or tobacco use problems in Zimbabwean outpatient hospital are referred to these two organisations. Indeed, AA has a non-specific promotion of belief in a higher power and its emphasis on the group process, i.e. twelve step / 'person centred' approach. Other methods include a non-spiritual approach that emphasizes the individual's capability to find a personal pathway to sobriety, exemplified by *Rational Recovery* [67]. There is also a faith-based method, built on a religious understanding of alcoholism, of which *Celebrate Recovery* is a prominent example, based upon Christianity [67]. Most communities offer a variety of approaches, therefore clinicians who are aware of these differences are in a good position to help patients make intelligent choices among the competing recovery philosophies.

Medication has shown limited efficacy and consistency in the treatment of drug addiction, including alcoholism and tobacco usage [68]. The neurochemical systems can be significantly altered by repeated exposure to drugs of abuse. Such long-term molecular and neurochemical changes might, in turn, explain the compulsive seeking and taking of the drug, as well as the risk of relapse [68].

Nurses need a team approach that revises their understanding of alcohol and tobacco dependency and the methods used to treat it. This, however, also depends on the economic situation, one's livelihood and nutritional status. The sad state of affairs in Zimbabwe may adversely affect a nurse's motivation and even ability to get to work on time. It is also sometimes difficult for nurses to be motivated to act because of fairly high figures - 63% in previous studies - of the participants open for counselling who were not yet ready to change their habits, and 62% not yet ready to seek profession help [69]. This presents an opportunity for addiction counsellors, hospital physicians or nurses to actively offer counselling [69]. Indeed, nurses estimated their alcohol-related competence as lower than working with many other health-related lifestyles, due to a lack of practical skills, lack of training in suitable intervention techniques, and unsupportive working environments [70]. A competent manager should certainly consider all these elements when planning secondary alcohol prevention programmes in primary health care.

## CONCLUSION

Given the worrying developments globally, fuelled by media and films, of an advanced lifestyle surrounded by alcohol and tobacco usage, it is essential that, given resources, health ministries should work to prevent the scourge at an early age in schools. One-off education sessions on the dangers of alcohol and tobacco are not enough. Follow-up sessions are essential, at least once a year, and although teenagers might ignore the advice, at least the seed will have been planted, so to speak. If abuse has already been detected, then behavioural, non-pharmacological treatment interventions and culturally-based counselling, including Christian counselling, will go a long way in the recovery process.

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## CONFLICT OF INTEREST

None recorded.

## REFERENCES

- Taha A, Ball K: Smoking in Africa: the coming epidemic. *World Smoking Health* 1982, **7**(2), 25-30.
- Cooper RG, Khan S: Alcohol consumption and tobacco smoking by South Asians in India and Britain. *Pak J Med Res* 2007, **46**(3), 78-87.
- Cooper RG, Osim E, Musabayane CT: The effects of simultaneous administration of ethanol and chloroquine on renal function. *Proceedings of the 1997 Annual Med Res Day* 1997a, Harare, Zimbabwe, 25 October 1997.
- Cooper RG, Osim E, Musabayane CT, Forsling ML, Balment RJ: Ethanol inhibits the chloroquine-induced natriuresis in the anaesthetised rat by increasing plasma aldosterone concentration. *Proceedings of the 1997 Annual Med Res Day* 1997b, Harare, Zimbabwe, 25 October 1997, 15-16.
- Cooper RG, Musabayane CT: The acute effects of combined chloroquine and ethanol on renal electrolyte handling. *Proceedings of the 2nd Int MIM African Malaria Conf* 1999, Durban, South Africa, 14-19 March 1999, C-42 - C-43.
- Cooper RG, Musabayane CT: Effects of ethanol on plasma chloroquine, arginine vasopressin (AVP) concentrations and renal hydro-electrolyte handling in the rat. *Renal Failure* 2000, **22**(6), 785-798.
- Musabayane CT, Cooper RG, Mungeri O, Osim E, Balment RJ: Renal electrolyte and fluid handling in the rat following acute chloroquine and/or ethanol administration. *Proceedings of the 27th Annual Congr of the Physiol Soc of S Africa* 1999, Stellenbosch, South Africa, 69.
- Musabayane CT, Cooper RG, Osim E, Balment RJ: Renal electrolyte and fluid handling in the rat following chloroquine and/or ethanol administration. *Gen Pharmacol: The Vascular System* 2000a, **34**(1), 43-51.
- Musabayane CT, Cooper RG, Prasada Rao PVV, Balment RJ: Effects of ethanol on the changes in renal fluid and electrolyte handling and kidney morphology induced by long-term chloroquine administration to rats. *Alcohol* 2006b, **22**(3), 129-138.
- Prasada Rao PVV, Cooper RG, Musabayane CT: Histopathological changes in kidneys of rats exposed to chloroquine and ethanol in combination. *Proceedings of the 2nd Int MIM Afr Malaria Conf* 1999, Durban, South Africa, 14-19 March 1999, C-140 - C-141.
- Cooper RG: The effect of tobacco smoking on renal function. *Ind J Med Res* 2006, **124**, 261-268.
- Cooper RG: Renal function in male Sprague-Dawley rats concurrently exposed to long-term nicotine (3-(1-Methyl-2-Pyrrolidinyl)Pyridine) and Methylated Spirits (Methyl Alcohol). *Ren Fail* 2008, **30**, 107-114.
- Cooper RG: Renal function in male rats concurrently exposed to nicotine & ethanol. *Ind J Med Res* 2007a, **125**, 791-793.
- Alalami U, Cooper RG: Promotion of healthy living in the West Midlands. *Proceedings of the 3rd Annual Faculty Res Conf* 2007, Sharing Research: a Faculty wide perspective, 23 November 2007, Birmingham City University, Birmingham, UK, 38.
- Cooper RG: Healthy meat eating? *Proceedings of the 3rd Annual Faculty Res Conf* 2007b, Sharing Research: a Faculty wide perspective, 23 November 2007, Birmingham City University, Birmingham, UK, 45.
- Muula AS, Mpabulungi L: Cigarette smoking prevalence among school-going adolescents in two African capital cities: Kampala Uganda and Lilongwe Malawi. *Afr Health Sci* 2007, **7**(1), 45-49.
- Ogwell AEO, Aström, Haugejorden O: Socio-demographic factors of pupils who use tobacco in randomly-selected primary schools in Nairobi Province, Kenya. *East Afr Med J* 2003, **80**(5), 235-241.
- Abiona TC, Aloba OO, Fatoye FO: Pattern of alcohol consumption among commercial road transport workers in a semi-urban community in South Western Nigeria. *East Afr Med J* 2006, **83**(9), 494-499.
- Stalcup SA, Christian D, Stalcup J, Brown M, Galloway GP: A treatment model for craving identification and management. *J Psychoact Drugs* 2006, **38**(2), 189-202.
- Christen AG, Christen JA: The female smoker: from addiction to recovery. *Am J Med Sci* 2003, **326**(4), 231-234.
- Teusch R: Substance abuse as a symptom of childhood sexual abuse. *Psychiat Serv* 2001, **52**(11), 1530-1532.
- Stewart ME: Adolescents in a therapeutic community: treatment implications for teen survivors of traumatic experiences. *J Psychoact Drugs* 1994, **26**(4), 409-419.
- Snow D, Anderson C: Exploring the factors influencing relapse and recovery among drug and alcohol addicted women. *J Psychosoc Nurs Mental Health Serv* 2000, **38**(7), 8-19.
- Long W, Vaughn C: "I've had too much done to my heart": the dilemma of addiction and recovery as seen through seven youngsters' lives. *J Drug Educ* 1999, **29**(4), 309-322.
- Cooper RG: *The Flame Lily Weeps*. Pneuma Springs Publishing, Dartford (Kent), UK, 124.
- White P, Clare AW: Psychological Medicine. In: P. Kumar and M. Clark (eds.), *Clinical Medicine* (6<sup>th</sup> edn), Elsevier Saunders, London 2005, 1273-1314.
- Lewis JJ, Garnett GP, Mhlanga S, Nyamukapa CA, Donnelly CA, Gregson S: Beer halls as a focus for HIV prevention activities in rural Zimbabwe. *Sex Transm Dis* 2005, **32**(6), 364-369.
- Chandiwana SK, Sebit MB, Latif AS, Gomo E, Acuda SW, Makoni F, Vushe J: Alcohol consumption in HIV-I infected persons: a study of immunological markers. *Cent Afr J Med* 1999, **45**(11), 303-308.
- WHO ASSIST Working Group: The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) development, reliability and feasibility. *Addiction* 2002, **97**(9), 1183-1194.
- Saungweme T, Khumalo H, Mvundura E, Moyo VM, Gordeuk VR, Rouault TA, Gomo ZA, Gangaidzo IT: Iron and alcohol content of traditional beers in rural Zimbabwe. *Cent Afr J Med* 1999, **45**(6), 136-140.
- Wicks AC, Thomas GE, Clain DJ, Loon N, Seggie J, Bramston B: Cirrhosis of the liver in Rhodesian Blacks. *S Afr Med J* 1977, **51**(25), 911-914.
- Bah SM: Social pathologies in Zimbabwe. *Cent Afr J Med* 1993, **39**(10), 201-203.
- Chinyadza E, Moyo IM, Katsumbe TM, Chisvo D, Mahari M, Cook DE, Mbengeranwa OL: Alcohol problems among patients attending five primary health care clinics in Harare city. *Cent Afr J Med* 1993, **39**(2), 26-32.
- Gwede CK, McDermott RJ, Westhoff WW, Mushore M, Mushore T, Chitsika E, Majange CS, Chauke P: Health risk behaviour of rural secondary school students in Zimbabwe. *Health Educ Behav* 2001, **28**(5), 608-623.
- Moyo VM, Gangaidzo IT, Gomo ZA, Khumalo H, Saungweme T, Kiire CE, Rouault T, Gordeuk VR: Traditional beer consumption and the iron status of spouse pairs from a rural community in Zimbabwe. *Blood* 1997, **89**(6), 2159-2166.
- Eide AH, Butau T, Acuda SW: Adolescent drug use in Zimbabwe assessed by their teachers. *Cent Afr J Med* 1999a, **45**(4), 80-85.
- Eide AH, Butau T, Acuda SW: Use of alcohol and tobacco among secondary school teachers in Zimbabwe. *Cent Afr J Med* 1996b, **45**(3), 60-64.
- Khan N, Arnott R: Substance use among rural secondary schools in Zimbabwe: patterns and prevalence. *Cent Afr J Med* 1996, **42**(8), 223-229.
- Eide AH, Acuda SW: Adolescents' drug use in Zimbabwe-comparing two recent studies. *Cent Afr J Med* 1996, **42**(5), 128-135.
- Eide AH, Acuda SW: Drug use among secondary school students in Zimbabwe. *Addiction* 1995, **90**(11), 1517-1527.
- Acuda SW, Eide AH: Epidemiological study of drug use in urban and rural secondary schools in Zimbabwe. *Cent Afr J Med* 1994, **40**(8), 207-212.
- Munodawafa D, Marty PJ, Gwede C: Drug use anticipated parental reaction among rural school pupils in Zimbabwe. *J School Health* 1992, **62**(10), 471-474.
- McMaster J, Kageler EK, Williams HA: Definitions of normal alcohol consumption held by male University of Zimbabwe senior year medical students. *Cent Afr J Med* 1990, **36**(12), 308-311.
- McMaster J, Keshav C: Perceptions of normal alcohol use held by Zimbabwean high school students. *Cent Afr J Med* 1994, **40**(4), 88-94.
- Acuda SW, Sebit MB: Prevalence of psychoactive substance use among psychiatric in-patients in Harare, Zimbabwe. *Cent Afr J Med* 1997, **43**(8), 226-229.

46. Woelk G, Mtisi S, Vaughan JP: Prospects for tobacco control in Zimbabwe: a historical perspective. *Health Policy* 2001, **57**(3), 179-192.
47. Chidzonga MM: Lip cancer in Zimbabwe. Report of 14 cases. *Int J Oral Max Surg* 2005, **34**(2), 149-151.
48. Chidzonga MM: Oral malignant neoplasia: a survey of 428 cases in two Zimbabwean hospitals. *Oral Oncol* 2006, **42**(2), 177-183.
49. Vizcaíno AP, Parkin DM, Skinner ME: Risk factors associated with oesophageal cancer in Bulawayo, Zimbabwe. *Brit J Cancer* 1995, **72**(3), 769-773.
50. Mishra V, Dai X, Smith KR, Mika L: Maternal exposure to biomass smoke and reduced birth weight in Zimbabwe. *Ann Epidemiol* 2004, **14**(10), 740-747.
51. Warren CW, Riley L, Asma S, Eriksen MP, Green L, Blanton C, Loo C, Batchelor S, Yach D: Tobacco use by youth: a surveillance report from the Global Youth Tobacco Survey project. *Bull WHO* 2000, **78**(7), 868-876.
52. Mufunda J, Scott LJ, Chifamba J, Matenga J, Sparks B, Cooper R, Sparks H: Correlates of blood pressure in an urban Zimbabwean population and comparison to other populations of African origin. *J Hum Hypertens* 2000, **14**(1), 65-73.
53. Munodawafa D, Marty PJ, Gwede C: Effectiveness of health instruction provided by student nurses in rural secondary schools of Zimbabwe: a feasibility study. *Int J Nurs Stud* 1995, **32**(1), 27-38.
54. Parkin DM, Vizcaíno AP, Skinner ME, Ndhlovu A: Cancer patterns and risk factors in the African population of southwestern Zimbabwe, 1963-1977. *Cancer Epidemiol Biomarker Prev* 1994, **3**(7), 537-547.
55. Cooper RG: Vanadium pentoxide inhalation. *Indian J Occup Environ Med* 2007c, **11**(3), 97-102.
56. Yach D: The impact of smoking in developing countries with special reference to Africa. *Int J of Health Services: planning, administration, evaluation* 1986, **16**(2), 279-292.
57. Walker AR, Adam F, Walker J, Walker BF: Cancer of the oesophagus in Africans in sub-Saharan Africa: any hopes for its control? *Europ J of Cancer Prev: the Off J of the Europ Cancer Prev Org (ECP)* 2002, **11**(5), 413-418.
58. Lutalo SK, Mabonga N: A clinical assessment of the consequences of alcohol consumption in 'communal' drinkers in the Zimbabwean Midlands. *Cent Afr J Med* 1992, **38**(9), 380-384.
59. Bursztyn PG: Alcohol and blood pressure: a social comparison in Zimbabwe. *Postgrad Med J* 1986, **62**(733), 1011-1016.
60. Gwati B, Guli A, Todd CH: Risk factors for sexually transmitted disease amongst men in Harare, Zimbabwe. *Cent Afr J Med* 1995, **41**(6), 179-181.
61. Jernigan DH: The global expansion of alcohol marketing: illustrative case studies and recommendations for action. *J Public Health Pol* 1999, **20**(1), 56-80.
62. Gregson S, Zhuwau T, Anderson RM, Chandiwana SK: Apostles and Zionists: the influence of religion on demographic change in rural Zimbabwe. *Popul Stud* 1999, **53**(2), 179-193.
63. Kim VM, Marangwanda C, Kols A: Quality of counselling of young clients in Zimbabwe. *East Afr Med J* 1997, **74**(8), 514-518.
64. Anonymous. (2008). English Dissenters. Available at: <http://www.exlibris.org/nonconform/engdis/anabaptists.html>. Accessed: 1 February 2008.
65. BibleGateway.com (2008). Gospel Communications. Getting the Word out. Available at: <http://www.biblegateway.com/>. Accessed: 1 February 2008.
66. Sanders JO: *The Divine Art of Soul Winning*. Pickering & Inglis Ltd., London 1971, 96. Brown AE, Whitney SN, Schneider MA, Vega CP: Alcohol recovery and spirituality: strangers, friends, or partners? *South Med J* 2006, **99**(6), 654-657.
67. Brown AE, Whitney SN, Schneider MA, Vega CP: Alcohol recovery and spirituality: strangers, friends, or partners? *South Med J* 2006, **99**(6), 654-657.
68. Heidbreder CA, Hagan JJ: Novel pharmacotherapeutic approaches for the treatment of drug addiction and craving. *Curr Opin Pharmacol* 2005, **5**(1), 107-118.
69. Freyer J, Coder B, Pockrandt C, Hartmann B, Rumpf HJ, John U, Hapke U: [General hospital patients with alcohol problems welcome counselling]. [Article in German]. *Gesundheitswesen* 2006, **68**(7), 429-435.
70. Geirsson M, Bendtsen P, Spak F: Attitudes of Swedish general practitioners and nurses to working with lifestyle change, with special reference to alcohol consumption. *Alcohol Alcoholism* 2005, **40**(5), 388-393.