ABSTRACT

Social exclusion elements (poverty, high unemployment and lack of social contacts) have generally been found to be contributing factors to the increased prominence of home-made alcohol in South African society and in the Mopani District of Limpopo Province in particular. These major elements of exclusion combined create a situation from which it is quite difficult for rural people to escape. Therefore, consumption of alcohol, be it home-made or industry-manufactured, makes a significant contribution to alcohol-related harm globally. Harmful use of alcohol and particularly the under-researched and unrecorded home-made alcohol and its related problems have become one of the major global public health problems. Alcohol consumption has been identified as an important risk factor of chronic disease and injury. Home-made alcohol production and use correlates strongly with the pressures placed upon social capital by rapid modernization and the decline in traditional social relationships and forms of family structure. The socio-economic injustices and the constant weakening of family bonds have created an environment in which temporary escape from the harsh reality of everyday life is often sought through the production of home-made alcohol. The focus of this paper was to explore the rationale towards concoction of harmful substances into home-made alcohol in Mopani District of Limpopo Province. Qualitative, explorative, descriptive and contextual design was ideal and purposive and snowball samplings were used. Data was collected through interviews with brewers and consumers of home-made alcoholic beverages. It was found that foreign substances are put into home-made alcoholic beverages for commercial reasons as a way of dealing with socio-economic exclusion. Due to the high concerns of public health in rural areas because of foreign substances into home-made alcohol, social workers in public health should do awareness campaigns and community education on home-made alcohol.

Key Words: home-made alcohol, unemployment, poverty, social isolation

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INTRODUCTION

The tremendous stress, rejection, fear and frequent bouts of depression that often result from social exclusion are high risk factors for illegal production and selling of home-made alcohol as well as for the development of a substance abuse problem. Many people who struggle with the negative effects of social exclusion turn to home-made alcohol production and commercialization to mitigate the discomfort and sense of helplessness they feel. Social exclusion can cause producers of home-made alcohol to use unorthodox methods which put health hazards to their consumers. Unemployment and low-paying jobs may also influence one to consider home-made alcohol production as an option for income generation. This report has been developed to shed light on the escalating problem of home-made alcohol abuse in Mopani District in particular and the Republic of South Africa in general.

Makhubele (2011) asserts that there is a dearth of research that has explored home-made alcohol misuse and abuse in rural areas of South Africa, particularly in Limpopo Province. In spite of the fact that there is dearth of research conducted on home-made alcohol, alcohol is still a major determinant of premature death. In support of this view, Babor, Caetano, Casswell, et al. (2003) contend that the harmful use of alcohol causes considerable public health problems and is ranked as the fifth leading risk factor in premature death and disability in the world. Alcohol is associated with a wide range of social problems such as unemployment and poverty. It also plays a role in the social disintegration of family and community life, especially in black communities (Gumede, 1995; Parry & Bennett 1998). It has been found that its detrimental effects lead to an estimated 3.8% of all global deaths and 4.6% of global burden of diseases (Blomgren et al., 2004; Herttua et al., 2007; Mohapatra et al., 2010; Rehm et al., 2007). Cook (2007) purports that alcohol is also a problem for the communities in which people live, degrading public health and safety and ultimately lowering their standard of living. Social exclusion degrades people in terms of their socio-economic status or social class. Nonetheless, for a long time, alcohol production and sale, particularly home-made alcohol, has been a major source of revenue to many rural people. Alcoholic beverages are, by any reckoning, an important economically embedded commodity. However, the benefits connected to the production, sale and use of this commodity come at an enormous cost to society.

Background information and problem formulation

The consumption of alcoholic beverages has a very long history in South Africa, dating back to ancient times (Gumede, 1995). Due to the rapid pace of change in the economic and social sphere and prevailing political instability in many African countries, alcohol and other psychoactive substance use and related problems are becoming major public health concerns (WHO/UNDCP, 2003). South Africa has experienced escalating levels of alcohol and other drug (AOD) use during its transition from apartheid to democracy (Burnhams, Myers, & Parry, 2009). Unrecorded alcohol consumption was also found to be considerably higher in developing countries. However, half of all alcohol consumption in Africa, two-thirds in the Indian sub-continent and one-third in Eastern Europe and Latin America remained unrecorded (WHO, 2004). With the exception of Nordic countries and Lithuania (where illegal brewing is identified as a major problem), unrecorded consumption in industrialized countries is comparatively lower and is largely a result of home brewing practices, tourism, and smuggling (WHO, 2004). In contrast, in many developing countries, a large chunk of unrecorded consumption is due to home production, illicit commercial production, and the sale of liquor, resulting in severe or fatal health consequences (WHO, 2004). Similar to the Indian experience, home production and illicit commercial production of alcohol are both a source of livelihood and the primary source for affordable alcohol for self-consumption among the poor in Nepal, Bangladesh, Sri Lanka, Kenya, and Somalia (Assunta, 2002; Sherestha, 1992; WHO, 2004).
Little in terms of alcohol research has been done in rural areas from developing countries hence Mustonen (2007) argues that almost all that is presently known about the relationship between alcohol use and alcohol problems are based on studies conducted in developed countries. Yet, alcohol abuse is considered to be an extremely serious health and social problem in many developing countries. Because traditional alcoholic beverages are locally produced in villages and homes, they are often outside the control of local governments (WHO, 2004). Due to the difficulty in collecting data for a product that is largely illegal, this issue has been largely neglected by the research community (Haworth & Simpson, 2004) and very little published materials exist about these kinds of beverages, prompting WHO (2004) to describe the source of data as almost exclusively grey literature on the internet. Such research work is important because in low-resourced areas, manufactures of home-made alcohol utilise unorthodox and poisonous ingredients to make their brews more intoxicating. Basically in underdeveloped or rural areas, home-made (traditional forms of) alcohol is produced through a simple procedure of fermentation of seeds, grains, fruits, and/or vegetables. These materials are usually poorly monitored for quality and strength, as well as frequently contaminated and toxic (WHO, 2004; Haworth & Simpson, 2004).

Home-brewing of alcohol in rural areas is an alternative to address problems of social exclusion. Lack of income due to underemployed and/or unemployment and poverty may affect socio-economic and health positions directly, hence home-brewing of alcohol to generate income is considered to be the way out. This income generates or creates average living conditions. Average living conditions are an important distal risk determinants for many socio-economic and health positions. Krieger (2001) contends that socio-economic and health positions are multifaceted constructs that include both resource-based and prestige-based measures. Resource-based measures refer to material and social resources and assets, including income, wealth and educational credentials; terms used to describe inadequate resources include “poverty” and “deprivation” whilst prestige-based measures refer to individuals’ rank or status in a social hierarchy, typically evaluated with reference to people’s access to and consumption of goods, services and knowledge, as linked to their occupational prestige, income and educational level. Based on that, production of home-made alcohol addresses in a way, addresses challenges of unemployment, poverty and lack of social contacts. The United Nations has identified two forms of poverty: “human poverty” and “income poverty” (UNDP, 2000). Income poverty refers to deprivation in a single construct — income. While income poverty is only one dimension of poverty, it is undoubtedly a core element. Human poverty, on the other hand, is characterized by impoverishment in multiple dimensions such as health, knowledge, standard of living and participation in society. The World Bank also accepts this view of poverty, which covers not only material deprivation but also low achievement in health and education (World Bank, 2001). It goes without saying that production of home-made alcohol by using unorthodox methods is aimed at bringing an income in spite of the effects it may yield. Moreover, poverty and poor education are considered to be additional factors that contribute to the high levels of production, consumption and availability of alcohol in South Africa (Parry & Bennetts, 1998, 1999) which eventually lead to using unorthodox methods and putting in foreign substances to make the alcohol more intoxicating.

**Aim of the study**

This was the baseline study aimed at exploring and describing precipitating factors for concoctions of harmful substances in home-made alcoholic beverages in rural areas of Mopani District in Limpopo Province, South Africa.

**The objectives of the study**

The objectives of the study were as follows:
To find out the means of survival for rural people in order to address social exclusion (unemployment, poverty and lack of social contacts)

To describe the ingredients in preparation for home-made alcohol beverages,

To explore the motives for home-brewers of alcohol for putting in foreign substances whilst preparing their home-made alcohol,

To increase the collection and sharing of data on home-made alcohol use, alcohol availability and alcohol-related harms in rural areas

**METHOD**

**Research Design and Approach**

The dearth of systematic epidemiological surveys at Limpopo Provincial level makes it difficult to estimate the prevalence and patterns of alcohol consumption and/or misuse at a district and local levels. Given the lack of data on the issue of home-made alcohol use and misuse, the researcher used a qualitative method to explore this largely unstudied area in Mopani District of Limpopo Province. All interviews were conducted by the researcher in Xitsonga. Interviews were conducted face to face in a private room, and lasted for 30 to 90 minutes. All interviews were tape-recorded and transcribed *verbatim*. Participants’ history of alcohol consumption, including homemade consumption, drinking practices, patterns and were explored. A topic guide was used to ensure that themes of interest were covered across all interviews. In order to obtain an understanding from the perspective of the brewers of home-made alcohol beverages, a triangulation was appropriate as explorative, descriptive and contextual design was ideal to provide rich information from participants’ perceptions and experiences within their natural setting without influencing them in any way (Babbie & Mouton, 2001). In other words, it was qualitative in nature, which enabled the researcher to gain a better insight into the production of home-made alcohol and to generate possibilities for future research (Durrheim, 2006; Babbie & Mouton, 2001). Individual interviews were used which De Vos (2002) asserts that they are meant to gain a detailed picture of a participant’s beliefs about, or perceptions or accounts of a particular subject. Contextual design has developed within the information systems design practice of the high technology industry. Contextual design is a popular human-centered design method from the field of information systems design (Beyer & Holtzblatt, 1998). Contextual design practitioners herewith as social science researchers’ conduct focused field observations, validate or adjust their interpretations in discussion with participants (Notess, 2005). According to De Vos (2002) people’s behaviour becomes meaningful and understandable when placed in the context of their lives. Without a context, there is little possibility of exploring the meaning of an experience. Terre Blanche, Kelly and Durrheim (2006) contend that the meaning of creations, words, actions, and experiences can only be ascertained in relation to the context in which they occur. The principle of understanding in context has a strong influence in the development of qualitative methodologies. The rationale for this methodology was also rooted in the attempt to discover valuable, practical and appropriate information regarding the precipitating factors towards production of home-made alcohols from rural areas.

**Population and sampling**

Purposive and snow-ball sampling were used in this study. Discussants and interviewees were selected purposively, while others were recruited through snowball sampling. The rationale for purposeful and snowball samples was to target individuals who could provide information to understand the phenomenon of home-made alcohol production in the context of precipitating factors as well as motives for putting in foreign substances and the types of ingredients put in. According to Neuman (2006), purposive sampling is appropriate to select unique cases that are especially informative. The study population was, therefore, limited to the brewers of home-made alcohol and consumers from rural...
areas in Mopani District of Limpopo Province. Communities which were highlighted as high-risk areas by South African Police Services in Mopani District were involved and people who produced home-made alcohol were involved up until the saturation level has been reached. De Vos (2002) states that snowball is aimed at approaching a single case that is involved in the phenomenon to be investigated in order to gain information on other similar persons. The researcher approached traditional leaders in each community and they referred him to those households which produced and sold home-made alcohol who eventually referred him to other producers. The hope was that each participant would refer the researcher to the one he or she has worked with on production of home-made alcohol or have knowledge about who produces home-made in the community, particularly on issues of precipitating factors and motives for producing home-made alcohol and ingredients used in the preparation of the home-made alcohol. This qualitative study was ultimately concerned with information richness and not representativeness (Julie, Daniels & Adonis, 2004).

Data collection and analysis
Structured individual interviews (face-to-face) were conducted purposefully with selected persons who brewed home-made alcohol and consumers and each referred the researcher to the next brewer of home-made alcohol. This method was selected as it provided an opportunity to minimize variations in the questions posed to the participants and to make sure that all relevant topics are covered (De Vos, 2002). Participants (producers/brewers of home-made alcohol) were visited at their homes and appointments were secured with each one of them. Informed consent of participants was obtained prior to data collection. The consent form explained the purpose and nature of the study, gave assurance of anonymity, confidentiality and the right to withdraw from the study. The aim and objectives of the study were explained and the participants agreed by signing the consent form. Structured individual interviews which had mainly open-ended questions based on the underlying objectives of the study, guided the interview process. The interviews were tape-recorded with the permission of the participants, transcribed and thematically analyzed. For the researcher to verify and maintain accuracy, he was guided by the viewpoint that qualitative data analysis involves bringing order, structure and meaning to the mass of information collected (De Vos, 2002). Data was analyzed thematically. Thematic analysis is a search for themes that emerge as being important to the description of the phenomenon (Daly, Kellehear, & Gliksman, 1997). The process involves the identification of themes through careful reading and re-reading of the data (Rice & Ezzy, 1999). It is a form of pattern recognition within the data, where emerging themes become the categories for analysis.

In support of that, Terre Blanche, Durrheim and Kelly (2006) outline the steps as follows: Step 1 is the familiarization and immersion (getting to know the data and engaging the data from the tape recorder, field notes and interview transcripts). In Step 2 is the inducing themes (working with themes that are easily noticeable). These themes emanate from data relating to the research aim. Step 3 entails coding (breaking up the relevant data in understandable means). Step 4 is elaboration (getting fresh view of the data by exploring themes more closely) and Step 5 is interpretation and checking the data (the researcher provides clarification and assessment of the data). Due to the sensitive nature of the subject, discussants and interviewees were assured that all information provided would be treated confidentially. Therefore, subsequent discussion used pseudonyms to protect their identity. An issue-focused approach was adopted in analyzing the qualitative data. This is an approach that describes what has been learned from all informants about a particular situation (Weiss, 1994). Data were coded according to concepts and categories used in the paper, and from these, excerpt files were compiled that collected material from interviews that dealt with the same issue. Excerpts are presented using the preservationist approach.
(Weiss, 1994); that is, material is presented in the original speech so as to reproduce the words recorded on tape as accurately as possible. Verbatim vernacular words, with English translation in parenthesis, are inserted in places for emphasis.

RESULTS

Since, this study was qualitative and employed purposive and snowball sampling methods. The researcher used structured interview schedule so as to ensure that all topics are covered and to minimize variations. This section gives a description of contributing factors for the prevailing home-brewed alcoholic beverages in Mopani District of Limpopo Province. Presentation of the results and subsequent discussions are based on the following three themes: Socio-economic exclusion (unemployment, poverty and lack of social contacts), description of the ingredients in preparation for the home-made alcoholic products as well as motives for mixing foreign hazardous substances in home-made alcohol beverages and drinking hazardous home-made alcohol beverages.

Social exclusion

Brewers of home-made alcohol unanimously agreed that the social exclusion directly and indirectly pressurize them to find alternatives means of generating income, hence they produce alcohol from home. Understanding the motivations for brewing home-made alcohol using unorthodox methods and constraints presented by socio-economic exclusion, participants had during interviews to advance that:

*Vutomi bya tika. Mintirho ku hava. Mukhalabya a va nyawuli. Ndzi sweka byalwa hikokwalaho ka ku ku fanele ku dyiwa laka kaya literally meaning that life is difficult. I am in an unstable relationship. I brew alcohol at home precisely because food should be provided for here at home.*

Other participants corroborated by saying that:

*Mukhalabya wa la kaya u lovile naswona kwaha ri hava munhu la tirhaka. Hikokwalaho ke, ndzi sweka byalwa leswaku ndzi ta hanyisa vana va mina, va kota no ya exikolweni. This means that the husband is deceased and I am the single parent and there is no one employed here at home. As a result of that I brew alcohol for survival and to be able to send children to school.*

The above assertions are corroborated by Niazi, Zaman and Ikram (2009), Burt, Resnick, and Novick, (1998), West (1997) and Capella and Larner (1999) when they say that poverty is not only a lack of sufficient income or material possessions. It is also a condition in which people lack prestige and have less access to resources.

With regard to the consumers, drinking home-made alcohol is a way of dealing with the effects of socio-economic exclusion. The superficial link commonly drawn is that poor people take refuge in alcohol to alleviate their unendurable suffering. In some circles, drinking is explained as the natural and expected response to poverty and misery. Alcohol is popularly assumed to be a way of temporarily escaping for a short while the harsh realities associated with social exclusion. Some participants echoed that:

*Loko ndzi nwile, ndzi rivala vusiwana — literally meaning that when I am drunk, I forget about my squalor.*

In support of the above assertion, some participants stated that:

*Vutomi bya tika, mintirho ku hava naswona vusiwana byi ti nyike matimba. Loko munhu a nga nwi, u tshamela ku ehleketa ngopfu. Le mabyalweni hi kona vanhu va hungasaku kona, i vile hi kona hi kumaka vanghana vo hungasa na vona. This literally means that life is difficult, there*
are no jobs and poverty is very rife. When one is unemployed, there is a possibility of thinking too much without a practical solution. At the drinking places, that is where people are relaxing and that is where one meets friends to relax with.

Description of the ingredients in preparation of home-made alcohol beverages

Several type of home-made alcohol were discovered and through interviews, description of how they are produced is presented.

*Mporosi (Mqomboti)*

This home-made alcohol is known to be the primeval amongst the communities which produce this alcoholic beverage. In ancient times, basically, people would use sorghum malt, ice cream, milk, sugar, yeast, *chibuku* locally known as *chimbukumbafi* or “shake-shake” and water to brew *Mporosi*. It was unanimously agreed that conventionally sugar and yeast were never used, whereas today some brewers add sugar and yeast. It takes seven days to prepare this home-made alcohol as it is cooked and end-products re-cooked (*ku swekisa*) until the brewer is satisfied that it is ready for consumption. It was used during social and religious occasions and by elders. However, of late, people add more hazardous substances to *Mporosi* such as methylated spirits and cabbat (a substance used to fast-track the ripening of bananas). Discussants and interviewees asserted that the *Mporosi* which is brewed currently is not *makoya* – meaning the original one. *Mporosi* we grew up knowing, is made up of sorghum malt, sugar and water than what is currently mixed into something like ice cream. Almost all brewers of *Mporosi* corroborated this fact that the ingredients of *Mporosi* have tremendously changed due to commercial reasons.

*Ndzi ta ku nyisa*

*Ndzi ta ku nyisa* literally means ‘I will beat you up’. Some other brewers call it *Skopdonorr*. It is brewed through mixing sorghum malt, maize meal, yeast, methylated spirits, brake fluids and battery acid. It takes the same process as *Mporosi* so that it ferments and re-cooks and ferments again until the satisfactory level has been reached. On the seventh day it would be ready for consumption. Corroborating this process, an elderly *Ndzi ta ku nyisa* brewer echoed that she learnt how to brew this home-made alcohol whilst she was with her husband in Rustenburg while he was still working in the mines. It is a dangerous home-brew alcohol as it is not supposed to be drunk by weak and sick people. With this alcohol, one should come having had a good meal, preferably porridge to avoid vomiting and dizziness. Consumers are unable to walk after drinking as they get very weak.

*Xikwembu ndzi teki*

*Xikwembu ndzi teki* which literally meaning ‘God takes me’. It is a mixture of sorghum malt, water, sugar, yeast, water from boiled roots of *jinja* shrub, battery acid, ice cream, king-korn and brake fluids. After having drunk this mixture, one is certain that he or she will die hence the alcohol named ‘God takes me’. Repeatedly echoed by the discussants and interviewees is that it is by the grace of God that after consuming *Xikwembu ndzi teki* the person will survive. The reason is that the person will start vomiting, trembling and unable to walk. It is obvious that the person will wet himself/herself.

Motives for mixing foreign hazardous substances in home-made alcoholic beverages as well as drinking hazardous home-made alcohol beverages

Participants (discussants and interviewees) constantly echoed that the reasons are obvious as they are not working, are living in poverty and with this kind of home-made alcohol products, people come together to relax and establish relationships. They are brewing alcohol so as to keep the fire burning in their households; hence they used whatever will keep customers coming to them. They were asked whether they thought about the effects of such foreign substances as brake fluids and battery acids could do to a human body. Their
response was that customers were not drinking brake fluids or battery acids but home-made alcohol in spite of what the mixtures were.

There are some pressing reasons for customers in rural areas of Mopani District in Limpopo Province to indulge in home-alcohol and these are: availability, accessibility, affordability and acceptability due to socio-cultural and religious connotations to home-made alcohol. The researcher found that in each community he had discussions with brewers and customers, there were no less than 40 households brewing home-made alcohol in spite of the population size of the community. With regard to consumers, their motives of drinking home-made alcohol beverages despite their debilitating effects were: to relieve stress, to pass time, to socialize, to enhance confidence, as a sexual stimulant and addiction and this corroborate findings from Botswana (Pitso, 2007).

**DISCUSSION**

Social exclusion is a worldwide phenomenon, distinctly noticed in developing countries. The interface between social exclusion and alcohol abuse is a complex phenomenon and is affected by many contributing factors. Alcohol has diverse influences on people’s economic status while economic status in turn affects alcohol use in many ways. The impact of alcohol on poverty is more than through just the money spent on it and the converse influence of poverty on alcohol, has far more to it than found in the absurd explanation that heavy consumption is the result of the harshness of poor lives. Samarasinghe (2009) asserts that lack of opportunities, facilities and services contribute to maintaining poverty. A rapid rise in unemployment can be linked to an increase in alcohol abuse (Stuckler, Basu, Suhrcke, Coutts & McKee, 2009). Conversely, over time, excessive alcohol use can lead to the development of social problems including unemployment, lost productivity, and family problems (Leonard & Rothbard, 1999; Booth & Feng, 2002).

The poor often have different lifestyles and different values from those of people not living in poverty. The conditions that poor people often cope with may include: unemployment or off-and-on employment, low-status and low-skill jobs, unstable family and relationships, low involvement in the community, a sense of being isolated from society, low ambition, and feelings of helplessness. Many people living in poverty are divorced, are single parents, or have unhappy marriages. They tend to have higher rates of dropping out of school, arrest, and mental disorders. Because of limited access to health care, they are more likely to suffer from poor physical health than are people considered middle class or above. The relationship between socio-economic exclusion and alcohol use is more complicated. Beyond lack of money, poverty leads to certain attitudes, behaviours, and life conditions. These same attitudes and conditions can contribute to production of home-made alcohol using unorthodox methods by brewers and alcohol misuse and abuse by consumers.

Home-made alcohol production and selling is a strategy to address the prevailing problems of unemployment and poverty. Generating income through selling home-made alcohol is the other major element of present poverty reduction efforts. Samarasinghe (2009) contends that these are mostly entrepreneurial and focused on individuals or small collectives. Many poverty alleviation efforts, such as home brewing, try to get poor people to improve their economic status by increasing their incomes.

Not exclusively in rural areas of Mopani District to Limpopo Province, home brewing of alcohol is a way of fighting social exclusion in spite of the health, social and economic burdens caused by the use of this home-made alcohol.

**Conclusions and recommendations**

The present study gave just a microcosm of the impact of unemployment and poverty as reasons for concoctions of harmful substances in home-made alcohol beverages and the likely alarming home-made alcohol beverages related problems in the country. The broader weakness in poverty reduction plans is lack of a comprehensive model of intervention, or even of
understanding, especially from the standpoint of the poor families and communities. The impact of alcohol, generally and home-made alcohol specifically, on human development is not only on health and economic matters but also on the general wellbeing, including healthy social relationships. Alcohol is a significant contributor to maintaining and worsening economic difficulties and it likely plays a role in generating poverty too. It keeps poor people collectively poor. Given the high unemployment and poverty concerns associated with the production and consumption of home-made alcohols, further knowledge on its mitigating and intervention strategies is required as well as prioritization of research on its links to various disease and socio-economic endpoints.

A multifaceted problem such as alcohol abuse requires a multi-pronged and multi-system approach to intervention (Benegal, 2005). As with most social problems, prevention, detection, and treatment are key areas of intervention in addressing alcohol abuse. There should be a balance amongst preventative, treatment and after-care services, particularly in rural areas. Presently, alcohol policy takes a moral stance rather than a scientific approach towards understanding and dealing with the problem of alcoholism, possibly compounding the problem. A better understanding of the nature, extent, and cause of the problems of unemployment and poverty would help to design policies and interventions that are closer to target in affecting these areas and creating social change. In order to effectively address social problems of unemployment and poverty, public policy must take into account the nature and extent of these problems and the context in which they occur. The present alcohol policy in South Africa seems to be based on an ideological stance rather than a comprehensive understanding of the various dimensions of the problem.

ACKNOWLEDGEMENT

The writing of this article was made possible by funding from NRF for emerging researchers (Thuthuka Funding).

REFERENCES


