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RESEARCH ARTICLE

FACTORS CONTRIBUTING TO DEPENDENCE ON ILLICIT ALCOHOL AMONG RESIDENTS AGED (15-50) YEARS IN SHITOCHI SUB-LOCATION, KENYA: A DESCRIPTIVE CROSS-SECTIONAL STUDY.

Lihavi musindi marjorie¹ and Phelix mulunda nasiombe².

1. Association of Public Health Officers Kenya.
2. Kenya Oral Literature Association.

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Abstract

The harmful use of alcohol is a component cause of more than 200 disease and injury conditions in individuals, most notably alcohol dependence, liver cirrhosis and injuries in the world. The present study aimed to determine the factors which contribute to the dependence on illicit alcohol among the residents of Shitochi sub-location in Kenya. It further intended to establish the association between socio-economic, cultural and psychological factors on dependence of illicit alcohol consumption in the region. A total of 385 participants between the ages of 15-50 were sampled through a stratified random sampling technique and data was collected through questionnaires. Multinomial logistic regression was used as the statistical model in this study. Of all 385 participants, 341(89%) were men and majority were above 40 years of age. 61 (17%) participants admitted that they had increased their alcohol intake in the past year and 146 (43%) stated that their frequency of utilization had decreased. 219 (57%) of the participants had no intention of quitting to drink illicit brew. There was a strong association ($P=0.011$) between affordability, availability and accessibility and dependence of illicit alcohol in the region. Occupation also had a strong association ($P=0.027$) with the dependence of illicit alcohol in the region. Most socio-economic factors were clearly linked to the dependence on illicit brew in the region. It is therefore important for the government to educate the people on the negative impacts of illicit alcohol to their health and general well-being and emphasize that abstinence is the best way to control dependency of illicit brew.

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Background:-

The World Health organization defines unrecorded/illicit alcohol consumption as “alcohol consumption which is not reflected in official statistics on alcohol consumption”.

The harmful use of alcohol is a component cause of more than 200 disease and injury conditions in individuals, most notably alcohol dependence, liver cirrhosis and injuries. Worldwide consumption of alcohol in 2010 was equal to 6.2 liters pure alcohol consumed per person aged 15 years or older, which translates to 13.5 grams of pure alcohol per day. A quarter of this consumption (24.8%) was unrecorded i.e. homemade alcohol illegally produced or sold

outside normal government controls. In 2012, 139 million DALYs (disability-adjusted life years) or 5.1% of global burden of disease were attributed to alcohol consumption (WHO, 2014).

During November 24–27, 2012, the Arizona Department of Health Services (ADHS) was notified that eight male inmates of prison A, a maximum security prison, had been hospitalized for treatment of an acute neurologic condition suspected to be botulism. All eight patients reported drinking pruno, an illicitly brewed alcoholic beverage that has been associated with botulism outbreaks in prisons. (CDC, 2012).

By late adolescence, 78.2% of US adolescents had consumed alcohol, 47.1% had reached regular drinking levels defined by at least 12 drinks within a given year, and 15.1% met criteria for lifetime abuse. The opportunity to use illicit drugs was reported by 81.4% of the oldest adolescents, drug use by 42.5%, and drug abuse by 16.4%. The median age at onset was 14 years for alcohol abuse with or without dependence, 14 years for drug abuse with dependence, and 15 years for drug abuse without dependence (Joel et al, 2012).

In December 2011, media outlets around the globe reported the shocking news that over 150 people had died in West Bengal, India, from toxic alcohol poisoning. According to most accounts, these deaths were related to the consumption of illegally produced alcohol. Tragedies like this one raise awareness in the public health community about the production and consumption of beverages that do not undergo quality controls. There are two major drivers of the informal beverage alcohol market which include culture and price (Guillermo Cantor, 2018).

A study conducted by ICAP indicated that majority of alcoholic drinks produced and traded around the world today are from domestic manufacturers whether legal or illegal. The top ten multinational producers of beer, wine and spirits accounts for a surprisingly small fraction of the alcohol produced worldwide. In some areas, especially in low and middle income economies, it may account for more than half of the total alcohol consumed but varies widely from community to community (Simpson and Botha, 2009).

There are a number of pathways related to alcohol quality that may lead to acute or chronic health problems. The following constituents and contaminants of alcoholic beverages were identified as likely contributors to these problems: toxic metals (e.g. lead) from contaminated water sources or unsuitable distillation equipment; volatile constituents, such as acetaldehyde or higher alcohols, which may be produced in significant amounts due to faults in production technology or microbiological spoilage; ethyl carbamate (urethane), a carcinogenic contaminant with major occurrence in certain fruit and sugarcane spirits; biologically active flavour compounds (e.g. coumarin in cosmetics used as non-beverage alcohol); toxic compounds used to denature alcohol (e.g. methanol or diethyl phthalate). In addition, the often higher ethanol content may have detrimental health effects (Jurgem Et al, 2010)

In Rwanda, the sale of the liquors is a lucrative business which generates a lot of revenue for people dealing in it. A lot of people, who do not understand the health risks of consuming the liquors, keep taking them and that brings a lot of money to the sellers. In addition, the production of such brews is cheap and takes less time to produce. Residents say a 72cl bottle of the banned liquors goes for less than Rwf200 which is far cheaper than the traditional and well-packaged banana beer, which goes for Rwf300 for a bottle of about 33cl (Pierre, 2013).

Mothers of one of the poorest areas in South Africa are drinking to deliberately damage their unborn babies just so that they can claim disability benefit. Life is so tough with unemployment high and crime rampant in South Africa's Eastern Cape that a newborn baby represents a form of income for the mothers. (Crawford, 2013).

An increase in current, binge drinking and hazardous or harmful drinking prevalence was observed from 2005 to 2008 in South Africa. For populations with high rates of hazardous alcohol use, both population-wide measures and individual-based interventions have been shown to have a notable impact on reducing the global burden of alcohol misuse. Most alcohol-related harm is attributable to hazardous/harmful drinkers who make disproportionate use of primary health care systems, but often go undetected and untreated for long periods, even though brief, easily delivered interventions are effective in this group of people (K Peltzer Et al, 2011).

About 85% of alcohol consumption is illicit in Kenya. The drinking feeds social problems, such as violence and poverty, and worse. Deaths and blindness from chang'aa contaminated with methanol or other chemicals are common in Kenya, with dozens, sometimes hundreds, of drinkers dying within a few days (Dixon, 2010).The

consumption of chang'aa tops at 76.7 per cent, wines and spirits 39.5 per cent, bhang 22.9 per cent, heroine 6.1 per cent and cocaine 4.8 percent (NACADA, 2012)

In Shitochi sub-location, illicit alcohol has led to the increased number of school dropouts. This highly affects the level of productivity because there is a higher population of dependent individuals in the region. Family instabilities are also high and husbands fail to fulfill the conjugal rights of their wives. Furthermore, domestic violence is also high in the sub-location and this has been linked to high rates of consumption of illicit brew which contributes to family breakups. The victims also do not have stable jobs to take care of their families but instead strain the financial recourses of the family later in the purchase of illicit brew hence leading to high poverty rates. Individuals have also gone blind and even died due the consumption of poisoned brew. There are women who also drink the illicit brew even when pregnant and these leads to children being born with fetal alcohol syndrome or in most cases both mother and child die due to over bleeding during delivery.

No study has assessed this issue among the people of Shitochi sub-location. The present study aimed to examine the factors that contribute to the dependence of illicit brew among the residents of Shitochi sub-location in Kenya due to its high negative effects to the population.

Objectives:-

The present study intended to identify the factors that contribute to the dependence on illicit alcohol among the residents of Shitochi sub-location, Kenya.

Methods:-

Design and Setting:-

Participants of the study were individuals who drunk the illicit alcohol aged between 15-50 years since they are the group that abuses illicit alcohol in the region more than the rest as stated by the chief of the area. The study employed a quantitative, cross-sectional study design since the observations were made at a point in time and descriptive data collected by use of structured questionnaires.

Sampling:-

Since this population was more than 10000, the sample size was calculated using the first part of the Fisher's (1978) formulae for sample size determination as shown below;

$N = Z^2 (p) (q) \div d^2$ Calculated as:

$$\text{Calculated as: } n = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} = 384.16$$

Therefore the sample size that was used in the present study was 385 residents. Participants were selected using stratified random sampling technique and all participants who did not consent to participate were all excluded.

Research Instrument:-

A pilot study was conducted at Khalaba village where the questionnaire was pretested. Thirty nine (39) residents between the ages of 15-50 who were willing to participate were involved in the pilot study. The main objective of the pilot study was to evaluate the feasibility, time, cost adverse events and reliability and validity of the data collection tool. This enabled the improvement upon the study design and data collection tools prior to performance of the full scale research project. The pretest also assessed whether the questions were clear and could be understood by the participants.

Data collection technique:-

A self-administered questionnaire with close ended questions was issued to all subjects with the subjects being allowed to exercise an informed consent before responding to questions in the questionnaire. Observations were also made during the study. Each questionnaire was filled within 10 and 15 minutes.

Ethical Aspects:-

Through the department chair of Public Health, a proposal was presented before UEAB Institutional Review Ethics Committee (IREC) which granted ethical approval and permission for this study to proceed. This was done to

Variable	Men/N 341(%)	Women/N 44(%)	Total 385(%)
Age			
Below 20 years	14(4.1)	0(0)	14(3.3)
21-30 years	68(20)	27(61.4)	95(24.7)
31-40 years	126(40)	9(20.5)	125(35.3)
41-50 years	133(49)	8(18.2)	141(36.7)
Marital status			
Single	59(17.3)	18(40.9)	77(20)
Married	244(71.5)	26(59.1)	270(70)
Separated	20(5.9)	0(0)	20(5.3)
Divorced	10(2.9)	0(0)	10(2.7)
Widowed	8(2.3)	0(0)	8(2.0)
Frequency of utilization			
Increased			
About the same	61(17.9)	4(9)	65(17)
Decreased	134(39.3)	20(45.5)	154(40)
	146(42.8)	20(45.5)	166(43)
Education			
Primary	131(38.4)	19(43.2)	150(39)
Secondary	120(35.2)	19(43.2)	139(36)
Diploma/certificate	54(15.8)	4(9.1)	58(15)
University level	36(10.6)	2(4.5)	38(10)
Occupation			
Unemployed	79(23.2)	17(38.6)	96(25)
Self-employed	189(55.4)	15(34.1)	204(53)
Employed (private)	33(9.7)	2(4.5)	35(9)
Employed (government)	40(11.7)	10(22.7)	50(13)
Monthly income			
Less than 3,000	144(42.2)	22(50)	166(43)
3,001-5,000	46(13.5)	7(15.9)	53(14)
5,001-7,500	23(6.7)	4(9.1)	27(7)
7,501-10,000	33(9.7)	2(4.5)	35(9)
More than 10,000	95(27.9)	9(20.5)	104(27)
Reason for use			
Availability	85(24.9)	11(25)	96(25)
Affordability	203(59.5)	24(54.5)	227(59)
Accessibility	53(15.5)	9(2.6)	62(16)
Helps in interaction			
Yes	282(82.7)	34(77.3)	316(82)
No	59(17.3)	10(22.7)	69(18)
It causes addiction			
Yes	264(77.4)	40(90.9)	304(79)
No	77(22.6)	4(9.1)	81(21)
Helps in stress			
Yes	208(61)	35(79.5)	243(63)
No	133(39)	9(20.5)	142(37)
Intention of quitting			
Yes	146(42.8)	20(45.5)	166(43)
No	195(57.2)	24(54.5)	219(57)
Busaa is a traditional drink			
Yes	338(99.1)	43(97.7)	381(99)
No	3(0.9)	1(0.3)	4(1)
Chang'aa is a traditional drink			

Yes	200(58.7)	19(43.2)	354(92)
No	14(41.3)	25(56.8)	31(8)

protect and handle any legal matters that may arise during the study and no harm was done to the subjects. Every participant was allowed to make an informed consent before being involved in the study.

Table No 1:-Title: Demographic characteristics of participants, socio economic, psychological and cultural factors associated with the dependence on illicit alcohol in Shitochi sub-location.

Confidentiality was also highly maintained throughout the process. All personal information obtained from the participants in the study was never revealed in reports and publications. To ensure this, codes were used on questionnaires and participants were not required to reveal their identity.

Statistical Analyses:-

The collected data were coded and analyzed using statistical package for social sciences (SPSS) 20 version. Multinomial regression was used to find possible associations between the variables and a P value of less than 0.05 was considered as a significant level. Frequencies and percentages were also used.

Results:-

The table 1 shows the demographic characteristics of the participant and the socio economic, psychological and cultural factors associated with the dependence of illicit alcohol in Shitochi sub-location. Majority were males at 89% and females at 11%. Respondents between 41-50 years were the most at 37% .70% of the participants were married .In the present study, affordability was the main reason as to why most participants drunk illicit alcohol in the region at 59%.Most participants went to school up to primary level (39%) and are also self-employed(53%) with the highest getting an income of less than 3000 shillings(43%). 79% of the participants agreed that illicit brew was addictive and most of them had no intention of quitting the drink. Most of them also claimed that illicit alcohol helps them cope with stress. The participants also acknowledged to the fact that busaa is a traditional drink and it is the one that is used in large quantities during ceremonies unlike chang'aa whereby only 57% identified it as a traditional drink.

Table No 2:- Title: Hypotheses Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	(Constant)	1.596	.366		4.362	.000
	what is your occupation	-.208	.093	-.259	-2.241	.027
	what is your level of education	.132	.080	.174	1.647	.102
	what is your monthly income	-.009	.049	-.021	-.180	.858
	what made you start using it	.247	.095	.215	2.589	.011
	Unemployment	.168	.163	.102	1.031	.304
	Poverty	-.086	.135	-.058	-.639	.524
	helps me interact	.193	.161	.101	1.200	.232

a. Dependent Variable: frequency of utilization

Affordability, availability, accessibility and occupation predict the dependence on illicit alcohol in the region with P-values less than 0.05.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.891	.321		8.993	.000
	helps me cope with stress	-.027	.120	-.018	-.221	.825
	does illicit brew cause addiction	.178	.140	.098	1.266	.208

	intention of quitting	-.520	.117	-.352	-4.436	.000
a. Dependent Variable: frequency of utilization						
The intention of quitting predicts the dependence on illicit alcohol in Shitochi sub-location since it had a P-value of less than 0.05.						

Discussion:-

In Shitochi sub-location, most of the participants were males at 88.7% compared to females at 11.3% because women were not willing to participate in the study and also women rarely go to the illicit brew dens but drink it at the comfort of their homes. The fact that traditions do not support women drinking could also be the reason as to why they were embarrassed to admit that they drink and thus participate in the study. In addition, the women are the ones who make the illicit brew and sell it to the residents. Most of these women are widowed and explained that they sell the brew to take care of their children.

Under normal circumstances, the males are expected to provide for their families and the fact that most males were found in the dens is an indication that the level of productivity in the region is low because these men waste a lot of time in the dens.

60% of the participants were youths. The married group of people were the most among the participants at 70% compared to the singles, the separated, the widowed and the divorced.

In the past one year, 43% of the participants stated that their frequency of drinking illicit brew had reduced and 40% of the participants said that their levels of dependency have not changed. Only 17% of the participants admitted that their level of dependency had increased. Most of the participants said that their drinking frequency had decreased because of the increasing economic demand. This is ironical because under positive circumstances they could have said that their frequency of drinking had decreased because they saw that illicit brew affects their lives negatively. This shows that the frequency of drinking is determined by how much money one has in that the more he has the more he will abuse illicit brew and the less money one has the less frequent the drinking of illicit brew.

Among the participants, 53% were jua kali industry self-employed. They explained they are self-employed because of lack of employment opportunities. The unemployed participants were 26% of the participants which is also a high percentage and it thus shows how high the dependent population is in the sub-location and the fact that the level of productivity in the region is low.

Most participants only reached primary school. The number of participants reduces as the hierarchy of education increases to university level at only 10%. Over 90% of the participants who said they reached primary school are class 5 and class six dropouts. This is alarming due to the fact that there is free primary education and adult education has been introduced by the government yet most participants did not finish primary school. Over 70% of the participants who reached in secondary school actually dropped out in form two and form three. The results also indicate that most people do not reach tertiary institutions in a time when the government is making efforts to increase the number of tertiary institutions even in rural areas. With a high percentage of illiterate individuals, it means that their understanding on the negative effects of illicit brew is very low and this will be a major challenge during health campaigns.

43% of the participants earn below Ksh 3000. Most of the participants in this category also work in the jua kali industry and the ones who earn more than Ksh10000 have reached tertiary education and also work in gold mines. This indicates that the people who drink illicit brew mainly belong to the lower social status of the society and not the ones who earn more money.

Most participants started using illicit brew because of its affordability while others used it because of its availability and accessibility. Illicit brew was as cheap as 10KSH compared to beer which one needs a lot of money (e.g. Ksh 200 Tusker brand). In addition to affordability illicit brew is also effective since it has a very high alcoholic content and thus the participants did not need to buy a lot of alcohol and stated that they are able to save for food and other personal needs. The fact that most of the participants' monthly income is less than Ksh 3000 also proves that the people of Shitochi sub-location drink illicit brew because of its affordability.

63% of the participants agreed that by drinking illicit brew they are relieved from the stress/depression in that they are able to escape from reality and not worry about their problems. In real sense, no alcohol or drug can relieve one from a stressful situation. The alcohol just does that temporarily, and when one is sober his problems have not gone away. Addiction is a major psychological factor that brings about dependency, over 75% of the participants agreed that drinking of illicit brew causes addiction and thus addiction brings about the dependency of illicit brew in the region. They admitted that since they are addicts, they cannot move on with their daily activities without drinking illicit brew. This explains why over 50% of the participants had no will to quit drinking illicit brew.

The fact that 99% of the participants agreed that busaa is a traditional drink is also an indication that cultural factors can lead to dependency on illicit brew in Shitochi sub-location. The participants also said that no traditional ceremony is done without the presence of busaa and during these ceremonies, licenses are given by the authorities to allow the brewing and drinking of busaa. Busaa is also the drink that is used in large quantities during traditional ceremonies especially commemoration, bull fighting, child naming ceremonies and traditional weddings.

On the other hand, there is uncertainty on whether chang'aa is a traditional drink or not since over 40% of the participants disagreed that it is. This is because chang'aa was introduced into the Luhya community in the early 1940's by the Suba from Sudan and also it is not a must for it to be used during traditional ceremonies and if used it is used in small quantities and through the 'back door'.

Some socio-economic factors like occupation, availability, affordability and accessibility predict the dependence on illicit brew in shitochi sub-location with P values below 0.05 with 0.027 on occupation and a strong association of 0.011 on availability, affordability and accessibility of the illicit brew in the region.

Occupation has a negative association with dependence on illicit brew at -0.208 in that when one is employed the level of illicit brew dependency is low and the dependency increases as the hierarchy of occupation decreases to unemployment.

The intention of quitting though predicted the dependence of illicit brew in Shitochi sub-location because it has a P value of $.000018$ which is a very strong association. The relationship between the intention of quitting and frequency of utilization is a strong negative relationship of -0.520 which means that as an individual's frequency of drinking decreases he/she has an intention of quitting illicit brew but as the frequency of drinking of an individual increases he/she has no will to quit drinking illicit brew.

Conclusion:-

The dependence on illicit brew in a particular locale is due to specific factors within the community. These factors could be socio-economic, psychological or cultural factors. Illicit brew production and consumption has brought about many negative effects to the society at large and thus there is a necessity that the factors be eliminated in order to mitigate its dependence among the people.

According to the findings of the present study, the socio-economic factors like occupation, availability, accessibility and affordability played a major role in the dependence on illicit brew compared to psychological and cultural factors. It is therefore important for the government to educate the people on the negative impacts of illicit alcohol to their health and general well-being by emphasizing that abstinence is the best way to control dependency of illicit brew. The government should also help those addicted to quit drinking through rehabilitation and monitoring. Furthermore, the fact that most of the participants had no intention of quitting to drink the illicit brew, policies should be put in place by the government in order to monitor the production and sale of alcohol in Kenya. The church should also be involved because it has a great influence to the behavior and perceptions of people.

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