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## Prevalence and Magnitude of alcohol-related health problems among youths in disease endemic Bushenyi district, Uganda

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### ABSTRACT

**Background:** Endemicity of Microbial infections remains a dominant public health challenge that impacts regional morbidity and mortality. Elucidating the impact of alcohol-related practices on the induction and progression of health problems may have profound significance in our effort to understand how health problems may be shaped by the social life of individuals per unit time.

**Objective:** The objectives of this study were to determine the prevalence and magnitude of health problems associated with alcohol intake among youth in Bushenyi district, Uganda.

**Materials and methods:** In this descriptive cross-sectional study, 384 youth were selected from the disease-endemic Bushenyi district using a multi-stage systematic random sampling technique. Factors tested included: prevalence of alcohol intake, divorce, violence, occupation, and loss of appetite. The magnitude of problems was tested using workplace problems including health and conflict-related problems in different age groups and gender. Alcohol-related risky behaviors and practices underlying disease distribution were tested to determine their correlation with family conflicts, family neglect, and antisocial behavior.

**Result:** Out of 384 (235 males and 149 females) studied, we report a 53.1% prevalence of alcohol intake among the studied population distributed as follows: 34.6% males and 18.5% females while the recorded 46.9% respondents who did not take alcohol are distributed as follows: 26.6% males and 20.3% females respectively. Identified problems among the youths living in disease endemic Bushenyi district included: 11.6% child abuse, 16.1% divorced, 13.9% involved in youth violence, 16.2% take alcohol because they lost

appetite, 19.1% became alcoholic because they lost their jobs. On the other hand, the magnitude of the problem was reflected by: work (7.8%) and health (9.1%) related problems among those aged 21-26 years. About 40.2% of respondents took beer while 24% took spirit alcohol drinks. Family conflicts, family neglect, and antisocial behavior were significantly correlated with alcohol intake among youths living in disease endemic Bushenyi districts.

**Conclusion:** Alcohol intake is highly prevalent on a colossal scale that correlated ( $p < 0.01, 0.05$ ) with outlined problems. Alcohol intake is a high-risk factor for risky practices and attitudes that encourages rapid spread and sustained endemicity of tropical infections. Advocacy, parental control, and effective policy among other control measures are highly recommended.

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## INTRODUCTION

Alcohol is a colorless, volatile inflammable liquid used as an intoxicant in wine, beer, or methylated spirit, and as a solvent or fuel, produced by fermentation, which converts sugar to ethanol (1). The global estimate of alcohol-associated disorders was about 76.3 million ten years ago, 1.8 million deaths and 4.0% of disability-adjusted life years (2). Drug abuse and alcoholism undermine motivation, interferes with cognitive processes, contribute to mood disorders, and increases the risk of accidental injury or death (3). The abuse of alcohol can lead to addiction, a known recipe for penury and a sure foundation for adolescent antisocial behaviors and alcohol-related health problems (4-5).

In South, East, and West Africa, the prevalence of alcohol abuse ranges between 10%-70%, making it a serious factor influencing the social, economic, cultural, and religious foundations of many African societies (6). Harmful use of alcohol (up to addiction and intoxication) is the third leading contributor to disease burden in many developed and developing countries (7-8). Violence, a decline of relationships, impaired productivity, and absenteeism from official responsibilities, accidents, microbial infections, injuries, delayed-healing wounds due to frequent falls and sustained microbial contamination, drowning, and burns, may be associated with alcohol consumption and addiction (9-10). The volume of alcohol consumed, the rate and volume of occasional drinking, may increase the risk of alcohol-related problems (11).

In the Bushenyi district, the magnitude of the problems associated with increased alcohol intake and baseline/surveillance studies to measure the

dynamics of increased alcohol intake are either highly limited or lacking. Tropical disease transmission dynamics are influenced by the socio-demographic, cultural, and socioeconomic status of the society especially in resource-limited settings (12). Understanding the impact of alcoholism on the induction and progression of health-related problems may highlight how health problems are shaped by the social life of individuals. This study was therefore designed to evaluate the prevalence and magnitude of alcohol-related health problems and their impact on tropical disease epidemic among youths living in disease endemic Bushenyi, Uganda.

## MATERIAL AND METHODS

In this descriptive cross-sectional study, a quantitative survey was done using self-administered, semi-structured, and closed-ended questionnaires to obtain information on demographic, socio-economic, and health-related problems from 384 recruited respondents living in Kakanju, Kyamuhunga, and Nyabubare sub-counties of Bushenyi district Uganda. The 384 (285 males and 149 females) participants included those aged 15- and 29-years old living in the three sub-counties studied and was established using Fisher's formulae,  $[n = Z^2p(100-p)/d^2]$ , where:  $n$  = minimum population;  $z$  = standard normal deviation corresponding to 1.96;  $P$  = Estimated prevalence = 50%,  $d$  = acceptable error limit = 5%. The multistage Random Sampling technique was used to divide the population into clusters (13) by selecting: 3 out of 9 sub-counties, 9 out of 27 parishes, 54 out of 108 villages, and 7 households from each village in Bushenyi district. Standing at a strategic area in the village, a

direction was randomly chosen by spinning a pen and every 3<sup>rd</sup> household where the tip of the pen faces was sampled. If the edge of the village was reached before obtaining the sampled size, the spinning of the pen was continued in all villages until the required sample size was obtained (13). A structured questionnaire was designed and used. Open and closed-ended questions were written in the English language, translated into the local Ruyankole language for those who did not understand the English language. The questionnaires for this study were pre-tested (piloted) in Ishaka Township to further standardize them and to check for completeness. Data were analyzed using SPSS version 16.0 software package; descriptive statistics were used to estimate the socio-demographic data, prevalence, and magnitude of alcohol problems while bivariate analysis obtained from spearman's correlation coefficients ( $\alpha=0.01$  and  $0.05$ ) were used to test for a relationship between alcohol intake and alcohol-related problems since both variables (independent and dependent) were categorical.

Table 1: Socio-demographic data of all 384 sampled respondents

Variables	No n=384	(%)
Sex		
Male	235	(61.2)
Female	149	(38.8)
Age		
15-19	117	(30.6)
20-24	134	(34.8)
25-29	133	(34.6)
Education		
Secondary	67	(19.6)
Tertiary	219	(55.7)
Uneducated	98	(24.7)
Occupation		
Civil Servant	30	(7.8)
Business	30	(7.8)
Student	281	(73.1)
Unemployed	43	(11.2)

The respondents were youth aged between 15 and 29 years, who reside in the Bushenyi district, in schools, or found in households. Those included were aged 15-29 years and were previously diagnosed mentally ill. Those who decline to consent were excluded. The study was approved by the Ethics and Research Committee of Kampala International University. Informed consent to participate in the research was sought and obtained from the participants.

## RESULT

A total of 384 (100%) male and female youths in three sub-counties of the district were sampled in the survey but only 204 (53.1%) respondents, responded positively to have been involved in alcohol consumption. Out of these respondents, males were 133 (34.6%) and females 71 (18.5%) while 180 (46.9%) which had no alcohol were made of 102(26.6%) males and 78 (20.3%) respectively.

Religion	
Catholic	145 (37.8)
Protestant	137 (35.7)
Muslim	24 (6.2)
Others	78 (20.3)
Marital status	
Single	186 (48.2)
Married	124 (32.2)
Widow/widower	15 (3.9)
Separated	39 (10.1)
Cohabiting	19 (5.2)
Age	
15-19	117 (30.6)
20-24	134 (34.8)
25-29	133 (34.6)

**Table 2: Social problems associated with alcohol intake**

Social problems	No (%)
Family conflict	18 (8.8)
Family neglect	17 (8.7)
Child abuse	23 (11.6)
Accidents	16 (7.9)
Divorce	32 (16.1)
Antisocial behavior	19 (9.6)
Violence	28 (13.9)
Sch. problems	16 (8.2)
None	35 (15.2)
Total	204 (100)

Table 1 above shows the demographic characteristics of respondents reported as follows: Gender: 61.2% were Males and 38.8% were females. Age group: 30.6% were 15-19 years old; 34.8% were 20-24 years old and 34.6% were 25-29 years old respectively. Education: 219 (50.7%) had tertiary education, followed by 98 (24.7%) uneducated, and the least was 67 (19.6%) who had secondary education. Occupation: 281 (73.1%) students, followed by 43 (11.2%) unemployed, and the least were 30 (7.8%) of business and civil servant 30 (7.8%). Religion: 145 (37.8%) were Catholics followed by 137 (35.7%) protestants, 24 (6.2%) Muslims, and 78 (20.3%) of others whose religious inclinations could not be identified. Marital status: 186 (48.2%) were single, followed by 124 (32.2%) married, 19 (5.2%) cohabiting (living together without being officially married), 39 (10.1%) were separated and 15 (3.9%) were widows/widowers. Table 2 depicts social problems estimated which revealed that: 8.8% had a family conflict, 22.6% abused children, 16.1% were divorced couple, 9.6% had antisocial behavior, 7.9% had an accident, 13.9% were involved in violence, and 8.2% had school problems. Economic problems were shown by: 19.1% workplace-related problems including loss of jobs and 9.6% who sold properties to meet their respective economic duties.

**Table 3: Health problems associated with increased alcohol intake**

Health problems	No %
Headache	7 (3.2)
* Depression	4 (2.0)
GIT problems	8 (3.8)
Trembling feet	8 (3.8)
Lack of sleep	16 (7.8)
Loss of appetite	34 (16.2)
Hangover	9 (4.2)
None	118 (59.2)

Depression was assessed based on respondent's perception

Health-related problems of consenting respondents were shown by; 3.2% with headache, 2.0% with depression, 3.8% with trembling feet and GIT problems, 7.8% with lack of sleep, 16.2% with a loss of appetite, and 4.0% with the aftermath of accumulated stress Table 3.

**Table 4: Magnitude of age specific alcohol related problems.**

Problems	Age 15-20	Age 21-25	26 – 29 years
Social	25.7%	17.9%	23.0%
Economic	13.8%	6.7%	5.7%
Health	11.7%	5.2%	2.6%

Table 4 above shows the magnitude of problems associated with alcohol intake, as it affects the age of respondents. The recorded 25.7% of respondents aged 15-20 years had the highest prevalence of alcohol-related problems which include social, economic, and health, followed by 23% of those aged 26 years and above. The observed 47.9% of males were the majority among alcohol consumers, who had alcohol-related social and health problems in the last 12 months compared to 31.5% of their female counterparts. We recorded 20% of those who were free from alcohol problems. The magnitude of problems as it affects the educational level of respondents was recorded as follows: 20.1% had tertiary education, followed by 13.9% who had secondary education, 12.6% were uneducated and 10.1% had primary education respectively while 43.3% had no problems and their educational status was not identified. The brand of alcohol

taken by respondents and the percentage of ethanol content were also recorded as follows: 40.2% of respondents preferred Beer, with an ethanol content of 12.8%, followed by 24% of respondents who preferred Spirit with ethanol content per 100mls ranging from 39.1% to 45.4%.

There was a significant correlation ( $p < 0.01$  and  $p < 0.05$ ) between the independent variable (IDV)

## DISCUSSION

Risky behaviors which impact the epidemiology of tropical disease continue to dominate communities of the traditional resource-limited settings. Effective prevention and control of such diseases depend on a clear understanding of factors underlying the distribution of such diseases. This study is about efforts to understand the role of and the extent to which alcoholism impacts the transmission dynamics and the endemicity of tropical infections in a resource-limited setting. Alcoholism influences behavioral changes which underlie actions that encourage disease transmission.

Our observation in this study shows that alcohol intake by respondents was significantly correlated ( $p < 0.01$  and  $0.05$ ) with antisocial behavior, traumatic injury, and associated health problems, including work problems. This alcoholism-related health problem may explain why it makes sense to associate alcohol use in adolescence with lower school enrolment, reduced earning, and heightened job instability when intoxicated users are unable to concentrate on their official duty (14). Thus alcoholism may increase the likelihood that physical health problems are guaranteed if respondents are engaged in risky practices that encourage tropical disease distribution such as sex without disease protective condom or pills, sleeping outside mosquito nets, eating with unwashed hands, drinking untreated water, walking barefooted in a soil-transmitted helminths endemic region and undertaking procedures which may expose respondents to the body fluid of person suffering from communicable disease.

The observed 53.1% is slightly higher than the old report of 52% from women who recently

alcohol intake and the following dependent variables (DV): antisocial behavior, traumatic injury, health problems, and work problems. There was no correlation ( $p > 0.01$  and  $p > 0.05$ ) between alcohol intake and the following dependent variables: family neglect, family conflicts, broken relationships, school problems, and child abuse.

experienced domestic violence, 10% prevalence in Zimbabwe, and higher than India report of 33% (2, 6). In Africa, rapid urbanization together with the disintegration of the traditional and cultural control over people and easy availability coupled with rampant use of drugs without prescription may have contributed to the induction and spread of drug abuse (6). The global burden of disease from alcohol exceeds that of tobacco and is at par with the burden attributed to unsafe sex worldwide (15). Hospital admissions for alcohol problems constituted 10% of all psychiatric admissions in Europe while Studies conducted in Nigeria, South Africa, Uganda, India, and Colombia, showed that a large fraction of reported domestic violence is related to alcohol use by the male partner (2). It is not clear if there are any specific driving factors which determine whether male or female should drink more alcohol as shown in the present study where 61.2% males drank more alcohol than 38.8% females (Table 1). This is because when subjected to the same social, economic, health, or geographical condition the drinking rate may be equal (16). Men are largely expected to drink more than women in a normal traditional African society because they are more exposed to free drinking parties and small talking evening groups of alcohol friends while waiting for women to do the house chores.

Men usually have more alcohol-related problems than females including death, sicknesses, and infections leading to hospitalization (17). While one in every four women was intoxicated after consuming alcohol in this study, one in every two men was intoxicated with alcohol made of blood-alcohol level of 0.08% (18-19). Level of education had no impact ( $p > 0.05$ ) on the level of alcohol intake and associated risky behaviors which

encourage disease transmission as shown in this study where 50.7% of alcoholics had tertiary education. On the other hand, education attainment may be associated ( $p < 0.05$ ) with a multitude of medical conditions, risky health behaviors, and mortality (20). Substance (alcohol) use disorders are more prevalent among those with more truncated education (21-22). While it is difficult to establish criteria or benchmarks for use and non-use of certain alcohol volume and concentration, intoxication and addiction remain the hallmark of hard-to-reverse drinking habits that have defined the platform upon which disease transmission risky behaviors are established.

Catholics (37.8%) drank more than the Protestants (35.7%) made of orthodox and Pentecostal Christians and 6.2% Muslims were intoxicated with alcohol (Table 1). A flagrant disrespect of religious requirements is what was shown by participants because no religion allows the use of alcohol. However, a wider alcohol-drinking margin was expected between Catholics and Protestants because alcohol use/nonuse was one of the reasons why the non-Catholics are called Protestants. Further studies may be needed to delineate the concept of alcohol use/non-use among different religious groups to clearly outline its impacts on behaviors underlying disease transmission in resource-limited settings. Such studies may also wish to show how religious doctrines can assist in shaping the lives of ordinary people.

We also noted that 48.2% of the singles took alcohol more than the 32.2% of the married. Married men are usually breadwinners of the family expected to take care of the nuclear and extended family members with their moderate income which can hardly be enough. Failed attempt to balance huge responsibilities with meager income stimulates the alcohol drinking instinct in most men and those who respond to the alcohol intake instinct expects the resultant intoxication to temporarily release them from family tension (23). The socio-economic situation also influences people's perception and response to tropical diseases either negatively by allowing people to postpone the date of treatment due to poor economy (24) or ignore treatment when

intoxicated by alcohol including engaging in risky practices which helps disease spread (25).

In this study, a 13.9% prevalence of violence was reported (Table 2). Violence may occur as a result of an argument over an irrelevant subject, leading to property vandalism. The consequences of youth violence affect the health and well-being of victims; relationships with family and friends; raising the levels of fear within communities and pressure on health and other public services (8). Alcohol-related violence could result in physical injuries (26). Globally an average of 565 deaths among people aged 10 to 29 years happens through interpersonal violence, with males at greater risk (2). Withdrawal symptoms can develop into aggressive behavior towards family members, friends, or members of the community probably leading to sexual assault (27). Alcohol may also be consumed in preparation for involvement in violence such as fights between gang members erupted after drinking; alcohol was used before fights to build confidence; alcohol use occurred after fights as a seal of gang unity, and alcohol and violence were linked ritually during gang initiation processes (2).

The presence of 16.1% divorced youth population who took alcohol may highlight the fact that emotionally traumatic experiences and adjustments during rehabilitation, which could be social, economic, and sexual may induce the habit of alcohol intake for nonalcoholics and may consolidate the alcohol drinking habit for known alcoholics (Table 2). These alcohol drinking premises if found among married couples may be a strong factor for marriage instability which may invariably be a recipe for divorce, polygamy, multiple sexual partnerships, prostitution, and indirectly encouraging disease transmission.

The prevalence of 11.6% cases of child abuse (Table 2) outlines the presence of children from alcoholic parents known to be exposed to emotional and sexual abuse with whipping as the most common abuse discovered. Children in homes where one or both parents drinks alcohol are likely liable to physical and psychological abuse, such as battering, sexual abuse, abandonment, varying emotional torture, and lack of affection. When parental judgment is impaired

under the influence of alcohol, it will influence the physical and psychological development of a growing child. Child abuse including sexual abuse encourages disease transmission.

This report of 7.9% accidents among studied alcohol users (Table 2) agrees with the known report that alcohol consumers are prone to different types of accidents, including road traffic accident (vehicles, bicycles, and pedestrians), falls, fires, injuries related to sports and recreational activities, self-inflicted injuries or injuries resulting from interpersonal violence. Alcohol abuse contributes to motor vehicle accidents, unquantified disability and deaths in Uganda, and juvenile delinquencies generally. Episodic drinking is common with truck/taxi drivers, drinking habits that encourage high-risk behaviors enhancing disease transmission.

School or academic problems were 8.2% prevalent among the studied population who consumed alcohol (Table 2). Alcoholism and drug use interfere with: the cognitive capacity of the youths, educational attainment and increases school attendance, population which possibly terminates their study before graduation and increases truancy which is "one of the early warning signs that youth are headed for substance abuse, potential delinquent activity, and social isolation and/or educational failure" (4, 28-30). Alcohol-induced adolescent learning impairments could affect academics and occupation (31). Exposing the brain to alcohol during this period may interrupt key processes of brain development, possibly leading to mild cognitive impairment as well as to further escalation of drinking which exposes participants to risk of infection in disease-endemic regions (32). L66y

The observed 8.8% prevalence of family conflicts (Table 2) among the respondents who took alcohol supports the fact that conflicts and alcohol use have a significant ( $p < 0.05$ ) relationship. On the other hand, the recorded 8.5% prevalence of family neglect was in line with the fact that the provision of emotional, economic, and psychological support is the function of the family and that neglect will have some deleterious effect on youth development. Reckless expenses of meager family resources on avoidable issues like alcoholism and

risky behaviors undermine the strength of a relationship upon which a family is built and these could be affected by alcohol use and abuse and this has implications in disease transmission in endemic regions.

Observation of 9.8% prevalence of antisocial behavior (Table 2) among gender-specific age groups was not strange because such behaviors may include: demeanor intended to injure people or damage property, illegal behavior, and defiance of generally accepted rules Tab. The human brain is very sensitive to the effects of alcohol as it induces several behavioral changes on the cerebellum (movement), the hippocampus (memory), the ventral tegmental area (reward), and even the brainstem (breathing). Childhood antisocial behaviors are a central element in the developmental pathway leading to adolescent alcohol abuse or dependence and in disease-endemic regions can have some serious disease transmission consequences.

There was a 19.1% prevalence of those who lost their jobs probably due to poor performance. This is supported by the fact that alcohol abuse influences the decline in job performance and decreases in work productivity and more absenteeism from work, ultimately lead to job losses (33). When compared to their clear-headed counterpart, Alcohol drinkers may be more often absent-minded, are less efficient, have more accidents at work, and show maladjustments with other workers, which lead to overall decreased performance. Some alcoholics find it difficult to reduce their expenditures, tend to dispose of their properties for money to spend on alcohol and this impacts negatively on their families (34) especially as it relates to aseptic precaution against disease transmission.

To understand health factors related to alcohol use among respondents, the following parameters were used: 3.2% headache, 2.0% depression, 3.8% high-risk sex and GIT discomfort, 7.8% lack of sleep, 16.2% loss of appetite, and 4.0% hangover (Table 3). All assessed within age groups and sexes of participants. This observation was in line with the report of Corrao et al., (35) who reported that over time, alcoholism can lead to the development of chronic diseases, neurological

impairments, and social problems. These include but are not limited to: gastrointestinal problems, neurological problems, including dementia, stroke, and neuropathy cardiovascular problems, including myocardial infarction, cardiomyopathy, atrial fibrillation, and hypertension. In general, the risk of cancer increases with increasing amounts of alcohol. Liver diseases are among the leading causes of all deaths among infected patients.

Alcohol abuse can lead to brain damage, liver problems, heart diseases, cancer, kidney problems, obesity, gastrointestinal problems, depression, memory loss, and impairment of other internal organs of the body (6). It could lead to diabetes, inflammation of the pancreas, gastrointestinal bleeding, weakening of the heart, and stroke. In pregnant women, alcohol is harmful to the unborn baby and has been associated with mental illness (7). The short-term effects include loss of coordination, slurred speech, trembling of the feet and hands, lack of concentration, and dizziness. Alcoholism has been linked with sexual risk behavior such as unprotected sex which undermines disease prevention strategies while encouraging disease distribution in tropical Africa (36). Some HIV-infected individuals, despite knowledge of their status, continue to practice unsafe sex, which places them and their partners at considerable risk (37).

Adolescent alcoholism may also be associated with risky sexual practices leading to sexually transmitted diseases, including HIV/AIDS. The probability of sexual intercourse may be increased by drinking unpredictable amounts of alcohol sufficient to impair judgment, but decreased by drinking heavier amounts that result in feelings of nausea, vomiting, passing out, or mental confusion. It should be clear that to the best of our knowledge and at the time of this investigation, no one has outlined the criteria for use by alcohol users to understand the amount sufficient to impair judgment or remain safe from intoxication. This threshold alcohol volume and concentration per body weight are needed to help alcohol users to know how and when to stay safe from intoxication.

The 25.7% degree of alcohol-related social, economic, and health problems found in the age

group 15-20 years was the highest, followed by 23.0% among those aged 26 years and above (Table 4). In this dispensation, all age groups were affected at different points according to the variables assessed. Compared to all other age groups, the prevalence of periodic heavy or high-risk drinking is greatest among young adults (38). The observed prevalence of 30.1% problems among the respondents with tertiary education followed by 13.9% secondary education could be attributed to peer group influence and way of socializing and relaxation including many medical conditions, health behaviors, and mortality among youths (7, 28). Males with 47.9% prevalence of alcohol usage were higher than females with 31.5% report. Alcoholism may be higher in men than in women in some instances but the ratio varies across cultural and ethnic lines (39).

The love the respondents had for beer was reflected by the observed 40.2% whose brand of beer had up to 12.8% followed by 24.0% Spirit with ethanol content per 100mls ranging from 39.1% to 45.4%. Intoxication may depend on the concentration and quantity of alcohol taken per unit time per body weight of respondents. The prevalence of periodic heavy or high-risk drinking and alcoholism is greatest among young adults (38).

There was a high correlation ( $p < 0.05$ , 0.01) between the independent variable (IDV) alcohol intake and the Dependent Variables (DV): antisocial behavior, traumatic injury, health problems, and work problems. There was no correlation ( $p < 0.05$ , 0.01) between alcohol intake and the following dependent variables: family neglect, family conflicts, divorce/broken relationships, school problems, and child abuse. Excessive alcohol use may lead to the development of chronic diseases, neurological impairments, including dementia, stroke, and neuropathy. "Alcohol use may be associated with increased risk of injury in a wide variety of settings including road traffic accident (vehicles, bicycles, and pedestrians), falls, fires, injuries related to sports and recreational activities, self-inflicted injuries or injuries resulting from interpersonal violence. Heavy drinking increases the risk of absenteeism,

and low productivity, which may eventually lead to loss of employment.

### CONCLUSION AND RECOMMENDATION

Alcohol intake is highly prevalent on a colossal scale among the studied population that correlated with outlined problems. Alcohol intake remains a high-risk factor for risky practices and attitudes that encourages rapid spread and sustained endemicity of tropical infections. Alcohol intake had a significant correlation ( $p < 0.05$ , 0.01) with family neglect, family conflict, school/work problems, accident and health issues, and antisocial behavior except for child abuse. There was a significant correlation ( $p < 0.05$ , 0.01) between alcohol intake and alcohol-related problems analyzed. Reduction of alcohol intake through community-directed comprehensive action against alcohol-related risky practices that encourages disease transmission, creation of public awareness on the impact of such alcohol-related practices on disease transmission, morbidity and mortality records, other interventions such as education, advocacies, update of moribund or outdated alcohol use policy, enactment of policy in non-policy existent settings and stepping up implementation efforts are highly recommended.

CONFLICT OF INTEREST: None

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