

Trends in Alcohol Intoxication Cases and Common Complications at Kitwe Teaching Hospital for the Years 2012, 2013, 2016 and 2017, Kitwe, Zambia

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Abstract

Background: Alcoholism is a major public health problem. It is associated with unhealthy effects and increased risk of injuries, trauma, violence and death of self or others. The rise in alcohol consumption rates, especially among youths, is alarming and requires immediate attention. Alcohol intoxication is detrimental to health as intoxication has complications related to the gastrointestinal system, neurological, soft tissue injury and death. **Methods:** A descriptive retrospective study on Trends in Alcohol Intoxication and Common Complications was conducted at Kitwe Teaching Hospital (KTH), Kitwe, Zambia. Information was collected from patient files and registers admitted to KTH for alcohol intoxication in the years 2012, 2013, 2016 and 2017. 113 of 235 files were available for review. Ethical clearance and Permission was granted by the ethical committee of the Tropical Disease Research Center (TDRC) and KTH respectively. Data analysis was done using SPSS V 20 and Microsoft Excel 2016 frequencies and percentages. **Results:** The average age of participants admitted for alcohol intoxication was 31. Neurological and Gastrointestinal complications were the most common at 25%, followed by fatalities (18%), while only 1% had soft tissue injuries. 30% however had no complications. The most common gastrointestinal complication was gastritis (46%) followed by Mallory Weiss tear (18%), then hypoglycemia (14%), hepatitis (11%), pellagra (7%), gastric ulcers (4%). One patient (1%) had an independent outcome of appendicitis which literature has not documented as a direct outcome of alcohol intoxication. More than half of those with neurological complications presented with seizures (52%), followed by those with psychosis (24%), then encephalopathy (10%), neuropathy (7%) and coma (7%). **Conclusion:** The findings from this study reviews alarming levels of complications of alcohol intoxication and is a public health problem in Kitwe. Therefore, sensitization campaigns about alcohol abuse need to be scaled up in order to curb the vice.

Keywords: Alcohol intoxication(AI), Common Clinical Complications, Kitwe Teaching Hospital (KTH).

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1. INTRODUCTION

Alcohol is a psychoactive substance. Alcohol intoxication is a condition that follows the administration of this substance and results in disturbances in the level of consciousness, cognition, perception, judgement, affect behavior or other psychophysiological functions and responses [1]. Intake of Excessive alcohol for a long time has become one of the world's burdens as it poses a potential risk to health, causing diseases such as liver diseases as well as unintentional injuries. Worldwide, 3.3million deaths every year result from alcoholism this represents about 5.9% of all deaths [1]. The significant risk of death in people that abuse alcohol is as a result of its effects of suppression on vital life functions such as those of the central nervous system. According to Chen *et al*, excess alcohol intake at one session can lead to drowsiness, respiratory distress, coma or even death [2].

A study conducted by Rockville concluded that alcohol was the most abused drug [3]. Excess alcohol consumption is detrimental to the health of humans, one of its irreversible effects is death and this effect is common in all age groups. However, the World Health Organization (WHO) report showed high prevalence of mortality in young adults aged 20 – 39 years; accounting for 25% of the total deaths [1]. Developing countries such as Zambia are also affected by alcoholism.

Zambia has had an increase in alcohol consumption rates of up to 5.6% [4,5]. The increasing consumption rates of alcohol in Zambia have been linked to various factors such as social, cultural and economic factors. While it is known that a large group of people indulge in alcohol for various reasons, most youths consume alcohol for fun and due to peer pressure. Various consequences of excess alcohol intake exist, but the following

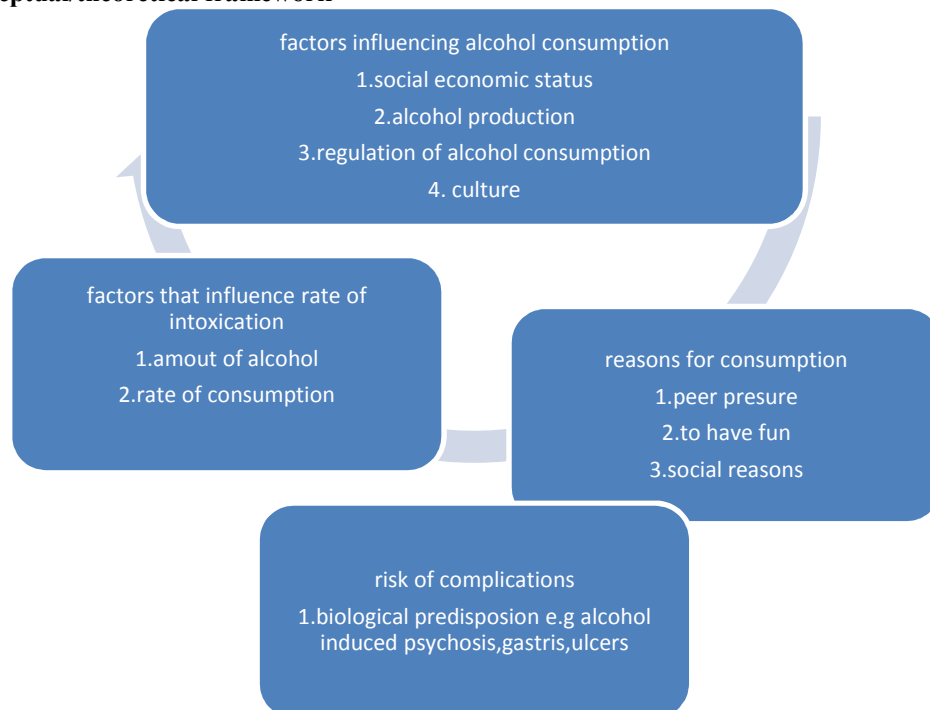
are some of the major consequences; high risk of sexual behavior and infection with sexually transmitted infections (STIs), including Human Immunodeficiency Virus (HIV), trauma, death and chronic liver diseases. The abuse of alcohol by youths is a public health concern and has reached alarming levels in Zambia and according to WHO, underage drinking is wide spread and a leading public health problem [6].

Alcohol consumption policy is currently being implemented by the Zambian government and intervention on excise tax on alcoholic beverages, national legal minimum age for on- premise sales of alcoholic beverages, legally required health warning labels on alcohol advertisement have been implemented. This research aimed at establishing trends in alcohol intoxication and common complications at Kitwe Teaching Hospital, Kitwe, Zambia.

1.1 Measurements

1. Alcohol intoxication was defined by history of alcohol ingestion/ smell of alcohol plus disorientation upon presentation to the hospital with signs and symptoms of alcohol intoxication.
2. Alcohol was defined as ethanol
3. Mallory Weiss tears were defined as a presentation of abdominal pain and vomiting of blood.
4. Gastritis was defined by abdominal pain plus vomiting.
5. Encephalopathy was defined by irrelevant talking.
6. Psychosis was defined by disorientated state.
7. Death was defined by absence of pulses and fixed pupils.

1.2 Conceptual/theoretical framework



Alcohol intoxication is a state of drunkenness also known as alcohol poisoning. People drink for different reasons such as peer pressure, have fun, forget about problems and for social reasons. These reasons are usually influenced by factors such as social economic status, culture, alcohol production, distribution and regulation of alcohol consumption. The risk of having complications due to alcohol intoxication is influenced by factors such as biological predisposition, those predisposed to drug induced psychosis are at a high risk of getting psychosis after intoxication than those who are not. The degree and rate of intoxication depends on the amount of alcohol taken as well as the frequency. The more alcohol taken and the shorter the period the easier it is to get intoxicated.

2. METHODS/MATERIALS

A retrospective study was conducted over a period of 24 weeks to determine the trends in alcohol intoxication and common complications at Kitwe Teaching Hospital, Kitwe, Zambia. The Information was obtained by reviewing patient files and hospital registers for the years 2012, 2013, 2016 and 2017. Data was compiled onto data collection sheets and subsequently entered into SPSS version 20 and Microsoft excel 2016 for data analysis. Frequencies, percentages and tables were extracted during data analysis. The trend in alcohol intoxication, the

common complications of alcohol intoxication, the modal age, average age and which of the two sexes was most affected were determined.

Ethical considerations

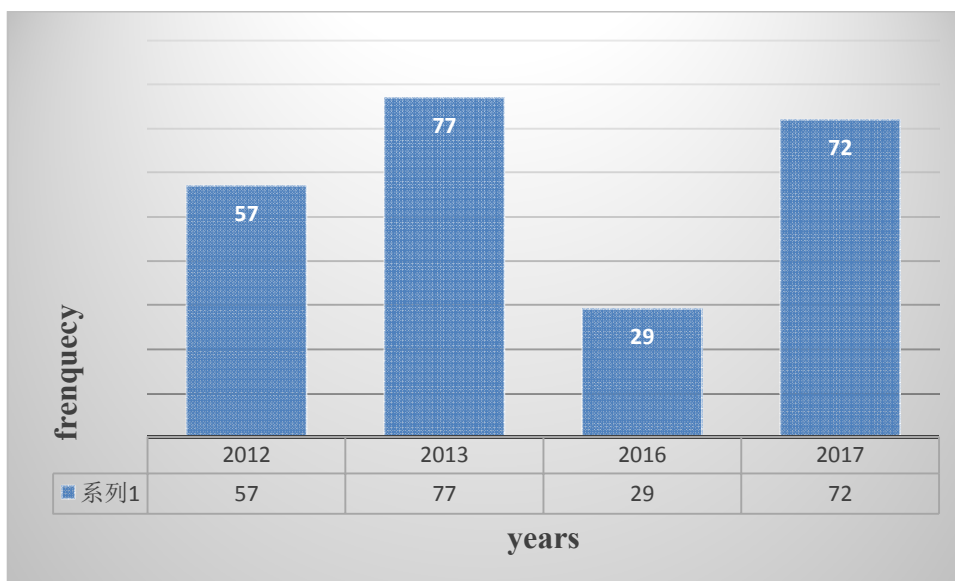
Ethical approval was sort from TDRC and permission was obtained from KTH. personal information of the study participants was concealed and information collected was only used for the purpose of the study.

3. RESULTS

3.1 Demographics

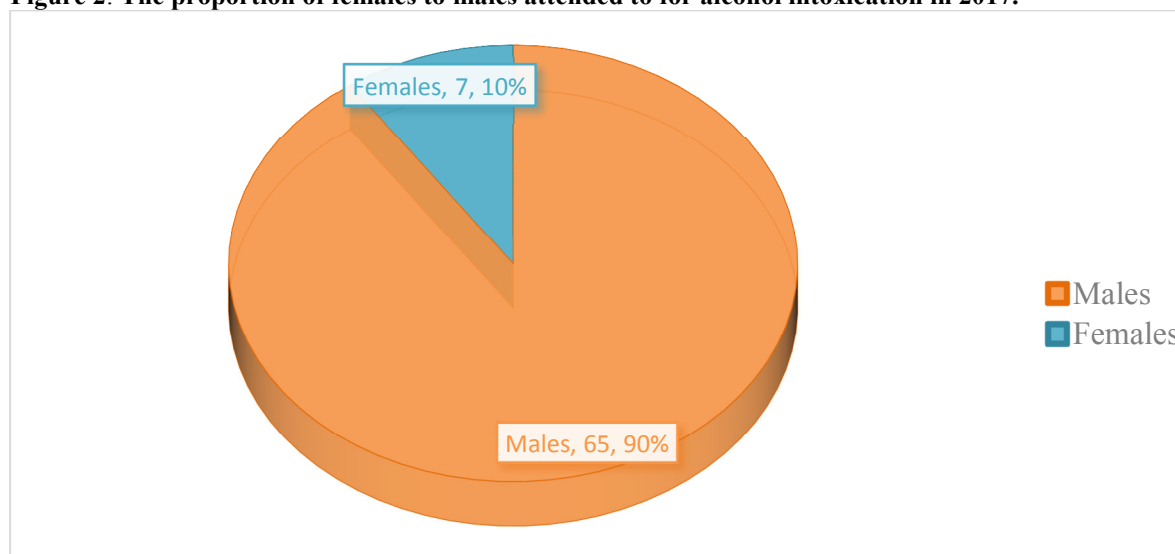
A total of 235 files were illegible but only 113(48%) where found. In-patient files from 2012 male ward register, 2013 male ward register, 2016 October male ward register, 2017 male ward and female ward registers were analyzed as these were the registers available. the highest number of patients available for review were 77 in 2013, followed by 2017 with 72, 2012 with 57 and lastly 2016 with 29.

Figure 1: Alcohol intoxication patient files available for review for the years 2012, 2013, 2016 and 2017 (n=113).



The average age for the patients admitted for alcohol intoxication was 31years with a mode age of 28years and the standard deviation was 10.3 years. The youngest person admitted for alcohol intoxication was 14years old and the eldest being 67years old (table 1). 46.6 % of the cases of alcohol intoxication admissions spent a period of 1day, while 37.3% spent about 2-5 days and 6.8% spent above 5 days. The average age and mode age suggests that most of the people involved were young adults.

Figure 2: The proportion of females to males attended to for alcohol intoxication in 2017.



3.2 Common Clinical Complications of Alcohol Intoxication.

Out of the 113 files analysed, 25% (29) cases had gastrointestinal complications, 25%(29) neurological, 18%(21) deaths and one had isolated 1(1%) soft tissue injury. However, the number of patients admitted for alcohol intoxication and later discharged with no systemic effects from the intoxication was 34 representing 30% of the total files as shown in figure 3. two patients had both gastrointestinal and neurological outcomes, one patient had a combination of hepatitis and neuropathy while the other had gastritis and seizures (figure 3).

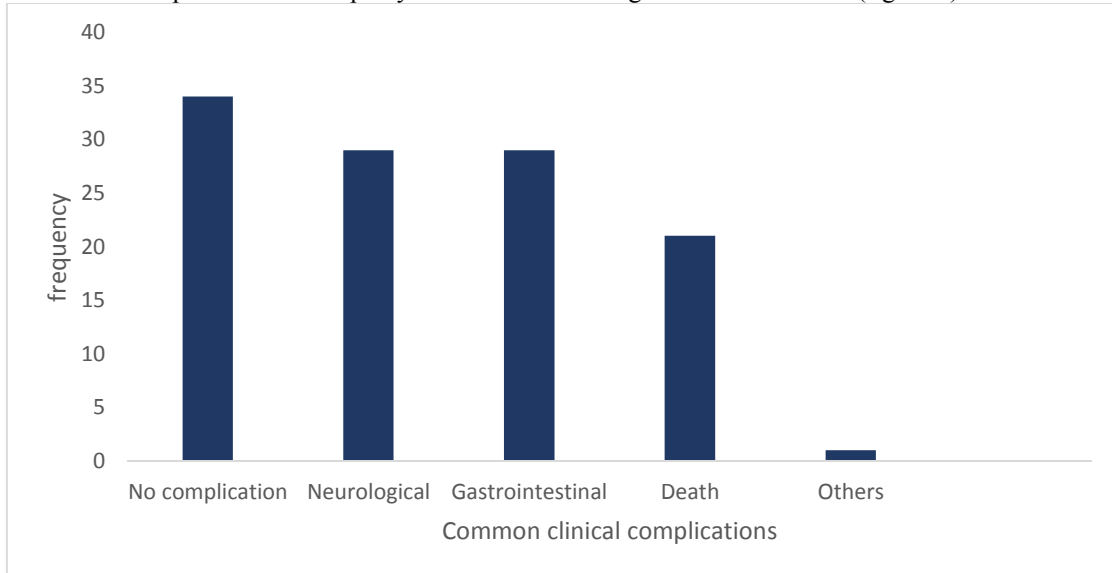


Figure 3: Common Clinical Complications of Alcohol Intoxication.

Nearly a third of the patients admitted for alcohol intoxication had no other relevant clinical complications. Neurological and gastrointestinal complications each accounted for 25% of the clinical outcomes and mortality was recorded in 18%.

3.3 Gastrointestinal Complications of Alcohol Intoxication.

Gastrointestinal complications represented 25%(29) of the clinical complications of alcohol intoxication. Out of the 29 cases with gastrointestinal outcomes, the highest was gastritis 46%(13) followed by Mallory Weiss tear 18%(5), then hypoglycemia 14%(4), hepatitis 11%(3), pellagra 7%(2), gastric ulcers 4%(1) and appendicitis1%(1). patient had an independent outcome of appendicitis which literature has not documented as a direct outcome of alcohol intoxication. (figure 4)

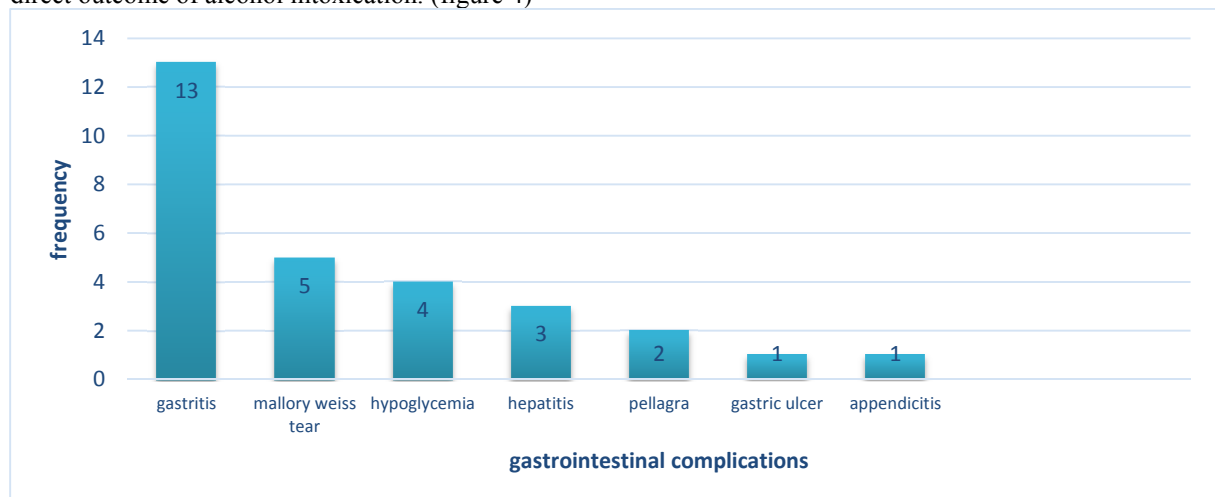


Figure 4: Gastrointestinal Complications of Alcohol Intoxication. The most common gastrointestinal outcome was gastritis.

Neurological Complications of Alcohol Intoxication.

Neurological alcohol intoxication complications represented 25%(29) of the analyzed files of those admitted for alcohol intoxication. More than half of the cases presented with seizures 15(52%), followed by those with

psychosis 24% (7), then encephalopathy 10% (3), neuropathy 7% (2) and lastly coma 7% (2).

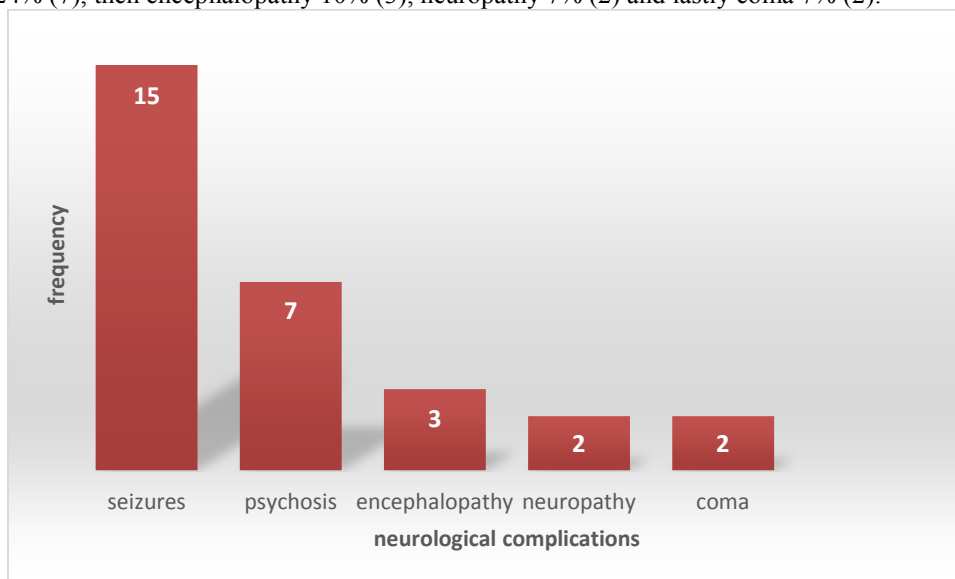


Figure 5: Neurological complications of Alcohol intoxication.52% of the cases with neurological complications of alcohol intoxication had seizures seconded by psychosis with 24%.

3.5 Death

The total number of deaths recorded were 18% (21) out of 113.the actual cause of death was not documented.

3.6 Other Clinical Outcomes of Alcohol Intoxication.

There was one isolated case of soft tissue injury representing 1% (1) of the total complications.

4. DISCUSSION

Demographics

A descriptive retrospective study was conducted at Kitwe Teaching Hospital on ‘Trends of Alcohol Intoxication and Common Complications for the years 2012, 2013, 2016 and 2017’. A total of 235 files were illegible but only 113(48%) were found. Like other studies this study utilised clinical diagnosis, age, sex, and period of admission [6]. Most of the cases of alcohol intoxication involved young adults (mean age was 31 years). The findings from this study was in line with other studies on alcohol intoxication which found that most of the people involved are young adults [1]. A study conducted by the Centers for Disease Control and Prevention (CDC) in the United States of America (U.S.A) reviewed that excessive alcohol intake shortened lives of those who died by an average age of 30 years [7]. From the 2017 inpatient files reviewed, it was found that only 10% were females and 90% were male, the male to female ratio was 9:1. This disagrees with a study which was conducted by Bertholet *et al* at a tertiary hospital in Switzerland were 34.5% represented females and 65.5% males [8]. Regardless of the difference in the distribution of male to female ratio between the two studies both found a significant number of males being intoxicated as compared to females.

Another study concluded that ‘problematic alcohol use leading to emergency department admissions starts in adolescence and the male to female ratio was 5:1’ [9]. A study by Green *e tal* showed a linear increase in the trends of alcohol intoxication [10]. However, our study found an up down trend. this may be due to the missing registers for some of the years. The current strategy of health data storage in Zambia is a challenge, especially when it comes to conducting retrospective studies in the hospitals as most of the information is not stored electronically making it difficult to retrieve information. Patient files and registers were either missing or incomplete. The study conducted by Green *et al* was done in Switzerland where electronic health records were used unlike Zambia where largely information is entered on paper based record with a high risk of losing patient files.

On a national perspective, alcohol consumption rates among adolescents were found to have increased over the years ([4], [11], [12]) but none of these studies conducted a retrospective study and the focus was on alcohol consumption rates rather than trends and complications of alcohol intoxication.

Systemic complications of alcohol intoxication

This study found systemic complications of alcohol intoxication agreeing with a study conducted by Holland and Pietrangelo [13]. Most of the common complications of alcohol intoxication were gastrointestinal and neurological both standing at 25%. The number of fatalities were 18% but the actual cause of deaths was not

established as it was not documented in the patient files this disagrees with a retrospective descriptive study on 105 trauma related deaths in Transkei region, South Africa, where a history of alcohol consumption was found in 49.5% of the 105 traumatic deaths [14].

A study conducted by Patel and Bhagwat in Zambia highlighted 50% of total deaths involving persons below the age of 34 [15]. Though this study only captured gastrointestinal, neurological, soft tissue injury and death other studies have established that alcohol can affect any body system [13].

Gastrointestinal complications of alcohol intoxication

Vonghia *et al* gives an account of acute alcohol intoxication complications but does not give exact percentages [16]. This study found that the most common gastrointestinal complication was gastritis (46%) followed by Mallory Weiss tear (18%), then hypoglycemia (14%), hepatitis (11%), pellagra (7%), gastric ulcers (4%) and one patient had an independent outcome of appendicitis (1%) which literature has not documented as a direct outcome of alcohol intoxication [17].

Neurological complications of alcohol intoxication

Neurological complications of alcohol intoxication represented 25% of the analyzed files of those admitted for alcohol intoxication. More than half of the cases presented with seizures (52%), followed by those with psychosis (24%), then encephalopathy (10%), neuropathy (7%) and lastly coma (7%). The complications documented were in agreement as those documented in a study on neurological complications of alcoholism by noble *et al* [18]. The seizure types could not be extracted as the study participant's files had no documentation. This study clearly established the trends of alcohol intoxication and common clinical outcomes by reviewing patient files in the casualty department at KTH taking note of age, sex, period of admission and diagnosis.

5. LIMITATIONS

The patient files and registers entry is not digitalized which made it difficult to find all of the patient files from the archives and registers. Even with the files that were found certain information such as occupation, residential address, documentation of specifics such as types of seizures or causes of death were not available.

Finding literature about alcohol intoxication and common complications was a challenge as very few studies have been conducted on alcohol intoxication. The few studies conducted on alcoholism mostly focus on rates rather than clinical complications.

6. RECOMMENDATIONS

A prospective study should be conducted on this subject. Data from this study maybe be used as a baseline. Public health information and increase of tax on alcohol will not only help with reducing cases of alcohol intoxication but will also reduce on the waste of human and hospital resources. Further we strongly recommend digitalization of patient records.

7. CONCLUSION

This study established an up-down up pattern in trends of alcohol intoxication. The most common clinical outcomes were gastrointestinal and neurological seen in quarter of the study participants followed by a mortality rate in nearly a 5th. Alcohol intoxication is of public health concern at KTH. In order to reduce the number of alcohol intoxication cases, the public must be educated on the complications of alcohol intoxication which includes death.

8. ACKNOWLEDGEMENTS

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