

Alcohol Use and Violence-Related Injury in Moshi, Tanzania: A Mixed Methods Study

by

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Thesis submitted in partial fulfillment of
the requirements for the degree of Master of Science, in the Duke
Global Health Institute in the Graduate School
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2019

ABSTRACT

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Abstract

Background: Harmful alcohol use and violence are both major contributors to global mortality and morbidity rates, despite being both predictable and preventable. This study seeks to quantitatively determine the association of violence-related injury and Alcohol Use Disorders in a referral hospital in Moshi, and qualitatively determine 1) how violence-related injury patients perceive alcohol use influences the occurrence of violence and 2) how experiencing a violence-related injury influences patients' subsequent alcohol use behavior. Methods: This study was conducted at Kilimanjaro Christian Medical Center (KCMC). Survey data was obtained from a trauma registry including all injury patients ≥ 18 years admitted to the emergency room. Interview participants were included if they reported their injury was due to violence, tested positive for alcohol (by breathalyzer) upon admittance, medically stable, able to communicate and provide informed consent in Swahili or English, and clinically sober at the time of enrollment. Results: From the 500 injury patients enrolled in the trauma registry from April 17, 2018 to January 12, 2019, 84 (16.8%) reported that their injury was due to violence. Patients with violent injuries were 2.21 times more likely to have a positive alcohol status compared to non-violent injuries (95% CI 1.36, 3.60, $p < 0.01$). Among violent injuries, those with a positive alcohol status were 6.26 times more likely to have an Alcohol Use Disorder compared to those with a negative alcohol status (95%

CI 2.13, 18.39, $p < 0.001$). Interview respondents reported a perception that violent injuries were worse from other injuries, that the perpetrator was also under the influence of alcohol, that alcohol contributes to violence, and a desire to change alcohol use behavior following their injury. Conclusion: Alcohol use and violence-related injury pose a significant threat to health and well-being globally. In Moshi, Tanzania, both issues are prevalent and contribute to a sufficient disease burden. This study has added to the data on alcohol-attributable harm, contributing to expanding information available on this issue from LMICs. To adequately reduce violence-related injuries in this setting, it is necessary to address harmful alcohol use as well.

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1. Introduction

Harmful alcohol use and violence are both major contributors to global mortality and morbidity rates, despite being both predictable and preventable (WHO, 2014). The number of global deaths due to alcohol use disorders is only expected to increase in the coming years (Griswold et al., 2018) and 45% of alcohol-attributable deaths globally are due to violence or injuries (Poznyak & Peden, 2007).

1.1 Alcohol Use Disorders

An alcohol use disorder (AUD) is one of the most common mental disorders globally; the WHO estimates over 283 million people suffer an AUD (WHO, 2018). Harmful or hazardous alcohol use contributes to 5% of Disability Adjusted Life Years (DALYs) (WHO, 2018). Globally, around 3.3 million deaths globally are attributed to alcohol or associated conditions per year (Bellis et al., 2016). The impact of harms associated with alcohol misuse is worst among the poor (WHO, 2018; Rehm et al., 2003). In Africa, alcohol is the leading avoidable risk factor, accounting for a substantial portion of the global burden of death and disability (Casswell & Thamarangsi, 2009; Lim et al., 2012). Drinking patterns in Africa are the second worst worldwide, with high rates of binge drinking and alcohol dependence (Rehm et al., 2009). In Tanzania, the prevalence of both alcohol use disorders and alcohol dependence among men and women exceeds the prevalence in the African region (WHO, 2018). Alcohol use has been associated with many high-risk behaviors, including crime, self-inflicted injury,

interpersonal violence, and unintentional injuries (WHO, 2014). Reducing the harmful use of alcohol has been shown to reduce the incidence of violence (Stockwell et al., 2009; WHO, 2014; Graham & Livingston, 2011).

1.2 Violence-related Injuries

Hundreds of millions of people suffer non-fatal forms of violent injuries (WHO, 2014). This can include child maltreatment, youth violence, intimate partner violence, sexual violence, interpersonal violence and elder abuse - with many individuals suffering from more than one type (WHO, 2014). Any kind of violence can contribute to a lifetime of negative health conditions such as depression, obesity, substance use disorders, smoking, high risk sexual behaviors, unintended pregnancies and sexually transmitted diseases and an increase in the likelihood of being involved in further violence - as a victim or a perpetrator (WHO, 2010) This places a substantial burden on health systems. Over 16 million people receive treatment for violence-related injuries every year (WHO, 2010). Many more never seek official health services. Violence also undermines economic and social development and human productivity (WHO, 2010). There is a growing burden of violence globally and more research is needed to understand possible implications of intervention (Herbert et al., 2011). In Tanzania, the percentage of both deaths and DALYs attributable to violence-related injuries have steadily increased since 1990 (IHME, 2016). Violence-related injuries are a significant contributor to global morbidity and mortality, but they are not distributed equally

between or within countries (WHO, 2014). 90% of violence-related deaths occur in LMICs, yet the majority of prevention initiatives have only been evaluated in high-income countries (HICs) (WHO, 2010). For non-fatal violence-related injuries, people living in LMICs often have reduced access to emergency care, counselling services, or financial support (WHO, 2010), and thus effective prevention initiatives are needed.

1.3 Alcohol & Violence

Global levels of alcohol use disorders and violence-related injuries vary significantly, but in all regions there is an association between the issues: both exacerbate the negative effects of each other (WHO, 2006). 88,000 deaths in 2016 were attributable to both alcohol and violence (WHO, 2018). The harmful consumption of alcohol increases the risk of an individual being both a victim or a perpetrator of different types of violence (WHO, 2006; Cherpitel et al., 2012). Persons aged 18-24 are at increased risk of being harmed by others' drinking, and that risk increases if they are also consuming alcohol (Bellis et al., 2015). Blood Alcohol Concentration (BAC) also has a dose-response relationship with aggression (Duke et al., 2011). Alcohol outlet density has also been linked with a 2.2% increase in violence crime (Graham & Livingston, 2011). Alcohol use undoubtedly changes cognition and physical functioning, reducing self-control, reducing the ability to recognize dangerous scenarios, and often increasing injury severity (Korcha et al., 2013). Conversely, witnessing or being victim to acts of violence can lead to increased alcohol use (WHO, 2006).

Although the current literature has established an association between violence and alcohol use disorders, there is limited data about this relationship in LMIC (Harford et al., 2018; Kazaura et al., 2016; WHO, 2018). Studies in Sub-Saharan Africa have explored some of the factors linking violence - specifically intimate partner violence, and alcohol abuse (Ekpenyong et al., 2018), but there has not been enough research to truly improve understanding of the issue and motivate interventions at the community, country or regional level.

Global health actors and researchers at all levels have a responsibility to collect and disseminate research on the scope and etiology of this problem to effectively identify appropriate interventions for the communities that have the most need. Emergency and trauma departments are well-positioned to screen for harmful alcohol use and violence, conduct research, and engage in initial interventions.

1.4 Research Aims

The long-term research goal in this area is to find strategies to reduce the negative health outcomes from alcohol abuse and violence globally. This study provides insight from both quantitative data and in-depth interviews into the relationship between alcohol use disorders and violence-related injuries in Moshi, Tanzania. This study seeks to quantitatively determine the association of violence-related injury and Alcohol Use Disorders in a referral hospital in Moshi, and qualitatively determine 1) how violence-related injury patients perceive alcohol use influences the occurrence of

violence and 2) how experiencing a violence-related injury influences patients' subsequent alcohol use behavior.

2. Methods

2.1 Ethics

This study was approved by the Duke University Medical Center Institutional Review Board, Kilimanjaro Christian Medical Center Ethics Committee and the Tanzanian National Institute of Medical Research under the IRB protocol number Pro00086496. The Tanzanian IRB prohibits the distribution of data publicly. Therefore, data was collected, transferred, and stored internally behind a Duke University protected firewall.

2.2 Setting

This study was conducted in Moshi, Tanzania. In sub-Saharan Africa, the percentage of alcohol-related deaths has increased by over 40% in the past 20 years (IHME, 2016). The region now ranks sixth out of 21 world regions in the number of disability-adjusted life years (DALYs) attributable to alcohol. Tanzania is the most populated country in eastern Africa, with a population of approximately 52.5 million people (IHME, 2016; Tanzania NBS, 2012). Forty-five percent of the population identify as lifetime abstainers of alcohol, while approximately 15% of the population admit to heavy periodic drinking (IHME, 2016). Overall, the amount of alcohol consumed per capita in Tanzania has increased by over 10% in the past 5 years (WHO, 2014), potentially due to high volumes of home-brewed alcohol and the proliferation of the tourism industry (Staton, 2015). The participants in this study were patients from

Kilimanjaro Christian Medical Center (KCMC). KCMC is a referral hospital in northwest Tanzania serving over 17,000 patients annually from urban and rural populations (Staton et al., 2018). KCMC is located in the Kilimanjaro region of Tanzania, which has relatively higher rates of alcohol consumption in comparison to other Tanzanian regions, possibly due to a large tourist industry, the proliferation of home-brewed alcohol, or certain Chagga customs (Mitsunaga, 2008; Carlson, 1993; McCall, 1996).

2.3 Study Design & Conceptual Framework

This study uses a sequential explanatory design. As such, quantitative data collection and subsequent preliminary analysis were used to inform the case selection for interviews and the content of the interview guide (Figure 1). After qualitative data collection and analysis were conducted, the results were compared, integrated and interpreted with the supplementation of more robust quantitative analysis.

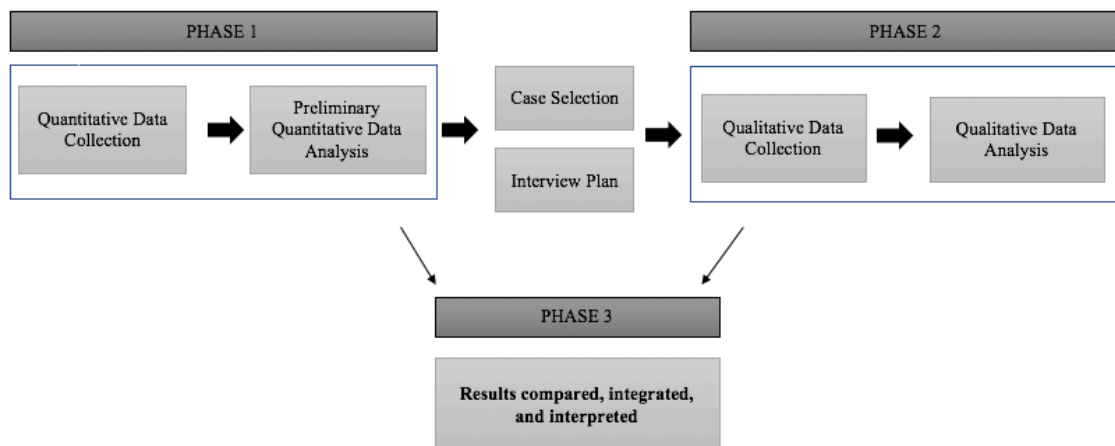


Figure 1: Sequential Explanatory Design Conceptual Model

2.4 Participants

The quantitative survey data including demographic information, alcohol and substance use history, and injury information was obtained from a trauma registry conducted at KCMC. Injury patients over the age of 18 coming into the emergency room of KCMC are enrolled in the trauma registry.

The interview participants were sampled from the trauma registry and included if they reported their injury was due to violence, reported alcohol use within 6 hours prior to injury or tested positive for alcohol (by breathalyzer) upon admittance, medically stable, able to communicate and provide full informed consent in Kiswahili or English (Appendix B1, B2), and clinically sober at the time of enrollment. Patients were excluded if their injury was sustained through self-harm, or group or conflict violence.

2.5 Instruments

The trauma registry is an extensive instrument that was translated and back-translated from English to Kiswahili by local research assistants (Appendix A). The registry includes demographic information, patient history, clinical diagnosis and treatment, injury and surgery information, the Patient Health Questionnaire-2 (PHQ2), a behavioral health assessment, the Alcohol Use Disorders Identification Test (AUDIT), and substance use screening. The AUDIT is a 10-item questionnaire and scale [range 0-40] developed to assess potential harmful alcohol use (Saunders et al., 1993; Babor, 2001) and has been culturally adapted and translated into Tanzanian Kiswahili and validated

in this setting (Vissoci et al., 2017). An AUDIT score of greater than or equal to 8 indicates harmful alcohol use with 85% sensitivity and 89% specificity (Cherpitel, 1994). Therefore, this cutoff was used to determine if a patient had an Alcohol Use Disorder (AUD).

The interview guide was developed and revised in several discussions with qualitative experts from Duke University and researchers from Kilimanjaro Christian Medical Centre. The guide was created in English, translated to Kiswahili and back-translated to English with local research assistants (Appendix C1, C2). The interview guide was piloted with research personnel and one injury patient.

2.6 Data Collection

The quantitative data from the trauma registry was collected from April 17, 2018 to January 12, 2019 on paper data collection sheets by 2 local research nurses with over 10 years of experience at KCMC. These research nurses have undergone a week-long training in medical ethics, instrument validation in Swahili, and relevant background information and proper administration techniques for the instruments. The data collection sheets survey forms were checked for completeness and error when entered into a REDCap database (Harris et al., 2009). Secondary quality control was performed after the data set was initially entered.

The qualitative data was collected between October 10, 2018 and November 26, 2018 by 2 trained research assistants with experience in sensitive topics (e.g. alcohol,

sexual history, HIV risk factors, social stigma). Patients were screened for inclusion and exclusion criteria in the Emergency Department upon arrival and following medical stabilization. The intended sample size to reach saturation was 10-12 participants (Guest et al., 2006). This thesis will be reporting the themes which arose from the first 4 interview participants; interviews are ongoing until saturation is reached. No eligible participants during this time period refused to take part in interviews. The interviews lasted between 10 and 15 minutes, were conducted in Swahili, and took place in private rooms at KCMC. This was done so that attending an interview did not identify the participants as either victims of violence or persons with potential alcohol use disorders. The interviews were digitally audio recorded, uploaded to a secure and encrypted location in an Internet-based database behind a university firewall, and then deleted from the original device. Any interview respondents that reported domestic violence or were found to have an alcohol use disorder not initially discovered through the trauma registry were referred to KCMC medical staff for usual care procedures, including counselling.

2.7 Data Management & Analysis

Quantitative data management and analysis was done in R Studio (R Foundation, 2016). Descriptive statistics (including mean, standard deviation, median, interquartile range, frequency distribution, and percentages) were obtained from the

sample and logistical modeling was used to produce odds ratios and the associated p values.

The qualitative data was transcribed in Kiswahili and then translated to English. The English transcript was coded and analyzed in Microsoft Excel. Codes and resulting themes were generated using grounded theory and content analysis to allow for a culturally appropriate understanding of observations and negate the need for a formal hypothesis (Strauss & Corbin, 1990). Each transcript and the resulting analysis were discussed and validated with Tanzanian research assistants to improve the cultural accuracy of any conclusions drawn.

3. Results

3.1 Quantitative Data

From the 500 injury patients enrolled in the trauma registry, 84 (16.8%) reported that their injury was due to violence. The remaining patients had non-violent mechanisms of injury (n=407, 81.4%) or an unknown mechanism of injury (n=9, 1.8%) (Figure 2).

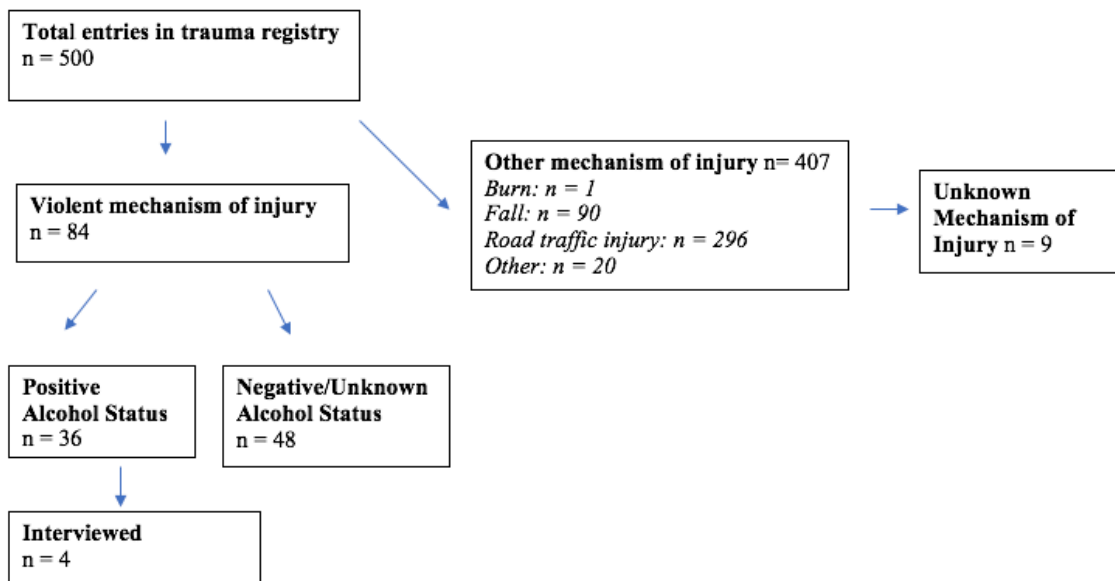


Figure 2: Flow Diagram of Participant Sample

Comparing violent and non-violent injuries, patients with non-violent injuries were 0.61 times more likely to be married (95% CI 0.38, 0.98, $p < 0.05$). Patients with violent injuries were 2.21 times more likely to have a positive alcohol status compared to non-violent injuries (95% CI 1.36, 3.60, $p < 0.01$) (Table 1).

Table 1: Demographic Information for Type of Injury: Violent v. Non-violent

	Violence-related injury n =84	Non-violent injury n = 407	OR (95% CI)	P-value
Age, Mean (SD)	38.1 (16.0)	38.2 (16.0)	0.98 (0.93,1.04)	0.36
Male, n (%)	70 (83.3%)	340 (83.5%)	0.99 (0.52, 1.85)	0.96
Moshi Urban, n (%)	20 (23.8%)	99 (24.3%)	0.97 (0.56, 1.69)	0.92
Years of Education, Mean (SD)	8.5 (3.3)	8.5 (3.3)	0.89 (0.70, 1.18)	0.35
Married, n (%)	38 (45.2%)	234 (57.5%)	0.61 (0.38,0.98)	p < 0.05
Employed, n (%)	79 (94.0%)	392 (96.3%)	0.60 (0.21, 1.71)	0.34
Chagga Tribe, n (%)	49 (58.3%)	219 (53.8%)	1.20 (0.75, 1.93)	0.45
Positive Alcohol Status, n (%)	36 (42.9%)	103 (25.3%)	2.21 (1.36, 3.60)	p < 0.01
Alcohol Use Disorder (AUDIT ≥ 8), n (%)	23 (27.4%)	76 (18.7%)	1.64 (0.96, 2.82)	0.07

Of the 84 patients with violence-related injuries, 36 (45.2%) had a positive alcohol status (Figure 3).

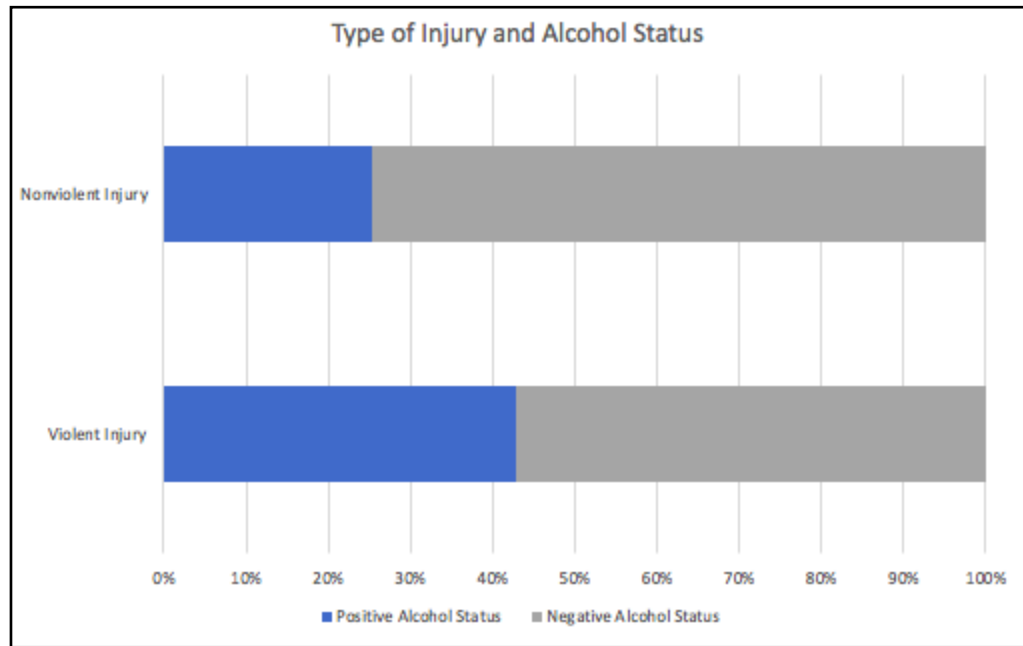


Figure 3: Alcohol Status and Type of Injury

Those with a positive alcohol status were also 6.26 times more likely to have an Alcohol Use Disorder compared to those with a negative alcohol status (95% CI 2.13, 18.39, $p < 0.001$) (Table 2). Patients with both positive alcohol status and violence-related injury were 2.82 times more likely to be assaulted with a knife (95% CI 1.02, 7.83, $p < 0.05$).

Table 2: Demographic Information for Violent Injuries: Positive v. Negative Alcohol Status

	Violence-related injury with positive alcohol status (n =36)	Violence-related injury with negative alcohol status (n=48)	OR (95% CI)	P-value
Age, Mean (SD)	37.96 (15.9)	38.06 (16.0)	0.98 (0.93, 1.04)	0.98
Male, n (%)	31 (86.1%)	39 (81.3%)	1.43 (0.44, 4.71)	0.56
Moshi Urban, n (%)	11 (30.6%)	9 (18.8%)	2.00 (0.73, 5.51)	0.18

Years of Education, Mean (SD)	8.56 (3.5)	8.49 (3.3)	1.03 (0.87, 1.22)	0.74
Married, n (%)	14 (38.9%)	24 (50.0%)	0.64 (0.26, 1.53)	0.31
Employed, n (%)	32 (88.9%)	44 (91.7%)	0.73 (0.17, 3.13)	0.67
Chagga Tribe, n (%)	23 (63.9%)	26 (54.2%)	1.49 (0.62, 3.63)	0.37
Alcohol Use Disorder (AUDIT \geq 8), n (%)	17 (47.2%)	6 (12.5%)	6.26 (2.13, 18.39)	p<0.001
Mechanism of Assault				
<i>Fist/foot, n (%)</i>	1 (2.8%)	3 (6.3%)	0.43 (0.04, 4.3)	0.47
<i>Gun, n (%)</i>	1 (2.8%)	2 (4.2%)	0.66 (0.06, 7.54)	0.74
<i>Knife, n (%)</i>	13 (36.1%)	8 (16.7%)	2.82 (1.02, 7.83)	p<0.05
<i>Other, n (%)</i>	21 (58.3%)	35 (72.9%)	0.52 (0.21, 1.30)	0.16
Suspected/reported positive alcohol status of perpetrator, n (%)	3 (0.1%)	2 (4.2%)	2.09 (0.33, 13.22)	0.43

When comparing either violent and non-violent injuries or alcohol status among violent injuries, other information including age, sex, residence, years of education, employment, tribe, median AUDIT score, alcohol status of the perpetrator, and death in hospital produced non-significant differences.

3.2 Qualitative Data

The sample size from the in-depth interviews was 4 patients, including 2 males and 2 females. The mean age of the participants was 37.56 (SD 15.09). The mean number of years of education was 8.24 (SD 3.85). 25% of the participants were from Moshi Urban, married, or from the Chagga Tribe. 75% of participants were employed and 0% died in the hospital. The range of AUDIT scores was 5-17, with 2 participants (50%) classified as having an Alcohol Use Disorder (AUDIT score \geq 8).

The main themes that emerged from these interviews include a positive alcohol status of the perpetrator, that alcohol use can contribute to the start of violence, a perception that violent injuries are worse from other kinds of injury, and the desire to change alcohol use behavior following a violent injury.

3.2.1 Alcohol Status of the Perpetrator

Nearly all participants reported that the person who attacked them was also under the influence of alcohol. One participant stated, *“Yes, I had drunk just a little, but I was aware of myself, he was the one who was not understanding me...we were living well but when he comes back from working after he has drunk alcohol, he uses abusive language on me, I cautiously go outside so I won’t be beaten, when he has stopped talking I go in and sleep.”* Another participant reported, *“I can say it is because he was also drunk, so he was making decisions while drunk, it is something he has never done when he is in his sound mind.”*

3.2.2 Alcohol's Contribution to Violence

All participants discussed their perceptions regarding alcohols' influence on or contribution to violence. One participant said simply, *"I think alcohol is what contributes to the start of violence."* Another participant reported, *"You find that someone has already drunk his/her alcohol instead of going to rest, he/she starts quarreling with people, insulting them, that is when a violence begins."* A participant stated, *"There is no direct relationship [between alcohol and violence], but the connection comes when you have drunk too much and you have no control of what you do and the consequence, since the mind is in not in order."* Another perception was, *"I mean when you are drunk, it may influence you to start a fight."* One participant's experience was that, *"[Alcohol] contributed since I couldn't even understand some of the things that happened because I was already drunk...I think [the fight] wouldn't have started because I could use my mind right and even observe the source of the quarrel and be able to solve it, so I think it contributed to some extent."* Finally, a participant explained: *"[Consequences] of using alcohol... first is to act without wisdom, another thing is to be confident, it makes you over confident to do something."*

3.2.3 Violent Injuries v. Other Injuries

Some participants discussed the difference between violent and non-violent injuries. One participant reported that a violent injury was worse because it is intentional: *"It would have been better hundred times if I was injured through other ways... I see*

it as if he completely intended to do that, or maybe he didn't know what he was doing because he was already drunk."

Another participant reported that violent injuries are worse because you are more likely to lose your life: *"The big difference is that getting an injury from violence, the injury may be worse because it is something that you didn't expect and since someone is angry, he may hit you with anything, like this one did. It is even easier to lose life than through any other causes"*

3.2.4 Desire to Change Alcohol Use Behavior

Following a violent injury, most participants expressed a desire to change their alcohol use behavior. Some participants discussed avoiding situations with alcohol: *"It has a kind of a lesson in it, it has a certain lesson, there is a way in which I will try to avoid this kind of situations so it doesn't happen again, especially in the alcohol drinking environment"*

Some reported they would reduce alcohol intake: *"For now while I am treating my injury, I think I have stopped [drinking alcohol] for now, which means when it comes to returning to drinking, I don't think I will drink too much."* One participant stated that they would stop drinking alcohol completely: *"I will completely stop. I am capable of that."*

4. Discussion

Given the significant global burden of alcohol use disorders and associated violence-related injuries, it is necessary to explore how these issues can be risk factors for and consequences of each other. Other studies in Tanzania have examined the role of alcohol in relation to violence among sex workers (Leddy et al., 2018) and domestic or gender-based violence (Mulawa et al., 2018; Vyas et al., 2015), but this is the first study to evaluate alcohol use and violence in Tanzania among a general injury population using both quantitative and qualitative methods.

4.1 Association of AUDs & Violence-Related Injury in KCMC

From the quantitative results, patients with violent injuries were more likely to have a positive alcohol status compared to non-violent injuries. Additionally, those with violence-related injuries and positive alcohol status (compared to negative alcohol status) were more likely to have an AUD. These findings support previous data that has shown a linkage between harmful alcohol consumption and exposure to violence (WHO, 2018; da Silva et al., 2015; Rossow, 1996; Cherpitel et al., 2018). They also support previous studies that have shown people with injuries caused by violence are more likely to have a positive alcohol status when admitted to an ED (Cherpitel, 1994; Korcha et al., 2014) and individuals with harmful or hazardous alcohol use are at higher risk for injury (Fairbairn, et al., 2017; Staton, 2015). Patients with violent injuries were less likely to be married, suggesting a probable underreporting of domestic violence. Given these

findings and the unique role of an emergency department, the ED is well-positioned to initially screen for alcohol use and subsequently have an impact on the occurrence of violence-related injury attributable to alcohol (Cherpitel 2002; Walton et al., 2010). Given the long pre-hospital care time in this setting (Staton et al., 2018), it is likely that alcohol use is underestimated in this study. From this study, it also appears that the ED will not be the best place to reach victims of domestic violence. This high-risk population likely requires an intervention tailored to the specific perceptions raised here.

4.2 Perceptions of Alcohol's Influence on Violence

From the interviews, participants reported that the perpetrator of their violent injury was frequently under the influence of alcohol. It is possible that a social drinking environment affected this finding; if patients were drinking it is probable that they were in a location with other individuals who were drinking as well. Participants also reported a perception that alcohol directly contributes to violence. These themes align with previous data on perpetrator alcohol status (Stuart, 2005) and aggression following intoxication (Bartholow & Heinz., 2006; Swahn et al., 2004; Chermack & Giancola, 1997). The reported belief that alcohol and violence are linked - both in causing the perpetrator to initiate violence as well as limiting the victim's ability to react - suggest potential areas for intervention and further research in this setting. However, knowledge of this association has not yet been leveraged for potential interventions in this setting.

4.3 Violence-related Injury and Subsequent Alcohol Use Behavior

Interview respondents also discussed how violent injuries were worse from other injuries and expressed a desire to change their alcohol use behavior after their current injury. Participants' experience of violent-injuries appears to have contributed to a desire to reduce or stop alcohol consumption. Other studies have found that experiencing an adverse event (such as injury) can be a catalyst for reducing harmful or hazardous alcohol use behavior (Pagulayan et al., 2016). This data suggests that these patients may be receptive to interventions targeted at reducing alcohol use in this setting.

4.4. Implications for Future Research

Low- and middle-income countries are particularly challenged by the implementation of known prevention methods for alcohol use and violence, due to the limited regulation of alcohol production and sales, the lack of data on violence-related injuries, and the absence of political will (WHO, 2006). However, findings from this study suggest that interventions to reduce alcohol use could reduce violence-related injury as well. Future studies are needed to assess the acceptability, feasibility and effectiveness of such interventions in this environment.

4.5 Limitations

A limitation of this study is that the data from patients presenting to the emergency room of KCMC may not be generalizable to the population living in this area

that does not seek treatment for violence-related injuries. Especially in instances of domestic violence against women, there is likely an underutilization of care for reasons such as stigma, fear, or geographical and financial restrictions (Henning & Klesges, 2002). Additionally, a general risk with qualitative research is the possibility that interviewees responded with what they believed to be socially desirable answers. This could have manifested in either underreporting of alcohol use behaviors or an exaggeration of one's desire to change their alcohol use behavior when asked by a provider. This potential limitation was minimized with the use of local researchers trained in sensitive topics and with the decision to conduct only private interviews. The small sample size of interview participants further limits the generalizability of these conclusions. However, no new themes were generated from the data in the final interview.

5. Conclusion

Alcohol use and violence-related injury pose a significant threat to health and well-being globally. In Moshi, Tanzania, both issues are prevalent and contribute to a sufficient disease burden. This study has added to the data on alcohol-attributable harm, contributing to expanding information available on this issue from LMICs. The ED can be used to screen for initial alcohol use and violence-related injury, but likely misses many victims of domestic violence. To adequately reduce violence-related injuries in this setting, it is necessary to address harmful alcohol use as well.

Appendix A: Trauma Registry

KCMC Clinical Trauma Registry: Arrival to the ED to Discharge from the hospital

DEMOGRAPHICS

Where patient lives: Moshi Urban Moshi Rural

Other: _____

Patient age: _____

Patient sex: Male Female

Patient Years Education: _____

Marital status: Single Married Partner, not married

Widow/Widower Separated

Employment: Student Unemployed Professional

Skilled employment

Self-employed Farmer

Other: _____

Tribe: Chagga Sambaa Masai Pare

Sukuma Iraq Nyaturu Mmeru

Muha Other: _____

Type of insurance:

None/ abscond

Cash personal payment/relative support

National Health Insurance

Hospital support/exemption (determined at discharge)

Other: _____

MEDICAL HISTORY

Diabetes Mellitus:

No → Never tested Tested and Negative

Yes → Untreated/Doesn't follow up Pills Insulin

Hypertension:

No → Never tested Tested and Negative

Yes → Takes pills Treated but uncontrolled

Untreated or Doesn't follow up

Any prior surgery:

No

Yes → Appendectomy Cholecystectomy

Other: _____

Other: _____

Any prior TBI?: No Yes

HIV Status: Tested and negative

Never tested

Yes → ARTs? No

Yes → Started (mm/yyyy) ___/___

On Septrin? No Yes

Date of 1st pos. test (mm/yyyy): ___/___

Last Viral Load: _____ Last CD4 count: _____

Clinic: _____

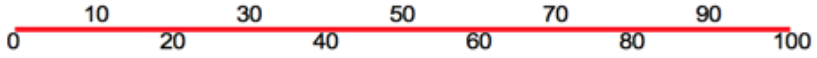
Any AIDS related infections: _____

Prescribed Medications: (medication name, dose, frequency)

Demographics & History: patient reported family reported

BEHAVIORAL HISTORY ON ARRIVAL; SF8

SF8 patient reported family reported

SF0. Kwa kutumia mstari kama kielelezo, unawezaje kupima/kukadiria vipi hali ya afya yako kwa sasa? (Nakili kwa asilimia inayoendana na alama ya anayehojiwa)						
From 0 to 100, how would you rate your current state of health? (Record number): _____						
						
You can use the line as a guide:						
SF1. Kwa ujumla, unawezaje kukadiria afya yako kwa wiki 4 zilizopita? Overall, how would you rate your health during the past 4 weeks?	0: Bora Zaidi 0: Excellent	1: Nzuri sana 1: Very Good	2: Nzuri 2: Good	3: Inaridhisha 3: Fair	4: Duni 4: Poor	5: Hairidhishi 5: Very Poor
SF2. Kwa wiki 4 zilizopita, ni kiasi gani matatizo yako ya kiafya yalizuia shughuli zako za kawaida za kimwili (kama vile kutembea kwenda sokoni)? During the past 4 weeks, how much did physical health problems limit your usual physical activities (such as walking to the market)?	0: Hapana kabisa 0: Not at all	1: Kidogo sana 1: Very little	2: Kiasi 2: Somewhat	3: Sana 3: Quite a lot	4: Sikuwa naweza kufanya shughuli za kimwili 4: Could not do physical activities	
SF3. Katika wiki 4 zilizopita, ulipata ugumu kwa kiasi gani katika kufanya shughuli zako za kila siku, ukiwa nyumbani au mbali na nyumbani, kwa sababu ya afya yako ya kimwili? During the past 4 weeks, how much difficulty did you have doing your daily work, both home and away from home, because of your physical health?	0: Hapana kabisa 0: None at all	1: Kidogo sana 1: A little bit	2: Kiasi 2: Some	3: Sana 3: Quite a lot	4: Sikuweza kufanya shughuli kilasiku 4: Could not do daily work	
SF4 Umekuwa na maumivu ya mwili kiasi gani kwa wiki 4 zilizopita? How much bodily pain have you had during the past 4 weeks?	0: Hakuna 0: None	1: Kidogo sana 1: Very mild	2: Kidogo 2: Mild	3: Kiasi 3: Moderate	4: Makali 4: Severe	5: Makali sana 5: Very Severe
SF5. Kwa wiki 4 zilizopita, ulikuwa na nguvu kiasi gani? During the past 4 weeks, how much energy did you have?	0: Nyingi sana 0: Very much	1: Nyingi zaidi 1: Quite a lot	2: Kaisi 2: Some	3: Kidogo 3: A little	4: Hakuna 4: None	
SF6. Kwa wiki 4 zilizopita ni kwa kiasi gani hali yako ya afya ya kimwili au matatizo ya kihisia yalizuia shughuli zako za kijamii na familia au marafiki? During the past 4 weeks, how much did your physical health or emotional problems limit your usual social activities with family or friends?	0: Hapana kabisa 0: None at all	1: Kidogo sana 1: Very little	2: Kidogo 2: Somewhat	3: Nyingi sana 3: Quite a lot	4: Sikuwa naweza kufanya shughuli za kijamii 4: Could not do social activities	
SF7. Kwa wiki 4 zilizopita, umesumbuliwa kwa kiasi gani na shida za mhemko (kama vile kujihisi kuwa na wasiwasi, mfadhaiko au kuwashwa)? During the past 4 weeks, how much have you been bothered by emotional problems (such as feeling anxious, depressed or irritable)?	0: Hapana kabisa 0: None at all	1: Kidogo 1: Slightly	2: Kiasi 2: Moderately	3: Nyingi sana 3: Quite a lot	4: Kuzidi kiasi 4: Extremely	
SF8. Kwa wiki 4 zilizopita ni kwa kiasi gani	0: Hapana kabisa	1: Kidogo	2: Kiasi	3: Nyingi	4: Kuzidi kiasi	

matatizo binafsi au ya hisia yalikuzuia kufanya kazi zako za kawaida, shughuli za shule au shughuli nyingine za kila siku? During the past 4 weeks, how much did personal or emotional problems keep you from doing your usual work, school or other daily activities?	<i>kabisa</i> 0: None at all	<i>Kidogo</i> 1: Slightly	2: Moderately	<i>sana</i> 3: Quite a lot	4: Extremely
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PHQ-2 DEPRESSION

PHQ2 patient reported family reported

PHQ1. Kwa wiki 2 ziilozopita ni kwa kiasi gani umekuwa ukisumbuliwa na kutokuwa na hamu au shauku ya kufanya vitu: In the past two weeks how often have you been bothered by little interest or pleasure in doing things:	0: Hapana kabisa 0: Not at all	1: Siku kadhaa 1: Several days	2: Zaidi ya nusu ya siku zote 2: More than half the days	3: Karibu kila siku 3: Nearly every day
PHQ2. Kwa wiki 2 zilizopita ni kwa kiasi gani umekuwa ukisumbuliwa na kuzubaa, kufadhaika au kukosa matumaini: In the past two weeks how often have you been bothered by feeling down, depressed, or hopeless:	0: Hapana kabisa 0: Not at all	1: Siku Kadhaa 1: Several days	2: Zaidi ya nusu ya siku zote 2: More than half the days	3: Karibu kila siku 3: Nearly every day

AUDIT Alcohol consumption: "Now I am going to ask you some questions about your use of alcoholic beverages during this past year." Explain what is meant by "alcoholic beverages" by using local examples of beer, wine, vodka, etc.

AUDIT patient reported family reported

1. Mara ngapi unatumia kinywaji kilicho na kilevi? How often do you have a drink containing alcohol?	<i>Hakuna</i> Never	<i>Kila mwezi au chini ya mwezi</i> Monthly or less	<i>Mara 2 hadi 4 kwa mwezi</i> 2-4 times/month	<i>Mara 2 hadi 3 kwa wiki</i> 2-3 times / week	<i>4 au zaidi kwa wiki</i> 4 or more times/week
2. Kwa siku ya kawaida unatumia vinywaji vingapi vyenye kilevi unapokuwa unakunywa? How many drinks containing alcohol do you have on a typical day when you are drinking?	<i>1 au 2</i>	<i>3 au 4</i>	<i>5 au 6</i>	<i>7 au 9</i>	<i>10 au zaidi</i>
3. Mara ngapi unatumia vinywaji sita au zaidi kwa mara moja? How often do you have six or more drinks on one occasion?	<i>Haijawahi kutokea</i> Never	<i>Chini ya kila mwezi</i> Less than monthly	<i>Kila Mwezi</i> Monthly	<i>Kwa wiki</i> Weekly	<i>Kila siku au karibu kila siku</i> Daily/ almost daily
4. Mara ngapi katika mwaka uliopita uligundua hukuweza kuacha kunywa mara ukishaanza? How often during the last year have you found that you were not able to stop drinking once you had started?	<i>Haijawahi kutokea</i> Never	<i>Chini ya kila mwezi</i> Less than monthly	<i>Kila Mwezi</i> Monthly	<i>Kwa wiki</i> Weekly	<i>Kila siku au karibu kila siku</i> Daily/ almost daily
5. Mara ngapi katika mwaka uliopita ulishindwa kufanya unavyotarajiwa kutoka kwako kwa sababu ya kunywa? How often during the last year have you failed to do what was normally expected of you because of drinking?	<i>Haijawahi kutokea</i> Never	<i>Chini ya kila mwezi</i> Less than monthly	<i>Kila Mwezi</i> Monthly	<i>Kwa wiki</i> Weekly	<i>Kila siku au karibu kila siku</i> Daily/ almost daily
6. Mara ngapi katika mwaka uliopita ulihitaji kinywaji cha kwanza asubuhi ili kuweza kuendelea na shughuli zako baada ya kunywa sana? How often during the last year have you needed a first drink in the morning to get	<i>Haijawahikutokea</i> Never	<i>Chini ya kila mwezi</i> Less than monthly	<i>Kila Mwezi</i> Monthly	<i>Kwa wiki</i> Weekly	<i>Kila siku au karibu kila siku</i> Daily/ almost daily

yourself going after a heavy drinking session?					
7. Mara ngapi katika mwaka uliopita ulijihisi kuwa na hatia au kujilaumu baada ya kunywa? How often during the last year have you had a feeling of guilt or remorse after drinking?	<i>Haijawahi kutokea</i> <i>Never</i>	<i>Chini ya kila mwezi</i> <i>Less than monthly</i>	<i>Kila Mwezi</i> <i>Monthly</i>	<i>Kwa wiki</i> <i>Weekly</i>	<i>Kila siku au karibu kila siku</i> <i>Daily/ almost daily</i>
8. Mara ngapi katika mwaka uliopita hukuweza kukumbuka kilichotendeka usiku uliopita kwa sababu ulikunywa? How often during the last year have you been unable to remember what happened the night before because of your drinking?	<i>Haijawahi kutokea</i> <i>Never</i>	<i>Chini ya kila mwezi</i> <i>Less than monthly</i>	<i>Kila Mwezi</i> <i>Monthly</i>	<i>Kwa wiki</i> <i>Weekly</i>	<i>Kila siku au karibu kila siku</i> <i>Daily/ almost daily</i>
9. Je, umejeruhiwa au mtu mwingine kujeruhiwa kwa sababu ya kunywa kwako? Have you or someone else been injured because of your drinking?	<i>Hapana [0]</i> <i>No [0]</i>		<i>Ndiyo, lakini ki kwa mwaka uliopita [2]</i> <i>Yes, but not in the last year [2]</i>		<i>Ndiyo kwa mwaka uliopita [4]</i> <i>Yes, during the last year [4]</i>
10. Je, ndugu yako au rafiki yako au daktari au mhudumu wa afya mwingine ameguswa na kunywa kwako au kupendekeza upunguze kunywa kwako? Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	<i>Hapana [0]</i> <i>No [0]</i>		<i>Ndiyo, lakini ki kwa mwaka uliopita [2]</i> <i>Yes, but not in the last year [2]</i>		<i>Ndiyo kwa mwaka uliopita [4]</i> <i>Yes, during the last year [4]</i>

SUBSTANCE USE: patient reported family reported

Drug	Lifetime Use?	Current Use?	Quantity per week
Tobacco	<input type="checkbox"/> No <input type="checkbox"/> Yes →	<input type="checkbox"/> No <input type="checkbox"/> Yes →	
Marijuana	<input type="checkbox"/> No <input type="checkbox"/> Yes →	<input type="checkbox"/> No <input type="checkbox"/> Yes →	
Cocaine	<input type="checkbox"/> No <input type="checkbox"/> Yes →	<input type="checkbox"/> No <input type="checkbox"/> Yes →	
Heroin	<input type="checkbox"/> No <input type="checkbox"/> Yes →	<input type="checkbox"/> No <input type="checkbox"/> Yes →	
Mirungi (Khat)	<input type="checkbox"/> No <input type="checkbox"/> Yes →	<input type="checkbox"/> No <input type="checkbox"/> Yes →	
Tambu	<input type="checkbox"/> No <input type="checkbox"/> Yes →	<input type="checkbox"/> No <input type="checkbox"/> Yes →	
Kuberi (oral snuff)	<input type="checkbox"/> No <input type="checkbox"/> Yes →	<input type="checkbox"/> No <input type="checkbox"/> Yes →	

ACUTE INJURY INFORMATION:

Date of Injury: (dd/mm/20yy) ___/___/20___

Injury time: (24 hr) ___:___

Date of Arrival to KCMC: (dd/mm/20yy) ___/___/20___

Arrival time: (24 hr) ___:___

Mechanism of arrival: Ambulance from other hospital

- Private car
- Private Motorcycle
- Unknown
- Bajaji
- Police car
- Boda boda
- Taxi
- Other: _____

First health center treated at:

- KCMC
- Hai District Hosp.
- Same District Hosp.
- Kilema Hosp.
- Kibosho Hosp.
- Faraja Hosp.
- Mawenzi
- Siha District Hosp.
- St. Joseph Hosp.
- Other: _____

Arrival date: (dd/mm/yy) ___/___/___

Arrival time: (24 hr) ___:___

Intention of the Injury: Unknown

- Unintentional
- Intentional → Self-Inflicted
- Inflicted by other person
- Inflicted by other (non-person)

Mechanism of Injury:

- Unknown
- Road Traffic →
- Driver or Passenger
- Motorcycle Truck
- Car Dala dala
- Bajaji Bus
- Pedestrian
- Bicycle
- Assault → Fist/Foot Gun Knife Other: _____
- Drowning
- Fall → Fall from standing
- Fall from height: _____ meters from ground
- Burn
- Other: _____

Alcohol Status:

- Patient: Negative Positive
- How was information obtained? Breathalyzer: ___ Clinical Exam History
- Driver, if not patient: N/A Negative Unknown
- Positive -> Suspected Confirmed
- Other persons involved: N/A Negative Unknown
- Positive -> Suspected Confirmed

BASELINE RISK ASSESSMENT

Vital Signs on Arrival to ED:

T ___ RR ___ HR ___ BP ___ / ___

Pulse Ox ___ Pain Level (0-100) ___

AVPU (Choose one)

- Alert
- Responds to Verbal stimuli only
- Unresponsive
- Responds to Painful Stimuli only
- Pupils:**
- L: normal sluggish non-reactive untestable
- R: normal sluggish non-reactive untestable
- Are pupils even? No Yes

Eye Opening (choose one)	<i>Spontaneously</i>	4
	<i>To Speech</i>	3

	<i>To Pain</i>	<i>2</i>
	<i>None</i>	<i>1</i>
Verbal Response (choose one)	<i>Oriented</i>	<i>5</i>
	<i>Confused</i>	<i>4</i>
	<i>Inappropriate</i>	<i>3</i>
	<i>Incomprehensible</i>	<i>2</i>
	<i>None</i>	<i>1</i>
Motor Response (choose one)	<i>Obeys Commands</i>	<i>6</i>
	<i>Localizes to pain</i>	<i>5</i>
	<i>Withdraws from pain</i>	<i>4</i>
	<i>Flexion to pain</i>	<i>3</i>
	<i>Extension to pain</i>	<i>2</i>
	<i>None</i>	<i>1</i>

Secondary insults and other complications:

Did patient experience seizure?

No

Yes → Type: _____ Duration: _____ (minutes)

Any aspiration event? No Yes

Burn No Yes

If Yes, Total BSA% Burned: _____

HOSPITAL STATUS

Vital Signs on Leaving ED/ Arrival to ward/ICU:

T _____ RR _____ HR _____ BP _____ / _____ POx _____ Pain Level (0-100) _____ Height _____ Weight _____

AVPU: _____ GCS E ___ / V ___ / M ___

ED Dispo location: Theatre/OR ICU Surgical 1

Surgical 2 Other: _____

Did the patient's status worsen after the ED? No Yes

ICU No (proceed to Need intubation?) Yes (continue)

Date of Arrival to ICU (dd/mm/20yy): ___ / ___ / 20 ___

Time: (24 hr) ___ : ___

Date of Discharge from ICU (dd/mm/yy): ___ / ___ / 20 ___

Time: (24 hr) ___ : ___

Vital Signs on Arriving to ICU (if different than above):

T _____ RR _____ HR _____ BP _____ / _____ POx _____

Pain Level (0-100) _____ AVPU _____ GCS E ___ / V ___ / M ___

Vital Signs on Leaving ICU:

T ____ RR ____ HR ____ BP ____ / ____ POx ____ Pain Level (0-100) ____ Weight: ____

AVPU ____ GCS E ____ / V ____ / M ____

Needed intubation? No Yes

If yes, where? _____

Intubation: (dd/mm/20yy): ____ / ____ / 20 ____

Time: (24 hr) ____ : ____

Extubation: (dd/mm/yy) ____ / ____ / ____

Time: (24 hr) ____ : ____

ORU? No Yes

Date to ORU: (dd/mm/yy) ____ / ____ / ____

Discharge from hospital: No (Elope/Death) Yes

Date: (dd/mm/yy) ____ / ____ / ____

Time: (24 hr) ____ : ____

Death in the hospital: No Yes

Date: (dd/mm/yy) ____ / ____ / ____

Time: (24 hr) ____ : ____

Destination after discharge: Morgue Home

Other: _____

Nutrition information and status/risks

Difficulty eating during hospitalization? No Yes

NGT placed for nutrition: No Yes

Date nutrition started: (dd/mm/20yy): ____ / ____ / 20 ____

Diagnostics Information:

POCUS/ EFAST: No Yes → Date (dd/mm/yy) ____ / ____ / ____ Time: (24 hr) ____ : ____

RUQ: Normal Not performed Abnormal Findings: _____

LUQ: Normal Not performed Abnormal Findings: _____

Cardiac: Normal Not performed Abnormal Findings: _____

Pelvis: Normal Not performed Abnormal Findings: _____

Lung: Normal Not performed Abnormal Findings: _____

HGb tested? No Yes initial: _____, lowest hgb: _____

Needed a transfusion? No Yes: Date (dd/mm/yy) ____ / ____ / ____

Glucose tested? No Yes _____

Creatinine tested? No Yes First _____ Date (dd/mm/yy) ____ / ____ / ____

Highest Cre _____ Date (dd/mm/yy) ____ / ____ / ____

XR Obtained: No Yes

Date: (dd/mm/20yy): ____ / ____ / 20 ____ Time: (24 hr) ____ : ____

XR Results:

CT obtained: No Yes

Date: (dd/mm/20yy): ____ / ____ / 20 ____ Time: (24 hr) ____ : ____

CT Results:

Subarachnoid Hemorrhage: Absent Present Indeterminant N/A

Subdural Hemorrhage: Absent Present Indeterminant N/A

Epidural Hemorrhage: Absent Present Indeterminant N/A

PERIOPERATIVE/ OPERATIVE DATA

Needed surgery?

Surgery#1: No Yes date(dd/mm/20yy): ___ / ___ /20___ Time: (24 hr) ___ : ___
 Indication: _____ WHO Checklist: No Yes
 Procedure: _____ ASA Status: I II III IV V

Surg #1:

Anesthesia: General Spinal/Epidural Local (see below)
 OR Airway mgmt: NA/none NRB Mask Ventilation LMA Intubation
 Induction: NA Ketamine Thiopental Propofol Benzodiazepine Lignocaine Bupivacaine
 Analgesia: NA Fentanyl Morphine Tramadol Pethadine Paracetamol NSAID
 Paralytic: NA Succinylcholine

Pain Interventions:

Nerve block: No Yes → US guided? No Yes
 Type: Fascia iliaca Femoral Adductor canal
 Popliteal Caudal TAP Rectus sheath Ilioinguinal
 Interscalene Axillary PEC serratus anterior
 Supraclavicular Infraclavicular

Post-op nausea/vomiting medications: No Yes →

Which: _____

ICU Risk factors: Check all that apply:

Never in ICU None apply
 aspiration event/ head not 30 deg Hypoxia Hyperglycemia
 Hypotension Hgb < 6 for 72 hours (no transfusion for 72hrs)
 Did patient get GI Ppx (Ranitidine, Cimetidine, Omeprazole, Lantoprazole) No Yes
 Onset Date: (dd/mm/20yy): ___ / ___ /20___
 Did patient get DVT ppx (Heparin, Aspirin, Enoxaparin) No Yes
 Onset Date: (dd/mm/20yy): ___ / ___ /20___
 Did patient first get rehab in the ICU? No Yes Onset Date: (dd/mm/20yy): ___ / ___ /20___
 Did the patient get seizure medicines? No Yes Onset Date: (dd/mm/20yy): ___ / ___ /20___
 If yes: which Phenytoin Carbamazepine other _____
 Did the patient get antibiotics during the hospitalization: No Yes If yes, which?
 Ampicillin # days ___ Gentamicin # days ___ Ceftriaxone # days ___
 Metronidazole # days ___ Piperacillin/Tazobactam # days ___ other _____ # days ___

Diagnostics List: (Clinical Impression)

1. _____
2. _____
3. _____

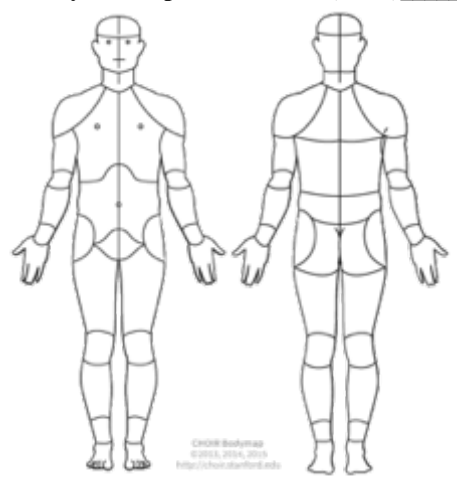
Complications

Pneumonia No Yes → Aspiration Ventilator Associated Other
 Acute renal Injury No Yes
 Thrombosis No Yes → If yes: DVT PE Fat embolism
 If yes: Clinical dx US CT
 Urinary tract Infection No Yes
 Multiple organ failure secondary to sepsis and shock No Yes
 Unexpected Delirium No Yes
 Sympathetic Storm No Yes [tachypnea, diaphoresis, hypertensive post TBI]

Seizures No Yes
Wound infections No Yes
Wound dehiscence/rupture/burst No Yes
Decubitus Ulcer/ Bed Sore No Yes If yes: Stage 1 Stage 2 Stage 3 Stage 4
Providers involved in care:
 PT/OT No Yes → Date of first service: (dd/mm/yy) ___/___/___ Time: (24 hr) ___:___
 Medicine Consultation No Yes → for: _____
 Cardiology Consultation No Yes → for: _____
 Social Worker No Yes → for: _____
 Other: _____ for: _____

SURGICAL DISCHARGE DATA:

Discharge Vital Signs: T ___ RR ___ HR ___ BP ___ / ___ Pulse Ox ___ Weight ___
 Where is your pain?/ Maumivu yako wapi? Pain (0-100) _____



Discharge meds: Prescribed Medications: (medication name, dose, frequency, new (since hospitalization) or old)

- _____ New Old
- _____ New Old
- _____ New Old

Follow-up Plans:

Comorbidities	Surgery <input type="checkbox"/> No <input type="checkbox"/> Yes	Dx:	When:
	Orthopedics <input type="checkbox"/> No <input type="checkbox"/> Yes		
	Medicine <input type="checkbox"/> No <input type="checkbox"/> Yes		
	Medicine #2 <input type="checkbox"/> No <input type="checkbox"/> Yes		

	Medicine #3 <input type="checkbox"/> No <input type="checkbox"/> Yes		
	Medicine #4 <input type="checkbox"/> No <input type="checkbox"/> Yes		
Rehab/OT, Pain	Rehab <input type="checkbox"/> No <input type="checkbox"/> Yes		
	OT <input type="checkbox"/> No <input type="checkbox"/> Yes		
	Other: _____ <input type="checkbox"/> No <input type="checkbox"/> Yes		
Mental Health	_____ <input type="checkbox"/> No <input type="checkbox"/> Yes		
Substance Use	_____ <input type="checkbox"/> No <input type="checkbox"/> Yes		

Glasgow Outcomes Scale

Upper good recovery, GR+	Resumption of normal life despite minor deficits
Lower good recovery, GR-	
Upper moderate disability, MD+	Disabled but independent. Can work in a sheltered setting
Lower moderate disability	
Upper severe disability, SD+	Conscious but disabled. Dependent for daily support
Lower severe disability, SD-	
Persistent vegetative, VS	Minimal responsiveness
Death	Non survival

PHQ2: patient reported family reported

<p>PHQ 1. Kwa wiki 2 zilizopita ni kwa kiasi gani umekuwa ukisumbuliwa na kutokuwa na hamu au shauku ya kufanya vitu: In the past two weeks how often have you been bothered by little interest or pleasure in doing things:</p>	0 : Hapana kibisa	1: Siku kadhaa	2: Zaidi ya nusu ya siku zote	3: Karibu kila siku
	0 : Not at all	1: Several days	2: More than half the days	3: Nearly every day
<p>PHQ 2. Kwa wiki 2 zilizopita ni kwa kiasi gani umekuwa ukisumbuliwa na kuzubaa, kufadhaika au kukosa matumaini: In the past two weeks how often have you been bothered by feeling down, depressed, or hopeless:</p>	0 : Hapana kibisa	1: Siku kadhaa	2: Zaidi ya nusu ya siku zote	3: Karibu kila siku
	0 : Not at all	1: Several days	2: More than half the days	3: Nearly every day

Family Support Questions:

Who would you call on for help if you were sick or disabled?

Primary caregiver's name and relation: _____

Would (person's name) be available to you if you needed assistance after this hospitalization?

No Yes Don't know No response

When would this person be available to you?

Never Weekdays Weekends Both Don't know No response

What time of day would this person be available to you?

Daytime Evening Overnight

Functional Independence Measure patient reported family reported

FIM1. Self care	re:	Score
FIM6. Toileting		
FIM10. Transfers: bed/chair/wheelchair		
FIM14. Locomotion: walking/wheelchair		
FIM15. Locomotion: stairs		
FIM17. Expression		
FIM18. Comprehension		
FIM22. Social Interaction		
FIM26. Problem Solving		
FIM27. Memory		

1, Total assistance (Subject contributes <25% of the effort or is unable to do the task)
 2, Maximal assistance (Subject provides less than half of the effort (25-49%)
 3, Moderate assistance (Subject still performs 50-75% of the task)
 4, Minimal assistance (Requiring incidental hand-on help only (subject performs >75% of the task)
 5, Supervision (Requiring only standby assistance or verbal prompting or help with set-up)
 6, Modified Independence (Requiring the use of a device but not physical help)
 7, Complete independence (Fully independent)

Appendix B1: Interview Informed Consent (English)

INTRODUCTION

You are being asked to take part in this research study because you were treated at Kilimanjaro Christian Medical Centre Emergency Department for an injury caused by violence. This study is being conducted by Dr. Mark Mvungi, Acting Director of Hospital Services, Dr. Blandina Mmbaga Kilimanjaro Christian Medical Center and Dr. Catherine Staton of the Division of Emergency Medicine at Duke University.

Research studies are voluntary and include only people who choose to take part. Please read this consent form carefully and take your time making your decision. As your study staff member discusses this consent form with you, please ask him/her to explain any words or information that you do not clearly understand. The nature of the study, risks, inconveniences, discomforts, and other important information about the study are listed below. You are free to ask questions about this study at any time. If you agree to take part in this study, you will be asked to sign and date this consent form. You will get a copy to keep.

WHY IS THIS STUDY BEING DONE?

The purpose of this study is to discuss the use of alcohol in Tanzania and any relationship it may have to violence-related injuries. The study will discuss the experience and perceptions of alcohol use and violence in Tanzania.

WHAT DO I HAVE TO DO IF I AM IN THIS STUDY?

If you agree to participate, you will participate in an interview. We will ask you to answer some questions about alcohol use and the circumstances of your injury. Our interview will take about 30 minutes of your time.

HOW MANY PEOPLE WILL TAKE PART IN THIS STUDY?

About 15 patients will participate in interviews during this study.

HOW LONG WILL I BE IN THIS STUDY?

Most likely your interview will last about 30 minutes.

WHY WOULD THE DOCTOR TAKE ME OFF THIS STUDY EARLY?

The study could be ended early by the Ministry of Health in Tanzania or by the Ethics Committee of KCMC. Ethics Committees and Institutional Review Boards watch over the safety and rights of research subjects. Also, the study could be ended early by the following groups in the United States: the Duke University Health System Institutional Review Board, the National Institutes of Health, and the Office of Human Research Protections.

WHAT ARE THE RISKS AND BENEFITS OF THE STUDY?

There is no benefit to you for participating in this study. There are no physical risks associated with this study. There is, however, the potential risk of loss of confidentiality. Every effort will be made to keep your information confidential; however, this cannot be guaranteed. Some of the questions we will ask you as part of this study may make you feel uncomfortable. You may refuse

to answer any of the questions and you may take a break at any time during the study. You may stop your participation in this study at any time.

If your answers to questions show that you need further medical or social assistance, we are obligated to, and will, refer you to an appropriate medical professional for treatment. We will not pay for the costs of your medical treatment or transport costs associated with these additional treatments.

CONFIDENTIALITY

Study records will be kept confidential as required by law. Your records will be assigned a unique study number. Information that links your name to the study number will be kept in a locked cabinet that can only be accessed by members of the research team. No personal identifiers will be sent to or used at Duke. If information from this study is presented at scientific meetings or in scientific journals, your identity will not be revealed.

WHAT ARE THE COSTS TO ME?

There is no additional cost to you for taking part in this research study.

WILL I RECEIVE ANY PAYMENTS?

There will be no financial compensation for participating in this study.

WHAT ABOUT RESEARCH RELATED INJURIES?

Immediate necessary care and support is available if an individual is injured because of participation in this research project, however, there is no provision for free medical care or for monetary compensation for such an injury. For questions about the study or research-related injury, contact Dr. Mark Mvungi from KCMC at (255) 78 62 40 988 or at (255) 75 43 01 149.

VOLUNTARY PARTICIPATION/RIGHT TO WITHDRAW

You may choose not to be in the study, or, if you agree to be in the study, you may withdraw from the study at any time. If you agree to participate, you may refuse to answer any question or stop the interview at any time. Your decision not to participate or to withdraw from the study will not involve any penalty or loss of benefits, and will not affect your access to health care.

Your decision to not participate or to withdraw from the study will not involve any penalty or loss of benefits to which you are entitled, and will not affect your access to health care at KCMC. If you do decide to withdraw, we ask that you contact Dr. Mark Mvungi in writing and let him know that you are withdrawing from the study. His mailing address is KCMC-Duke Collaboration, Box 3010, Sokoine Road, Moshi. We will tell you about new information from this or other studies that may affect your health, welfare or willingness to stay in this study. If you want the results of the study, let the study staff know.

WHAT DO I DO IF I HAVE QUESTIONS OR PROBLEMS?

For questions about the study or a research-related injury, or if you have complaints, concerns or suggestions about the research, contact Dr. Mark Mvungi from KCMC at (255) 78 62 40 988 or at (255) 75 43 01 149/ For questions about the study or research-related injury, contact Dr. Mark Mvungi from KCMC at (255) 78 62 40 988 or at (255) 75 43 01 149

For questions about your rights as a research participant, or to discuss problems, concerns or suggestions related to the research, or to obtain information or offer input about the research, contact the Kilimanjaro Christian Medical Centre (KCMC) Ethics Committee at telephone number (255) 27 27-53909 or the Duke University Health Systems Institutional Review Board at +1-919-668-5111.

STATEMENT OF CONSENT

"The purpose of this study, procedures to be followed, risks and benefits have been explained to me. I have been allowed to ask the questions I have, and my questions have been answered to my satisfaction. I have been told whom to contact if I have additional questions. I have read this consent form and agree to be in this study with the understanding that I may withdraw at any time. I have been told that I will be given a signed and dated copy of this consent form to keep."

Participant's Name (Print)

Signature and Date

Person Obtaining Consent's Name (Print)

Signature and Date

Appendix B2: Interview Informed Consent (Swahili)

UTANGULIZI

Unaombwa kushiriki katika utafiti huu kwa sababu umetibiwa katika kitengo cha dharura cha hospitali ya Kilimanjaro Christian Medical Centre kwa matatizo ya kuumia kulikosababishwa na vurugu. Utafiti huu unafanywa na Daktari Mark Mvungi, Daktari Blandina Mmbaga wa KCMC na Daktari Catherine Staton wa Idara ya matibabu ya dharura katika chuo kikuu cha Duke.

Tafiti ni za hiyari na zinahusisha watu ambao wamechagua kushiriki. Tafadhali soma fomu hii ya ridhaa kwa makini na uchukuwe muda wako kufanya maamuzi. Mfanyakazi mhusika akiwa anajadili fomu hii ya ridhaa na wewe, tafadhali muulize akuelezee neno lolote au taarifa yoyote ambayo hujaelewa vizuri. Asili ya utafiti ni Hatari/Kudhubutu, usumbufu, Adha na taarifa zingine muhimu za utafiti zimeorodheshwa chini. Uko huru kuuliza maswali kuhusu utafiti huu muda wowote. Kama unakubali kushiriki katika utafiti huu, utaombwa kusaini na kuandika tarehe kwenye fomu hii ya ridhaa. Unaweza kupata nakala kwa ajili ya kuhifadhi.

KWA NINI UTAFITI HUU UNAFANYIKA?

Lengo la utafiti huu ni kujadili matumizi ya pombe nchini Tanzania na uhusiano wowote unaoweza kuwa ni wa kuumia kunakohusiana na vurugu. Utafiti utajadili uzoefu na mawazo ya matumizi ya pombe na vurugu nchini Tanzania.

NINATAKIWA KUFANYA NINI KAMA NINAHUSIKA KWENYE UTAFITI HUU?

Kama unakubali kushiriki, Utashiriki kwenye mahojiano. Tutakuomba kujibu maswali kuhusu matumizi ya pombe na mazingira ya ajali kuumia kwako.

NI WATU WANGAPI WATASHIRIKI KATIKA UTAFITI HUU?

Ni kama wagonjwa 15 watashiriki kwenye mahojiano wakati wa utafiti huu.

NTASIRIKI KATIKA UTAFITI KWA MUDA GANI?

Sana sana mahojiano yatachukua kama dakika 30.

KWA NINI DAKTARI ANAWEZA KUNIONDOA KWENYE UTAFITI HUU MAPEMA?

Utafiti unaweza kumalizwa mapema na Wizara ya Afya ya Tanzania au Kamati ya Maadili ya KCMC. Kamati ya maadili na Taasisi ya bodi ya mapitio vinaangalia usalama na haki za mhusika wa utafiti. Pia, utafiti unaweza kusitishwa mapema na makundi yafuatayo ya Amerika, Bodi ya upitiaji wa mfumo wa afya ya Taasisi ya chuo kikuu cha Duke, Taasisi ya taifa ya afya, na ofisi ya kulinda tafiti za kibinadamu.

ZIPI NI HATARI NA FAIDA ZA UTAFITI?

Kama unakubali kushiriki kwenye utafiti huu, hakutakuwa na faida za moja kwa moja za kimatibabu kwako. Hakuna hatari yoyote ya kimwili inayohusika na utafiti huu. Hata hivyo, kuna hatari ya upotevu wa usiri. Kila jitihada zitafanyika kuhifadhi taarifa zako kwa usiri; hata hivyo,

hii haiwezi kudhaminiwa. Baadhi ya maswali tutakayokuuliza kama sehemu ya utafiti huu yatakufanya uhisi wasiwasi. Unaweza kukataa kujibu maswali yoyote na unaweza kuchukua mapumziko muda wowote wakati wa utafiti huu. Unaweza kusitisha ushiriki wako kwenye utafiti huu wakati wowote.

Kama majibu yako yanaonesha kwamba unahitaji msaada zaidi wa matibabu au wa kijamii, sisi tuna wajibu wa kukurejesha kwa mtaalamu sahihi wa matibabu. Hatutalipa gharama za matibabu yako au gharama za usafiri zinazo husiana na matibabu haya ya ziada.

USIRI

Kumbukumbu za utafiti zitahifadhiwa kwa usiri kama sheria zinavyotaka. Kumbukumbu zako zitapewa nambari ya pekee ya utafiti. Taarifa zinazohusisha jina lako na nambari ya utafiti vitawekwa kwenye kabati linalofungwa ambalo litatumiwa na wahusika wa timu ya utafiti tu. Hakuna vitambulisho binafsi ambavyo vitatumwa au kutumika na Duke. Kama taarifa kutoka katika utafiti huu zitawakilishwa kwenye mikutano yoyote ya kisayansi au kwenye majarida ya kisayansi, utambulisho wako hautonyeshwa.

Matokeo ya utafiti yataendelea kuwepo kwenye kumbukumbu zako za utafiti kwa kwa mda wa kama miaka sita baada ya utafiti kumalizika

ZIPI GHARAMA KWANGU?

Hakuna gharama zozote za ziada kwa wewe kushiriki kwenye utafiti huu.

NITAPATA MALIPO YOYOTE?

Hakutakuwa na fidia yoyote ya kifedha kwa kushiriki katika utafiti huu.

VIPI KUHUSU MAJERAHA YANAYOHUSISHA UTAFITI?

Huduma muhimu na msaada wa haraka upo endapo mtu ameumia kwa sababu ya kushiriki kwenye mradi huu wa utafiti, hata hivyo, hakuna uotaji wa huduma ya matibabu ya bure au kufidia pesa kwa majeraha hayo. Kwa maswali kuhusu majeraha yanayohusika na utafiti au uchunguzi, wasiliana na Daktari Mark Mvungi kutoka KCMC kwa namba 0786240988 au kwa 0754301149.

HIYARI YA USHIRIKI/HAKI YA KUJITOA

Unaweza kuchagua kutokuwepo kwenye utafiti, au, kama unakubali kuwa kwenye utafiti, unaweza kujitoa kwenye utafiti muda wowote. Kama unakubali kushiriki, unaweza kukataa kujibu swali lolote au kusimamisha mahojiano katika muda wowote. Maamuzi yako ya kutoshiriki au kujitoa kwenye utafiti hayatahusisha adhabu yoyote au kupoteza faida, na haitokuathiri wewe kupata huduma ya matibabu.

Maamuzi yako ya kutokushiriki au kujitoa kutoka kwenye utafiti hayatahusisha adhabu yoyote au kupoteza faida ambayo ni haki yako, na haita athiri upataji wako wa huduma ya matibabu hapa

KCMC. Kama unaamua kujitoa, Tunakuomba uwasiliane na Daktari Mark Mvungi kwa maandishi na kumjulisha kwamba unajitoa kwenye utafiti. Anuani yake ya barua ni KCMC-Duke collaboration, Box 3010, Sokoine Road, Moshi.

Tutakutaarifu kuhusu taarifa mpya kutoka kwenye utafiti huu au tafiti nyingine ambazo zinaweza kuathiri afya yako, ustawi au matakwa ya kuwepo kwenye utafiti huu. Kama unahitaji matokeo ya utafiti huu, wajulishe watumishi wa utafiti.

NIFANYE NINI KAMA NINA MASWALI AU MATATIZO?

Kwa maswali kuhusu Utafiti au majeraha yanayohusisha utafiti, au kama una malalamiko, wasiwasi, au mapendekezo kuhusu utafiti, wasiliana na Daktari Mark Mvungi kutoka KCMC kwa namba 0786240988 au kwa 0754301149.

Kwa maswali kuhusu haki zako kama mshiriki wa utafiti, au kujadili matatizo, wasiwasi, au mapendekezo yanayohusu utafiti, au kupata taarifa au kutoa mchango kuhusu utafiti, wasiliana na kamati ya maadili ya KCMC kwa namba ya simu (255) 27 27-53909 au Bodi ya upitiaji wa mfumo wa afya ya Taasisi ya chuo kikuu cha Duke, kwa namba+1-919-668-5111.

TAMKO LA RIDHAA

“Kusudi la utafiti huu, taratibu za kufuatwa, hatari na faida zimeelezwa kwangu mimi. Nimeruhusiwa kuuliza maswali niliyonayo, na maswali yangu yamejibiwa na nimeridhika. Nimekwisha ambiwa ni nani wa kuwasiliana nae kama nina maswali ya ziada. Nimesoma fomu hii ya ridhaa na nimekubali kushiriki katika utafiti huu kwa “kuelewa kwamba ninaweza kujitoa muda wowote. Nimeambiwa kwamba nitapewa nakala ya fomu ya ridhaa iliyosainiwa na kuandikwa tarehe nihiifadhi.

Jina la mshiriki

Saini na tarehe

Jina la mtu aliyepokea ridhaa

Saini na tarehe

Appendix C1: Interview Guide (English)

1. Can you tell me about the event that lead to your injury?
 - a. Where were you?
 - b. Were you alone?
 - c. What were you doing?
2. Were you under the influence of alcohol?
 - a. If yes → How do you think that affected the circumstances of your injury?
3. Can you tell me about your relationship with the individual who injured you?
 - a. How would you describe your experience with this person prior to your injury?
 - b. How long have you known this person?
 - i. Do you live with this person?
 - c. Why do you think this individual injured you?
4. How is experiencing an injury as a result of violence different from experiencing another kind of injury?
 - a. Do you think this event will impact your behavior going forward?
 - i. Daily life? Relationships? Work?
 - ii. How will this injury change your alcohol use behavior?
5. Was alcohol involved in any other injuries you have experienced?
 - a. Did these other injuries impact your behavior in any way?
 - b. Can you explain the circumstances of these injuries?
 - c. How was this injury different from any past injuries?
6. What do you see as some of the consequences of alcohol use?
 - a. Does alcohol use impact the use of illegal drugs?
7. What do you think is the connection between alcohol use and violence in your community?

Appendix C2: Interview Guide (Swahili)

1. Je, unaweza ukanielezea kuhusu tukio lililopelekea kuumia kwako?
 - a. Ulikuwa wapi?
 - b. Je, ulikuwa peke yako?
 - c. Ulikuwa unafanya nini?
2. Je, ulikuwa kwenye ya ushawishi wa pombe?
 - a. Kama ndio→unafikiri hiyo imechangiaje mazingira ya wewe kuumia?
3. Unaweza kunielezea uhusiano wa mahusiano yako na huyu mtu aliyekujeruhi?
 - a. Unaweza ukaelezeaje uzoefu wako na huyu mtu kabla ya kuumia?
 - b. Unafahamiana naye kwa muda gani sasa?
 - i. Unaishi na huyu mtu?
 - c. Unadhani ni kwa nini huyu mtu amekujeruhi?
4. Je, kupata majeraha kutokana na ugomvi kunatofautianaje na kupata majeraha ya namna nyingine?
 - a. Je, unafikiri tukio hili litabadilisha tabia yako?
 - i. Maisha ya kila siku? Mahusiano? Kazi?
 - ii. Je, Majeraha haya yatabadilisha tabia yako kuhusu matumizi ya pombe?
5. Je, pombe imehusika kwenye majeraha mengine yoyote uliyowahi kuyapata?
 - a. Je, majeraha hayo mengine yalibadilisha tabia yako kwa namna yoyote ile?
 - b. Je, unaweza kuelezea mazingira ya kutokea kwa majeraha hayo?
 - c. Je, majeraha haya yana tofauti gani na majeraha mengine yaliyopita?
6. Unadhani ni yapi baadhi ya madhara ya matumizi ya pombe?
 - a. Je, matumizi ya pombe yanashawishi tabia ya matumizi ya dawa za kulevya?
7. Je unafikiri kuna uhusiano gani upi uliopo kati ya matumizi ya pombe na ugomvi kwenye jamii yako?

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