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Characteristics of Patients Admitted with Alcohol Related Traumatic Injuries

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Objective: Alcohol use is well recognized as a contributor to traumatic injury. The purpose of this review was to describe the demographics of patients admitted to a regional trauma center with alcohol related traumatic injuries in order to improve service to this population and provide injury prevention programs directed towards this population.

Research Question:

•What are the characteristics of patients admitted to St. Marys Hospital with an alcohol related traumatic injury?

Literature Review:

- Alcohol use can affect patient's care when presenting to the emergency department (Indig, Copeland, Conigrave, & Rotenko, 2009).
- Hospital staff need training on interventions, resources, and supports available for patients presenting with alcohol related traumatic injuries (Indig et al., 2009).
- Staff estimated the number of alcohol related traumatic injuries over the weekend timeframe at higher than actual rates. This was attributed to the lack of available resources and supports from other community providers throughout weekends (Indig et al., 2009).
- People with high levels of depression and people using substances are more likely to use the emergency room as the entry point for their health care than the general population ((McBride, Drumm, Terry-Mcelrath, & Chitwood, 2006).
- Alcohol related incidents and costs double during warm weather months (Lesjak, McMahon, & Zanette, 2008).
- 80% of cases in one study of alcohol related trauma patients were treated for sprains, lacerations, and closed fractures (Lesjak et al., 2008).
- Researchers concluded that excess alcohol use makes people more vulnerable to assault and injury (Hughes, Peters, Davies, & Griffiths, 2007).
- Patients presenting with alcohol related traumatic injuries present in the early morning hours and are more likely to have been assaulted than those without alcohol related traumatic injuries, making the emergency department a potential site for alcohol and violence prevention and intervention (Linakis, Thomas, Mello, & Baird, 2009).

Limitations:

- Not all emergency departments consistently screen for alcohol use among patients (Linakis et al., 2009).
- Several studies contained small sample sizes and the findings would need to be replicated before concluding that they are generalizable.

Methodology:

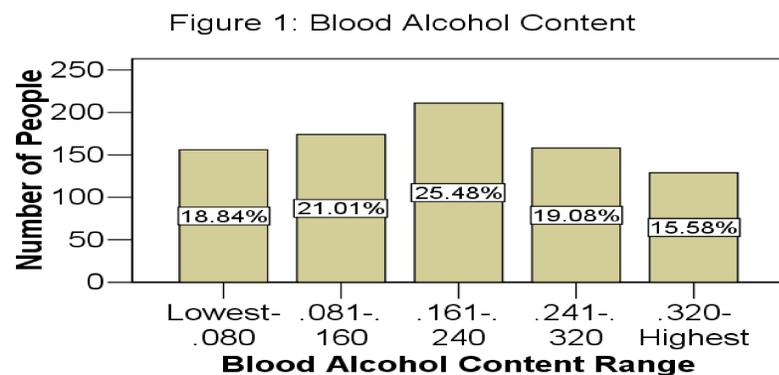
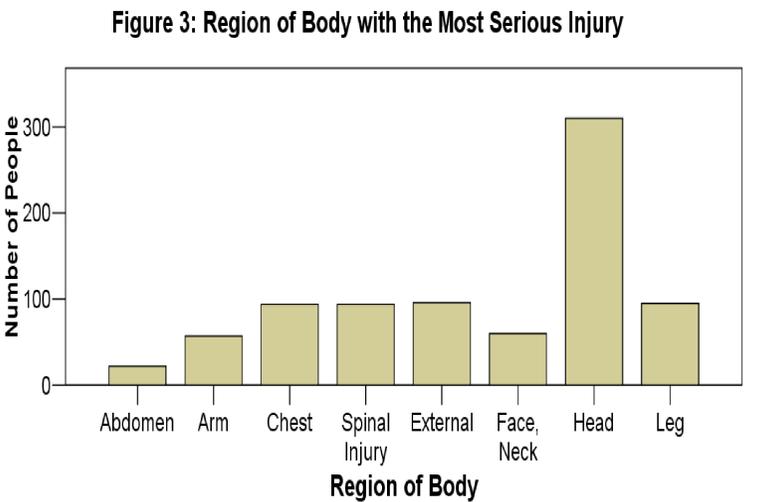
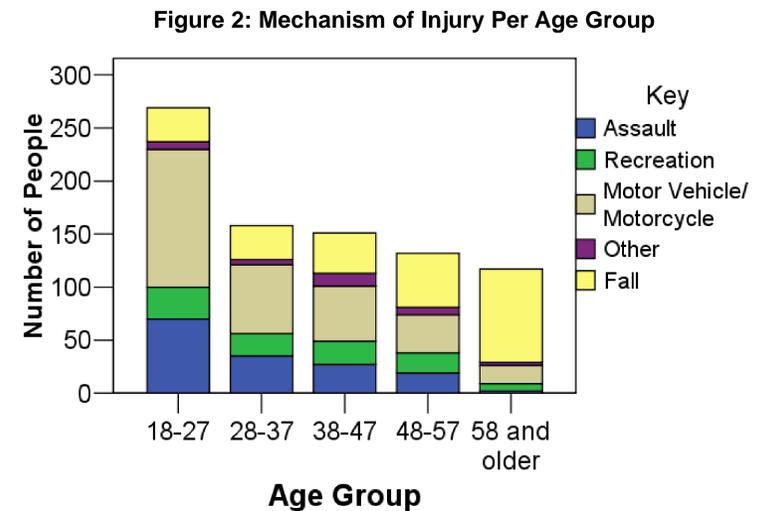
A secondary data analysis was conducted with data from the St. Marys Trauma Center Registry. The study included data for patients age ≥18 admitted between January 2008 and December 2010 after traumatic injury concurrent with alcohol use, withdrawal or alcoholism (as determined by institutional substance abuse screening).

References

References are available from the author upon request.

Results: Of 828 patients presenting with alcohol related traumatic injuries, a majority were male (81%) and white (85%) residing in Southeast MN (71%) (Table 1). Patients with a blood alcohol content level below the legal limit (18.8%) were greatly outnumbered by patients over the legal limit (81.2%) (Figure 1) and nearly 31% of patients had the comorbidity of alcoholism as defined by the National Trauma Data Standard (NTDS). However, only 7% of patients experienced alcohol withdrawal during their hospitalization and 87% of patients had no other substances in their system. Almost twice as many young adults (age 18-27) were admitted with an injury compared to other age groups. Numerous mechanisms of injury were represented with notable age related variances (Figure 2). The most frequently injured body region was the head (37%) with the next most frequently injured body region accounting for only 11% of the population (Figure 3). Of patients admitted with an alcohol related traumatic injury, 63.5% were treated for mild injuries. Lastly, 32.4% of patients were uninsured, self pay or used hospital sponsored charity care; with young adults being 32.5% of the study population and 46.5% of the uninsured. This subgroup of patients had shorter hospital stays than patients with other forms of insurance.

Table 1: Demographic Information		Count	Percent
Gender	Male	672	81.2
	Female	156	18.8
Race	American Indian	5	0.6
	Asian	2	0.2
	Black/African	29	3.5
	Caucasian/White	704	85.0
	Hispanic	35	4.2
	Other	41	5.0
	Unknown	12	1.4
Patient's Residence	Southeast MN	589	71.1
	South Central MN	61	7.4
	Southwest MN	5	0.6
	Northeast MN	2	0.2
	Central MN	2	0.2
	Metropolitan MN	16	1.9
	Other Country	1	0.1
	Other State	152	18.4



Conclusion: Based on this review, Mayo Clinic's Trauma Center will be able to improve service to these patients by directing alcohol related injury prevention efforts toward young males, aged 18-27. Not only is this the group with the greatest number of alcohol-related trauma admissions but this group also represents a large drain on trauma center resources due to uncompensated care. If Minnesota eventually requires people to have insurance, the uncompensated care would be reduced greatly. Additionally, this review had an unanticipated finding of older adults experiencing alcohol related falls. This is an area for prevention which will need to be approached differently than the 18-27 year old group, which may present challenges to the Injury Prevention Specialist. This review provides the necessary baseline data to measure the efficacy of future prevention interventions at Mayo Clinic's Trauma Center.