

Alcoholism in elderly patients: Characteristics of patients and impact on the emergency department



Rates of alcohol abuse/misuse among the baby boomer generation have exceeded that of their predecessors, leading to increased emergency department (ED) utilization by this group, especially as they age [1]. Estimates of alcohol abuse in older adults have ranged from 4%, to 22% in those patients requiring emergency, psychiatric or other medical care [2]. Length of stay and hospital charges for older adults admitted through the ED are significantly higher when there is an alcohol-related diagnoses [3]. It has also been found that many social and health-related factors influence alcohol use and the frequency of ED visits in elderly patients. These may include homelessness, living alone, being divorced or never married, lower socio-economic status, low education levels, chronic diseases, chronic pain and chronic mental health problems [1,4,5]. The subject of alcohol misuse in late life has received relatively little attention in the literature and as the population ages, identifying risks and outcomes for older adults who abuse alcohol will be of great importance. Our objectives were to assess the epidemiology, clinical features, and prognosis of older adults visiting an ED for alcohol-related problems.

We conducted a retrospective cohort analysis of older adults (>64 years of age) presenting to the EDs of seven affiliated hospitals in West Michigan primarily for acute or chronic alcohol abuse or other alcohol-related problems. All eligible cases were seen between January 2009 and June 2015 (80 months). Medical records were used to determine psychosocial and medical risk factors, final disposition, hospital course, complications and morbidity. Data were analyzed to determine prevalence, demographics, comorbidities, alcohol history, clinical findings, and treatment provided to those with alcohol-related disorders. Descriptive statistics were used to summarize the data. The main outcome criterion was the frequency of risk factors and precipitants in our population.

During the study period, 2623 elderly patients were screened; 1040 patients or 39.6% met inclusion criteria. The mean age was 71.1 ± 5.7 years; the oldest patient was 99 years old. The typical elderly patient was male (72%), Caucasian (85%), and lived alone (42%) or with family or a caregiver (40%). One hundred fifty-six (15%) patients were residing in homeless shelters, and 3% came from extended care facilities. Our population averaged 4.4 ED visits per person over the previous 12 months (range 1–49).

Acute intoxication and falls, collapse or syncope were the most common primary reasons for presentation to the ED. Most patients (89%) reported consuming alcohol within the previous 24 h; 3% of patients were experiencing alcohol withdrawal. A significant number of elderly patients (43%) were currently using psychotropic and/or pain medications. Many of these medications had the potential for adverse interactions with alcohol, including opioids, anxiolytics, antidepressants, hypnotics, antipsychotics, and mood regulators. Additional psychosocial risk factors included comorbidity, social isolation, polypharmacy, and recent hospitalization (Table 1).

A total of 510 (49%) of patients were admitted to the hospital; the average hospital length of stay was 5.1 ± 4.1 days. Primary reasons for admission were pancreatitis (14%), gastrointestinal hemorrhage (12%), altered mental status (12%), fracture (11%), liver failure (11%) anemia (7%) and chronic obstructive pulmonary disease (7%).

The hospital mortality was 2% (21/1040). After discharge from the ED or hospital, 29% of patients had a change in their living situation. These changes included subacute rehab facilities, homeless shelters, psychiatric admissions, extended care facilities and adult foster care. Patients discharged to home were given referral to 69 different community

Table 1
Psychosocial risk factors (N = 1040 patients).

Comorbidity (>3 medical problems)	639 (61.4%)
Psychotropic/pain medications	449 (43.2%)
Living alone	439 (42.2%)
>5 prescribed medications	342 (32.8%)
Hospitalization in past 6 months	199 (19.1%)
Homeless	156 (15.0%)
History of diabetes	141 (13.6%)
Depression/anxiety	128 (12.3%)
Functional disability	109 (10.5%)
Recent decline in function	92 (8.8%)
Memory impairment	53 (5.1%)
Recreational drug use	52 (5.0%)
Poor nutrition	49 (4.7%)
Extreme age	40 (3.8%)
Marital problems	33 (3.2%)
Poor nutrition	49 (4.7%)
Language Barrier	20 (1.9%)
Terminal illness	19 (1.8%)

resources, including alcoholics anonymous, community mental health services, counseling services, food pantry, public housing, visiting nurse services, and support groups.

There are significant numbers of “high-risk” elderly alcoholics with polypharmacy, comorbidities, financial constraints, functional decline, depression, and social isolation. Although community-based services can be effective in addressing many of the identified needs, a significant proportion of these patients require a change in their living situation upon hospital discharge. Research into substance abuse treatments directed toward older adults is of utmost importance as the numbers of elderly grows and their utilization of medical care increases. The use of a Brief Negotiation Interview (BNI) in the ED with a referral for further treatment, as well as a randomized control trial comparing behavioral interventions are avenues being pursued by researchers [6,7]. Also, development of apps or other mobile phone-based interventions may be a prospective way to help this demographic as they become more tech savvy and greater numbers of older adults have access to cellphones [2]. Mitigating risk factors for abuse as well as being sure older adults have a safe, supportive environment in which to live are paramount.

Lindsey Ouellette
William TenBrink
Chad Gier
Spencer Shepherd
Sadie Mitten
Matthew Steinberger

Department of Emergency Medicine, Michigan State University College of Human Medicine, 15 Michigan St NE 736B, Grand Rapids, MI 49503, United States

Chad Sutcliffe
Grand Valley State University, Department of Allied Health Sciences, 15 Michigan St NE 736B, Grand Rapids, MI 49503, United States

Jeffrey Jones
Brad Riley
Department of Emergency Medicine, Michigan State University College of Human Medicine, 15 Michigan St NE 736B, Grand Rapids, MI 49503, United States
Spectrum Health Hospitals, 15 Michigan St NE 736B, Grand Rapids, MI 49503, United States

Corresponding author at: 15 Michigan St NE Suite 701, Grand Rapids, MI 49503, United States.

E-mail address: Jeffrey.Jones@spectrumhealth.org.

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The Global Health Service Partnership's point-of-care ultrasound initiatives in Malawi, Tanzania and Uganda



1. Introduction

The challenges of providing quality healthcare in resource-limited settings in sub-Saharan Africa have led to initiatives to increase the number of healthcare professionals, improve the relevance of training programs, and develop local leadership capacity, aiming to promote clinical outcomes [1–4]. Point-of-care ultrasound (POCUS) is a modality that can provide critical support in resource-limited settings. There have been several reports of its utility in such settings, but much remains to be learned about how to best train practitioners, optimize usage and ensure its continued applicability [5–7].

In this context, we report our experience with introducing POCUS as part of the Global Health Service Partnership (GHSP), a program that was established in 2012 as a collaboration between the President's Emergency Plan for AIDS Relief (PEPFAR), Peace Corps, and Seed Global Health to provide medical and nursing education and training in resource-limited settings [2,8]. Since 2012, GHSP has placed U.S. volunteer physicians, midwives, and nurses in host institutions in several African countries with critical shortages of high level healthcare providers. Many of the educational sites lacked adequate imaging capabilities, so in 2013 GHSP engaged in an educational program focused on the use of POCUS to support GHSP volunteers' educational activities in collaboration with host institutions in Malawi, Tanzania, and Uganda.

2. Ultrasound training program

A total of 156 GHSP clinical educators deployed between 2013 and 2017 across 5 countries (Malawi, Tanzania, Uganda, Swaziland, and Liberia) (Fig. 1). These clinical educators spent one year in the host countries, and twenty of the 156 GHSP clinical educators extended their mission for an additional year. While

implementing POCUS program, only sites in Malawi, Tanzania, and Uganda had ultrasound equipment and participated in POCUS training, and from this initial group of 156 GHSP clinical educators, 63 physicians and midwives were assigned to sites with ultrasound equipment and participated in the POCUS training. GHSP nurses (with the exception of midwives) were not included in the POCUS training, nor were GHSP physicians at sites without ultrasound. The GHSP clinical educators in this study were placed at academic institutions in Malawi (n = 21), Tanzania (n = 24) and Uganda (n = 18).

GHSP clinical educators were equipped and trained in the use of hand-held ultrasound in a multifaceted approach. These initiatives included:

- 1- *Ultrasound equipment*: sixteen hand-held portable ultrasound devices (VScan, GE, Wauwatosa, WI) with the support from the GE Foundation (Boston MA) provided to the host institutions.
- 2- *Pre-departure training*: Over the course of two days during their orientation in Washington DC, clinical educators were presented with lectures on ultrasound (US) application in limited-resource settings followed by hands-on POCUS training sessions in 3 to 5 stations with a volunteer to instructor ratio of 3 to 4:1.
- 3- *Onsite training in the host institution*: Two to four months after clinical educators' arrival, two authors (KB and HS) individually conducted onsite US training in the host countries for GHSP clinical educators and local counterpart faculty. These onsite training sessions typically included a review of the concepts for clinician-performed US, introduction to the GE Vscan ultrasound and its controls, the FAST/FASH abdominal ultrasound exam [focused assessment with sonography for trauma/focused assessment with sonography for HIV/TB] [9], echocardiography, lung, renal/bladder, and abdominal ultrasound in the classroom followed by bedside ultrasound training and practice by clinical educators and their counterparts. Sites with midwives and obstetricians received focused training on gynecologic ultrasound and first- and third-trimester ultrasound as well as other relevant topics.
- 4- *Self-study online modules* and educational materials for clinical educators while they were in host countries.
- 5- *Educational feedback on transmitted images*: Images were sent in digital format to two authors (HS, KB) for review. Feedback was provided in order to improve quality of images and integrate ultrasound more fully in clinical decision making.
- 6- *Training to local counterparts*: The trainers also emphasized integration of local counterparts with POCUS training through didactic classroom instruction, hands on practice and bedside teaching.

3. What other imaging technologies were available at host institutions aside from POCUS?

POCUS can be of particular importance when other imaging modalities are not available. Less than 1/2 of clinical educators reported having consistent x-ray capability at their sites, which included large regional referral hospitals. Reasons for inconsistent availability ranged from lack of necessary film or chemicals needed for image development, equipment malfunction, and an unstable power grid with rolling brownouts/blackouts. Of the clinical educators with consistent x-ray capability, only 12% reported having CT capabilities, and only 4% reported having MRI capabilities with a wide variability in their consistency (Table 1).