

Research Article

Perceptions of Alcohol use among US Firefighters

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OPEN ACCESS**Abstract**

Epidemiologic studies find that many fire service personnel use alcohol at a high rate and report frequent binge drinking episodes. Using formative research methods, we explored perceptions and beliefs about the role of alcohol within the fire service community. Participants were 423 firefighters and fire service administrators from across the United States (US). There were a number of reasons given for the rates of alcohol use among firefighters including the unique shift schedules of career firefighters, the camaraderie and peer support for alcohol consumption, use as a means of stress management, and the traditions surrounding consumption among firefighters. Results point to key areas for prevention and intervention efforts for the fire service.

Keywords

- Firefighters
- Alcohol
- Occupational health
- Fire service

INTRODUCTION

While moderate rates of alcohol consumption have some protective cardiovascular benefits [1], binge drinking and excessive alcohol use are related to negative outcomes such as increased risk of cardiovascular disease [2], higher rates of cancer [3], metabolic syndrome [4], neurocognitive impairment [5], and a number of negative occupational [6,7] and social outcomes [8,9]. Excessive alcohol use has been identified as the third leading preventable cause of deaths in the United States (US) [10]. Despite the health benefits of moderate alcohol consumption, there is a consensus in the public health community that excessive consumption and binge drinking are detrimental to health.

Limited epidemiologic evidence is available regarding the rates and patterns of alcohol use among US firefighters, although what has been published presents a compelling picture of high rates of consumption and binge drinking (Haddock et al., in press). For instance, in a population-based sample of firefighters from the central United States, Haddock and colleagues [11] found that 85% of career and 70% of volunteers reported consuming alcohol in the previous 30 days and more than half (56%) of career and nearly half (45%) of volunteer firefighters reported binge drinking in the past 30 days. In a sample of 112 firefighters from the northeast, Carey et al. [12] found that 58% of firefighters reported binge drinking behavior. In comparison, the national rate of current drinking and binge drinking in the past 30 days for men is 67.6% [13], and approximately 20% [14], respectively, demonstrating that binge is substantially higher among firefighters than the general population.

Rates of other problem drinking behaviors among firefighters

vary by study but tend to be higher than the general population. Boxer and Wild [15] found that 29% of 145 male firefighters had possible or probable problems with alcohol use according to the Michigan Alcoholism Screening Test. North et al. [16] studied rescue workers following the Oklahoma City bombing and found that one quarter of firefighters indicated a current alcohol use disorder and nearly half reported an alcohol use disorder at some time in their lifetime. Haddock and colleagues [11] found that 9% of career and 10% of volunteer firefighters self-reported drinking and driving in the past 30 days. Similarly, the National Volunteer Fire Council found that 8% of firefighters surveyed reported either driving under the influence or riding in a car with someone under the influence of alcohol [17]. Taken together, these studies suggest that alcohol misuse among firefighters is at epidemic proportions and deserves more attention.

The national fire service is paying increased attention to alcohol use and abuse among its members. For example, in a report on emerging health issues in the volunteer fire service¹⁷, the US Fire Administration identified alcohol abuse as one of seven health concerns needing attention, along with cardiovascular disease, nutrition, physical activity, tobacco, diabetes and stress management. The International Association of Fire Chiefs (IAFC) released a Policy Statement in 2003 recommending zero tolerance for alcohol consumption within eight hours of emergency operations and training [18]. In addition, the Wellness Fitness Initiative, a comprehensive health program co-sponsored by the IAFC and the International Association of Firefighters (IAFF) identifies alcohol as "by far the most abused substance" (p. 44) and encourages personnel who have "crossed over to health risk behavior from their alcohol and/or drug use" to seek help [19].

It is clear that the current epidemiologic literature provides an alarming picture of alcohol misuse, binge drinking and unhealthy drinking habits among firefighters. Unfortunately, no formative research exists which systematically examines the social and cultural norms and practices around alcohol in the fire service in order to determine factors driving the epidemic. In order to properly focus intervention and prevention efforts to curb maladaptive alcohol consumption patterns among firefighters, it is critical to understand perceptions, attitudes and beliefs about alcohol use among fire service personnel. The current study explores views about alcohol use among fire service personnel using data from focus groups and key informant interviews with a national sample of firefighters, fire service leadership, medical directors and health promotion personnel.

METHODS AND MEASUREMENTS

The present study received Institutional Review Board (IRB) approval from all relevant institutional IRBs.

Participating departments

Fire departments were solicited through an article in Fire Chief magazine that outlined the purpose of the study as wanting to explore health and wellness in the fire service and the procedures involved [20]. Interested personnel were instructed to contact the project Principal Investigator for possible study inclusion. Selection was based on having a range of department types (career, volunteer, and combined), regions (east, central, west) and sizes to ensure a diverse range of opinions. Additional details on recruitment are available in Jahnke et al [21].

At each selected department, focus groups and informant interviews were scheduled with firefighters and with the fire chief and/or their designee, respectively. Designees typically were an assistant chief tasked with overseeing health and wellness, a wellness coordinator, or a medical director. For career departments, the point of contact was asked to identify crews to solicit for participation. On average, between two and four focus groups were scheduled per career department. At volunteer departments, focus groups typically occurred at the end of the monthly meeting or, in some instances, were scheduled as a special department meeting. Typically only one focus group per volunteer department was conducted. In large departments, multiple focus groups were scheduled to attain a representative cross-section of firefighters.

Participants

Participant demographic and occupational roles are listed in table 1. Personnel were primarily male (Career 93.2%, Volunteer 79.2%, Combination 87.5%) and Caucasian (Career 64.8%, Volunteer 97.9%, Combination 92.5%) which is similar to the fire service in general [22] Table 1.

Focus group/key informant interview protocols

After introducing the study and what participation involved, personnel were given the opportunity to ask questions. Once all questions were addressed, firefighters were asked to complete the informed consent document and a brief demographic questionnaire if they wanted to participate. The initial question in each session was “What are the biggest health concerns facing

the fire service?” Analysis of the responses to this question has been previously published. [21] After the initial question, domains covered in the session included physical activity, mental health, nutrition, sleep, tobacco use, and alcohol use. In sessions where alcohol use among firefighters was not raised as a topic by participants, the question “What role does alcohol play with the people in this department?” was asked. Responses from the resulting discussion are presented.

Approach to analysis

Focus group and interview recordings were transcribed verbatim. We used a two-stage process to determine the underlying themes of the transcripts. Initially, transcripts were reviewed separately for each region and by type of department; however, because no significant regional differences were apparent, final analysis included all transcripts combined. Researchers reviewed the transcripts to develop a familiarity with the texts looking for emerging themes and patterns across interviews/groups. Transcripts then were uploaded to NVivo [23], a qualitative computer program used to highlight and code data into major (“parent nodes”) and sub-themes (“child nodes”). Summaries of each major and sub-theme were made and sample quotes extracted from the transcripts. Two independent reviewers completed the thematic analysis and compared identified themes. Differences of opinion on emerging themes were identified and discussed. A second round of coding ensued based on the revised identified themes. A third researcher familiar with all the transcripts reviewed the completed thematic analysis for clarity and completeness. For the current study, responses to the queries about alcohol use were analyzed.

Table 1: Demographic and occupational characteristics (M; SD or %) of personnel.

Demographic	Career (N=295)	Volunteer (N=48)	Combination (N=80)
Age (years)	41.8(10.6)	37.1 (14.9)	38.9 (12.7)
Gender (% male)	93.2	79.2	87.5
Race (%)			
-African American/Black	10.2	0.0	1.3
-American Indian/Alaskan Native	0.3	0.0	0.0
-Asian/ Pacific Islander	19.5	0.0	1.3
-Hispanic/Latino	2.7	0.0	3.8
-Multi-ethnic	2.4	2.1	1.3
-White/Caucasian	64.8	97.9	92.5
Of Hispanic Origin (% yes)	6.5	0.0	3.8
Occupational			
Time in the Fire Service (Years)	15.6 (9.3)	16.0 (11.6)	14.3 (11.2)
Rank/Position in Fire Department			
-FF/FF paramedic	56.0	64.4	66.3
-Company Officer	23.7	13.3	20.1
-Chief	15.4	17.8	11.3
-Other Personnel	4.7	4.4	2.6

RESULTS

Perceptions about alcohol use in the fire service

When asked about the prevalence and trends of alcohol use in the fire service, there were mixed opinions about the amount of alcohol firefighters consumed compared to the general population and other occupational groups. Some personnel believed that the trends seen among firefighters were similar to the general population.

"I don't think we're any worse off than anybody else. I don't think we're any better, but I don't think we're any worse off." Firefighter, Career

"I think being a bartender for many years and knowing the people in the department, I think it's probably - it would be parallel on any other - any other profession. You have people that drink all the time. You have people that drink socially. You have people that maybe, you know, once a year, you know, they sip their champagne on holidays" Firefighter, Career

"We've got a number of young folks that are still learning how not to abuse it. Uh, we also have a segment of our organization that, doesn't because of religious beliefs. But, for the most part, I'd say recreational alcohol users." Chief, Career.

However, a several personnel believed that alcohol played an important role in the fire service, that high rates of consumption were common, and that the social norms supported alcohol consumption.

"I think that if you go to most fire departments, even a police department, we drink." Chief, Career

"I would say heavy. Really. I mean, every social event pretty much that we have is based around the bar area and what not." Chief, Career

"I'd say it's higher. I don't think it's any more than any other type of stressful profession though." Firefighter, Career

"You're not going to go to any fire department - fire department function, I mean, outside of work that doesn't have alcohol. There will always be alcohol and there will always be heavy coolers of alcohol. You know, that have been there, there will never be a lack of alcohol at any function. Even - even ones that are department sponsored." Firefighter, Career

Given the split opinions about the rates of alcohol use in the fire service relative to the general population, it was not uncommon that participants expressed their disagreement in perceptions.

Firefighter #1: "the alcohol, the issue, is not one of those where it's abused. But socially - you get that tolerance like you're in college."

Response from Firefighter #2: "I'd be careful with - real careful. I think it's more abused than what you believe." Firefighters, Career

Negative occupational outcomes

Despite the debate over the perceptions of drinking rates among firefighters, there was near unanimous consensus across

regions, personnel, and department type that occupation-related incidents involving alcohol were rare. Reportedly, most fire departments have taken a strong stance against on-duty intoxication.

"...we have a no tolerance policy. And I mean, that's part of our interview process...is a scenario of your partner having alcohol on his breath or suspicion of it, and it's, 'Sorry. Nice working with you, but it's not how it works around here.'" Firefighter, Career

"We have not had, in the time that I've been here, had an issue with on-duty alcohol usage or issues of someone coming to work impaired in any way. So, I have not seen any indication that." Chief, Career

"I haven't seen any problem with our folks as far as alcoholism goes. Obviously we have a few people that are social drinkers. We have a few people that are a little more than social drinkers. But, you know, at work we don't have any challenges with alcohol use or alcohol issues." Chief, Career

Several participants reported that alcohol use on the job, while once common, is now much less tolerated.

"When I started in like '90, '91, I remember a lot more people being hung over, coming in looking like absolute crap. And I don't see that much anymore." Chief, Career

"I think it has really changed an awful lot. I do not see that anymore. Maybe off days there's a lot of alcohol in use. But on the job, I'll bet it's (on duty intoxication) zero." Firefighter, Career

Negative occupational outcomes were identified as rare and isolated by most personnel.

"We haven't had any issues. We haven't had anybody get arrested. We had one employee five or six years ago, it's my understanding, that they got a DWI, but it's pretty uncommon." Chief, Career

Fire department policies

When asked what accounted for the low rates of negative occupational outcomes, most participants reported zero-tolerance policies at the department level that were strictly and consistently enforced.

"There's no alcohol use, there's no alcohol on city property or on fire department property. There's no alcohol use on duty." Chief, Career

"I know if you get caught the first time - you're done." Firefighter, Career

One of the primary alcohol related policies reported was the requirement in many departments that firefighters have a valid driver's license as a condition of employment.

"... if you get DUI or a DWI, you lose your job automatically. There's no forgiveness there at all." Firefighter, Career

"You need a license for a minimum requirement for this job. So you don't have a license and that becomes a court thing. It's not a department or union thing. The judge doesn't give you a permit to get to and from and you're a driver. Or, even if you're

not, you don't meet the minimum requirements. And if you don't have that for - get your license back within 365 days, the chief can let you go. No questions asked, no recourse." Firefighter, Career

In addition to the official no-tolerance policies for on-duty intoxication or consumption at most departments, a number of personnel reported social norms that discouraged being intoxicated on duty and peer regulation, both in career and volunteer departments.

"We're - we're pretty strong in our department about peer enforcement of, like, we don't allow people to - we see anyone out drinking heavily and, you know, it's Saturday night, two o'clock, and they're on duty the next morning or something like that - it gets back. I mean, we're pretty good about policing that." Firefighter, Volunteer

"...every once in awhile you'll see some guys and you just walk up to them and you go, "Are you good to be here?" Okay, you quit drinking at 1:00 this morning and now it's 7:00. That's not a lot of time. So, I think it has the potential, but I think we keep it pretty well known that we watch for that and it's unacceptable that you need to have a solid eight hours before you come to work that you're not drinking." Chief, Career

Among reasons for the peer enforced norms of the alcohol policies was the recognition that being intoxicated on duty put the entire crew at risk.

"A lot of it is handled by just kind of peer pressure because it's a unique situation where there are three or four of you on a truck and one of the guys comes in and he is stinking and he's putting your life in jeopardy because they know what it's like so they'll say something to him, "You need to go home." Chief, Career

Reasons for alcohol use

Among those who believed firefighters consumed alcohol excessively, a number of reasons were posited.

Shift schedule: A number career personnel believed that the 24 shift schedule contributed to the problematic alcohol use patterns. Given that most firefighters work 10 days a month, they drink alcohol on their days off as a way to fill their time.

"I think a lot of it has to do with - we're here 24 hours. We still have 24 hours off." Firefighter, Career

"One thing that's different with us, though, I mean we work ten days a month, so we got a lot of days that we don't work the next morning. That's one reason why - maybe that's my excuse, I don't know." Firefighter, Career

Camaraderie/social bonding: Another major theme that arose was the social aspect of alcohol as being central to its use. Among career firefighters, getting together for drinks off duty was cited as a way of socializing.

"I use it as an excuse to unwind on the four days, you know what I mean? You get together in a big group, go out, have a drink, tell war stories, laugh about stuff we did. Just act - act like exactly we did at the station, except do it with beer - with a drink." Firefighter, Career

"Well, the fire service is traditionally a male-oriented, macho,

and, you know, alcohol goes hand-in-hand with a bunch of men, you know, talking about how macho they are. Chief, Volunteer

Stress: Discussion arose about the relationship between alcohol use and mental health. Many believed that alcohol was used among firefighters as a means of managing occupational stress unique to firefighters and other first responders.

"The stress of the job...when you get off...you want something that will help you unwind." Firefighter, Career

"...say it was my bad day, tomorrow would be the day I would definitely have a drink. But, I think I'm responsible enough just to have one or maybe two." Firefighter, Career

"Alcohol can be used as a - basically to self-medicate, because a lot of people, there's a lot of stress in the job." Chief, Volunteer

"And I think there's a strong tendency to turn to alcohol because it's so readily available and it's - it's a quick fix for, you know, having a bad moment or having a tough time. And so I think that, just like any other drugs, once you step towards that quick fix, then it's easier and easier to go back to it. So, I think part of what we do have to deal with in our job does contribute to that." Firefighter, Career

Others believed that, while rates of use might be high, it was not due to the stress of running calls but rather that most alcohol consumption was social.

"I don't see our guys as stress drinkers. I see them just social drinkers. I don't know of anybody that just is nervous or is anxious and has a drink because of that." Chief, Career

"Can it be linked to the job? You know, that's a way of relieving your stress or relaxing. No, I don't think so." Firefighter, Career

Some believed that, while alcohol use is not always perceived as a stress coping mechanism, it may be due to misperceptions or under-recognition by firefighters.

"I think subconsciously - I think it's more - because if you think about it then you're like, "No, I just do that because we were hanging out with buddies and having wings." I think subconsciously it plays a bigger effect than most people think it does." Firefighter, Career

Traditions: Personnel also discussed the traditions around alcohol in the fire service. Many believed the acceptability of alcohol use in the fire service currently is due to the historical role alcohol has played in the social milieu of firefighters.

"They (firefighters) all seem to be social and if you look back throughout the history of the fire service when my great grandfather was on up through the ranks what's union hall if there wasn't an open bar or a party somewhere." Chief, Career

Volunteer firefighters discussed the social component of being a member of the fire department and identified the firehouse as a social gathering place. In the past, a number of firehouses also had served as the local bar.

"where I worked in the city of [name deleted], where I grew up...they would tell stories about how they would take the engine to somebody's house to pick them up to bring them to work because they couldn't drive because they were still drunk from

last night's parties...and it was - it was normal practice that, if we got off our shift, that, you know, 1800 hours, we would be down at the local bar at 1805 in full uniform." Chief, Volunteer

"if you look at the volunteer service back in the day, the local firehouse was a public bar. You know?... Local pub. So, if you showed up, you're a member there, you ran fires." Firefighter, Volunteer

Drinking and driving

The topic of driving while intoxicated was raised in a number of focus groups. Some reported believing that firefighters were more careful than the general population about drinking and driving because of the occupational consequences of being arrested for drunk driving.

"Even the after work group that goes out, they have a beer together as a group, uh, they're very, very cautious about the amount of alcohol. You can see it. Well, that's society, though. I mean, they're afraid that they're going to get in a car and drive and they shouldn't be doing that. So, they may have one, two, three, maybe four beers or something." Chief, Career

"What we've explained to the guys too, I know the chief did, was it's not Joe Blow got a DUI. It's part of Joe Firefighter, which such and such department got a DUI and when you figure that part of your job hinges on your driver's license, public perception, I mean these are things that can be very serious and I think a lot of guys around here take that to heart." Chief, Career

Others believed that, despite seeing the negative and deadly consequences of drunk driving, firefighters still drove while intoxicated.

"I'll be completely honest with you. I think there's a lot of hypocrisy, because we go to accidents. We see the result of drinking and driving, but I know that there's so many of us that still do it, or still have done it." Firefighter, Career

DISCUSSION

While there was some disagreement about firefighters' alcohol consumption compared to the general population, many believed that firefighters consumed significant amounts of alcohol. Available epidemiologic evidence suggest that rates of binge drinking and heavy alcohol consumption are high among firefighters [11,12], are similar to rates found among military personnel [24], and are higher than the general population [14]. While it is possible that our focus groups and interviewees who suggested alcohol use was limited actually did have rates similar to the general population, it also is likely that firefighters overestimate alcohol consumption in the general population and underestimate the consumption of their peers. In a survey published by the IAFC, 66% of respondents indicated members of their department had come to work with a hangover and 37% reported they had firefighters who missed duty or calls due to alcohol use [25]. Despite the reported occupational impact, only 2% of respondents perceived a serious abuse of alcohol by their department members²⁵. Given the limited data available suggests not only high rates of use, but also high rates of binge drinking among firefighters [11,12], the findings of the present study suggest there is a chasm between the perceptions of firefighters

about alcohol use and what is known about the risks associated with excessive use. Our results also suggest that the initial focus of intervention efforts among firefighters should be increasing their awareness about problematic drinking behaviors, such as binge drinking, and a healthy level of use.

A number of reasons were posited for the high rates of alcohol use among firefighters including their work schedules, the social bonding that occurs around drinking activities, the stress associated with firefighting tasks, and the traditions of alcohol use in the fire service. Most firefighters in the US work in 24 hour shifts, which results in them working approximately 10 days per calendar month. Some personnel reported that having off days with their colleagues encouraged social gatherings centered on alcohol use. Limited data is available about this type of shift schedule and its relationship to health behaviors, but future research should explore the relationship between 24 hour shifts and alcohol consumption.

While there were differing opinions about the relationship between alcohol and the stress of firefighting, a number of people reported using alcohol as a means of managing the stress of emergency calls and for "unwinding". This relationship has been the focus of some previous research which suggests that the stress of firefighters' tasks may be related to negative health outcomes and higher alcohol use [26]. For instance, alcohol use was cited as the second leading coping strategy reported by firefighters who responded to the Oklahoma City bombing (19% of firefighters) behind seeking support from friends and family (50% of firefighters) [27]. Similarly, Smith and colleagues [28] found a relationship between firefighter stress and problematic alcohol use. Interestingly, they found an inverse relationship between years of service and alcohol problems, demonstrating that firefighters may depend on alcohol less as they gain more experience in their jobs. They also reported that firefighters with high resiliency were less likely to report alcohol problems. Findings of the present study, in conjunction with existing literature, suggest that future research on firefighters should be sensitive to the relationship between mental health and alcohol use as a coping strategy. In particular, it will be important to further explore the temporal relationship between the two domains.

Of note, personnel consistently reported zero tolerance for intoxication while on duty or at the fire stations in both career and volunteer departments. A number of departments have implemented strict policies around on-duty intoxication whether it is the result of on-duty consumption or arriving at work the morning after a heavy night of drinking. According to participants, the social norms among firefighters are not accepting of on-duty intoxication. However, according to the findings of the IAFC online survey, personnel coming to work hung over from alcohol consumption the night before is not uncommon [25]. It is possible that, while on-duty intoxication is not accepted, reporting for work hung over is not viewed as negatively. Intervention efforts and future research need to consider the difference between firefighters' perceptions and the reported concerns related to on-duty intoxication.

Off duty high-risk behaviors such as drinking and driving also are discouraged by policies that require firefighters to

be terminated if they receive a citation for driving under the influence, according to the present findings. Despite the negative consequences of driving under the influence, a number of personnel reported that drinking and driving occurred among firefighters. According to Haddock et al. [11] approximately 10% of firefighters who consumed alcohol reported driving when they had consumed more than they should. Similarly, the IAFC survey found that nearly a third of respondents reported members of their departments had experienced incidents of public misconduct (e.g. trouble with police, DUI) due to their alcohol consumption [25]. Prevention and intervention efforts should include a focus on reducing high risk behaviors resulting from alcohol consumption.

The present study has a number of notable strengths. First, the study provides a unique perspective on the attitudes and opinions about alcohol use in the fire service not easily captured in quantitative data. Second, the current study includes a diverse sample of firefighters, fire service leaders, health promotion personnel and medical directors from across the country. Finally, data analysis procedures included multiple raters using an iterative and recursive process to best capture the themes of the data. Despite the study strengths, limitations to the findings exist. For instance, it is possible a selection bias exists as departments self-selected for study participation and it is conceivable those departments are not representative of the fire service in general. Given the zero-tolerance stance by most departments, it also is likely that some personnel were reluctant to discuss heavy alcohol use. Despite these limitations, the findings paint a rich picture of the role alcohol use plays in the fire service. Benefits of the study include a large sample size, a diverse range of departments (e.g. regional, department type), and personnel from a number of ranks. Findings provide a strong framework for intervention and prevention efforts for the US fire service.

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