

CLEARINGHOUSE FOR MILITARY FAMILY READINESS

Reducing Heavy Drinking in the Military: Rapid Literature Review

Clearinghouse Technical Assistance Team

As of March 1, 2019

This material is the result of partnership funded by the Department of Defense between the Air Force Medical Operations Agency and the USDA's National Institute of Food and Agriculture through a grant/cooperative agreement with Penn State University



PennState

Table of Contents

EXECUTIVE SUMMARY	3
INTRODUCTION.....	3
RISK FACTORS ASSOCIATED WITH HEAVY DRINKING	4
PREVENTION STRATEGIES FOR ALCOHOL MISUSE.....	5
UNIVERSAL PREVENTION	5
SELECTIVE SCREENINGS	5
BRIEF INTERVENTIONS	6
INTERVENTION DELIVERY METHOD.....	7
RECOMMENDATIONS	7
RESOURCES	8
CONCLUSION.....	9
SUGGESTED CITATION	9
REFERENCES	10

Executive Summary

As part of an examination of potential strategies to reduce heavy drinking in the military, research staff at the Clearinghouse for Military Readiness at Penn State (Clearinghouse) conducted a brief, rapid review of recent (i.e., 2007-present) peer-reviewed literature on the topic of alcohol abuse prevention. We used search terms such as *alcohol abuse prevention*, *prevention of alcohol abuse*, and *alcohol abuse prevention strategies* to identify relevant resources targeting both adults and Service members. This rapid review is a preliminary examination of potential strategies to reduce heavy drinking in the military; however, it is not a comprehensive review of the literature.

This rapid review includes an overview of:

- Types and rates of problematic drinking;
- Screening strategies to identify heavy drinkers;
- Universal prevention strategies to reduce heavy drinking;
- Selective intervention strategies to reduce heavy drinking; and
- Resources that professionals can use to help heavy drinkers reduce or quit drinking.

Individuals who engage in heavy drinking, also defined as excessive or high-frequency binge drinking (i.e., drinking five or more drinks on a consistent basis) are more likely to have severe health consequences, exhibit undesirable behaviors, and demonstrate decreased workplace productivity (Mattiko, Rae Olmsted, Brown, & Bray, 2011). The prevalence of alcohol dependence increases significantly as the frequency of binge drinking increases. Treating alcohol dependence requires a more rigorous treatment plan, and the relapse rate is high. As a result, prevention efforts should focus on identifying individuals who are heavy drinkers before alcohol dependence develops.

Both universal screening and education are recommended prevention strategies. Selective screening and interventions should focus on heavy drinkers who are male, under the age of 35, between the pay grades E1 and E6, have difficulties with impulse control, were recently deployed, and display signs of trauma or post-traumatic stress disorder (Mattiko, Rae Olmsted, Brown, & Bray, 2011; Ramchand et al., 2011; Mattiko, Rae Olmsted, Brown, & Bray, 2011; and Dvorak et al., 2014). Interventions can be delivered in-person or via web/mobile-based applications and should include training on blood alcohol content, personalized normative feedback, emotion regulation training, goal setting, self-monitoring, and goal review.

Introduction

Most U.S. adults consume at least some alcohol on a regular basis. A comparable pattern of alcohol consumption exists between military Service members and civilians. According to a recent survey, 70% of previously deployed Service members and 69% of

civilians reported drinking alcohol at least once in the previous month (Ramchand et al., 2011). However, excessive drinking (e.g., risky or problematic drinking) can have adverse consequences for individuals, families, employers, and society as a whole.

Binge drinking, a form of excessive drinking defined as drinking at least five or more drinks for men or four or more drinks for women on at least one occasion during the past 30 days, is of particular concern. Individuals who consume five or more drinks regularly are more likely to have severe health consequences, injuries, poorer academic performance, engage in risky behaviors such as unplanned and unsafe sex, display aggressive behavior, assault others, drink and drive, and have social and family problems (Mattiko, Rae Olmsted, Brown, & Bray, 2011). As the frequency of binge drinking increases so does the risk of developing alcohol dependence. Binge drinking that occurs at least four or more times in the previous 30 days is referred to as heavy drinking. The prevalence of alcohol dependence in individuals who reported binge drinking on one or two occasions in the previous month was 4.3%. However, it increased to 29.8% among heavy drinkers who reported binge drinking 10 times or more in the previous month (Esser et al., 2014).

The treatment for alcohol dependence is rigorous and may require intensive interventions such as motivational-enhancement therapy, 12-step facilitation therapy, behavioral couples therapy, and pharmacotherapy. In addition, the percentage of individuals recovering from alcohol dependence that are able to avoid relapse long-term is only 10%. However, brief interventions delivered to heavy drinkers who do not suffer from alcohol dependence may result in a reduction in alcohol consumption and the negative consequences caused by alcohol use (Friedman, 2013).

As a result, the identification of Service members that binge drink, especially those who do so on a regular basis, and brief interventions to reduce the frequency of binge drinking and prevent alcohol dependence should be the priority of prevention efforts.

Risk Factors Associated with Heavy Drinking

Research indicates that certain military populations are more likely to engage in heavy drinking than others, including:

- **Males** - A higher percentage of male Service members engage in heavy drinking than females (Mattiko, Rae Olmsted, Brown, & Bray, 2011).
- **Under 35 years of age** - Active duty personnel under age 35, and ages 21-25 in particular, engage in heavy drinking more regularly than their civilian counterparts (Ramchand et al., 2011).
- **Pay grades E1 and E6** - Enlisted Service members between the pay grades E1 and E6 self-reported higher rates of heavy drinking than officers (Mattiko, Rae Olmsted, Brown, & Bray, 2011).

- **Post-deployment** - Active duty Service members that were exposed to combat are more likely to report binge drinking than those that did not deploy (Ramchand et al., 2011).
- **Trauma** - The number of traumas deployed Service members experienced and reports of post-traumatic stress or other depressive symptoms appear to increase the frequency of binge drinking (Ramchand et al., 2011).
- **Poor impulse control** - Research suggests that individuals who have difficulties with impulse control, particularly while experiencing negative emotions, report increased rates of alcohol use and negative consequences as a result of alcohol consumption (Dvorak et al., 2014).

Prevention Strategies for Alcohol Misuse

Universal Prevention

Universal prevention strategies that focus on educating the population about the harmful effects of excessive drinking, particularly binge drinking, can be beneficial. The evidence-supported approaches to reduce excessive drinking in civilian settings such as college campuses and workplaces should be explored by the military (Ramchand et al., 2011). Universal prevention strategies that can be explored include:

- **Policy changes** - Creating new policies or supporting existing alcohol policies. Research suggests that binge drinking is strongly affected by state alcohol policies such as increasing alcohol taxes, regulating alcohol outlet density, and increasing commercial liability (Esser et al., 2014).
- **Alcohol education** - Increasing efforts to improve education and training related to alcohol abuse problems particularly because of the normative beliefs surrounding alcohol consumption in military culture (Witkiewitz & Estrada, 2011).
- **Screening** - Conducting a brief annual screening with a validated measure of alcohol consumption for all adults (Esser et al., 2014; Friedman, 2013). This may already take place in primary care settings. If screening is voluntary, the use of low-cost incentives can increase participation (Larimer & Cronce, 2007).

Selective Screenings

In addition to universal screening, selective screening that focuses on high risk populations is recommended. In some cases, officers may know of Service members who are heavy drinkers, particularly if they work together in close quarters. Identifying a manner in which leaders can encourage change or treatment-seeking without resulting in contempt and a negative stigma is recommended (Mattiko, Rae Olmsted, Brown, & Bray, 2011). When heavy drinking is suspected, it is recommended that the Service member be screened for consumption pattern, negative consequences

experienced as a result of alcohol consumption, and readiness to change drinking habits (Friedman, 2013).

Brief Interventions

Studies suggest that brief interventions with heavy drinkers without alcohol dependence can lead to a reduction in alcohol consumption and a reduction in negative consequences caused by alcohol use (Friedman, 2013; White et al., 2010). One study found that the effects of brief alcohol interventions may persist for up to one year after the end of intervention, despite the brevity of the interventions (Tanner-Smith & Lipsey, 2015). These interventions should be delivered by trained professionals within high-risk groups and integrated into opportunistic locations such as health clinics or counseling centers (Larimer & Crouce, 2007). Specific types of selective interventions are listed below. In addition, examples of each intervention provided by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) are listed as well.

- **Blood alcohol content (BAC) training** - Training should include how gender, body type, different types of alcohol, drinking duration, food consumption, and water consumption impact BAC; how elevated BAC impairs bodily function; and how long it takes for BAC to return to 0.00 (Foundation for Advancing Alcohol Responsibility).
 - <https://www.responsibility.org/drink-responsibly/virtual-bar-and-BAC-calculator/>
- **Personalized normative feedback (PNF)** - Interventionists should provide nonjudgmental feedback specific to the individual about their drinking patterns and harm it may be causing them (Friedman, 2013).
 - <https://www.rethinkingdrinking.niaaa.nih.gov/How-much-is-too-much/Is-your-drinking-pattern-risky/Whats-Your-Pattern.aspx>
- **Emotion regulation training** - Training that improves emotion regulation may effectively decrease emotion regulation difficulties for individuals with poor impulse control (Dvorak et al., 2014).
 - <https://www.rethinkingdrinking.niaaa.nih.gov/Thinking-about-a-change/Its-up-to-you/Planning-For-Change.aspx>
- **Goal setting** - When the individual conveys readiness to change their drinking behavior, the interventionist should help them negotiate an acceptable goal for changing risky drinking habits (Friedman, 2013).
 - <https://www.rethinkingdrinking.niaaa.nih.gov/Thinking-about-a-change/Its-up-to-you/Planning-For-Change.aspx>
- **Self-monitoring** - In one study, self-monitoring was found to be the single most effective intervention for reducing alcohol consumption (Leightley et al., 2018).
 - <https://www.rethinkingdrinking.niaaa.nih.gov/Tools/Interactive-worksheets-and-more/Track-what-you-drink/Drinking-Tracker-Cards.aspx>
- **Goal review** - The interventionist should follow up with the individual see if there have been any changes in alcohol consumption. All successes should be

reinforced and referral for specialty treatment should be made if the individual is having difficulty reducing their alcohol consumption (Friedman, 2013).

- <https://www.rethinkingdrinking.niaaa.nih.gov/Tools/Interactive-worksheets-and-more/Stay-in-control/Recovering-From-Drinking-Episode.aspx>

Intervention Delivery Method

Recent research indicates that mobile apps and web-based tools as brief alcohol interventions may be just as effective as traditional face-to-face delivery methods (Leightley et al., 2018). As a result, utilization of mobile apps and web-based tools as a first step is a promising approach to behavior change. Face-to-face intervention can be a useful second step in the behavior change process and may not be necessary at all in some cases (Larimer & Cronce, 2007).

The Department of Defense (DoD) has already invested resources into measuring the potential benefit of web-based alcohol reduction interventions. The DoD completed a pilot study of the Program for Alcohol Training, Research, and Online Learning (PATROL), a selective preventive intervention to reduce risky alcohol consumption. In the PATROL pilot, individuals representing a general military sample were assigned to one of two web-based alcohol interventions: The Drinker's Check-Up or Alcohol Savvy. The Drinker's Check-Up demonstrated positive effects on average number of drinks consumed per occasion, binge drinking behavior, and estimated peak BAC in the previous month (Ames & Bennett, 2011; Witkiewitz & Estrada, 2011). The Clearinghouse has vetted The Drinker's Check-Up and placed it as "promising" on our Continuum of Evidence. Click on the link below to see the program's fact sheet:

- <https://lion.militaryfamilies.psu.edu/programs/drinkers-check>

It is important to note that there is a high rate of attrition with mobile and web-based health interventions (Leightley et al., 2018). In-person follow-up by a trained interventionist remains an important part of the behavior change process.

Recommendations

- Explore effective alcohol prevention programs such as those currently being used by the Air Force. Service members that deployed as part of the Air Force consumed alcohol less frequently and engaged in binge drinking less frequently than Service members in the other branches of the United States Armed Forces (Ramchand et al., 2011).
- Examine evidence-based interventions being utilized by universities and civilian workplaces to reduce binge drinking (Ramchand et al., 2011).
- Provide universal BAC and alcohol abuse education for all Service members (Witkiewitz & Estrada, 2011).
- Identify Service members who are heavy drinkers (i.e., binge drink at least four times per month) by using validated screening tools such as the AUDIT (Esser et

al., 2014). Heavy drinkers are at the greatest risk for developing alcohol dependence, which requires intensive treatment and the relapse rate is high (Friedman, 2013).

- If possible, briefly screen all Service members annually for problematic alcohol consumption patterns (Esser et al., 2014; Friedman, 2013).
- Screen Service members who are at an increased risk for problematic drinking behavior, particularly Service members returning home from deployment to a combat zone and display signs of trauma, distress, or post-traumatic stress symptoms (Ramchand et al., 2011).
- Utilize evidence-based brief interventions (i.e., BAC training, PNF, emotion regulation training, goal setting, self-monitoring, goal review) with heavy drinkers (i.e., individuals who binge drink at least four times per month) to reduce problematic drinking behaviors. (Friedman, 2013).
- Consider using mobile or web-based interventions to reduce alcohol consumption first, followed by an in-person intervention (Larimer & Crouse, 2007).
- Provide service members with information on where and how to seek help if they experience difficulty with drinking. The Substance Abuse and Mental Health Services Administration (SAMHSA) offers a 24-hour Help Hotline at 1-800-622-HELP.

Resources

In the Selective Brief Interventions section located above, resources by the NIAAA were provided as an example of each of the brief intervention strategies that were provided. It is recommended that those resources are explored and utilized, when appropriate.

Below we have listed several additional resources that may be helpful to professionals who are utilizing selective brief intervention strategies to help reduce heavy drinking behaviors in the military.

- **NIAAA Helping Patients Who Drink Too Much: A Clinician's Guide**
 - This NIAAA guide outlines a four-step clinical approach to reduce problematic drinking. Flow charts are included to help professionals navigate the process. The steps include:
 1. Ask about alcohol use
 2. Assess for alcohol disorders
 3. Advise and assist
 4. At follow-up: Continue support
 - https://pubs.niaaa.nih.gov/publications/Practitioner/CliniciansGuide2005/clinicians_guide.htm
- **NIAAA Clinician's Guide Online Training**
 - This training includes four interactive, 10-minute videos that professionals can use to practice using the NIAAA Clinician's Guide.

- <https://www.niaaa.nih.gov/publications/clinical-guides-and-manuals/niaaa-clinicians-guide-online-training>
- **NIAAA Rethinking Drinking Website**
 - This NIAAA website is intended for individuals who are exploring reducing or cutting alcohol consumption. It contains tools that help individuals determine if their drinking pattern is risky, identifying signs of a drinking problem, and tools to reduce drinking.
 - <https://www.rethinkingdrinking.niaaa.nih.gov/>
- **Drinker's Checkup**
 - Drinker's Checkup is a web-based program that helps people develop a better understanding of their drinking, consider whether or not to modify drinking behaviors, and identify strategies for changing their behavior.
 - https://drinkerscheckup.com/pre_register/Overview1.aspx

Conclusion

A large number of studies have been conducted to identify problematic alcohol consumption patterns, validated measures and best practices to identify individuals who engage in these patterns, and interventions to reduce alcohol consumption before alcohol dependence develops. A thorough review of the literature to address all facets of alcohol abuse prevention is beyond the scope of this review. However, the Clearinghouse and the technical assistance team are available should further assistance with research questions or implementing a plan to address alcohol abuse prevention be helpful.

Suggested Citation

Clearinghouse for Military Family Readiness. (2019). *Reducing heavy drinking in the military: Rapid literature review*. University Park, PA: Clearinghouse for Military Family Readiness.

References

- Ames, G. M., Bennett, J. B. (2011). Prevention interventions of alcohol problems in the workplace: A review and guiding framework. *Alcohol Research Current Reviews*, 34(2), 175-187.
- Borok, J., Galier, P., Dinolfo, M., Welgreen, S., Hoffing, M. Davis, J. W., . . . Moore, A. (2013). Why do older unhealthy drinkers decide to make changes or not in their alcohol consumption? Data from the healthy living as you age study. *Journal of the American Geriatrics Society*, 61(8), 1296-1302.
<https://doi.org/10.1111/jgs.12394>
- The Drinker's Checkup. (2016). Welcome to the Drinker's Checkup. Retrieved from <https://drinkerscheckup.com/>
- Dvorak, R. D., Sargent, E. M., Kilwein, T. M., Stevenson, B. L., Kuvaas, N. J., Williams, T. J. (2014). Alcohol use and alcohol-related consequences: Associations with emotion regulation difficulties. *The American Journal of Drug and Alcohol Abuse*, 40(2), 125-130.
<https://doi.org/10.3109/00952990.2013.877920>
- Esser, M. B., Hedden, S. L., Kanny, D., Brewer, R. D., Gfroerer, B. A., Naimi, T. S. (2014). Prevalence of alcohol dependence among US adult drinkers, 2009-2011. *Preventing Chronic Disease*, 11(206),
<http://dx.doi.org/10.5888/pcd11.140329>.
- Foundation for Advancing Alcohol Responsibility. Virtual Bar and BAC Calculator. Retrieved from <https://www.responsibility.org/drink-responsibly/virtual-bar-and-BAC-calculator/>
- Friedmann, P. D. (2013). Alcohol use in adults. *The New England Journal of Medicine*, 369, 365-373. <https://doi.org/10.1056/NEJMcp1204714>
- Larimer, M. E., Cronce, J. M. (2007). Identification, prevention and treatment revisited: Individual-focused college drinking prevention strategies 1999-2006. *Addictive Behaviors*, 32(11), 2439-2468.
<https://doi.org/10.1016/j.addbeh.2007.05.006>
- Leightley, D., Puddephatt, J., Jones, N., Mahmoodi, T., Chui, Z., Field, M., . . . Goodwin, L. (2018). A smartphone app and personalized test messaging framework (InDEx) to monitor and reduce alcohol use in ex-serving personnel: Development and feasibility study. *JMIR mHealth and uHealth*, 6(9), e10074.
<https://doi.org/10.2196/10074>

- Mattiko, M. J., Rae Olmsted, K. L., Brown, J. M., Bray, R. M. (2011). Alcohol use and negative consequences among active duty military personnel. *Addictive Behaviors*. 36(6), 608-614. <https://doi.org/10.1016/j.addbeh.2011.01.023>
- National Institute on Alcohol Abuse and Alcoholism. (2007). Helping patients who drink too much: A clinician's guide. Retrieved from https://pubs.niaaa.nih.gov/publications/Practitioner/CliniciansGuide2005/clinicians_guide.htm
- National Institute on Alcohol Abuse and Alcoholism. NIAAA Clinician's Guide Online Training [Flash]. Retrieved from <https://www.niaaa.nih.gov/publications/clinical-guides-and-manuals/niaaa-clinicians-guide-online-training>
- National Institute on Alcohol Abuse and Alcoholism. Drinking tracker cards. Retrieved from <https://www.rethinkingdrinking.niaaa.nih.gov/Tools/Interactive-worksheets-and-more/Track-what-you-drink/Drinking-Tracker-Cards.aspx>
- National Institute on Alcohol Abuse and Alcoholism. Planning for change. Retrieved from <https://www.rethinkingdrinking.niaaa.nih.gov/Thinking-about-a-change/Its-up-to-you/Planning-For-Change.aspx>
- National Institute on Alcohol Abuse and Alcoholism. Rethinking drinking: alcohol & your health. Retrieved from <https://www.rethinkingdrinking.niaaa.nih.gov/>
- National Institute on Alcohol Abuse and Alcoholism. What's your pattern? Retrieved from <https://www.rethinkingdrinking.niaaa.nih.gov/How-much-is-too-much/Is-your-drinking-pattern-risky/Whats-Your-Pattern.aspx>
- Ramchand, R., Miles, J., Schell, T., Jaycox, L., Marshall, G. N., Tanielian, T. (2011). Prevalence and correlates of drinking behaviors among previously deployed military and matched civilian populations. *Military Psychology*, 23(1), 6-21. <https://doi.org/10.1080/08995605.2011.534407>
- Tanner-Smith, E. E., Lipsey, M. W. (2015). Brief alcohol interventions for adolescents and young adults: A systematic review and meta-analysis. *Journal of Substance Abuse Treatment*, 51, 1-18. <https://doi.org/10.1016/j.jsat.2014.09.001>
- White, A., Kavanagh, D., Stallman, H., Klein, B. Kay-Lambkin, F. Proudfoot, J., . . . Young, R. (2010). Online alcohol interventions: A systematic review. *Journal of Medical Internet Research*, 12(5), e62. <https://doi.org/10.2196/jmir.1479>
- Witkiewitz, K., Estrada, A. X. (2011). Substance abuse and mental health treatment in the military: Lessons learned and a way forward. *Military Psychology*. 23(1), 112-123. <https://doi.org/10.1080/08995605.2011.548651>