



The prevalence of alcohol use, and alcohol use related disorders, tends to be higher among boys and men. However, this gender gap appears to be narrowing, particularly among girls and young women. Statistics from Canada and the USA reveal: a greater increase in rates of alcohol use disorder and binge drinking among women compared with men ^[1]; equally high rates of binge drinking among girls and boys ^[2]; and high rates of alcohol-related hospitalization among young girls (age 10-19) ^[3].

Clearly, addressing and preventing alcohol use disorders and related harms is a key issue for all genders. However, tailored responses are needed that attend to how sex- and gender-related factors affect initiation, patterns of use, and health and treatment outcomes. Specifically, sex related factors affect the biological responses to alcohol use and treatments, and gendered factors such as social, cultural and economic norms, relationships and opportunities affect uptake, patterns of use, and responses to policies and programs.

For example, some of the sex-related factors include:

- Brain imaging studies among girls and boys with alcohol use disorders suggest that boys are less sensitive to the neurotoxic effects of alcohol compared to girls; girls show more pronounced reductions in functional brain activation in multiple areas of the brain ^[4, 5].
- Girls who binge drink demonstrate poorer sustained attention and working memory than boys who binge drink ^[6].
- Females transition from initiation to regular use of alcohol faster than males ^[2].
- Males tend to have more water in their bodies to dilute the alcohol, and have more of the enzyme alcohol dehydrogenase, which breaks down alcohol in the stomach ^[7]. Therefore, females require smaller amounts of alcohol to become intoxicated/ reach higher alcohol concentration in the blood ^[8].
- The use of the medication naltrexone for treating alcohol use is associated with significantly greater reductions in alcohol craving among women compared to men ^[9].
- Women develop liver cirrhosis with lower quantities of alcohol use ^[10].

Some of the gender-related factors include:

- Masculine norms are associated with alcohol use among boys ^[11, 12] and men, including transgender men ^[13]. Traditional perceptions of masculinity (i.e. alcohol use is “part of manhood”) have been associated with motivation to consume alcohol, and alcohol related problems ^[14, 15]
- Co-occurring depression and substance use is more common among girls. Girls may be more likely to use alcohol and other substances to manage negative emotions and cope with stress and the effects of trauma ^[20, 21]. Interventions that address: coping skills, family relationships and communication, stress, depression, social interactions and self-esteem/ body image have been identified as promising approaches to preventing and reducing alcohol use among girls ^[22-24].
- Men have fewer protective factors for alcohol abuse compared to women. For example, men are unlikely to have perceived social sanctions regarding alcohol use ^[16].
- Alcohol and substance abuse is associated with increased violence among men against intimate partners as well as strangers ^[17-19].
- Barriers to seeking help and support reported by pregnant women and girls who use alcohol include: shame and guilt, fear of child welfare involvement and/or having a child removed from their care, unsupportive or controlling partner, not having enough information about available services, waiting lists at addictions treatment agencies ^[25].
- Trans people report using alcohol and substance use to cope with transgender-related discrimination [26]. Trans individuals may use substances to socially validate or affirm their gender identity, and trans men’s use of alcohol may be influenced by the societal belief that excessive drinking is associated with masculinity ^[13].

While alcohol use and alcohol use disorders are prevalent among all genders, tailored policies and interventions are required at all levels (harm reduction, prevention and treatment) to address the links between sex, gender and alcohol use.



References:

1. Grant, B.F., et al., *Prevalence of 12-month alcohol use, high-risk drinking, and dsm-iv alcohol use disorder in the united states, 2001-2002 to 2012-2013: Results from the national epidemiologic survey on alcohol and related conditions*. JAMA Psychiatry, 2017. 74(9): p. 911-923.
2. Cheng, H.G., M.D. Cantave, and J.C. Anthony, *Taking the First Full Drink: Epidemiological Evidence on Male-Female Differences in the United States*. Alcoholism: Clinical and Experimental Research, 2016. 40(4): p. 816-825.
3. Canadian Institute for Health Information, *Alcohol Harm in Canada: Examining Hospitalizations Entirely Caused by Alcohol and Strategies to Reduce Alcohol Harm*. 2017, CIHI: Ottawa, ON.
4. Caldwell, L.C., et al., *Gender and adolescent alcohol use disorders on BOLD (blood oxygen level dependent) response to spatial working memory*. Alcohol and Alcoholism, 2005. 40(3): p. 194-200.
5. Medina, K.L., et al., *Prefrontal cortex volumes in adolescents with alcohol use disorders: unique gender effects*. Alcoholism: Clinical and Experimental Research, 2008. 32(3): p. 386-394.
6. Squeglia, L.M., et al., *Adolescent binge drinking linked to abnormal spatial working memory brain activation: differential gender effects*. Alcoholism: Clinical and Experimental Research, 2011. 35(10): p. 1831-1841.
7. Centre of Excellence for Women's Health (CEWH) and Girls Action Foundation (GAF), *Girls, alcohol and depression: A backgrounder for facilitators of girls' empowerment groups*. 2014, CEWH: Vancouver, BC.
8. Tuchman, E., *Women and addiction: the importance of gender issues in substance abuse research*. Journal of addictive diseases, 2010. 29(2): p. 127-138.
9. Herbeck, D.M., et al., *Gender differences in treatment and clinical characteristics among patients receiving extended release naltrexone*. Journal of Addictive Diseases, 2016. 35(4): p. 305-314.
10. Rehm, J., et al., *Alcohol as a risk factor for liver cirrhosis: A systematic review and meta-analysis*. Drug and alcohol review, 2010. 29(4): p. 437-445.
11. Iwamoto, D.K. and A.P. Smiler, *Alcohol Makes You Macho and Helps You Make Friends: The Role of Masculine Norms and Peer Pressure in Adolescent Boys' and Girls' Alcohol Use*. Substance Use & Misuse, 2013. 48(5): p. 371-378.
12. Schulte, M.T., D. Ramo, and S.A. Brown, *Gender differences in factors influencing alcohol use and drinking progression among adolescents*. Clinical Psychology Review, 2009. 29(6): p. 535-547.
13. Scheim, A.I., G.R. Bauer, and M. Shokoohi, *Heavy episodic drinking among transgender persons: Disparities and predictors*. Drug and alcohol dependence, 2016. 167: p. 156-162.
14. Uy, P.J., N.A. Massoth, and W.H. Gottdiener, *Rethinking male drinking: Traditional masculine ideologies, gender-role conflict, and drinking motives*. Psychology of Men & Masculinity, 2014. 15(2): p. 121.
15. Gonzalez, C.A., J.D. Gallego, and W.O. Bockting, *Demographic Characteristics, Components of Sexuality and Gender, and Minority Stress and Their Associations to Excessive Alcohol, Cannabis, and Illicit (Noncannabis) Drug Use Among a Large Sample of Transgender People in the United States*. The Journal Of Primary Prevention, 2017. 38(4): p. 419-445.
16. Nolen-Hoeksema, S. and L. Hilt, *Possible Contributors to the Gender Differences in Alcohol Use and Problems*. The Journal of General Psychology, 2006. 133(4): p. 357-374.
17. Peralta, R.L., L.A. Tuttle, and J.L. Steele, *At the Intersection of Interpersonal Violence, Masculinity, and Alcohol Use: The Experiences of Heterosexual Male Perpetrators of Intimate Partner Violence*. Violence Against Women, 2010. 16(4): p. 387-409.
18. Stuart, G.L., et al., *The role of drug use in a conceptual model of intimate partner violence in men and women arrested for domestic violence*. Psychology of Addictive Behaviors, 2008. 22(1): p. 12.
19. Moore, T.M., et al., *Drug abuse and aggression between intimate partners: A meta-analytic review*. Clinical Psychology Review, 2008. 28(2): p. 247-274.
20. Nock, M.K., et al., *Prevalence, subtypes, and correlates of DSM-IV conduct disorder in the National Comorbidity Survey Replication*. Psychological medicine, 2006. 36(5): p. 699-710.
21. Nolen-Hoeksema, S., *Gender differences in risk factors and consequences for alcohol use and problems*. Clinical psychology review, 2004. 24(8): p. 981-1010.
22. Kumpfer, K.L., P. Smith, and J.F. Summerhays, *A wakeup call to the prevention field: Are prevention programs for substance use effective for girls?* Substance use & misuse, 2008. 43(8-9): p. 978-1001.
23. Schwinn, T.M., et al., *Risk and protective factors associated with adolescent girls' substance use: Data from a nationwide Facebook sample*. Substance Abuse, 2016. 37(4): p. 564-570.
24. Schinke, S. and T. Schwinn, *Gender-Specific Computer-Based Intervention for Preventing Drug Abuse Among Girls*. The American Journal of Drug and Alcohol Abuse, 2005. 31(4): p. 609-616.
25. Centre of Excellence for Women's Health, *Why do girls and women drink alcohol during pregnancy?* . 2016.
26. Klein, A. and S.A. Golub, *Family rejection as a predictor of suicide attempts and substance misuse among transgender and gender nonconforming adults*. LGBT Health, 2016. 3(3): p. 193-199.