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Coaching Women on the Impact of Alcohol Intake on Mental Well-being: A Systematic Literature Review

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NURS 695: Alternate Plan Paper

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Abstract

Alcohol intake among women has increased in recent years. Women's bodies metabolize alcohol differently when compared to men and are at increased risk for adverse effects, both physically and mentally. The purpose of this systematic literature review is to explore the evidence related to the impact of coaching in primary care on drinking behaviors and over-all well-being of women. Four databases including PsycInfo, Academic Search Premier, CINAHL Plus with full text, and Gender Studies Database were searched using a variety of key words. Studies were included if they focused on female alcohol use and abuse, interventions specific to female alcohol use, mental health and well-being related to alcohol use, and special groups (young adult women, older adult women, women veterans, or sexual minority women). Studies were excluded if they focused on domestic violence, polysubstance abuse, men or males, adolescents/children, sleep disturbances, postpartum or pregnancy, sexual dysfunction, sexual assault, or eating disorders. A total of 25 studies were included in this review. Alcohol use and misuse has been linked to depression, anxiety, and decreased generalized well-being in youngadult women, older-adult women, sexual minority women, and veterans. Coaching women in primary care on drinking behaviors decreases alcohol intake and increases overall well-being. An overall lack of female-specific research exists on how the coaching of women on alcohol intake in primary care affects drinking behaviors and overall mental health. Careful screening for alcohol use/misuse should be done at every healthcare encounter and female-specific interventions implemented. Further research is needed on female-specific coaching methods to utilize when addressing alcohol use and its affect on drinking behaviors and mental well-being.

Keywords: female, woman, women, females, alcohol use, alcohol drinking, alcohol misuse, alcoholism, drinking culture, drinking behavior, well-being, wellbeing, well being, life

satisfaction, happiness, life quality, wellness, mental health, therapy, treatment, intervention, counseling, psychotherapy, primary care

Coaching Women on the Impact of Alcohol Intake on Mental Well-being: A Systematic Literature Review

The National Institute of Alcohol Abuse and Alcoholism (NIAAA, 2019), report rates of alcohol use and misuse among women are rising in recent years. Social norms around women and alcohol have also shifted in recent years with increased social acceptance. Alcoholic drinks are more readily available, development of advertising aimed specifically at women, and cultural acceptance of women drinking alcohol has normalized and increased use, leading to a closure of the gender-gap (American Addiction Center, 2020; Milic et al., 2017). In the early 1900's, men were twice as likely to use alcohol and three times as likely to develop alcohol-related problems compared to women, in contrast to today where both genders are drinking equally (American Addiction Centers, 2020). Women are at higher risk of developing liver cirrhosis, heart disease, neurological changes, cancers of breast, mouth, throat, esophagus, and liver, and alcohol dependence when compared to men due to the way women metabolize alcohol (Bold et al., 2016; Centers for Disease Control [CDC], 2016; National Institute of Health [NIH], 2015). According to the American Addiction Center (2020), women are almost twice as likely to suffer from anxiety or depression when compared to men, and alcohol use may be linked. This review will explore the coaching of women in primary care on their use of alcohol and the impact of coaching on drinking behaviors and mental well-being. Evidence-based recommendations will be made on coaching practices for primary care, future research, policy, and education.

Background

Alcohol is the most widely used recreational drug and is culturally accepted throughout the world (Han et al., 2017; Milic et al., 2017). In the United States, alcohol use is associated with more than 85,000 deaths per year and is estimated to be the third leading cause of

preventable death (Moyer, 2013). Approximately 5 million women in America drink alcohol in a way that threatens their physical health, mental health, and/or welfare (NIH, 2015). NIAAA (2019) report the prevalence of alcohol use and misuse is increasing in women, which may be due to a greater cultural acceptance of women drinking, women having children at later ages, alcohol advertising aimed towards women specifically, and greater availability of alcohol in general compared to the past.

Women's bodies react differently to alcohol when compared to men due to women having less water in their physiological makeup and lower levels of dehydrogenase enzymes, which break down alcohol in the body (Milic et al., 2018; NIH, 2015). Alcohol is distributed in the body through water, the more water available, the more dilute the alcohol concentration (Milic et al.; NIH, 2015). For this reason, women's bodies are exposed to higher levels of alcohol than men when the same amount is consumed, potentially causing damage at lower levels of intake (Milic et al.; NIH, 2015). Therefore, women potentially develop health issues, mood and behavioral changes, and addiction faster than men and as a result of less alcohol intake (NIH, 2015). Higher rates of neurological damage in women who abuse alcohol (Pavkovic et al., 2018). Neurological damage including Wernicke-Korsakoff Syndrome, delirium tremens, alcoholic cellular degeneration, and alcoholic myopathy and neuropathy have been shown to be caused by alcohol use and abuse (American Addiction Centers, 2020).

The Office of Disease Prevention and Health Promotion (ODPHP, 2015), published *Dietary Guidelines for Americans* that recommended consumption of alcohol in moderation; defined as up to one drink per day for women and up to two drinks per day for men. *High risk* or *risky drinking* is defined as greater than four drinks per day or greater than eight drinks per week for women and greater than five drinks per day or fifteen drinks per week for men (Moyer, 2013;

ODPHP, 2015). *Binge drinking* is consuming greater than four drinks for women or five drinks for men in less than two hours (ODPHP, 2015). *Alcohol abuse/misuse* is drinking behavior that is damaging to the drinker or persons associated with the drinker; including situations such as missing work, participating in dangerous activities while drinking, and continuing to drink even though it is causing problems in their life (Moyer, 2013; NIH, 2015). *Alcohol dependence* refers to drinking behaviors including: craving, withdrawal symptoms, tolerance, and consuming more than intended, along with being progressive and potentially life-threatening (Moyer, 2013; NIH, 2015).

Clinical Phenomenon of Interest

The phenomenon of interest in this systematic review involves providing women in primary care with an alcohol use assessment, brief intervention (coaching), and the effect of coaching on their drinking behaviors and over-all wellbeing.

Clinical Significance for Advanced Practice

Nurse practitioners provide primary care services to a wide variety of patients. Primary care providers are often the initial contact with the patient that identifies unhealthy drinking and plays an essential role in providing initial interventions and resources (Abraham, Lewis et al., 2017). Finn et al., (2018) report treatment for alcohol dependence in primary care as promising, which may narrow the current treatment gap.

Current guidelines from the U. S. Preventive Services Task Force (USPSTF) for screening in primary care advise clinicians to "screen adults aged 18 years or older for alcohol misuse and provide persons engaged in risky or hazardous drinking with brief behavioral counseling interventions to reduce alcohol misuse, a Grade B recommendation" (Moyer, 2013, p. 210). Moyer (2013) recommends screening tools including: AUDIT, AUDIT-C, and single

question screening for example, "How often do you drink more than 4-5 drinks in a day?"

(Moyer, 2013, p. 212). AUDIT and AUDIT-C have shown sensitivity and specificity in primary care for detecting alcohol misuse (Moyer, 2013). These screening tools should be administered to "risky or harmful" alcohol users, not abusers who are dependent on alcohol (Moyer, 2013, p. 211). Recommended interventions for those with a positive screening for risky or harmful alcohol use include: cognitive behavioral programs through in-person sessions, web-based sessions, written self-help resources, or telephone resources (Moyer, 2013). Behavioral counseling is most effective when it is brief and continues with multiple sessions over time (Moyer, 2013). Additionally, Moyer reports potential harms of screening in primary care include creating anxiety for the patient or production of stress within the provider-patient relationship.

Screening for mental health disorders such as anxiety and depression may be a way of recognizing and managing disorders that can lead to alcohol use. Anxiety screening in primary care can be effectively done utilizing the Generalized Anxiety Disorder Scale (GAD-7), which is a validated tool for detecting anxiety symptoms (Pedrelli et al., 2016; USPSTF, 2016). The USPSTF (2016) recommend depression screening of adults 18 years of age or older. Screening interval evidence is lacking therefore interval is to be determined by clinical judgement of risk factors. Depression screening in primary care can be done using the Patient Health Questionnaire-9 (PHQ-9), which is a validated instrument for detecting depressive symptoms (Pedrelli et al., 2016; USPSTF, 2016). Alternatively, the Geriatric Depression Scale can be used in older adults and Edinburgh Postnatal Depression Scale in postpartum women (USPSTF, 2016).

Utilization of the above-named screening tools by nurse practitioners in primary care will facilitate timely detection of alcohol use/misuse, depression, and/or anxiety. Therapeutic and

trusting provider/patient relationships facilitate a safe environment to administer these screenings. As a result, individualized coaching can be provided in a therapeutic environment to the patient.

Clinical Question

Based on the above phenomenon of interest, the following clinical question was constructed in PIO (population-intervention-outcome) format to guide a systematic review: *In adult women (P), how does primary care coaching on alcohol intake (I) affect drinking behaviors and over-all mental well-being (O)?* An intervention-based PIO was chosen based on the assumption that coaching women in primary care would improve over-all mental well-being and drinking behaviors (Melnyk & Fineout-Overholt, 2019).

Methods

Databases

A systematic literature review was completed between 10/24/19-11/22/19. PsycInfo, Academic Search Premier, CINAHL Plus with full text, and Gender Studies Database were utilized to locate studies to inform the clinical question. Descriptions of each database, dates included, and restrictions added to each database search are included in Table 1 of the attached Appendix.

Search Restrictions/Keyword Combinations

Search terms included "female," "woman," "women," "females," "alcohol use," "alcohol use," "alcohol drinking," "alcohol misuse," "alcoholism," "drinking culture," "drinking behavior," "wellbeing," "wellbeing," "well being," "life satisfaction," "happiness," "life quality," "wellness," "mental health," "therapy," "treatment," "intervention," "counseling," "psychotherapy," and "primary care." Search exclusion terms included "aids," "acquired human immunodeficiency

syndrome," "human immunodeficiency virus," "pregnancy," and "pregnant." Each database resulted between 10-22 studies based on these search criteria, yielding 60 studies. Bibliographic review was also utilized to obtain 3 additional relevant resources. Of the 63 articles identified for review, four were duplicates appearing in more than one database. Therefore, a total of 59 articles were reviewed based on inclusion/exclusion criteria. See Table 2 in the attached Appendix for additional details on the keyword combinations and number of hits per database.

Inclusion/Exclusion Criteria

Studies included met one or more of the following criteria: female-focused alcohol use and abuse, interventions specific to female alcohol use, mental health and well-being related to alcohol use, and special groups (young adult women, older adult women, women veterans, or sexual minority women).

Studies were excluded based on the following criteria: focus on domestic violence, polysubstance abuse, men or males, adolescent/child focus, sleep disturbances, postpartum or pregnancy, sexual dysfunction, sexual assault, or eating disorders. See Table 3 in the attached Appendix for details of all studies reviewed and specific rationale for inclusion or exclusion.

Literature Review Process

The 25 articles were selected for inclusion and reviewed for study purpose, sample size, design, level of evidence, findings, and implications for further study. See Table 4 in the attached Appendix for these details.

Methodological Assessment

The level of evidence (Melnyk & Fineout-Overholt, 2019) of included studies ranged from I-VII. Level I evidence (2) included a systematic review of randomized control studies and a guideline for clinical practice to serve as standards for care. Level II evidence (3) included

randomized clinical trials. A majority of the studies (13) have level IV evidence consisting of cohort, cross-sectional, and ethnographic studies. Level VI studies (5) included (4) qualitative interview studies and (1) an introduction of a model for intervention. Level VII studies (1) included expert opinion. The strength of evidence found in this literature review is appropriate for the clinical topic of coaching women in primary care on alcohol intake and its affect on mental well-being and drinking behaviors.

Summary of Literature

The literature review will synthesize the evidence related to coaching women in primary care and its affect on alcohol intake and mental well-being.

Study Characteristics

As mentioned above in the methods section, this systematic review included 25 studies ranging with levels of evidence between I-IV (Melnyk & Fineout-Overholt, 2019). The level I evidence includes a practice guideline and systematic review of randomized-controlled trials assessing screening and brief intervention effectiveness on reducing alcohol consumption in primary care (Kaner et al., 2018; Moyer, 2013). The level II evidence includes three randomized-controlled trials. Bold et al., (2017) and Holzhauer et al., (2017) focused on women-specific factors related to alcohol use and well-being. Wallhed Finn et al., (2018) examine effectiveness of alcohol interventions administered in primary care to both males and females. Most of the evidence was level IV evidence (13/25) including quantitative cohort, cross-sectional cohort, retrospective cross-sectional, retrospective cohort, and longitudinal cohort with focus on gender and alcohol use, mental health and drinking relationships, alcohol use in older women, college-aged women, and sexual minority women, and barriers to receiving alcohol intervention. Level VI evidence included qualitative interview studied (4) focused on

women veterans and sexual minority women and a (1) model introduction on Screening, Brief Intervention, and Referral to Treatment, specific to women (Shogren et al., 2017). Level VII evidence included professional opinion from the NIH (2015) on alcohol use and women.

Synthesis of Research

Women and Alcohol Use

Young-Adult Women

Young adults consume more alcohol than any other peer group and has been associated with consequences including: accidents/injuries, sexual assaults, suicides, academic problems, accidental death, and emotional stress (Alley, et al., 2018; Kenney et al., 2018; Lau-Barraco et al., 2016; NIH, 2015; Pedrelli et al., 2016). Self-reported poor mental health was associated with increased levels of drinking (Kenney et al., 2018; Pavkovic et al., 2018). Pedrelli et al., found females display depression symptoms more often than males and seek mental health treatment more readily, yet utilization of mental health treatment within high-risk groups is still lacking. Young adults may be using alcohol to self-medicate as a result of to stress due to association between increased drinking levels and emotional distress (Alley et al.; Constant et al., 2018; NIH, 2015). Non-depressed or anxious students drink for social reasons, yet depressed or anxious students tend to drink to cope with stressors (Kenney et al.; Lau-Barraco et al.). Increased alcohol use has been associated with increased levels of depression, lower levels of well-being, relationship problems, and unwanted pregnancies due to unsafe sex (NIH, 2015; Tran et al., 2016).

Older Adult Women

Older adults experience many life-changes including: health decline, lifestyle changes, caring for elderly parents, work role changes (such as retirement or inability to retire), and

support system changes. These factors can lead to loneliness, stress, and potential pain and suffering, and can contribute to increased alcohol use (Milic et al., 2018; NIH, 2015). Binge drinking and alcohol use disorders are increasing, especially among females within the baby boomer generation when compared to those born in earlier generations (Han et al., 2017; NIH, 2015; Veldhuis et al., 2017). Additionally, increases in binge alcohol use among older adults with health comorbidities have been noted in the research. This is concerning due to increased risks to health and safety (Han et al., 2017; NIH, 2015). This age group uses more medications for anxiety and depression, that may interact with alcohol negatively (NIH, 2015). Moderate to heavy drinking is associated with increased dissatisfaction and decreased generalized well-being (Constant et al., 2018; Tran et al., 2016).

Sexual Minority Women

Sexual minority women include lesbian, bisexual, and queer women (Jeong et al., 2016; McNair et al., 2016). This group of women consumes alcohol at higher levels when compared to heterosexual women (Jeong et al.; McNair et al.; Veldhuis et al., 2017). Minority stress within this group contributes to maladaptive behaviors exhibited by substance use and mental health problems like anxiety and depression (Jeong et al.; McNair et al.; Veldhuis et al.). Sexual minority women are at higher risk of depression and alcohol dependence when compared to heterosexual women (Jeong et al.; Veldhuis et al.). Veldhuis et al., found this group is twice as likely to drink heavily as they age, compared to heterosexual women; this contributes to increased risk of poor mental and physical health later in life, in addition to increased morbidity and mortality (Veldhuis et al.). Additionally, Bränström & Pachankis (2018) report, bisexual women show a three-time greater risk of psychological distress and substance use than heterosexual women.

Sexual minority women may have poorer overall mental health and rates of alcohol abuse, requiring specialized treatment (Branstrom & Pachankis, 2018; Jeong et al., 2016; McNair et al., 2016). Also, SMW may be reluctant to seek treatment due to fear of sexual discrimination (Jeong et al.; McNair et al.; Veldhuis et al., 2017). Jeong et al. reported the relationships between sexual identity, race/ethnicity, and minority stress on psychological health and health behaviors is essential to creating effective interventions for sexual minority women.

Veterans

The Veterans Administration (VA) requires primary care to perform yearly alcohol risk screening, brief counseling, and referral for substance use disorders when needed (Abraham, Wright, et al., 2017). Approximately 30% of women veterans misuse alcohol, yet women are under-represented in substance abuse treatment (Abraham, Lewis et al., 2017; Abraham, Wright, et al.; Lewis et al., 2016). Unhealthy drinking is often associated with depression, post-traumatic stress disorder (PTSD), or sexual assault in this population (Abraham, Lewis et al., 2017). Abraham, Wright, et al. report women being under-represented in alcohol-related care is due to women being less likely to report unhealthy drinking. Factors identified affecting women veterans' willingness to engage in alcohol-related care include financial barriers, social support, provider's knowledge of care options, availability of gender-specific services, time constraints in primary care a referral process, and self-appraisal of drinking (Abraham, Lewis et al.; Abraham, Wright, et al.; Lewis et al.). Lewis et al. (2016) reported increased wiliness to receive alcoholrelated care if medical or psychological comorbidities existed. Abraham, Wright et al. (2017) identified shared decision-making via telephone or facetime as a promising intervention method for women veterans.

Depression/Anxiety, Well-being, and Alcohol Use

Alcohol misuse has been shown to contribute to anxiety and depression (Moyer, 2013). Women with alcohol use disorder have significant issues with self-care, depression and anxiety, and interpersonal relationships (Holzhauer et al., 2017, Pavkovic et al., 2018; Tran et al., 2016). Alcohol misuse and depression comorbidities have been associated with higher rates of suicidal ideation (Pavkovic et al.). Potential contributing factors to the comorbidity of alcohol misuse and depression included: 1) the chemical effects of alcohol on the CNS causes depression, 2) alcohol misuse develops as a way to deal with depression symptoms, 3) alcohol misuse and depression occur together spontaneously due to a stressor, and 4) depression and alcohol misuse occur independently (Pavkovic et al.).

Addressing anxiety and depression in women with alcohol use/misuse can help their understanding of contributing factors to her mental health (Holzhauer et al., 2017). Women with alcohol misuse, along with depression or anxiety have less success with alcohol cessation or moderation when attempted without the help of a provider (Holzhauer et al., 2017).

Coaching Interventions

Brief Behavior Counseling

Counseling in primary care may vary in individual components, duration, number, and frequency of sessions, and delivery method (Moyer, 2013). Interventions can be web-based, telephone-based, in-person, or via written materials (Kaner et al., 2018; Moyer, 2013). Typical interventions include feedback on the patient's alcohol use, recommendations on reducing the amount consumed, and information about the potential health effects of continued use (Kaner et al.). The best evidence for effectiveness has been shown from brief counseling with multiple exposures to reduce alcohol consumption (Kaner et al.; Moyer, 2013). Kaner et al. found that at

one year follow up after brief intervention, there was a reduction of the amount of alcohol consumed per week by one beer.

Shogren et al., (2017) recommend the Screening, Brief Intervention, and Referral to Treatment (SBIRT) model to screen all women for unhealthy alcohol use and intervene appropriately. First, it utilizes a variety of screening tools individualized by provider and patient including: NIAAA single question, AUDIT, AUDIT-C, CRAFFT, T-ACE, and TWEAK (Shogren et al.). Brief interventions are recommended based on either at-risk alcohol use or suspected alcohol use disorder. Feedback is provided to the patient based on their screening result and consequences of their continued use (Shogren et al.). The provider must encourage the patient to ask questions, and advise they reduce their drinking (Shogren et al.). These interventions are most effective when comprised of multiple short (10-15 minute) interventions initiated on the same visit as the screening was done (Shogren et al.).

Women benefit from individualized interventions (Lewis et al., 2016; Shogren et al., 2017). The way the provider presents options related to care or treatment influence their willingness to receive alcohol care. The provider's knowledge level about treatment options and resources available is also important to women approaching alcohol intervention, in addition to the provider having a genuine interest in their care (Abraham, Lewis et al., 2017; Lewis et al.; Shogren et al.).

Cognitive-Behavioral Therapy

Cognitive-behavioral therapy (CBT) helps identify feelings, thoughts, and circumstances associated with drinking behaviors and facilitates the development of healthy coping skills (Milic et al., 2018). Bold et al., (2017) and Holzhauer et al., (2017) found female-specific CBT to improve the quality of life including increased levels of alcohol abstinence and self-reported

physical, psychological, and social well-being. CBT can be an effective treatment for women with high levels of anxiety or depression in addition to alcohol misuse (Bold et al.; Holzhauer et al.). Abraham, Lewis et al. (2017), find telephone-based CBT to be a convenient and promising medium for delivering alcohol-related care to women veterans.

Wallhed Finn et al. (2018) investigated the combination of CBT and motivational interviewing to decrease alcohol intake, promote problem-solving abilities, and encourage behavior changes. Unique to this study, they compared outcomes by treatment setting (specialty-based or primary care-based). The patients treated in primary care showed similar reductions in alcohol intake when compared to those receiving similar treatment in specialty care (Wallhed Finn et al.). Patients a with higher severity of alcohol dependence and depression showed better outcomes from specialty-based treatment (Wallhed Finn et al.).

Mindfulness

Bravo et al., (2016) found increased mindfulness to be associated with decreased depressive symptoms and drinking behaviors. Lower levels of mindfulness were associated with increased depressive symptoms and drinking behaviors (Bravo et al.). Mindfulness-based interventions may be effective with college-aged students by reducing depressive symptoms and drinking behaviors.

Barriers to Seeking Treatment

Women do not seek treatment for alcohol misuse due to perceived social stigma, economic, and time barriers (Abraham, Lewis et al., 2017; Bold et al., 2017; Finn et al., 2018; Mellinger et al., 2019; Milic et al., 2018). Abraham, Lewis et al. (2017) and Lewis et al., (2016) reported women motivated to seek treatment may be hindered by a lack of gender-specific options or a male-dominated setting. Mellinger et al. found low treatment seeking behaviors in

women are particularly concerning due to increasing numbers of women who meet the criteria for alcohol use disorder.

Discussion

Alcohol use and misuse has been linked to depression, anxiety, and decreased generalized well-being in young-adult women, older-adult women, sexual minority women, and veterans (Abraham, Lewis et al., 2017; Constant et al., 2018; Holzhauer et al., 2017; Jeong et al., 2016; Moyer, 2013; NIH, 2015; Pavkovic et al., 2018; Tran et al., 2016; Veldhuis et al., 2017). Brief behavioral counseling, cognitive behavioral therapy, motivational interviewing, and mindfulness provide multiple effective options to provide coaching for women in primary care on their alcohol intake and the affect it has on their well-being (Bold et al., 2017; Bravo et al., 2016; Holzhauer et al., 2017; Kaner et al., 2018; Moyer, 2013; Wallhed Finn et al., 2018).

Literature Gaps

This literature review identified large gaps in available evidence in the effect of coaching on alcohol intake in women in primary care on drinking behaviors and overall mental health.

The USPSTF recommends screening all adults 18 years of age or older for alcohol misuse (Moyer, 2013). Alcohol affects women's bodies differently than men biologically (NIH, 2015). Therefore, a gap in the literature exists regarding further investigation of the female-specific needs for coaching, prevention, and treatment of alcohol misuse or abuse.

The literature review included a total of 25 studies, with a total of 233,566 subjects. Of this total, 6,854 (2.9%) of these subjects were involved in studies specifically looking at womencentered objectives/purpose. The remaining studies examined both genders, yet data was able to be extracted pertinent to women.

Some female-specific research exists looking at young adult women, older adult women, veterans, and sexual minority women and their unique needs regarding coaching, prevention, and treatment of alcohol misuse. The group of women in middle age is not specifically represented in this literature review leaving many questions unanswered including- (a)Does this group of women have unique characteristics and needs, just as the previously mentioned groups do? (b) Are there potentially other groups not identified in this literature review that have unique characteristics needing coaching? and (c) Do other factors need to be studied, unique to women, that influence alcohol intake and well-being?

Limitations

This literature review has several limitations. The guidelines and recommendations for screening and intervention are based on the adult population in general. The USPSTF guideline for screening and counseling in primary care on alcohol use have been made for all adults greater than 18 years of age (Moyer, 2013), not specific to women. This guideline has a Grade B, meaning "inconsistent or limited-quality patient-oriented evidence" is available (Ebell et al., 2004, p. 551). Disease-oriented evidence is intermediate, which means improvements in patient outcomes may not be reflected in the evidence (Ebell et al., 2004). The Cochrane Review by Kaner (2018) focused on adult drinkers, not specifically women. Over-all, the guidelines lack specificity for women. Reviewing the included articles of the literature review, 13 of the total 25 reviewed articles had a female focus. The others were included in the review due to their gender-specific applicability.

The recommendation for screening includes brief intervention. This brief intervention is varied, not standardized, dependent on the provider administering, and unique to the individual's

needs. The media and setting that it is provided also varies. Future research and standardization is needed to facilitate this process.

Implications for the Future

Recommendations for clinical practice, further research, and educational/policy changes were identified throughout this literature review and are further expanded below.

Clinical Practice Recommendations

Careful screening is needed to identify women misusing alcohol in both annual and episodic visits so that education and interventions can be put into place to preserve their physical and mental health (Shogren et al., 2017). Screening for alcohol use/misuse should also be accompanied by assessment of depression and anxiety using a tool such as a PHQ-9 and GAD-7 (Pavkovic et al., 2018).

Building a trusting provider/patient relationship is essential. Screening for alcohol use can create anxiety for the patient, therefore stressing the patient/provider relationship (Moyer, 2013). Having a trusting provider/patient relationship facilitates open communication regarding alcohol use.

Identification of specific effective coaching interventions on alcohol intake is needed for primary care providers. Women with differing lifestyles and stages of life have unique needs. Women with high levels of depression and anxiety can positively affect their treatment outcomes by including interventions involving emotion regulation and mood management (Holzhauer et al., 2017).

Recommendations for Research

Many issues for further research were identified through this literature review process. It is known that women metabolize alcohol differently than men (NIH, 2015). Yet the

recommendations for screening and brief intervention are the same for all adult males and females. The *Dietary Guidelines* (NIH, 2015) for women are different than men (one drink per day vs two drinks per day); yet determining a "safe" amount of alcohol use for women should be studied further. Addressing the effects of long-term alcohol consumption in women is needed (Tran et al., 2016). Focused screening and prevention programs for women are needed to examine specific groups of women (i.e., SMW, veterans, young women, older women, and middle-aged women), to identify specific characteristics and provide screening and interventions based on their unique needs. Determination of specific interventions effective for females is needed. Establishing how advertising, social media, culture, family, and educational level affect your alcohol intake and well-being is needed. Learning how the "mommy needs wine" culture is affecting the drinking patterns and well-being of women in today's culture is also important to explore. Over-all, there is a lack of female-specific research on coaching in primary care on alcohol use and its effect on well-being and drinking behaviors.

Education/Policy Recommendations

Opportunities for further education/policy changes were identified in this review.

Women metabolize alcohol differently than men (Milic et al., 2018; NIH, 2015). Men have historically used and misused alcohol at greater levels than women, but this gap is narrowing (NIAAA, 2019). Providers' awareness of increased alcohol use in women is essential to providing appropriate screening and treatment (Milic et al.). Primary care is an appropriate setting for screening for alcohol misuse, providing brief intervention, and referral to specialty care as appropriate (Abraham, Lewis, & Cucciare, 2017; Moyer, 2013; Shogren et al., 2017; Wallhed Finn et al., 2018). Women are more receptive to coaching when providers possess the appropriate knowledge level regarding treatment options and resources, in addition to having a

genuine interest in their care (Lewis et al., 2016, Shogren et al.). Young adult women, older adult women, SMW, and veterans are at increased risk for alcohol abuse, and interventions should be individualized to their unique needs (Abraham, Lewis, & Cucciare, 2017; Abraham, Wright, et al., 2017; Alley et al., 2017; Han et al., 2017; Jeong et al., 2016; McNair et al., 2016; Milic et al.). Potential guideline changes would be needed pending further research on gender specific issues including screening methods, intervention methods, and specific needs of individual groups.

Conclusion

An over-all lack of research exists on how primary care coaching of women on alcohol intake affects drinking behaviors and overall mental health. Women's bodies metabolize alcohol differently when compared to men and are at increased risk for adverse effects both physically and mentally (NIH, 2015). Existing knowledge demonstrates the connection of alcohol intake and its affect on mental well-being. Additionally, coaching has demonstrated effectiveness in decreasing the amount of alcohol consumed in adults, not women specifically (Moyer, 2013). The gap in literature exists in linking female-specific interventions to coaching on alcohol use and its affect on drinking behaviors and mental well-being. Primary care providers need additional education on the unique needs of women in relation to coaching them on their alcohol use. Ongoing research, education, clinical practice, and policy changes are required to continue to improve the coaching of women in primary care on their alcohol intake and its affect on drinking behaviors and overall mental health.

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Appendix

Table 1Database Search Description

Database (or Search Engine)	Restrictions Added to Search	Dates Included in Database	General Subjects Covered by Database
1. PsycINFO	Full Text; References Available; English Language; Peer Reviewed Journal; Research Article; Abstract Available; Age group >18; Population Female; Exclude Male	2016 through 2019	Citations and abstracts to articles and books about psychology and related specialties: psychiatry, education, business, medicine, nursing, pharmacology, law, linguistics, and social work
2. Academic Search Premier	Full Text; Scholarly Reviewed; Academic Journals; English Language; References Available	2016 through 2019	Citations and abstracts to articles, full text of articles from almost every academic subject.
3. CINAHL Plus with full text	Full Text; References Available; Abstract Available; Academic Journals;	2014 through 2019	Full text access to e-books about nursing. Also provides citations and abstracts to articles, books, dissertations, proceedings, and other materials about nursing and allied health, including cardiopulmonary technology, emergency service, health education, medical/laboratory, medical assistant, medical records, occupational therapy, physical therapy, physician assistant, radiologic technology, and social service/health care.
4. Gender Studies Database	Scholarly Journals; Linked Full Text	2014 through 2019	Essential subjects covered in this resource include gender inequality, masculinity, postfeminism, and gender identity.

Table 2

Data Abstraction Process

Date of Search	Key Words	Hits in Psych INFO	Hits in Academic Search Premier	Hits in CINAHL	Hits in Gender Studies Database
10.24.19	female or woman or women or females	68,798	15,436	4,390	10,416
	alcohol use or alcohol drinking or alcohol misuse or alcohol abuse or alcoholism or drinking culture or drinking behavior	19,546	2,026	306	204
	well-being or wellbeing or well being or life satisfaction or happiness or life quality or wellness or mental health	111,574	10,037	4,291	2,058
	therapy or treatment or intervention or counseling or psychotherapy or primary care	148,050	31,884	10,642	4,084
10.24.19	female or woman or women or females AND alcohol use or alcohol drinking or alcohol misuse or alcoholism or drinking culture or drinking behavior AND well-being or wellbeing or well being or life satisfaction or happiness or life quality or wellness or mental health AND therapy or treatment or intervention or counseling or psychotherapy or primary care	24	43	13	39
10.24.19	female or woman or women or females AND alcohol use or alcohol drinking or alcohol misuse or alcoholism or drinking culture or drinking behavior AND well-being or wellbeing or well being or life satisfaction or happiness or life quality or wellness or mental health AND therapy or treatment or intervention or counseling or psychotherapy or primary care NOT HIV or aids or acquired human immunodeficiency syndrome or human immunodeficiency virus	24	37	13	12
10.24.19	female or woman or women or females AND alcohol use or alcohol drinking or alcohol misuse or alcoholism or drinking culture or drinking behavior AND well-being or wellbeing or well being or life satisfaction or happiness or life quality or wellness or mental health AND therapy or treatment or intervention or counseling or psychotherapy or primary care NOT HIV or aids or acquired human immunodeficiency syndrome or human immunodeficiency virus NOT pregnancy or pregnant	18	22	10	10
10/24/19	Bibliographic review – 3				

^{*}All cells with 22 or fewer results were reviewed.

Table 3

Characteristics of Literature Included and Excluded

Reference	Included or Excluded and Document	Rationale
Abraham, T. H., Lewis, E. T., & Cucciare, M. A. (2017). Providers' perspectives on barriers and facilitators to connecting women veterans to alcohol-related care from primary care. <i>Military Medicine</i> , <i>182</i> (9), e1888-e1894. https://doi.org/10.7205/MILMED-D-17-00042	Included	Unhealthy drinking, primary care, veterans
Abraham, T. H., Wright, P., White, P., Booth, B. M., & Cucciare, M. A. (2017). Feasibility and acceptability of shared decision-making to promote alcohol behavior change among women veterans: Results from focus groups. <i>Journal of Addictive Diseases</i> , <i>36</i> (4), 252-263. https://doi.org/10.1080/10550887.2017.1373318	Included	Barriers to alcohol related treatment-veterans. Mental health comorbidity-interventions
Adofoli, G. & Ullman, S. (2014). An exploratory study of trauma and religious factors in predicting drinking outcomes in african American sexual assault survivors. <i>Feminist Criminolog</i> , 9(3). https://doi.org/10.1177/1557085114531319	Excluded	examined the relationships between religious factors, trauma histories, and life satisfaction and alcohol-related outcomes in adult sexual assault survivors
Alley, E. S., Velasquez, M. M., & von Sternberg, K. (2018). Associated factors of readiness to change in young adult risky drinkers. <i>American Journal of Drug & Alcohol Abuse</i> , 44(3), 348–357. https://doi.org/10.1080/00952990.2017.1363768	Included	Increase understanding of readiness to change as it relates to risky drinking by exploring factors related to readiness to change alcohol use behavior, specifically for young adult patients
An, J., Moon, C., Kim, D., Lee-Tauler, S., Jeon, H., Cho, S., Sung, S., & Hong, J. (2019). Prevalence of intimate partner violence victimization and its association with mental disorders in the Korean general population. <i>Archives of Women's Mental Health</i> . 22: 751. https://doi.org/10.1007/s00737-019-00997	Excluded	Focus' on intimate partner violence and it's effect on women's mental health. Briefly speaks to increased alcohol use in women whom are victims.
Bengtsdotter, H., Lundin, C., Danielsson, K. G., Bixo, M., Baumgart, J., Marions, L., Brynhildsen, J., Malmborg, A., Lindh, L., Poromaa, I. S. (2018). Ongoing or previous mental disorders predispose to adverse mood reporting during combined oral contraceptive use. <i>The European Journal of Contraception and Reproductive Health Care</i> , 23(1), 45-51. https://doi.org/10.1080/13625187.2017.1422239	Excluded	BCP, mood disorders, women.
Bold, K. W., Epstein, E. E., & McCrady, B. S. (2017). Baseline health status and quality of life after alcohol treatment for women with alcohol dependence. <i>Addictive Behaviors</i> , 64, 35-41. https://doi.org/10.1016/j.addbeh.2016.08.014	Included	Substance use and health care providers to consider the overlap of alcohol use problems and health domains. Female-specific cognitive behavioral treatment for alcohol use disorders positively
Bränström, R., & Pachankis, J. E. (2018). Sexual orientation disparities in the co-occurrence of substance use and psychological distress: a national	Included	significantly elevated prevalence of high-risk alcohol use, cannabis use, and daily tobacco smoking, among sexual minorities compared to

Reference	Included or Excluded and Document	Rationale
population-based study (2008-2015). <i>Social Psychiatry & Psychiatric Epidemiology</i> , 53(4), 403–412. https://doi.org/10.1007/s00127-018-1491-4.		heterosexuals. Most notable with bisexual women vs heterosexual women.
Bravo, A. J., Pearson, M. R., Stevens, L. E., & Henson, J. M. (2016). Depressive symptoms and alcohol-related problems among college students: A moderated-mediated model of mindfulness and drinking to cope. <i>Journal of Studies on Alcohol and Drugs</i> , 77(4), 661-666. https://doi.org/10.15288/jsad.2016.77.661	Include	Mindfulness-based interventions suggest that mindfulness may attenuate the conditioned response of using substances in response to negative emotional states, and trait mindfulness has been shown to be a protective factor associated with experiencing fewer alcohol-related problems
Chen, Z., Li, X., Chen, Y., Hong, Y.,, Shan, Q., Liu, W., & Zhou, Y. (2014). Alcohol and other drug use, partner violence, and mental health problems among female sex workers in southwest China. <i>Healthcare for Women International</i> , <i>35</i> (1). https://doi.org/10.1080/07399332.2012.757317	Excluded	IPV, etoh, drug abuse, mental illness, HIV
Choi, N. G., DiNitto, D. M., Marti, C. N., & Choi, B. Y. (2017). Association between nonmedical marijuana and pain reliever uses among individuals aged 50. <i>Journal of Psychoactive Drugs</i> , 49(4), 267–278. https://doi.org/10.1080/02791072.2017.1342153	Excluded	Marijuana and pain relievers.
Constant, A., Gautier, Y., Coquery, N., Thibault, R., Moirand, R., & Val-Laillet, D. (2018). Emotional overeating is common and negatively associated with alcohol use in normal-weight female university students. <i>Appetite</i> , <i>129</i> , 186-191. https://doi.org/10.1016/j.appet.2018.07.012	Included	Overeating, excess ETOH consumption, female college students.
Costa, E. C. V., & Gomes, S. C. (2018). Social support and self-esteem moderate the relation between intimate partner violence and depression and anxiety symptoms among portuguese women. <i>Journal of Family Violence</i> , <i>33</i> (5), 355–368. https://doi.org/10.1007/s10896-018-9962-7.	Excluded	impact of IPV on mental health and on alcohol abuse and highlights the need to design effective interventions that promote social and personal resources in victimized women.
Feinstein, B., Dyar, C., Li1, D., Whitton, S., Newcomb, M., & Mustanski, B. (2017). The longitudinal associations between outness and health outcomes among gay/lesbian versus bisexual emerging adults. <i>Archives of Sexual Behavior</i> , 48, 1111-1126. https://doi.org/10.1007/s10508-018-1221-8	Excluded	Substance abuse and mental health problems in gay/lesbian vs bisexual adults. Longitudinal study looking at different groups.
Fleury, MJ., Grenier, G., & Bamvita, JM. (2018). Associated and mediating variables related to quality of life among service users with mental disorders. <i>Quality of Life Research</i> , 2. https://doi.org/10.1007/s11136-017-1717-z	Excluded	Quality of life of mental health care users.
Fortuna, K., Ferron, J., I. Pratt, S., Muralidharan, A., Aschbrenner, K., Williams, A., Deegan, P., & Salzer, M. (2019). Unmet needs of people with serious mental illness: Perspectives from certified peer specialists. <i>Psychiatric Quarterly</i> , 90(3). 579-586. https://doi.org/10.1007/s11126-019-09647-y	Excluded	Isolation in persons with mental illness.

Reference	Included or Excluded and Document	Rationale
George, A. M., & Zamboanga, B. L. (2018). Drinking game participation and outcomes in a sample of Australian university students. <i>Drug & Alcohol Review</i> , <i>37</i> (5), 599–606. https://doi.org/10.1111/dar.12811	Excluded	College student drinking games-interventions to deter?
Giannotta, F., & Weichold, K. (2016). Evaluation of a life skills program to prevent adolescent alcohol use in two European countries: One-year follow-up. <i>Child & Youth Care Forum</i> , 45(4), 607–624. https://doi.org/10.1007/s10566-016-9349-y	Excluded	Adolescent focus
Hafekost, K., Lawrence, D., O'Leary, C., Bower, C., Semmens, J., & Zubrick, S. R. (2017). Maternal alcohol use disorder and risk of child contact with the justice system in western Australia: A population cohort record linkage study. <i>Alcoholism: Clinical and Experimental Research</i> , <i>41</i> (8), 1452-1460. https://doi.org/10.111/acer.13426	Excluded	Focus on children of mothers whom use ETOH
Han, B. H., Moore, A. A., Sherman, S., Keyes, K. M., & Palamar, J. J. (2017). Demographic trends of binge alcohol use and alcohol use disorders among older adults in the united states, 2005–2014. <i>Drug and Alcohol Dependence</i> , 170, 198-207. https://doi.org/10.1016/j.drugalcdep.2016.11.003	Included	Alcohol use among older adults is increasing in the US, including past-month binge alcohol use and AUD with increasing trends among females
Holzhauer, C. G., Epstein, E. E., Hayaki, J., Marinchak, J. S., McCrady, B. S., & Cook, S. M. (2017). Moderators of sudden gains after sessions addressing emotion regulation among women in treatment for alcohol use. <i>Journal of Substance Abuse Treatment</i> , 83, 1-9. https://doi/org/10.1016/j.jsat.2017.09.014	Included	Psychotherapy used to decrease mental health symptoms for women in treatment for AUD
Jeong, Y. M., Veldhuis, C. B., Aranda, F., & Hughes, T. L. (2016). Racial/ethnic differences in unmet needs for mental health and substance use treatment in a community-based sample of sexual minority women. <i>Journal of Clinical Nursing</i> , 25(23-24), 3557-3569. https://doi.org10.1111/jocn.13477	Included	High rates of depression and hazardous drinking among sexual minority women, understand the factors that may increase the risk of these conditions among sexual minority women, the potentially high unmet need for mental health and substance use treatment
Kaner, E., Beyer, F., Muirhead, C., Campbell, F., Pienaar, E., Bertholet, N., Daeppen, J., Saunders, J., & Burnand, B. (2018). Effectiveness of brief alcohol interventions in primary care populations. <i>Cochrane Database of Systematic Reviews.</i> (2). https://doi.org/10.1002/14651858.CD004148	Included	Systematic review of effectiveness of alcohol intervention in primary care. Brief interventions reduce alcohol consumption.
Kenney, S. R., DiGuiseppi, G. T., Meisel, M. K., Balestrieri, S. G., & Barnett, N. P. (2018). Poor mental health, peer drinking norms, and alcohol risk in a social network of first-year college students. <i>Addictive Behaviors</i> , 84, 151-159. https://doi.org/10.1016/j.addbeh.2018.04.012	Included	mental health status impacts drinking behaviors-interventions based on this.
Lau-Barraco, C., Linden-Carmichael, A. N., Braitman, A., & Stamates, A. (2016). Identifying patterns of situational antecedents to heavy drinking among	Included	Increased mental health symptoms with increased drinking.

Reference	Included or Excluded and Document	Rationale
college students. <i>Addiction Research & Theory</i> , 24(6), 431–440. https://doi.org/10.3109/16066359.2016.1153077.		
Lawental, M., Surratt, H. L., Buttram, M. E., & Kurtz, S. P. (2018). Serious mental illness among young adult women who use drugs in the club scene: Cooccurring biopsychosocial factors. <i>Psychology, Health & Medicine, 23</i> (1), 82-88. https://doi.org/10.1080/13548506.2017.1330545	Excluded	Club scene-women-mental health, victimization, trauma, physical pain, substance dependence and sexual risk factors
Lea, T., Wit, J., & Reynolds, R. (2014). Minority stress in lesbian, gay, and bisexual young adults in Australia: Associations with psychological distress, suicidality, and substance Use. <i>Archives of Sexual Behavior</i> , <i>43</i> , 1571-1578. https://doi.org/10.1007/s10508-014-0266-6	Excluded	Increased mental health problems and substance abuse rates in same- sex attracted persons. Chronic stress leading to poorer mental health.
Lee, N., Roche, A., Duraisingam, V., Fischer, J., Cameron, J. & Pidd, K. (2014). A systematic review of alcohol interventions among workers in maledominated industries. <i>Journal of Men's Health</i> , <i>11</i> (2), 53-63. https://doi.org/10.1089/jomh.2014.0008	Excluded	Focus on interventions for men only.
Lemanne, D., & Maizes, V. (2018). Advising women undergoing treatment for breast cancer: A narrative review. <i>Journal of Alternative & Complementary Medicine</i> , 24(9/10), 902–909. https://doi-org.10.1089/acm.2018.0150	Excluded	Breast cancer treatment-complimentary medicine
Lewis, E. T., Jamison, A., Ghaus, S., Durazo, E., Frayne, S., Hoggatt, K., Bean-Mayberry, B., Timko, C., & Cucciare, M. A. (2016). Receptivity to alcohol-related care among U.S. women veterans with alcohol misuse. <i>Journal of Addictive Diseases</i> , <i>35</i> (4), 226-237. https://doi.org/10.1080/10550887.2016.1171670	Included	Alcohol misuse in primary care-veterans-women's-specific interventions.
Long, M. N. (2018). Online and health risk behaviors in high school students: An examination of bullying. <i>Pediatric Nursing</i> , 44(5), 223–228. https://doi.org/10.1111/4452018	Excluded	High school age focus
McElroy, J. A., Haynes, S. G., Eliason, M. J., Wood, S. F., Gilbert, T., Barker, L. T., & Minnis, A. M. (2016). Healthy weight in lesbian and bisexual women aged 40 and older: An effective intervention in 10 cities using tailored approaches. <i>Women's Health Issues</i> , 26, S18–S35. https://doi.org/10.1016/j.whi.2016.05.002	Excluded	Lesbian and bisexual women have higher rates of obesity than heterosexual women. Interventions on physical activity, healthy diet, quality of life, alcohol intake. Measured changes after interventions.
McKenzie, N., Killaspy, H., Jakobowitz, S. (2019). Assessing needs for psychiatric treatment in prisoners: 3. Comparison of care received by black and minority ethnic prisoners and by white prisoners. <i>Social Psychiatry & Psychiatry Epidemiology</i> , 54: 883. https://doi.org/10.1007/s00127-019-01663-4	Excluded	Focus on minority inmate mental health needs.

Reference	Included or Excluded and Document	Rationale
McNair, R., Pennay, A., Hughes, T., Brown, R., Leonard, W., & Lubman, D. I. (2016). A model for lesbian, bisexual and queer-related influences on alcohol consumption and implications for policy and practice. <i>Culture, Health & Sexuality</i> , <i>18</i> (4), 405–421. https://doi.org/10.1080/13691058.2015.1089602	Included	Sociocultural influences on alcohol consumption among lesbian, bisexual and queer women in Australia. Social connection, wellbeing.
Mellinger, J. L., Fernandez, A., Shedden, K., Winder, G. S., Fontana, R. J., Volk, M., Blow, C., & Lok, A. S. F. (2019). Gender disparities in alcohol use disorder treatment among privately insured patients with alcohol-associated cirrhosis. <i>Alcoholism: Clinical and Experimental Research</i> , 43(2), 334-341. https://doi.org/10.1111/acer.13944	Included	Focus' on alcoholic cirrhosis and intervention
Merghati-Khoei, E., Sheikhan, F., Shamsalizadeh, N., Haghani, H., Yousofnia Pasha, Y. R., & Killeen, T. (2014). Menopause negatively impacts sexual lives of middle-aged Iranian women: A cross-sectional study. <i>Journal of Sex & Marital Therapy</i> , 40(6), 552–560. https://doi-org/10.1080/0092623X.2013.796577	Excluded	The study aimed to explore associations between sexual function, demographic variables, health and menopausal status among middle-aged Iranian women.
Milic, J., Glisic, M., Voortman, T., Borba, L., Asllanaj, E., Rojas, L, Troup, J., Kiefte-Joung, J., Van Beek, J., Muka, T., & Franco, O. H. (2018). Menopause, ageing, and alcohol use disorders in women. <i>Maturitas</i> , 111, 100-109. https://doi.org/10.1016/j.maturitas.2018.03.006	Included	Overview of drinking patterns, and of the prevalence, risk factors, health impacts and treatment challenges of AUD for women as they progress through middle and older age.
Moyer, V. (2013). Screening and behavioral counseling interventions in primary care to reduce alcohol misuse: U.S. Preventive Services Task Force Recommendation Statement. <i>Annals of Internal Medicine</i> , <i>159</i> (3), 210-218. https://doi.org/10.7326/0003-4819-159-3-201308060-00652	Included	USPSTF Guideline on alcohol misuse interventions.
National Institute of Health. (2015). <i>Alcohol: A women's health issue</i> . https://www.acog.org/-/media/Departments/Tobacco-Alcohol-and-Substance-Abuse/AlcoholA-Womans-Health-Issue.pdf	Included	Definitions, recommendations, and statistics of the current state of alcohol as it relates to women's health.
Pavkovic, B., Zaric, M., Markovic, M., Klacar, M., Huljic, A., & Caricic, A. (2018). Double screening for dual disorder, alcoholism and depression. <i>Psychiatry Research</i> , 270, 483-489. https://doi.org/10.1016/j.psychres.2018.10.013	Included	Results of statistical analysis showed that a more problematic alcohol use type was associated with a more severe level of depression, with a greater positive association between problematic alcohol use and severity of depressive symptoms among females
Pedrelli, P., Borsari, B., Lipson, S. K., Heinze, J. E., & Eisenberg, D. (2016). Gender differences in the relationships among major depressive disorder, heavy alcohol use, and mental health treatment engagement among college students. <i>Journal of Studies on Alcohol and Drugs</i> , 77(4), 620-628. https://doi.org/10.15288/jsad.2016.77.620	Included	Episodic drinking/depression, relationship of each-differences between sexes

Reference	Included or Excluded and Document	Rationale
Peters van Neijenhof, R., van Duijn, E., Comijs, H. C., van den Berg, J., de Waal, M., Oude Voshaar, R., & van der Mast, R. (2018). Correlates of sleep disturbances in depressed older persons: the Netherlands study of depression in older persons (NESDO). <i>Aging & Mental Health</i> , 22(2), 233–238. https://doi.org/10.1080/13607863.2016.1247421	Excluded	Sleep disturbances and depression
Quin, E. & Hides, S. (2019). Impact of a brief psychoeducational intervention for reducing alcohol use and related harm in school leavers. <i>Drug and Alcohol Review</i> , 38(4). https://doi.org/10.1111/dar.12920	Excluded	Focus on late adolescence.
Reddy, S., Dick, A. M., Gerber, M. R., & Mitchell, K. (2014). The effect of a yoga intervention on alcohol and drug abuse risk in veteran and civilian women with posttraumatic stress disorder. <i>Journal of Alternative & Complementary Medicine</i> , 20(10), 750–756. http://doi.org/10.1089/acm.2014.0014	Excluded	Focus on PTSD in women veterans.
Roberts, K. (2017). Correlates of law enforcement suicide in the United States: a comparison with Army and Firefighter suicides using data from the National Violent Death Reporting System. <i>Police Practice Research</i> , 20(1). https://doi.org/10.1080/15614263.2018.1443269	Excluded	Suicide rates among police compared to firefighters and Army
Robinson, L., Kelly, P., Deane, F., & Townsend, M. (2019). The residential status of children whose parents are in treatment for methamphetamine use. <i>Drug & Alcohol Review</i> , 38 (4), 359-365. https://doi.org/10.1111/dar.12931	Excluded	Methamphetamine use-children of.
Shidhaye, R., Gangale, S., & Patel, V. (2016). Prevalence and treatment coverage for depression: a population-based survey in Vidarbha, India. <i>Social Psychiatry & Psychiatric Epidemiology</i> , <i>51</i> (7), 993–1003. https://doi.org/10.1007/s00127-016-1220-9	Excluded	Depression, ETOH use, not focused on women. Focused on farmers in India.
Shlomi-Polachek, I., Fung, K., Meltzer-Brody, S., & Vigod, S. (2017). Short stay vs long stay postpartum psychiatric admissions: a population-based study. <i>Archives of Women's Mental Health</i> , 20(4), 505–513. https://doiorg.ezproxy.mnsu.edu/10.1007/s00737-017-0733-x	Excluded	Postpartum focus.
Shogren, M., Harsell, C., & Heitkamp, T. (2017). Screening women for atrisk alcohol use: An introduction to screening, brief intervention, and referral to rreatment (SBIRT) in women's health. <i>Journal of Midwifery and Women's Health</i> , 62(6), 746-754. https://doi.org/10.1111/jmwh.12659	Included	SBIRT resources are evidence based, allowing the clinician to screen for use of alcohol, implement a brief intervention, and conduct referral to treatment, if necessary.
Shorey, R. C., Dawson, A. E., Haynes, E., Strauss, C., Elmquist, J., Anderson, S., & Stuart, G. L. (2016). Is general or alcohol-specific perceived social	Excluded	Perceived social support for those in ETOH treatment and its effect on depression symptoms.

Reference	Included or Excluded and Document	Rationale
support associated with depression among adults in substance use treatment? <i>Journal of Psychoactive Drugs</i> , 48(5), 359–368. https://doi.org/10.1080/02791072.2016.1225140		
Shorey, R. C., Brasfield, H., Anderson, S., & Stuart, G. L. (2014). Mindfulness deficits in a sample of substance abuse treatment seeking adults: a descriptive investigation. <i>Journal of Substance Use</i> , <i>19</i> (1/2), 194–198. https://doi.org/10.3109/14659891.2013.77050	Excluded	No distinction between men and women. Focus on inpatient treatment
Sørensen, T., Jespersen, H., Vinberg, M., Becker, U., Ekholm, O., & Fink-Jensen, A. (2018). Substance use among Danish psychiatric patients: a cross-sectional study. <i>Nordic Journal of Psychiatry</i> , 72(2), 130–136. https://doi.org/10.1080/08039488.2017.1400098.	Excluded	No distinction of specific female results. Generalized
Townsend, E., Ness, J., Waters, K., Kapur, N., Turnbull, P., Cooper, J., Bergen, H., & Hawton, K. (2016). Self-harm and life problems: findings from the Multicentre Study of Self-harm in England. <i>Social Psychiatry & Psychiatric Epidemiology</i> , <i>51</i> (2), 183–192. https://doi.org/10.1007/s00127-015-1136-9.	Excluded	Self-harm and how to provide services to prevent
Tran, N. T., Clavarino, A., Williams, G. M., & Najman, J. M. (2016). Life course outcomes for women with different alcohol consumption trajectories: A population-based longitudinal study. <i>Drug and Alcohol Review</i> , <i>35</i> (6), 763-771. https://doi.org/10.1111/dar.12428	Included	Four trajectories of women's alcohol consumption were identified: abstaining, low-stable drinkers, moderate-escalating drinkers and heavy-escalating drinkers.
Upshur, C., Jenkins, D., Weinreb, L., Gelberg, L., & Orvek, E. (2018). Homeless women's service use, barriers, and motivation for participating in substance use treatment. <i>American Journal of Drug & Alcohol Abuse</i> , 44(2), 252–262. https://doi.org/10.1080/00952990.2017.1357183	Excluded	Among homeless women with SUD, to explore service use, motivation to change, service barriers, and willingness to have substance use and mental health problems addressed in primary health care
Vaitses A., Pase, F., Churchill, S., Soll, B., Schwarz, K., Schneider, M., Costa, A., & Lobato, M. (2019). Dealing with gender-related and general stress: Substance use among Brazilian transgender youth. <i>Addictive Behaviors Reports</i> 9. https://doi.org/10.1080/07448481.2018.1465060	Excluded	Adolescent focus
Veldhuis, C. B., Talley, A. E., Hancock, D. W., Wilsnack, S. C., & Hughes, T. L. (2017). Alcohol use, age, and self-rated mental and physical health in a community sample of lesbian and bisexual women. <i>LGBT Health</i> , <i>4</i> (6), 419-426. http://doi.org/10.1089/lgbt.2017.0056	Included	SMW, drinking does not decline as sharply with age as it does for heterosexual women in the general population. current and projected increases in the aging population and the risks that heavy drinking presents for morbidity and mortality, interventions aimed at older SMW are needed
Wallhed Finn, S., Hammarberg, A., & Andreasson, S. (2018). Treatment for alcohol dependence in primary care compared to outpatient specialist	Included	Primary care vs specialty care for treating alcohol use disorder.

Reference	Included or Excluded and Document	Rationale
treatment—A randomized controlled trial. <i>Alcohol and Alcoholism</i> , <i>53</i> (4), 376-385. http://doi/org/10.1093/alcalc/agx126		
Weaver, T. L., Gilbert, L., El-Bassel, N., Resnick, H. S., & Noursi, S. (2015). Identifying and intervening with substance-using women exposed to intimate partner violence: Phenomenology, comorbidities, and integrated approaches within primary care and other agency settings. <i>Journal of Women's Health</i> (15409996), 24(1), 51–56. https://doi.org/10.1089/jwh.2014.4866	Excluded	SUD and IPV-interventions
Wilksch, S., O'Shea, A., Wade, T. (2018). Depressive symptoms, alcohol and other drug use, and suicide risk: Prevention and treatment effects from a two-country online eating disorder risk reduction trial. <i>International Journal of Eating Disorders</i> . 52(2), 132-141. https://doi.org/10.1002/eat.23005	Excluded	Eating disorders, mental health, substance abuse.
Worsley, R., Bell, R. &, Gartoulla, P., & Davis S. (2017). Prevalence and Predictors of Low Sexual Desire, Sexually Related Personal Distress, and Hypoactive Sexual Desire Dysfunction in a Community-Based Sample of Midlife Women. <i>Journal of Sexual Medicine</i> , 14, 675-686. https://doi.org/10.1016/j.jsxm.2017.03.254	Excluded	Focus on women with low desire, sexually related personal distress, and HSDD are common in women at midlife

Table 4Literature Review Table of All Studies Included

Citation	Study	Pop (N)/	Design/	Variables/	Interventi	Findings	Implications
(Include the citation of all studies	Purpose	Sample	Level of	Instruments	on		
that met inclusion criteria from	_	Size (n)	Evidence				
Table 3 above)		/Setting(s	(Melnyk				
)	&				
			Fineout-				
			Overholt,				
			2015)				
Abraham, T. H., Lewis, E. T., &	Determine	23	Qualitati	Semi-structured	Interviews	Themes Identified:	VA providers possess
Cucciare, M. A. (2017).	barriers and	providers	ve/Semi	interview guide	were		firsthand knowledge of
Providers' perspectives on	facilitators	-NP's	structure	informed by the	transcribe	(1)insufficient care	provider- and clinic-level
barriers and facilitators to	to women	MD's,	d	Consolidated	d, and	resources; (2) provider	factors that help or hinder the
connecting women veterans to	receiving	RN's,		Framework for	themes	prioritization of alcohol-	process of connecting women

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi on	Findings	Implications
alcohol-related care from primary care. <i>Military Medicine</i> , <i>182</i> (9), e1888-e1894. https://doi.org/10.7205/MILMED-D-17-00042	alcohol- related care from the primary care providers perspective.	PA's, and mental health providers	interview s VI	Implementation Science (CFIR)25 was used to collect data about factors that providers perceived affected women Veterans' disclosure of alcohol use to a primary care provider and their willingness to consider alcohol- related care:	pertaining to providers' perspectives on barriers and facilitators to connecting women Veterans with unhealthy drinking to alcohol-related care were identified through template analysis	related care in the context of women's other health care needs; (3) insufficient knowledge of care options or the referral process among providers; (4) time constraints during routine visits in primary care; and (5) the referral process for alcohol-related care	Veterans who present with unhealthy drinking to alcohol-related care. Providers identified a number of barriers and facilitators in primary care, some of which had not previously been described in the literature, which could increase the likelihood of connecting women, both in VA primary care settings and elsewhere, to additional services. Providers' have firsthand knowledge of clinic processes, and the importance of including their perspectives in understanding provider and clinic-level factors that affect receipt of care.
Abraham, T. H., Wright, P., White, P., Booth, B. M., & Cucciare, M. A. (2017). Feasibility and acceptability of shared decision-making to promote alcohol behavior change among women veterans: Results from focus groups. <i>Journal of</i>	Determine effectiveness and viability of telephone delivery intervention for behavior change in	n=19(24) N=69 Primary care patients Central	Qualitati ve Interview Cohort	AUDIT-C Interview guide: open-ended questions Delivery of the tSDM protocol	2-sixty- minute focus group discussion s via telephone	-Communicating via telephone reported as too impersonal-reluctant to share. -Increased trust with long- term pt/provider relationships and provider	Continuity of care increase receptivity and engagement of alcohol-related care?

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi	Findings	Implications
Addictive Diseases, 36(4), 252-263. https://doi.org/10.1080/10550887. 2017.1373318	women veterans with unhealthy drinking behaviors and depression and/or PTSD.	Arkansas Veterans Healthca re System			(tSDM protocol)	knowledge-Value collaborative decision making-increased receptivity to alcohol-related care. -Length of sessions too long-60 minutes.	
Alley, E. S., Velasquez, M. M., & von Sternberg, K. (2018). Associated factors of readiness to change in young adult risky drinkers. <i>American Journal of Drug & Alcohol Abuse</i> , 44(3), 348–357. https://doi.org/10.1080/00952990. 2017.1363768	Does gender and/or race/ethnicit y impact readiness to change alcohol use in young adults?	1,256 adults between 18-29. Patients at Harris County Hospital, Texas	Quantitat ive Cohort IV	Readiness Ruler K6 was used to screen for nonspecific psychological distress AUDIT	Mediation al analysis was conducted to further describe the relationshi p of emotional distress, drinking severity and drinking consequen ce to readiness to change	Strongest relationship between emotional distress, drinking severity and consequence severity, and readiness to change Female group was found to be positively associated with higher levels of readiness to change and emotional distress. Unlike the males, females' emotional distress was not related to drinking severity but rather their readiness to change was through drinking consequences	indicating that young adults may be using alcohol to self-medicate when dealing with distressing emotions Interventions to promote responsible drinking in this population should focus the evaluation of these experiences, as well as increasing understanding of the associations between emotional distress, drinking and alcohol-related consequences

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi	Findings	Implications
					alcohol use		
Bold, K. W., Epstein, E. E., & McCrady, B. S. (2017). Baseline health status and quality of life after alcohol treatment for women with alcohol dependence. <i>Addictive Behaviors</i> , 64, 35-41. https://doi.org/10.1016/j.addbeh.2016.08.014	Characterize the pre- treatment health status of alcohol dependent women and examine the degree to which alcohol treatment might promote positive quality of life changes	138 women	Randomi zed Clinical Trial	12-session group versus individual female-specific CBT treatment	Health Questionn aire Quality of Life Index Alcohol Use	Pre-Health Problems: smoking cigarettes (34.1%), hypertension (31.2%), obesity (27.5%), arthritis (21.0%), high cholesterol (17.4%), heart problems (8.7%), and a history of cancer Significant improvements in physical, psychological, social, environmental, and quality of life after treatment. Reducing alcohol use was associated with greater gains in quality of life domains	important information about the presentation of health problems in women with alcohol use problems and possible health benefits from receiving alcohol treatment Health benefits from alcohol treatment that could be used to inform the development and delivery of generalized interventions targeting women's health behaviors
Bränström, R., & Pachankis, J. E. (2018). Sexual orientation disparities in the co-occurrence of substance use and psychological distress: a national population-based study (2008-2015). Social Psychiatry & Psychiatric Epidemiology, 53(4), 403–412.	Explore sexual orientation- based differences in substance use, psychologic al distress,	n=79,586 persons aged 16- 84. 1,673 self- identified as	Cross- sectional Cohort IV	Sexual orientation Sociodemographic factors Substance use: tobacco, cannabis,	Public health survey Statistical analysis	Significantly elevated prevalence of high-risk alcohol use, cannabis use, and daily tobacco smoking among sexual minorities than among heterosexuals The elevated risk of cooccurring psychological	First population-based study to look at sexual orientation and stress. Bisexual women more than a three-time greater risk of co-occurring psychological distress and substance use than heterosexual women

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi on	Findings	Implications
https://doi.org/10.1007/s00127- 018-1491-4	and their co- occurrence. Does increased exposure to stressors explain these potential disparities?	lesbian, gay, or bisexual Swedish National Public Health Survey		or high-risk alcohol consumption Psychological Stress: GHQ12 Stress exposure		distress with substance use was most notable among gay men relative to heterosexual men, and bisexual women as compared to heterosexual women Experiences of discrimination, victimization, and social isolation partially explain the sexual orientation disparity in these co-occurring problem	Sexual minorities also experience elevations in the co-occurrence of these outcomes as a function of their exposure to stigma-related stressors
Bravo, A. J., Pearson, M. R., Stevens, L. E., & Henson, J. M. (2016). Depressive symptoms and alcohol-related problems among college students: A moderated-mediated model of mindfulness and drinking to cope. <i>Journal of Studies on Alcohol and Drugs</i> , 77(4), 661-666. https://doi.org/10.15288/jsad.2016.77.661	Further research on the associations between depressive symptoms, drinking to cope, and alcohol-related problems	N=699 n=448 Undergra duate students of psycholo gy departme nt participa nt pool-southwes	Cohort Quantitat ive	Mindfulness: Five Facet Mindfulness Questionnaire Depressive Symptoms: Center for Epidemiological Studies Depression Scale— Drinking to cope motives: Modified Drinking Motives Questionnaire	Moderate d mediation model Mplus 7.11 to examine the total, direct, and indirect effects of each predictor variable	The indirect effect of depressive symptoms on alcohol-related problems via drinking-to-cope motives was weakest among individuals with high trait mindfulness and strongest among individuals with low trait mindfulness	Individuals with higher levels of trait mindfulness would demonstrate weaker indirect associations between depressive symptoms and alcohol-related problems via drinking-to-cope motives Mindfulness-based interventions may be effective among college students: decoupling the associations between depressive symptoms and alcohol coping mechanisms.

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi on	Findings	Implications
		tern USA.		Alcohol-related problems: 24-item Brief-Young Adult Alcohol Consequences Questionnaire Alcohol consumption: Daily Drinking Questionnaire	on alcohol- related problems using bias- corrected bootstrapp ed estimates		
Constant, A., Gautier, Y., Coquery, N., Thibault, R., Moirand, R., & Val-Laillet, D. (2018). Emotional overeating is common and negatively associated with alcohol use in normal-weight female university students. <i>Appetite</i> , 129, 186-191. https://doi.org/10.1016/j.appet.20 18.07.012	Determine the frequency of overeating in response to emotions in normal-weight female university students, to determine its factor structure, and to investigate its association with	N=377 n=335 Female universit y students aged 18–24 years with healthy Body Mass Index from Rennes Universit y	Cohort Quantitat ive IV	Emotional Overeating Questionnaire (EOQ) Ricci-Gagnon questionnaire (RG)-Physical Activity AUDIT-Drinking patterns CRAFFT- Substance abuse	SCOFF Questionn aire-eating disorder Three- Factor Eating Questionn aire- Cognitive and behavioral componen ts of eating	AUDIT scores revealed that 32.5% of respondents had excessive alcohol consumption, while tobacco use (everyday: 7.2%; occasionally: 7.8%) and substance abuse (12.2%) were in minority Alcohol misuse constitute a recent but increasing problem among young French women while excessive drinkers merely replaced excessive eating with excessive drinking to cope with distress	Excessive eating and drinking seem to be two different ways to cope with similar emotions. It would be of interest to identify specific food items towards which emotional eating might be targeted, and investigate whether or not alcohol mitigates their consumption in stressful situations

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi	Findings	Implications
	maladaptive coping behaviors, eating patterns.	Hospital- France					
Han, B. H., Moore, A. A., Sherman, S., Keyes, K. M., & Palamar, J. J. (2017). Demographic trends of binge alcohol use and alcohol use disorders among older adults in the united states, 2005—2014. <i>Drug and Alcohol Dependence, 170</i> , 198-207. https://doi.org/10.1016/j.drugalcd ep.2016.11.003	Estimate the prevalence and to examine demographi c trends of self-reported alcohol use - in particular binge alcohol use and alcohol use disorders among older adults, and to determine correlates of use among older adults.	National Survey on Drug Use and Health n=61,240 2005- 2014 Adults >50 residing in the US.	Retrospe ctive Cross- sectional IV	National Survey on Drug Use and Health Alcohol use and binge alcohol use DSM-IV-Alcohol Use Disorder Demographics and health related variables	Logistic regression models were used to examine correlates of binge alcohol use and AUD.	women, binge drinking and alcohol use disorders increased greatly during the study period. Regarding binge drinking, we also detected significant increases among older non-Hispanic whites, but by 2013/2014 Hispanics had the highest prevalence for binge drinking relative to other races. Those reporting household incomes ≥ \$75,000 also had significant increases and the highest binge drinking prevalence by 2013/2014 compared to other household incomes. Significant increase in binge alcohol use among	alcohol use, binge alcohol use, and alcohol use disorders have continued to increase among older adults, particularly among females. importance of screening these populations for binge alcohol use and alcohol use disorders.

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi	older adults with multiple chronic conditions.	Implications
Holzhauer, C. G., Epstein, E. E., Hayaki, J., Marinchak, J. S., McCrady, B. S., & Cook, S. M. (2017). Moderators of sudden gains after sessions addressing emotion regulation among women in treatment for alcohol use. <i>Journal of Substance Abuse Treatment</i> , 83, 1-9. https://doi/org/10.1016/j.jsat.2017.09.014	Women's baseline depression, anxiety, and confidence to be abstinent while in a negative emotional state would predict attainment of SGs after attending sessions that addressed depression, anxiety, and emotion regulation	Study #1 n=35 Study # 2 n=111 Women, >18, Consume d ETOH in last 30 days, DSMIV ETOH Depende nce	Review of 2 RTC's II	Situational Confidence Questionnaire Beck Depression and Anxiety Inventories Timeline Follow- Back Structured Clinical Interview for DSM-IV Axis I Disorders Psychiatric Research Interview for Substance and Mental Disorder Daily Drinking Log	Manual-guided, outpatient, female-specific, 12-session CBT protocols with a goal of abstinence from alcohol Data were collected at baseline, within treatment, and 15 months after baseline	Women with high levels of depression and/or anxiety at baseline, those who experienced both a SG in drinking after session five/six and had higher confidence to remain abstinent in a negative emotional state at the end of treatment reported lower drinking frequency at 9-but not 15-month follow-up	Providing interventions targeting mood and emotion regulation in AUD treatment for women show promise Addressing anxiety and depression among women with AUD may help the patient to understand the "whole picture" of her drinking and develop a cohesive understanding of her mental health

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi on	Findings	Implications
Jeong, Y. M., Veldhuis, C. B., Aranda, F., & Hughes, T. L. (2016). Racial/ethnic differences in unmet needs for mental health and substance use treatment in a community-based sample of sexual minority women. <i>Journal of Clinical Nursing</i> , 25(23-24), 3557-3569. https://doi.org10.1111/jocn.13477	Examine unmet needs for mental health and substance use treatment among a diverse sample of sexual minority women- lesbian and bisexual.	700 Latina, African America n, and white SMW interview ed in wave 3 of the 15-year Chicago Health and Life Experien ces of Women (CHLE W) study	Cross-sectional - quantitati ve IV	Sexual Identity Depression- Diagnosis Interview Schedule Alcohol Dependence Mental Health Treatment Alcohol Treatment	Chi-square Logistic regression	More than one-half of women in the study reported lifetime depression and almost one fourth reported lifetime alcohol dependence White women had the highest rates of lifetime depression; almost 70% reported lifetime depression, compared to 60.5% of Latinas and 47.0% of African Americans	unmet need for mental health and substance use treatment that varies by race/ethnicity with Latina women showing the greatest unmet need for treatment
Kaner, E., Beyer, F., Muirhead, C., Campbell, F., Pienaar, E., Bertholet, N., Daeppen, J., Saunders, J., & Burnand, B. (2018). Effectiveness of brief alcohol interventions in primary care populations. <i>Cochrane Database of Systematic Reviews</i> . (2).	Assess the effectiveness of screening and brief alcohol intervention to reduce excessive alcohol consumption	69 RCT's, 33,642 participa nts	RTC's Systemat ic Review	Amount of alcohol drank per week per report.	Study participant s received brief interventi on or usual care or written informatio	People who received the brief intervention drank less than control group participants. Longer counselling probably provided little additional benefit compared to brief	Brief interventions in primary care settings aim to reduce heavy drinking compared to people who received usual care or brief written information. Longer interventions probably make little or no difference to

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi	Findings	Implications
https://doi.org/10.1002/14651858. CD004148.pub4	in hazardous or harmful drinkers in primary care or emergency settings.				n about alcohol	intervention or no intervention.	heavy drinking compared to brief intervention.
Kenney, S. R., DiGuiseppi, G. T., Meisel, M. K., Balestrieri, S. G., & Barnett, N. P. (2018). Poor mental health, peer drinking norms, and alcohol risk in a social network of first-year college students. Addictive Behaviors, 84, 151-159. https://doi.org/10.1016/j.addbeh.2 018.04.012	Look at relationships between symptoms of anxiety and depression, descriptive and injunctive perceptions of important peers, alcohol consumption , and alcohol-related problems in a first-semester college student	N=1,660 n=1,254 First-year college students, residing in the dorm of a private universit y in the United States	Cohort Quantitat ive IV	Web-based survey Demographic characteristics Alcohol consumption-frequency and amount Alcohol consequences: Brief Young Adult Alcohol Consequences Questionnaire Anxiety and Mood: PHQ4 Peer Network	Network autocorrel ation models	Anxiety and depressed mood were negatively correlated with descriptive perceptions Depressed mood was negatively related to injunctive perceptions. Anxiety and depressed mood were negatively related to the consumption variables, but positively related to the total number of negative consequences Higher descriptive and injunctive perceptions were independently associated with greater levels of alcohol consumption, and poor mental health was independently associated with greater alcohol-related	Perceptions of close peers' drinking was related to significantly more consequences among students reporting depressed mood or anxiety, but not associated with consequences among students with stronger mental health. Inform existing efforts to prevent and intervene on alcohol misuse among a vulnerable population of college students. Campus-based counseling approaches should screen for co-occurring anxiety, depression, and alcohol misuse; address students' perceptions of friends' drinking; and promote healthy

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi on	Findings	Implications
	social network			Perceptions of peers		consequences, after controlling for the number of drinks consumed in the past month	coping and harm reduction strategies
Lau-Barraco, C., Linden-Carmichael, A. N., Braitman, A., & Stamates, A. (2016). Identifying patterns of situational antecedents to heavy drinking among college students. Addiction Research & Theory, 24(6), 431–440. https://doi.org/10.3109/16066359. 2016.1153077	Determine situational predictors and patterns of college student heavy drinkers.	n=549 college students- mid- sized East Coast Universit y, 18-25, 2 heavy drinking episodes in the last 30 days.	Cohort Quantitat ive IV	Inventory of Drug- Taking Situations – Alcohol Version Drinking Motives Questionnaire Mental Health: Brief Symptom Inventory-18 Daily Drinking Questionnaire Young Adult Alcohol Consequences Questionnaire	Latent Profile Analysis MANOV A analysis ANOVA analysis	High Situational group experienced the most alcohol-related problems High Situational Endorsement class reported significantly more mental health symptoms the Moderate class consumed alcohol more frequently and reported similar levels of quantity and heavy episodic frequency as the High Situational class, the latter group experienced greater alcohol harms with elevated risk. High Situational Endorsement class endorsed significantly more coping-motivated and conformity-motivated	results of this study provide insight that could guide intervention work with heavy drinking college students identified mental health symptomology and particular drinking motives as factors that may contribute to one's likelihood of drinking in these situations can be used to design and improve tailored intervention programs for those most atrisk for experiencing alcohol harms

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi	Findings	Implications
						drinking than either of the other two classes	
Lewis, E. T., Jamison, A. L., Ghaus, S., Durazo, E. M., Frayne, S. M., Hoggatt, K., Timko, C., & Bean-Mayberry, B., Cucciare, M. A. (2016). Receptivity to alcoholrelated care among U.S. women veterans with alcohol misuse. <i>Journal of Addictive Diseases</i> , 35(4), 226-237. https://doi.org/10.1080/10550887. 2016.1171670	Identify factors associated with women Veterans' receptivity to a recommenda tion for alcohol- related care when they present to Veterans Affairs (VA) primary care with alcohol misuse	30 women veterans	Qualitati ve VI	Semi structured interviews		Themes: Self-appraisal of their drinking behavior as more severe, the provider's presentation of treatment options, availability of gender-specific services, and worse physical and mental health	Educating women about the health effects of alcohol misuse Increasing providers' knowledge about available care options Gender-specific services.
McNair, R., Pennay, A., Hughes, T., Brown, R., Leonard, W., & Lubman, D. I. (2016). A model for lesbian, bisexual and queer-related influences on alcohol consumption and implications for policy and practice. <i>Culture</i> , <i>Health & Sexuality</i> , <i>18</i> (4), 405–421.	Identify lesbian, bisexual and queer- related influences on alcohol consumption among	N=521 n=25 Alcohol and Lesbian/ bisexual Women: Insights	Ethnogra phic- qualitativ e VI	Alcohol and Lesbian/bisexual Women: Insights into Culture and Emotions study: Online survey focusing on alcohol and mental health.	Semi- structured interview: focused on sexual identity, mental health, alcohol	Factors influencing ETOH use: (1) connection with lesbian, bisexual and queer women, (2) coping with discrimination,	Alcohol consumption among lesbian, bisexual and queer women appears to be influenced by a range of factors, including coping, connection and identity Health providers should also understand that the use of

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi on	Findings	Implications
https://doi.org/10.1080/13691058. 2015.1089602	Australian lesbian, bisexual and queer women	into Culture and Emotions Study- convenie nce sample			use and impressions of alcoholuse in the lesbian, bisexual and queer community	(3) lesbian, bisexual and queer identity influencing connection and coping.	alcohol for coping in the face of structural and inter-personal minority stress can become problematic.
Mellinger, J. L., Fernandez, A., Shedden, K., Winder, G., Fontana, R, Volk, M., Blow, F., & Lok, A. (2019). Gender disparities in alcohol use disorder treatment among privately insured patients with alcohol-associated cirrhosis. Alcoholism: Clinical and Experimental Research, 43(2), 334-341. https://doi.org/10.1111/acer.1394	Determine rates, predictors, and outcomes of AUD treatment utilization in cirrhosis patients with private insurance.	n=66,053 Truven Analytics Market- Scan Commer cial Claims and Encounte rs database from 2009 to 2016. (Privatel y insured).	Retrospe ctive Cohort IV	ICD 10 Code depression/anxiety Pre- and post-index cirrhosis diagnosis rates of MHSA treatment utilization.	Mental Health and Substance Abuse Care	AUD treatment was low, despite a high rate of MHSA insurance coverage Women being less likely to obtain both a face-to-face MHSA clinic visit and FDA-approved relapse prevention medication AUD treatment are related more to patient attitudes than to structural insurance issues Women are less likely to receive inpatient, outpatient, emergency room, or other face-to-face treatment for AUD relative to men and are less likely	Despite evidence that women are less likely to seek face-to-face treatment, when women do access psychosocial treatment, they may have better treatment outcomes than men Alcohol cessation is the only intervention known to improve mortality in patients with ALD, and receipt of AUD treatment in our study was significantly associated with improved out-comes Integrated care combining professional mental health and hepatology care and the development of novel

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		Ages 18-64. ICD 10 Code of cirrhosis				to attend specialty addiction treatment service	behavioral treatments for this population are urgently needed Efforts to reduce gender-specific barriers to treatment are urgently needed to improve outcomes
Milic, J., Glisic, M., Voortman, T., Borba, L. P., Asllanaj, E., Rojas, L., Troup, J., Kiefte, J., Muka, T., & Franco, O. (2018). Menopause, ageing, and alcohol use disorders in women. <i>Maturitas</i> , 111, 100-109. https://doi.org/10.1016/j.maturitas .2018.03.006	Identify the themes from the set of studies; we synthetized identifying potential intervention s to support the female patients with AUD.	1977- 2018 PubMed & Cochrane	Literatur e Review V	NA	NA	Alcohol consumption definitions Women different physiologically Health consequences of alcohol ID optimal therapy for treating AUD: Behavioral, cognitive-behavioral, couples, pharmacological, motivational enhancement, or a combination of above.	Targeted screening and preventive programs for women should be developed Increase our understanding of the drinking patterns that are beneficial and harmful to menopausal women including more information on types of alcohol, and levels and frequency of consumption Identify factors that might contribute to increased consumption of alcohol in menopausal and postmenopausal women Women respond well to psychotherapy and recruiting the female patients with any form of AUD in such

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi on	Findings	Implications
							treatment improves chances of preventing grief and correlated depressive and anxiety symptoms.
Moyer, V. (2013). Screening and behavioral counseling interventions in primary care to reduce alcohol misuse: U.S. Preventive Services Task Force Recommendation Statement. <i>Annals of Internal Medicine</i> . <i>159</i> (3), 210-218. https://doi.org/10.7326/0003-4819-159-3-201308060-00652	USPSTF recommenda tion statement on screening and behavioral counseling intervention s in primary care to reduce alcohol misuse	Adolesce nts aged 12 to 17 years and adults aged 18 years or older	Recomm endation Statemen t	NA	NA	NA	The USPSTF recommends that clinicians screen adults aged 18 years or older for alcohol misuse and provide persons engaged in risky or hazardous drinking with brief behavioral counseling interventions to reduce alcohol misuse. (Grade B recommendation) The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening and behavioral counseling interventions in primary care settings to reduce alcohol misuse in adolescents.
National Institute of Health. (2015). Alcohol: A women's health issue. https://www.acog.org/- /media/Departments/Tobacco- Alcohol-and-Substance- Abuse/AlcoholA-Womans- Health-Issue.pdf	Overview of alcohol and women's health and recommenda tions	NA	National Institute of Health- recomme ndations	NA	NA	NA	Definitions, recommendations, statistics of the current state of alcohol as it relates to women's health.

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Pavkovic, B., Zaric, M., Markovic, M., Klacar, M., Huljic, A., & Caricic, A. (2018). Double screening for dual disorder, alcoholism and depression. <i>Psychiatry Research</i> , 270, 483-489. https://doi.org/10.1016/j.psychres. 2018.10.013	Look the relationship between alcoholism and depression in undiagnosed patients by simultaneou sly applying screening tests for both disorders	N=500 n=421 Ages 19- 65 whom visited a general health practition er at a health center.	Cross- sectional Quantitat ive IV	CAGE, FAST, AUDIT, MAST Beck Depression Inventory (BDI)	Distributi on frequency tables Student T test Chi- squared test	High positive association between alcoholism and depression Greater positive association between alcohol and depression was seen in females Although men have a greater tendency toward alcoholism than women, evidence has demonstrated a greater incidence of alcohol-related damage, especially neurological damage, in women	Problematic alcohol use type is associated with a more severe level of depression, greater positive association between problematic alcohol use, and severity of depressive symptoms among females and more harmful alcohol consumption among males Importance of applying screening tests for the early detection of dual disorders, such as alcoholism and depression
Pedrelli, P., Borsari, B., Lipson, S. K., Heinze, J. E., & Eisenberg, D. (2016). Gender differences in the relationships among major depressive disorder, heavy alcohol use, and mental health treatment engagement among college students. <i>Journal of Studies on Alcohol and Drugs</i> , 77(4), 620-628. https://doi.org/10.15288/jsad.2016.77.620	Looks at the association between depression and heavy drinking among college students, the effect of gender, and whether	n=61,561 Healthy Minds Study: 2007, 2009– 2013	Retrospe ctive cross- sectional	PHQ-9 Alcohol use: based on self-report Treatment engagement: Use of mental health services-self-report	Hierarchic al linear regression s	College students with MDD reported higher frequency of HED and higher levels of alcohol intoxication Association between MDD and higher alcohol intoxication during a heavy drinking episode was	The presence of an association between MDD and heavy alcohol use suggests the need for systematic screenings of both conditions. Low rates of treatment engagement in college students with MDD and heavy alcohol use calls for the development of strategies to

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi on	Findings	Implications
	comorbid MDD and heavy alcohol use are associated with higher rates of mental health treatment engagement					stronger in female than male Students with MDD were more likely to be engaged in mental health treatment, especially women students A higher proportion of female students with HED than female students without HED were engaged in treatment	engage this high-risk group in treatment.
Shogren, M., Harsell, C., & Heitkamp, T. (2017). Screening women for at-risk alcohol use: An introduction to screening, brief intervention, and referral to treatment (SBIRT) in women's health. <i>Journal of Midwifery and Women's Health</i> , 62(6), 746-754. http://doi.org/10.1111/jmwh.1265	Screening, Brief Intervention, and Referral to Treatment (SBIRT) Model	NA	Model introduct ion VI	NA	NA	NA	Utilization of AUDIT, NIAAA Single question, AUDIT-C, CRAFFT, T-ACE or TWEAK by primary care providers to screen. Brief interventions- individualized per patient. Referral to treatment as needed.
Tran, N. T., Clavarino, A., Williams, G. M., & Najman, J. M. (2016). Life course outcomes for women with different alcohol consumption trajectories: A population-based longitudinal	Looks at marital relationships , reproductive health and	n-3,337 Mater Universit y of Queensla	Longitud inal Cohort quantitati ve	Marital relationship outcomes Reproductive history	semipara metric group- based modeling	4 Trajectories: abstainers, low-stable drinkers, moderate-escalating drinkers and heavy-escalating drinkers	Women in the heavy- escalating alcohol consumption trajectory reported lower levels of happiness compared with women in other alcohol

Citation (Include the citation of all studies that met inclusion criteria from Table 3 above)	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s	Design/ Level of Evidence (Melnyk & Fineout- Overholt, 2015)	Variables/ Instruments	Interventi	Findings	Implications
study. <i>Drug and Alcohol Review, 35</i> (6), 763-771. https://doi.org/10.1111/dar.12428	well-being for women with different alcohol consumption trajectories over 21 years	nd Study of Pregnanc y, Brisbane between 1981 and 1984	IV	Well-being outcomes Alcohol consumption	chi-square analyses	Those in the community who consume alcohol at higher levels may experience adverse consequences in their marital relationship Heavier drinkers are likely to experience disruption in their daily tasks, experience increased spouse conflicts, and marital dissatisfaction	consumption trajectory groups. This is consistent with previous research showing that high/heavy alcohol consumption predicted dissatisfaction and lower well- being Moderate and heavy- escalating alcohol consumption is associated with a wide range of adverse outcomes at the 27-year follow-up-PREVENTION PROGRAMS
Veldhuis, C. B., Talley, A. E., Hancock, D. W., Wilsnack, S. C., & Hughes, T. L. (2017). Alcohol use, age, and self-rated mental and physical health in a community sample of lesbian and bisexual women. <i>LGBT Health</i> , <i>4</i> (6), 419-426. http://doi.org/10.1089/lgbt.2017.0056	Looks at associations among age, alcohol consumption, and indicators of both self-rated mental health and self-rated physical health in a sample of sexual	n=447 Chicago Health and Life Experien ces of Women (CHLE W) study >18	Cohort	Age Drinking levels: light, moderate, or heavy Mental/Physical health: Self report	Chi- square ACNOVA	Unlike studies of drinking among women in the general population, did not see marked age-related declines in drinking The oldest women in the study rated their mental health most positively Self-rated mental health was generally not associated with drinking levels.	Given our rapidly aging population, if the baby boomer generation carries its heavier drinking patterns into older age, we may see higher levels of drinking among women overall than have been seen historically, perhaps resulting in smaller disparities between older SMW and heterosexual women Interventions should target the underlying reasons for the maintenance of heavier

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	minority women	Self- reported lesbian				Slightly more than 10% of older SMW in the study were considered heavy drinkers. Although the rate of heavy drinking was significantly lower in this age group than in the 18–25 group, it is more than double the rate of heavy drinking among older women in the general population	drinking patterns into older adulthood
Wallhed Finn, S., Hammarberg, A., & Andreasson, S. (2018). Treatment for alcohol dependence in primary care compared to outpatient specialist treatment—A randomized controlled trial. <i>Alcohol and Alcoholism</i> , 53(4), 376-385. http://doi/org/10.1093/alcalc/agx1 26	Effects of treatment for alcohol dependence in primary care were investigated	n=288 >18 Stockhol m	Randomi zed controlle d non- inferiorit y trial	Timeline Follow Back 30 days- ETOH AUDIT & SADD Client Satisfaction Questionnaire Short Index of Problems. EuroQol 5 Dimensions: QoL Blood draw: CDT, GGT, AST, ALT	treatment in primary care with the 15- method, a brief treatment adapted for generalist settings, or treatment at a specialize d	treatment in specialist care was not found to be superior to primary care treatment in primary care can have beneficial outcomes for individuals with low psychiatric comorbidities and without dependence on illicit drugs	treatment of alcohol dependence largely can be managed by general practitioners, where only a minority of severe cases need to be referred to specialists. This implies a division of labor between generalists and specialists, that is the norm in most medical fields, is feasible but has not been accepted for addiction medicine yet

Citation	Study	Pop (N)/	Design/	Variables/	Interventi	Findings	Implications
(Include the citation of all studies	Purpose	Sample	Level of	Instruments	on		
that met inclusion criteria from		Size (n)	Evidence				
Table 3 above)		/Setting(s	(Melnyk				
)	&				
			Fineout-				
			Overholt,				
			2015)				
					addiction		
					unit		

Melnyk, B. M., & Fineout-Overholt, E. (2015). *Evidence-Based Practice in Nursing & Healthcare: A Guide to Best Practice* (3rd ed.). Philadelphia, PA: Wolters Kluwer.