

FASD Prevention: An Annotated Bibliography of Articles Published in 2024



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Executive Summary

Introduction

Annually, researchers associated with the Prevention Network Action Team (pNAT) of the CanFASD Research Network search the academic literature for articles related to Fetal Alcohol Spectrum Disorder (FASD) prevention. The findings are organized using a [four-level prevention framework](#) developed by the pNAT to describe the wide range of work that comprises FASD prevention. The annual literature search is intended to update those involved in FASD prevention in Canada, so they can inform their practice and policy work with current evidence. The members of the pNAT also have the opportunity in monthly web meetings to discuss the implications of the findings for their work.

Search Methods

Six databases were searched using EBSCO Host for articles published between January and December 2024. All searches were limited to articles published in the English language. Articles were further screened for relevance to the FASD pNAT, and non-relevant articles (e.g., diagnosis of FASD) were removed from the list. Articles were then categorized into one or more theme, as presented below.

Search Results

One hundred and seven ($n = 107$) articles were included from our searches. Twenty-four ($n = 24$) articles were assigned to more than one category and six ($n = 6$) were attributed to more than one country. Table 1 provides an overview of the number of articles found in each topic area by country. English-language research on FASD prevention was most often generated in the United States of America (USA), Australia, Canada, and the United Kingdom (UK).

Prevalence of, and influences and factors associated with, alcohol use in pregnancy

Thirty-two ($n = 32$) articles explored the prevalence of, and influences and factors associated with, alcohol use during pregnancy. The majority of studies were cross-sectional ($n = 19$), followed by qualitative ($n = 4$), narrative or systematic reviews ($n = 3$), and case control, correlational, Delphi, experimental, meta-ethnography and retrospective cohort ($n = 1$, respectively).

Three studies reported on global, national or provincial prevalence of alcohol use in pregnancy. A national Danish study using self-reported measures found the prevalence of to be as high as 33%, when using anonymous, self-reported measures [1]. An Indian study estimated national prevalence as 1.26%, with significant regional variations. Their study found the highest prevalence of prenatal alcohol use was 13.3% [2]. Lastly, a study of birth registries in a Canadian province found that 2.4% of women reported alcohol use in pregnancy [3].

Prevalence was often described in relation to other perinatal health issues and service utilization. Several studies looked at the overlap between pregnancy and substance use/substance use disorders. For example, a Norwegian study estimated the prevalence of pregnancy (21.7%) among women treated for substance use disorder [4]; a US study of a women-centred substance use treatment program found alcohol use prevalence largely consistent at 15% over time [5]; another US study noted a decrease over time in alcohol being used as the primary substance for which pregnant individuals were admitted to treatment [6]; and one study found a low uptake of substance use treatment (13%) among pregnant and all women of reproductive age [7]. An Ethiopian study assessed the prevalence of hazardous alcohol use (7.7%) among women with HIV [8]. Lastly, one study looked at prevalence of maternal substance use in pregnancy for children at risk of maltreatment and found it to range from 2.4% to 40.6% globally [9].

Influences on alcohol use in pregnancy were identified in five categories:

Structural Factors:

Structural factors influencing alcohol use in pregnancy include policies and laws related to alcohol availability, substance use treatment availability, as well as the systematic attitudes and stigma toward

pregnant and parenting women and gender diverse individuals. In 2024, the structural factors reported included:

- lack of identification and referral to treatment [10, 11]
- financial barriers to treatment [7, 10]
- stigma [7]
- punitive alcohol policies, alcohol taxes and policy related to availability of alcohol [12-14]
- racism and the need for culturally responsive care [7, 15, 16]

Informational Factors:

Informational factors involve women and people of childbearing age having accurate, accessible, and non-judgmental information about the risks of alcohol use in pregnancy. In 2024, the informational factors reported included:

- normalization of alcohol use [11]
- lack of knowledge about the harms of alcohol use in pregnancy [17]
- lack of knowledge around drinking while trying to conceive and early pregnancy [18]
- how risk perceptions are shaped [18, 19]

Authors of a meta-ethnography compellingly articulated informational influences by noting how pregnant women have to navigate a maze “in a whirlwind of conflicting information and knowledge” [20].

Stress-related Factors:

The use of alcohol to cope with stressors and mental health concerns is often identified as a key contributor to continuing use of alcohol in pregnancy. Studies in 2024 described the following stress related factors:

- experience of violence and coercion in relationships and sexual abuse [5, 11, 21]
- experience of depression and other mental health concerns [3, 22, 23]
- maternal childhood trauma [24, 25]
- stress and anxiety [11]

Social Determinant of Health (SDoH)-Related Factors:

SDoH-related influences include income and social status, employment and working conditions, education, food security, physical environments, gender, culture and race/racism, among others. In 2024, SDoH-related factors cited included:

- poverty [2, 11]
- living in rural areas [2, 26]
- culture [16]
- higher education (for women accessing treatment) [27], lower education [2, 28], lower education level combined with younger age and poor social support [29]

In all the 2024 studies, the SDoH related influences were interconnected with other categories of influence.

Preconception and prenatal health related factors

Preconception and prenatal health factors refer to health risks that occur when planning a pregnancy and in the preconception period, that may or may not continue in pregnancy. These factors include, but are not limited to:

- preconception alcohol and/or tobacco use [3, 17, 30, 31]
- unplanned pregnancy [17]
- HIV status [17]

Level 1 Prevention

Fifteen ($n = 15$) articles described Level 1 FASD prevention efforts. The study designs included: systematic and scoping reviews ($n = 5$), cross sectional studies ($n = 4$), content analysis ($n = 2$), randomized control trials ($n = 2$), a commentary ($n = 1$) and a study protocol ($n = 1$).

The commentary described the Strong Born campaign, which was launched by the National Aboriginal Community Controlled Health Organization in collaboration with the Aboriginal Community Controlled Health

Organization in 2023. It is Australia's first national health promotion initiative aimed at addressing FASD within Aboriginal and Torres Strait Islander communities [32].

There were three themes identified in this level of prevention. Several studies explored awareness raising in the digital context including: the effectiveness of mobile health apps [33, 34] and prenatal education via text messaging [35]; the reach and usefulness of the Australian FASD HUB website [36]; how questions and topics about alcohol and pregnancy are raised on a web-based UK-based parenting forum [37].

Another theme for this level of FASD prevention related to alcohol use in pregnancy guidelines, including the barriers to implementing international clinical guidelines, such as insufficient time and limited organizational supports and resources [38] and enablers, including training, which can also be done in concert with other FASD prevention strategies [39].

A third theme related to warning labels, including: knowledge of alcohol and pregnancy warning labels among medical students [40]; alcohol warning labels as a component of a comprehensive alcohol control strategy [41]; and aspects of Australia's implementation of mandatory warning labels [42, 43]. Several studies also explored evidence related to multiple types of alcohol container labels in reducing alcohol consumption [44], including the effectiveness of different warning label types (e.g., cancer warning labels) on different subpopulations, including pregnancy women [45].

Level 2 Prevention

Twenty-six ($n=26$) articles described Level 2 prevention efforts. Study designs included: descriptive ($n=4$), cross sectional ($n=3$), reviews ($n=3$), pre-post-test ($n=2$) qualitative ($n=2$), study protocols ($n=2$) and case control, case series, cohort, commentary, editorial, mixed method, non-randomized control, observational, retrospective case note, and randomized control ($n=1$, respectively).

The studies related to this level of prevention explored many approaches to improving screening, brief intervention and referral to treatment (SBIRT). Several studies described the comprehensive efforts undertaken by the USA Centers for Disease Control to promote SBIRT among a range of key health care providers [46-48].

Other studies emphasized the use, and need for improvement in awareness, screening and SBIRT processes in practice in different practice settings including during antenatal care [49-53], and by a range of health [54-57] and social service providers [58]. Different approaches were used to advance screening efforts including through the integration of clinical software [59, 60] and incentive-based text messaging interventions [61].

Non-stigmatizing approaches to screening and brief intervention as part of five key strategies to prevent FASD [39] were described, as well as approaches to brief interventions that were culturally informed [62, 63] and tailored to clients' needs (e.g., for couples who drink heavily [64], to support abstinence [65]). However, racial inequities follow-up drug testing following universal screening for prenatal substance use [66] continue to be reported.

Level 3 Prevention

Sixteen ($n=16$) articles described Level 3 prevention efforts. Study designs included qualitative ($n=4$), scoping and systematic reviews ($n=3$), case studies ($n=2$), cross-sectional ($n=2$), mixed methods ($n=2$), case control ($n=1$), descriptive ($n=1$), and a study protocol ($n=1$).

In 2024, research related to live-in treatment for pregnant and parenting women with substance use problems was a focus. Studies examined: barriers and facilitators to engagement and retention in live-in treatment for pregnant and parenting women [67]; how outcomes from a live-in substance use recovery program for pregnant and parenting women are impacted by age, rural/urban location and race/ethnicity [68]; and longitudinal characteristics of women and their children in a comprehensive treatment program for pregnant and parenting women over a 23 year period [5].

Several studies reported on specific approaches to Level 3 support including: the role of substance-free social networks (family and friends) for perinatal women in treatment [69]; case management and home-visiting interventions [70]; specialized relational support for perinatal clients who face unique challenges related to their trauma history, gender, and perinatal status [71]; alcohol pharmacotherapies [72]; family centred treatment programs [73, 74]; and a couples intervention to promote co-parenting and address heavy drinking [64].

Six studies examined structural considerations to supporting pregnant women with alcohol and other health and social concerns, including: political, organizational and personal factors associated with implementation of perinatal treatment [75]; the role of patient navigation in outpatient, hospital and live-in programs [76]; and coordinated support through integrative care models [77]. One study emphasized how intensive case management, home visits, parenting programs and treatment are part of a multi-strategy FASD prevention approach [39], and a final study examined province-wide inequities in availability of wrap-around, supportive housing, and acute care programs in British Columbia [26].

Level 4 Prevention

Eleven ($n = 11$) articles described Level 4 prevention efforts. Most studies which addressed postpartum supports are described above in Level 3 Prevention, as many programs serve both pregnant and postpartum women and gender diverse people and their families. Two additional studies focused specifically on support for new mothers included: a doula home visiting for young, low-income mothers to support parenting and toddler social-emotional development [78]; and a comprehensive supportive housing intervention implemented for young mothers experiencing substance use disorder and homelessness [79].

Supportive Alcohol and Child Welfare Policy

Fifteen ($n = 15$) articles described efforts related to supportive alcohol and child welfare policy. Study designs included cross sectional ($n = 4$), systematic review and other reviews ($n = 3$), commentary ($n = 2$), randomized controlled trial ($n = 2$), qualitative ($n = 1$), retrospective cohort ($n = 1$), experimental ($n = 1$), and content analysis ($n = 1$).

Several studies explored how alcohol policy could support FASD prevention. One study described the benefits of policies geared towards the general population rather than pregnancy-specific policies. The study found policies geared towards the general population were more effective in reducing the adverse effects of drinking during pregnancy, particularly among young people [80]. Other studies explored how various policy domains (e.g., alcohol tax [12] and physical availability [13]) could be leveraged to reduce alcohol-related harms during pregnancy. Several studies in this area of prevention were related to those described in Level 1 prevention, including studies that described the benefits of multiple [81] or rotated warning labels [44] on alcohol containers. Lastly, a study described how structural interventions that limit the availability of alcohol use in pregnancy can raise awareness about the risks of alcohol use during pregnancy [39].

Several studies were described that were supportive of women and children's care, including calls for equitable policies for marginalized individuals [82]; and women-centered and destigmatizing approaches to [83]. One study addressed challenges of interpreting a child protection statute, which thus requires policy makers and health and social service providers to improve access to compassionate perinatal care and treatment for substance using mothers [84]. Lastly, a study from the UK described how alcohol and drug policies permeate through health and social systems to stigmatize and marginalize women. The study advocated for timely gender- and trauma-informed service delivery [85].

Other – stigma, ethical issues, and systemic approaches

Fourteen ($n = 14$) articles described efforts related to stigma, ethical issues and systemic approaches. Study designs included: qualitative ($n = 5$), reviews ($n = 4$), mixed methods ($n = 2$), cross sectional ($n = 1$), descriptive ($n = 1$), and an editorial ($n = 1$).

Studies described the importance of addressing stigma towards those who consume alcohol during pregnancy, including through evidence-based approaches [39]. For example, a collaboration between medical champions and women with lived experience of having a child with FASD has enhanced health care providers' understanding about FASD, while simultaneously addressing stigma associated with alcohol use during pregnancy [86]. Other evidence-based practices have included embedding simulation-based education into training programs about FASD to increase knowledge and confidence in addressing issues related to prenatal exposure, especially for social workers [87]. Further efforts are needed in public spaces, including in online fora or on social media, where alcohol and pregnancy recommendations can lead to unintended consequences in creating stigma and self-stigma and in turn a reduction in help-seeking [88, 89].

Ethical issues described in the 2024 literature included the manifestation of racism and discrimination in FASD diagnoses [90] and the overrepresentation of pregnant women with substance use disorders who receive suboptimal pre- and postnatal care [91]. Studies found that mental health and substance use issues are underdiagnosed and undertreated among perinatal individuals and that outcomes could be improved by integrating mental health support into obstetric and gynecologic care [92].

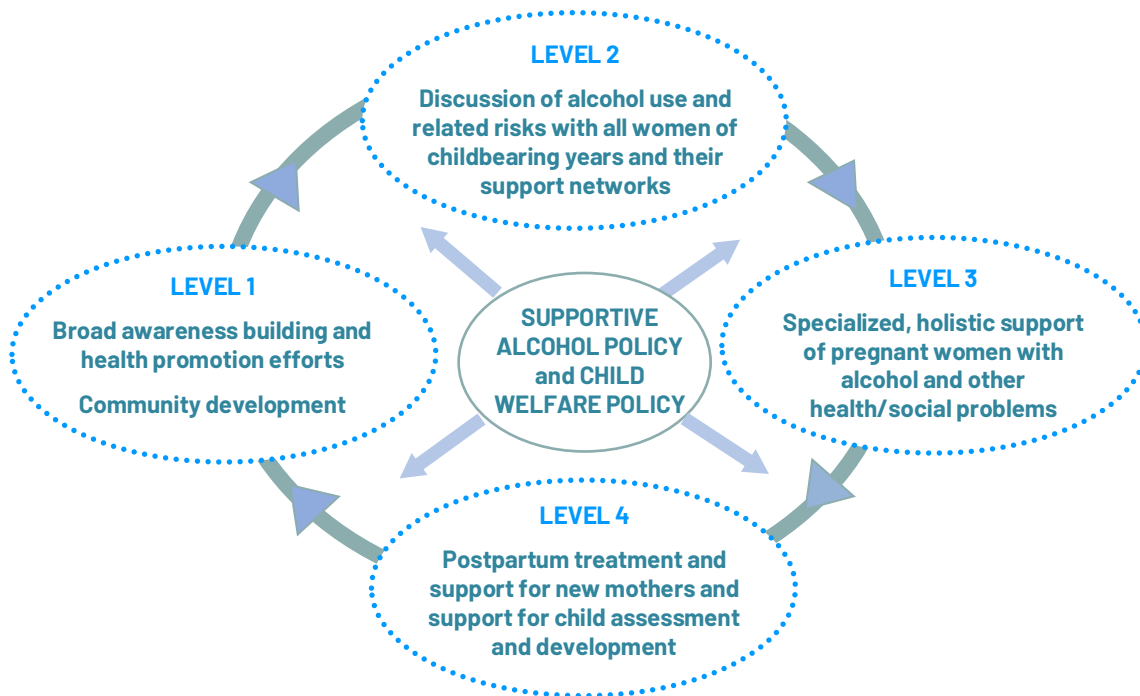
In summary

Valuable evidence on FASD prevention is generated each year by researchers across the world. It is important to gather, synthesize and discuss this literature to guide our efforts in each of the four levels of prevention, in developing supportive alcohol and child welfare policy, and in considering ethical and destigmatizing considerations

FASD Prevention Literature Search 2024

Introduction

Annually, researchers associated with the Prevention Network Action Team (pNAT) of the CanFASD Research Network search the academic literature for articles related to Fetal Alcohol Spectrum Disorder (FASD) prevention. The findings are organized using a four-level prevention framework, that describes the wide range of work that comprises FASD prevention. The annual literature search is intended to update those involved in FASD prevention in Canada, so they can inform their practice and policy work with current evidence. The members of the pNAT also have the opportunity in monthly web meetings to discuss the implications of the findings for their work.



Search Methods

The following databases were searched using EBSCO Host for articles published between January and December 2024:

1. Bibliography of Native North Americans
2. CINAHL Complete (Cumulative Index of Nursing and Allied Health Literature)
3. MEDLINE with Full Text
4. PsycINFO
5. Social Work Abstracts
6. Urban Studies Abstracts

Searches of each database were conducted using the following search terms: 1)[Fetal Alcohol Spectrum Disorder OR FASD OR fetal alcohol OR foetal alcohol OR alcohol exposed pregnancy OR alcohol] + [pregnancy] + [prevention OR preventing OR preventative]; 2)[Alcohol OR drink*] + [pregnan* OR conception OR preconception OR postpartum OR prenatal OR antenatal OR perinatal or maternal] + prevention; 3)[Alcohol OR drink*] + prevention + [women OR girls OR youth OR teen* OR mother OR Aboriginal OR Indigenous OR First Nation* OR Inuit OR Métis]; 4)[Alcohol OR drink* OR FASD] + [awareness OR education OR policy] + [women OR girls OR female OR mother]; 5)[Alcohol OR drink*] + intervention* + [women OR girls OR female OR mother]; 6)[Alcohol OR drink*] + stigma + [women OR girls OR female OR mother]; 7)[Alcohol OR drink*] + [motivational interviewing OR Screening OR brief intervention OR SBIR OR SBIRT] + [women OR girls OR gender OR female OR mother OR pregnan*]; 8)[Alcohol or drink*] + [home visit* OR NICU OR neonatal intensive care unit OR midwives or midwife or midwifery]; 9)[Pregnan* OR conception OR preconception OR post-partum OR mother] + [substance use treatment OR harm reduction]; 10)[Pregnan* OR conception OR preconception OR post-partum OR mother] + [wraparound OR parent child assistant program OR PCAP OR community OR holistic OR integrated OR multidisciplinary]; 11)[Alcohol OR drink*] + [land-based OR cultur*] + [women OR girls OR youth OR teen* OR mother OR Aboriginal OR Indigenous OR First Nation* OR Inuit OR Métis];

All searches were limited to articles published in the English language. Articles were further screened for relevance to the FASD pNAT, and non-relevant articles (e.g., diagnosis of FASD) were removed from the list. Articles were then categorized into one or more theme, as presented below.

Search Results

One hundred and seven ($n = 107$) articles were included from our searches. Twenty-four ($n = 24$) articles were assigned to more than one category and six ($n = 6$) were attributed to more than one country. Table 1 provides an overview of the number of articles found in each topic area by country. English-language research on FASD prevention was most often generated in the United States of America (USA), Australia, Canada, and the United Kingdom (UK).

Table 1: Studies identified by topic and country

Country	Prevalence	Level 1	Level 2	Level 3	Level 4	Policy	Stigma	Total
Australia	2	5	3	1	0	2	0	13
Belgium	1	0	0	0	0	0	0	1
Brazil	0	0	0	0	0	0	1	1
Canada	2	4	1	3	0	2	3	15
China	0	1	0	0	0	0	0	1
Chile	0	1	0	0	0	1	0	2
Denmark	1	0	0	0	0	0	0	1
Ethiopia	2	0	0	0	0	0	0	2
Finland	0	0	1	0	0	0	0	1
France	0	0	2	0	0	0	1	3
Germany	1	0	0	0	0	0	1	1
India	1	0	0	0	0	0	0	1
Italy	0	0	1	0	0	1	1	3
Netherlands	0	1	0	0	0	0	0	1
Norway	3	0	0	0	0	0	1	4
Panama	1	0	0	0	0	0	0	1
Poland	0	1	0	0	0	1	0	2
Qatar	0	1	0	0	0	1	0	2
Slovakia	1	0	0	0	0	0	0	1
South Africa	2	0	1	0	0	0	0	3
Spain	2	0	1	1	0	1	0	5
Sweden	1	0	1	0	0	0	0	2
UK	3	3	0	0	0	2	2	10
US	12	1	16	11	11	7	4	62
	35	18	27	16	11	18	14	139

A. Prevalence of, and influences and factors associated with, alcohol use in pregnancy

- 1. Bretteville-Jensen, A. L., & Williams, J. (2024). Pregnancy and pregnancy outcomes in a national population cohort of patients treated for substance use disorders. *Journal of Addiction Medicine*. <https://doi.org/10.1097/ADM.0000000000001404>**

This Norwegian study estimated the population-level prevalence of pregnancy, birth, elective termination, and miscarriage among women treated for SUDs compared to women not in treatment from the general population. The study further examined the associations between SUD treatment and pregnancy and elective terminations. Data from a prospective registry-linkage study of women (15-45 years) identified in the Norwegian Patient Registry as entering treatment for a diagnosed SUD over a 2-year period ($n = 6470$) and their non-treated frequency-matched cohort of women from the general population identified through the Norwegian Population Registry ($n = 6286$) were analyzed. Multivariable logistic regression models tested for associations of SUD treatment with pregnancy and with elective termination among pregnant females. The cohort treated for a SUD had higher pregnancy (21.7%) and elective termination rates (12.7%) rates compared to the demographically matched sample (19.9% and 4.5%, respectively). However, women treated for AUD, OUD, and sedative drug use disorder had lower annual birth rates. After adjusting for potential confounders, there were no significant differences in the odds of pregnancy for women treated for AUD, OUD, and sedative drug use disorder compared to the demographically matched sample. Moving forward, targeted interventions such as free long-acting contraception and integration of family planning guidance into substance use treatment should be considered.

- 2. Chapman, M., Bandoli, G., & Goldenberg, S. M. (2024). The association between depression and alcohol use among pregnant adults in the USA. *Archives of Women's Mental Health*, 27(3), 425-433. <https://doi.org/10.1007/s00737-023-01417-x>**

This USA study examined the association between experiencing a major depressive episode (MDE) in the past year and past-month alcohol use among pregnant women using the 2011-2020 National Survey on Drug Use and Health (NSDUH). Pregnant women ($n = 6745$) between the ages of 18 and 44 years old were included in the study for analysis. Multivariable logistic regression analysis was used to examine the association between past-year MDE and past-month alcohol use adjusting for age, race/ethnicity, marital status, and employment status. Additional analysis was performed to investigate whether this relationship differed by trimester of pregnancy. The prevalence of past-year MDE and past-month alcohol use was 7.67% and 9.15%, respectively. Past-year MDE was significantly associated with past-month alcohol use in pregnant women adjusting for age, race/ethnicity, marital status, and employment status ($aOR = 1.96$; 95% CI: 1.34-2.87). The association became stronger in second and third trimesters, showing the strongest effect estimates in the third trimester. The study findings may inform approaches for improved screening guidelines and health education for individuals who may be at higher risk of prenatal alcohol use.

- 3. Del Campo Giménez, M., Fernández Bosch, A., Martínez de la Torre, C., Minuesa García, M., López-Torres Hidalgo, J., Córcoles García, S., & Párraga Martínez, I. (2024). Impact of pregnancy on women's health-related lifestyle habits: Diet, physical activity, alcohol consumption, and smoking. *European Journal of Obstetrics, Gynecology, and Reproductive Biology*, 299, 182-187. <https://doi.org/10.1016/j.ejogrb.2024.06.021>**

This Spanish study explored health-related lifestyle habits in women before and during pregnancy. Women ($n = 348$) with a child under 5 years of age and who visited their family doctor, or a paediatric consultation were recruited from six health centres. Sociodemographic (age, educational level, marital status, social class, type of cohabitation, nationality), health-related lifestyle habits (physical activity, diet, tobacco use, alcohol consumption), health conditions, and medication intake data were recorded. Preconception alcohol (42.8%) and tobacco (19.3%) use was significantly higher than during pregnancy (3.4% and 12.4%, respectively). However, women reported being more inactive during the preconception period and adhering more to the Mediterranean diet during pregnancy. More than half (53.2%) of women reported a change from non-healthy to healthy in at least one of the evaluated habits during pregnancy. The findings reinforce that pregnancy is a period of transition in which lifestyle changes do occur from the preconception to pregnancy periods. However, not all lifestyle habits are taken up consistently.

4. Desiron, M., Saad, C., Tecco, J. M., & Kadji, C. (2024). Substance use during pregnancy. *Psychiatria Danubina*, 36(2), 241 – 249.

This narrative review described the prevalence of substance exposure during pregnancy and the maternal and fetal impacts. The review is framed through the lens of the obstetricians, citing limitations to the therapeutic framework, as well as training, tools, and time required to support with substance use disorders. Citing data from 2016 and 2021, the authors report that alcohol consumption is higher in developed countries, and in Europe, incidence of perinatal alcohol use was 25%. Perinatal consumption of alcohol is often done in combination with other substances and can be related to a range of environmental and psychological stressors. Self-screening tools, as opposed to physician-led consultations, were reported to be more effective.

5. Erng, M. N., Reid, N., Moritz, K. M., & van Driel, M. (2024). A novel prenatal alcohol use risk perception model: Feedback from a Delphi process. *Health Education Research*, 39(6), 554-567. <https://doi.org/10.1093/her/cyae037>

This Australian study explored the dimensions and factors influencing prenatal alcohol risk perceptions by refining the Pregnancy Alcohol Use Risk Perception (PARP) model. The PARP conceptual model was built off of previous findings from a systematic review. In this study, authors used expert feedback gathered through a Delphi process to examine the usefulness, clarity, and design of the PARP model. A total of $n = 37$ international experts participated, with $n = 17$ completing all three online surveys. Four key characteristics were identified that underpinned the revised model: (1) personal relevance and negotiation of risks, (2) the connection between emotions and cognitive risk processing, (3) the role of individual, sociocultural, and institutional factors, and (4) the dynamic nature of risk perception. Recognizing how risk perceptions are shaped by broader contextual factors can aid in developing more effective, tailored messages and educational materials for preventing alcohol use during pregnancy.

6. Fusco, R. A., Kulkarni, S. J., & Pless, J. (2024). "He gets mad that I'm sober": Experiences of substance use coercion among postpartum women in recovery. *Journal of Substance Use and Addiction Treatment*, 164, 209407. <https://doi.org/10.1016/j.josat.2024.209407>

This qualitative study from the USA sought to 1) understand how substance use coercion in intimate relationships may affect women's substance use, and 2) describe the presence of substance use coercion in postpartum women. Women were recruited from a larger intervention study providing home visit support to postpartum women in substance use recovery. Qualitative

interviews with $n = 30$ women with substance use disorders who had given birth within the past six months were conducted and thematic analysis was used to analyze the findings. Each participant reported at least one instance of coercive behaviour related to their substance use, and that all partners engaged in substance use. Most women also described the ways in which their partners adversely impacted their recovery. Four themes were further identified: 1) sabotaging sobriety, 2) making substance use a condition of the relationship, 3) portraying her as a "bad mom," and 4) furthering social isolation. The findings demonstrate the ways in which abusive partners used victim's substance use as a means of further control. Moving forward, it is integral that substance use treatment providers consider the role of intimate partners on women's substance use and recovery.

7. Ghosh, A., Verma, A., Choudhury, S., & Dhawan, P. (2024). Regional disparities and correlates of alcohol use during pregnancy in India: Insights from the national family health survey-5. *Drug and Alcohol Review*. <https://doi.org/10.1111/dar.13995>

This study estimated the national and state-wise prevalence of alcohol use during pregnancy in India and the associated social, demographic and health-related correlates. Using data from the National Family Health Survey (NFHS-5, 2019 – 2020), data from $n = 724,115$ women aged 15–49 years from all 28 states and 8 union territories was collected. The main outcome of interest was self-reported alcohol use during the respondents' current or most recent pregnancy. The findings indicated that the national prevalence of perinatal alcohol use was 1.26% with significant variations. The highest prevalence rates were found in Arunachal Pradesh (13.03%), Chhattisgarh (5.77%), and Assam (5.62%). Of the women who consumed alcohol during pregnancy, 9.63% drank almost every day, 30.88% reported weekly drinking, and 59.49% consumed less than once a week. There was a higher prevalence of alcohol use among women aged 20 – 49 compared to those 15 – 19 years old. Rurality, income, and educational attainment also impacted alcohol use. Women who were poorer, living in rural areas, and with no education had a higher prevalence of alcohol use. There was no significant association between alcohol use and unplanned pregnancy. Women with tribal status and those who lived in Northeast India also had an increased odds of alcohol use during pregnancy. The findings indicate significant regional and socio-demographic disparities in perinatal alcohol use. There is a need for targeted public health interventions and policies, particularly in high-risk groups and regions.

8. Green, V. R., Kennedy-Hendricks, A., Saloner, B., & Bandara, S. (2024). Substance use and treatment characteristics among pregnant and non-pregnant females, 2015–2019. *Drug and Alcohol Dependence*, 254, 111041. <https://doi.org/10.1016/j.drugalcdep.2023.111041>

This study examined substance use and treatment characteristics among reproductive-aged women in the USA. Data from pregnant and non-pregnant women aged 15–44 years ($n = 97,830$) from the 2015–2019 National Survey on Drug Use and Health (NSDUH) were examined. Weighted percentages of past-month alcohol or drug use, past-year substance use disorder (SUD), stratified by pregnancy status, and past-year treatment setting and treatment payer were calculated. Compared to non-pregnant women, pregnant women had lower prevalence of past-month illicit drug use (1.6% vs. 4.3%, $p < 0.01$), cannabis use (5.3% vs. 12.5%, $p < 0.01$), binge drinking (4.5% vs. 29.3%, $p < 0.01$) and past-year SUD (7.1 vs. 8.8%, $p < 0.01$). Less than 13% of women with SUD received treatment regardless of pregnancy status. However, treatment use was higher among pregnant women compared to non-pregnant women (12.8% vs. 10.5%). There were no statistically significant differences in past-year treatment use, setting, or treatment payer. Most pregnant (61.0%) and non-pregnant (53.3%) women reported paying for treatment out-of-pocket. However, more pregnant

women reported paying for treatment through Medicaid. The findings indicated that while the prevalence of substance use and SUD was lower among pregnant women; the low uptake of substance use treatment suggests that barriers exist to treatment-seeking among reproductive-aged women. Further exploration of the impact of stigma, payment methods, and pregnancy status on access to treatment is needed.

9. Johnson, S. M., Kelly, E. N., LaBrot, B., & Ryczak, K. (2024). Effect of education on adherence to recommended prenatal practices among Indigenous Ngäbe-Buglé Communities of Panama. *Medicina*, 60(7). <https://doi.org/10.3390/medicina60071055>

The objective of this study was to assess the adherence to the World Health Organization recommended prenatal practices among Ngäbe and Buglé women in Panama. Pregnant or recently pregnant women over the age of 18 who lived in eight Indigenous Ngäbe-Buglé communities were recruited from mobile healthcare clinics. An eight-question survey on prenatal education and previous or current prenatal care practices was administered. Among the women surveyed ($n = 137$), 65 reported taking prenatal vitamins, 21 had prenatal check-ups, 136 avoided alcohol, 31 increased caloric intake, and 102 maintained their activity levels during pregnancy. Ngäbe-Buglé women who received prenatal education from an official healthcare provider were significantly more likely to report taking prenatal vitamins during pregnancy compared to those receiving education through unofficial sources ($p = 0.0029$) or with those with no prenatal education ($p < 0.0001$). However, no significant differences were found in other prenatal practices based on education sources. The authors note that the low alcohol use during pregnancy may be attributed to low alcohol consumption among Ngäbe-Buglé women, regardless of pregnancy status. Future interventions should prioritize culturally competent prenatal education and address barriers to accessing prenatal healthcare in Ngäbe-Buglé communities.

10. Jones, H. E., Andringa, K., Carroll, S., Johnson, E., Horton, E., O'Grady, K., Stanford, D., Renz, C. & Thorp, J. (2024). Comprehensive treatment for pregnant and parenting women with substance use disorders and their children: The UNC Horizons Story. *Maternal and Child Health Journal*, 28:409–425. <https://doi.org/10.1007/s10995-023-03870-7>

This study evaluated a comprehensive women-centred substance use disorder (SUD) treatment program for pregnant and parenting women in North Carolina, USA, to identify changes in the patient population over time and neonatal outcomes. Data was extracted from the treatment programs' (UNC Horizons) annual reports (1994 – 2017) to see if patient characteristics and infant outcomes were compared to normative North Carolina data. Opioids as the primary substance of use increased from 0% in 1995/1996 fiscal year to 62% in the 2016/2017 fiscal year. Intravenous substance use increased as well, from 7% to 41%. Cocaine decreased from 66% to 12%. Alcohol remained mostly consistent across years, at just below 10% in 1995/1996 to approximately 15% in 2016/2017, with a high of about 30% between 2011–2013. History of incarceration increased from 10–20% in the early years of the study period to 40–50% beginning in the 2007/2008 fiscal year. An increase was observed in the proportion of women reporting a desire to self-harm, from 20% in 2004/2005 to 40% in 2016/2017, and self-reported suicide attempt history was consistent across years at 32%. Reports of experiencing childhood physical abuse also remained constant across years at 38%, however sexual abuse and domestic violence slightly increased. There was no significant difference between UNC Horizons patients and the comparison data in terms of likelihood of premature birth or low birthweight. The authors highlight the unique contribution of this research as offering a detailed examination of the patient populations over a 23-year period.

11. Jones, C., Ford, B. R., Shearer, R. D., Terplan, M., Stewart, K. & Winkelman, T. N. A. (2024). Perinatal substance use treatment and criminal legal system referral trends. *Journal of Substance Use and Addiction Treatment*, 166, 209492. <https://doi.org/10.1016/j.josat.2024.209492>

This USA study compared trends in substance use during pregnancy upon admission to treatment based on referral source. Using data from the Treatment Episode Data Set-Admissions, data on perinatal substance use and referral sources between 1995–2021 and trends in primary substance leading to treatment were analyzed. Of all treatment admissions in the dataset, approximately 1% (n = 536,948) were pregnant individuals. Between 1995–2021, treatment admissions among perinatal people increased for primary substance use of methamphetamine (10% to 27%), opioids (21% to 38%), and cannabis (9% to 18%). There was a decrease in admissions for cocaine (32% to 6%) and alcohol (26% to 11%). The authors highlight that there were substantial changes to both primary substance for treatment admissions during pregnancy as well as referral pathways over time. They emphasize that treatment programs must adapt to fluctuating trends in perinatal substance use and that there is a need to expand programs for treating methamphetamine use disorder during pregnancy in the context of criminal legal system referral.

12. Khan, M. T. F., Mazumder, S., & Rao, M. (2024). The trend of characteristics and pattern of polysubstance co-occurrences among pregnant women: TEDS-A findings. *Journal of Substance Use*, 29(5), 657–664. <https://doi.org/10.1080/14659891.2023.2197056>

The objectives of this USA study were to 1) identify the trends of sociodemographic, substance use, and clinical characteristics of pregnant women admitted to substance use treatment facilities and (ii) examine the patterns associated with polysubstance use. Data from the Treatment Episode Data Set – Admissions (TEDS-A) of pregnant women between 2011 and 2018 was used (n = 181, 887 pregnant women). The Cochran–Armitage test was employed to test substance use and sociodemographic trends, and Market Basket Analysis (MBA) was used for mining association rules to identify polysubstance use patterns. Pregnant women ages 21 – 29 and who were white, had 12 or more years of education, lived independently, and were not employed consistently represented the largest admission cohorts. The number of pregnant women who reported using heroin and methamphetamine as their primary substance increased from 2011 to 2018. Alcohol use, cannabis use, crack/cocaine use, other opiates/synthetics, and benzodiazepines decreased. Basket analysis revealed some patterns of polysubstance co-occurrence consistent over the years. The co-occurrences of alcohol and cannabis or methamphetamine and cannabis were the most common. The findings highlight that pregnant women’s treatment admissions remained stable over time, particularly among particularly sociodemographic cohorts. Further, trends in polysubstance use demonstrate a need for multi-focused interventions.

13. Legas, G., Beyene, G. M., Asnakew, S., Mengist, B., Tedla, A., Shiferaw, K., Mekonen, A. B., Abate, M. W., Nigat, A. B., Aytenew, T. M., Tibebu, N. S., Emiru, T. D., Tiruneh, C. M., & Libanos, M. (2024). Prevalence of hazardous alcohol consumption and associated factors among HIV-positive pregnant women attending public hospitals in Northwest Ethiopia: a multicentred cross-sectional study. *BMJ Open*, 14(10), e084089. <https://doi.org/10.1136/bmjopen-2024-084089>

This study assessed the prevalence and associated factors of hazardous alcohol consumption among HIV-positive pregnant women attending public hospitals in Northwest Ethiopia. A facility-

based, cross-sectional study was conducted among $n = 401$ HIV-positive pregnant women attending public hospitals in Northwest Ethiopia from February to April 2021. Bivariate and multivariable binary logistic regressions were used to identify factors associated with hazardous alcohol consumption. The prevalence of hazardous alcohol consumption among HIV-positive pregnant women was 7.7% (95% CI: 5.2, 10.5). After adjusting for possible confounders, history of mental illness (AOR = 3.10; 95% CI: 1.19, 8.05), having comorbid psychological distress (AOR = 4.39; 95% CI: 1.57, 12.30), non-disclosure of HIV status to partner (AOR = 3.28; 95% CI: 1.21, 8.84) and poor medication adherence (AOR=2.82; 95% CI 1.20, 6.62) were significantly associated with hazardous alcohol use. The findings indicated that the prevalence of hazardous alcohol consumption among HIV-positive pregnant women in Northern Ethiopia was high, especially among pregnant women who had a history of mental illness. Early detection and appropriate prenatal alcohol interventions should be promoted, particularly at HIV and prevention of mother-to-child transmission (PMTCT) clinics.

14. Li, Z., Tucker, C. M., Odahowski, C. L., Eichelberger, K. Y., Zhang, J., & Hung, P. (2024). Co-occurrence of mental illness and substance use among US pregnant individuals, 2012–2021. *Psychiatry Research*, 334, 115820. <https://doi.org/10.1016/j.psychres.2024.115820>

This study from the USA examined tobacco, alcohol and marijuana use among pregnant individuals with mental illness using data from the National Survey of Drug Use and Health (NSDUH). Associations of past-year mental illness with past-month polysubstance use and each substance use were analyzed by logistic regression models, with complex sampling weights and survey year. Among $n = 6,801$ pregnant individuals included (representing a weighted total of $n = 10,805,584$ pregnant individuals over the ten-year period), 16.4% reported having any mental illness in 2012 and 2013, increasing to 23.8% in 2020–2021. Severe mental illness increased from 3.3% to 9.4%. The prevalence of alcohol use decreased to 7.6% for those without any mental illness and 7.2% for those with any mental illness in 2020 – 2021; however, it increased to 26.2% among those with a severe mental illness. Pregnant individuals with mental illness were more likely to report polysubstance use (AOR = 1.59, 95% CI: 1.04, 2.44). Polysubstance use increased disproportionately among those with severe mental illness, from 14.0% to 18.6%. Further, pregnant individuals with greater severity of mental illness had higher odds of polysubstance use. The authors conclude that pregnant individuals with greater severity of mental illness were more likely to engage in substance use. Evidence-based educational, screening and treatment services, and public policy changes are encouraged to reduce substance use during pregnancy, particularly among those with mental illness.

15. Myra, S. M., Wiig, E. M., & Axberg, U. (2024). I want to be a mom who is clean, who loves herself, and feels ok with herself-pregnant women's thoughts about motherhood and their unborn child when in treatment for substance use problems. *Human Systems: Therapy, Culture & Attachments*, 4(3), 163–180. <https://doi.org/10.1177/26344041241263082>

This Norwegian study explored the perspectives of pregnant women in voluntary or involuntary substance use treatment about motherhood, their unborn child, their treatment experiences. Sixteen ($n = 16$) women in substance use treatment and were at different stages of pregnancy were interviewed. A phenomenological/hermeneutic analytical approach was used. Four categories emerged from the analysis: influences of childhood experience; 2) on becoming a mother; 3) relating to the unborn child, and 4) the meaning of treatment. Ten subthemes were identified. The women described growing up in difficult family settings, including the complex impact of multiple

adverse childhood experiences on their own attachment. Among all the participants, the pregnancy was unplanned, and they spoke of how their pregnancy had become a turning point in which they were re-evaluating their substance use and life circumstances. All the participants described fears of having harmed the baby and several described how the ultrasound experience made it possible to connect with the child. Several women reported needing the structure of the involuntary treatment to help. The study demonstrated that both motivation and relational history need to be considered when deciding on the optimal therapeutic context to bring about change and identifies themes that have important implications for planning treatment and support.

- 16. Northrup, T. F., Stotts, A. L., Fischer, S. M., von Sternberg, K. L., & Velasquez, M. M. (2024). Increased risk for alcohol- and other substance-exposed pregnancies among women who smoke tobacco: A secondary analysis of a primary care-based intervention. *Tobacco Induced Diseases*, 22. <https://doi.org/10.18332/tid/191107>**

This study from the USA examined alcohol- and substance-exposed pregnancy risk by smoking status. Using data from the CHOICES-Plus intervention, eligible women ($n = 261$) were recruited from 12 primary care clinics in a public healthcare system. Eligible were not pregnant, aged 18-44 years, drinking >3 drinks/day or >7 drinks/week, sexually active, and not using effective contraception. The authors compared women who did and did not smoke tobacco on alcohol and drug severity, and psychological distress (e.g. anxiety) at baseline. Compared to non-smokers, those who smoked drank more days/week (mean=3.3 vs. mean=2.7, $p<0.01$), had higher AUDIT scores (mean=12.1 vs. mean=9.8, $p<0.05$), were more likely to report current substance use (66.1% vs. 48.3%, $p<0.01$), and had a greater number of lifetime drugs used. Those who smoked also reported greater levels of anxiety, lower confidence to not drink, lower confidence to reduce risky drinking, and greater drinking temptations. Yet those who smoked also had greater readiness to reduce alcohol use (mean=6.2) compared to those who did not smoke (mean=5.2, $p<0.05$). The authors conclude that women who drink and smoke have higher risk of alcohol-, tobacco- and other substance-exposed pregnancies, thus primary care providers should screen for alcohol and tobacco co-use and provide brief intervention and/or treatment referral.

- 17. Oh, S.S., Ali, M.M., Park, J., Kang, E., Park, E-C., & Kawachi, I. (2024). Punitive state policies targeting alcohol use during pregnancy and alcohol consumption among pregnant women. *Scientific Reports*, 14. <https://doi.org/10.1038/s41598-024-74283-x>**

This study explored if punitive US state-level alcohol and pregnancy policies are associated with a decreased alcohol use among pregnant women over time. Using data from the Pregnancy Risk Assessment Monitoring System (PRAMS; 1990 – 2015), a difference-in-difference approach was used to determine if punitive state laws impacted alcohol consumption rates among women. Punitive policies were described as those that included admissibility of evidence in child welfare proceeding, or prompted child abuse, neglect, deprivation, or dependence due to prenatal alcohol use. Punitive state alcohol policies were not significantly associated with decreased rates of alcohol use among pregnant women within three years of their implementation (95% CI: -1.47, 4.55). Further, they were not associated with the reduction of alcohol use during pregnancy. The findings suggest that punitive policies must be reevaluated. Future policies should better address maternal and child health outcomes.

- 18. Parker, M., May, P. A., Marais, A. S., de Vries, M., Kalberg, W. O., Buckley, D., Hasken, J., Hoyme, H. E., & Seedat, S. (2024). Influence of childhood trauma and traumatic stress on**

a woman's risk of having a child with a fetal alcohol spectrum disorder. *Alcohol: Clinical and Experimental Research*, 48(6), 1176–1188. <https://doi.org/10.1111/acer.15334>

This South African study investigated the role of maternal childhood trauma and lifetime traumatic stress on prenatal alcohol consumption and on the risk of having a child with FASD. A nested, case-control study was conducted for maternal risk assessment. Study participants were mothers of first-grade students being assessed for FASD in five rural communities in the Western Cape Province of South Africa. Face-to-face surveys, which included mental health and trauma assessment questionnaires, were conducted. In logistic regression analyses, higher maternal childhood trauma scores were modestly associated with an increased likelihood of having a child diagnosed with FASD (OR = 1.014, $p = 0.015$). Structural equation modeling found that traumatic stress and drinking during pregnancy, but not lifetime alcohol use, were associated with maternal childhood trauma. Lifetime alcohol use influenced drinking during pregnancy, which in turn was significantly associated with having a child diagnosed with FASD. The authors conclude that there was no direct influence of maternal childhood trauma on FASD diagnosis; however, maternal trauma may indirectly contribute to the risk of having a child diagnosed with FASD.

19. Petersen Williams, P., Erasmus-Claassen, L.-A., Taylor, S., Browne, F. A., Wechsberg, W. M., Myers, B., Parry, C. D. H., & Washio, Y. (2024). Perceptions of perinatal alcohol use and treatment needs in Cape Town, South Africa: A qualitative study. *Frontiers in Psychiatry*, 15, 1199647. <https://doi.org/10.3389/fpsyt.2024.1199647>

This South African study explored perceptions of perinatal alcohol use and treatment needs in Cape Town. Individual in-depth interviews were conducted with pregnant women with a recent history of alcohol use ($n = 32$) and clinic and community stakeholders ($n = 16$). The findings suggested that there was a widespread perception that women know the dangers of drinking alcohol while pregnant but know much less about drinking while breastfeeding. There were mixed views shared about whether women who are pregnant or breastfeeding experience alcohol-related stigma. Participants described contextual factors impacting drinking such as interpersonal violence, lack of support, stress, anxiety and poverty, and drinking being normalized. Finally, participants shared mixed views and conflicting knowledge about available resources to support alcohol reduction. They highlighted a desire for support groups and the involvement of partners in alcohol interventions. The findings identified the need for an innovative alcohol intervention program that is tailored to the needs of pregnant and postpartum women. It also highlights the importance of including community-based support and partner involvement in these interventions.

20. Piske, M., Joyce, S., Yan, Y., Katsuno, N., Homyra, F., Zanette, M., Barker, B., Meilleur, L., McBride, B., Joshi, P., Sullivan, E., & Nosyk, B. (2024). Population perinatal substance use and an environmental scan of health services in British Columbia, Canada. *Drug and Alcohol Dependence*, 264, 112457. <https://doi.org/10.1016/j.drugalcdep.2024.112457>

This Canadian study investigated perinatal substance use in British Columbia (BC) by region and examined availability of clinical and community-based programs. Provincial health administrative data was used to identify all BC residents accessing care for substance use within 12 months of their first perinatal care record to delivery during 2016–2021. An environmental scan identified all programs offering perinatal care and substance use treatment or support in BC as of December 2022. $N = 12,439$ cases of perinatal substance use were reported and linked to $n = 13,814$ livebirths. Population perinatal substance use was almost eight times higher in rural/remote Northern BC compared to the city of Vancouver and 60% of residents who used substances during pregnancy

were outside of Vancouver. There were 29 services identified, including 19 wraparound programs, 8 supportive housing programs, and 2 acute care programs. Regions outside Vancouver represented only 35% of BC's specialized acute care and supportive housing beds, despite having higher rates of perinatal substance use. The authors highlight the importance of expanding perinatal substance use care to rural and remote locations in BC to address geographic inequities in access to care and health outcomes.

21. Pistone, I., Dahl, B., & Bondas, T. (2024). Trapped in a maze: A meta-ethnography of women's experiences of alcohol use in pregnancy. *Social Science & Medicine*, 360, 1-19. <https://doi.org/10.1016/j.socscimed.2024.117337>

This meta-ethnography conducted by researchers in Sweden and Norway provides an interpretative and conceptual understanding of women's experiences with alcohol during pregnancy. A literature search was conducted in seven electronic databases. Eighteen ($n = 18$) studies were included and appraised using the CASP checklist. The authors noted that the metaphor of being trapped in a maze illustrated the complexity of pregnant women's experiences of alcohol use during pregnancy, as women who drink alcohol during pregnancy are navigating the maze in a whirlwind of conflicting information and knowledge. Sociocultural norms form rigid pathways within the maze from which women then use several motives to justify the routes chosen in the maze. The competing information, knowledge and clashing norms within women's sociocultural contexts leave women to navigate alone in the maze. Moving forward, alcohol in pregnancy needs to be conceptualized as an issue positioned at the intersection of social sciences and healthcare. Early prevention and multimodal interventions should draw on women's experiences with alcohol in pregnancy.

22. Popova, S., Dozet, D., Temple, V., Riddell, C., & Yang, C. (2024). A population-based study on women who used alcohol during pregnancy and their neonates in Ontario, Canada. *Children*, 11(8). <https://doi.org/10.3390/children11080993>

This Canadian study assessed the prevalence of prenatal alcohol use and associated maternal and neonatal outcomes. Using linked maternal and neonatal data (2015–2018) for alcohol-exposed pregnancies from Better Outcomes Registry and Network (BORN) Ontario, logistic regression models were used to assess the odds of prenatal heavy alcohol and other substance use and the impacts of heavy alcohol use and other prenatal substance exposures on neonatal outcomes. A total of $n = 10,172$ (2.4%) women reported alcohol use during pregnancy. One-third of women had pre-existing or current mental health and/or substance use problems, which was associated with significantly higher odds of heavy alcohol use during pregnancy. Prenatal exposure to heavy alcohol use was associated with significantly higher odds of neonatal abstinence syndrome, respiratory distress syndrome, neonatal intensive care unit (NICU) admission, and hyperbilirubinemia. Prenatal exposure to one or more substances in addition to alcohol was associated with significantly higher odds of fetal/maternal/placental pregnancy complications; preterm birth; NICU admission; low APGAR scores; one or more confirmed congenital anomalies at birth; respiratory distress syndrome; and intrauterine growth restriction. The authors conclude that it is crucial to routinely screen childbearing-age and pregnant women for alcohol and other substance use as well as mental health problems as to prevent adverse maternal and neonatal outcomes.

23. Powell, M., Pilkington, R., Varney, B., Havard, A., Lynch, J., Dobbins, T., Oei, J. L., Ahmed, T., & Falster, K. (2024). The burden of prenatal and early life maternal substance use

among children at risk of maltreatment: A systematic review. *Drug and Alcohol Review*, 43(4), 823-847. <https://doi.org/10.1111/dar.13835>

This systematic review conducted by researchers in Australia and the UK synthesized prevalence estimates of maternal substance use during pregnancy and early life among children at risk of maltreatment. Four databases were searched for observational studies from high-income countries that sampled children at risk of maltreatment and reported information on maternal substance use during pregnancy and/or the child's first year of life. Thirty-five ($n = 35$) studies were included, of which fifteen studies had adequately sized and representative samples to estimate prevalence and ten studies reported on alcohol use or FASD. Maternal substance use prevalence ranged from 2.4% to 40.6%. Maternal substance use was highest among families whose infants referred to child protection at birth (40.6%) and where children were placed in out-of-home care (10.4% to 37.2%). Prenatal and early life maternal substance use prevalence was higher when studies defined substance use more broadly and when substance use was ascertained from both children's and mother's records. The authors suggest that supportive, coordinated responses to maternal substance use are needed from health and child protection services, and should be inclusive of substance use treatment and prenatal and postpartum care plans.

24. Rausgaard, N.L.K., Ibsen, I.O., Fruekilde, P.B.N., Nohr, E.A., Damkier, P., & Ravn, P. (2024). Screening of substance use in pregnancy: A Danish cross-sectional study. *Acta Obstetrica et Gynecologica Scandinavica*. 103: 1408-1419. <https://doi.org/10.1111/aogs.14862>

In this national urinary screening study for substance use in pregnancy conducted in Denmark, urine samples were screened on-site for 15 substances (including alcohol). All screen-positive urine samples underwent secondary quantitative analyses with liquid chromatography- tandem mass spectrometry (LC-MS/MS) analysis. Results were compared to questionnaire information to analyze the validity of self-reporting and to examine possible cross-reactions. Findings showed a prevalence of substance use among pregnant women of 10.8%, with almost all confirmed positive samples being attributed to nicotine use. The prevalence of alcohol was less than 0.5%, while self-reporting of alcohol intake was low, at 33.3%. The dipstick performed poorly, as only 44% of the positive results from the initial dipstick screening were confirmed. Dipstick analyses did not seem to provide further information than self-reporting except for alcohol and cannabis intake. LC-MS/MS analyses remained gold standard, and the authors recommended discussing the future role of dipstick screenings for substance use in pregnancy.

25. Schölin, L., & Arkell, R. (2024). Representations of 'risky' drinking during pregnancy on mumsnet: A discourse analysis. *Drug and Alcohol Review*. <https://doi.org/10.1111/dar.13948>

This article from the UK explored online discourse about alcohol use during pregnancy, including representations of 'appropriate' alcohol behaviours and risks. Posts from the online forum, Mumsnet, from 2016 to 2021 were analysed using a two-staged approach and seventy-three ($n = 73$) threads with $n = 1,554$ replies were analysed. Users described engaging with different sources of evidence and mentioned guidelines and scientific sources but also requested and appreciated anecdotal information. Risk was discussed in several ways, but all users 'othered' drinking that they perceived as risky. There was a lack of knowledge around drinking while trying to conceive and around early pregnancy. Only a few posts prescribed risks at all levels of drinking. Users positioned their drinking according to perceived norms through language choices; when not pregnant (or

unknowingly pregnant) being 'plastered' was justified but when pregnant drinking only 'sips' or 'tiny' quantities of alcohol was considered appropriate. Forum users demonstrated a desire to adhere to 'responsible motherhood', which did not equate to abstinence if consumption was perceived as acceptable and justified. Future research should explore information needs and effective approaches to health communication for pregnant women or those planning a pregnancy.

26. Schulte, A., Liu, G., Subbaraman, M. S., Kerr, W. C., Leslie, D., & Roberts, S. C. M. (2024). Relationships between alcohol policies and infant morbidities and injuries. *American Journal of Preventive Medicine*, 66(6), 980–988. <https://doi.org/10.1016/j.amepre.2024.01.003>

This study from the US examined the relationship between alcohol physical availability policies and outcomes related to pregnant people's alcohol use, including infant morbidities and injuries. Using outcome data from Merative MarketScan, a commercial insurance claims data set and policy data from the National Institute on Alcohol Abuse and Alcoholism's Alcohol Policy Information System, the National Alcohol Beverage Control Association, and Liquor Handbooks, the relationships between state-level policies regulating the availability (sites, dates/hours, and government monopoly) of alcohol and infant morbidities and injuries. The sample included 1,432–979 pairs of infants and birthing people ages 25 – 50 who gave birth to a singleton between 2006 and 2019. State government monopoly on liquor sales was associated with reduced odds of infant morbidities and injuries. Allowing liquor sales after 10pm was associated with increased odds of infant injuries and gas station liquor sales were associated with increased odds of infant morbidities and injuries. The findings suggest that reducing alcohol availability can help minimize adverse outcomes related to alcohol use in pregnancy.

27. Shchetinina, A., & Slopen, N. (2024). Unmet need for alcohol use disorder treatment in reproductive-age females, with emphasis on pregnant and parenting populations in the United States: Findings from NSDUH 2015–2021. *PLoS ONE*, 19(4). <https://doi.org/10.1371/journal.pone.0301810>

This USA study described patterns in the past year Alcohol Use Disorder (AUD) prevalence and treatment among reproductive-aged women, with a specific focus on pregnant and parenting women. Data on reproductive-age women from the National Survey on Drug Use and Health (2015–2021) was analysed. The authors used generalized linear models to estimate prevalence ratios (PR) for past 12-month AUD and its treatment based on DSM-V criteria. The findings suggested that pregnant and parenting women displayed lower risk for AUD (PR = 0.48, 95% CI: 0.41, 0.57; PR = 0.5 95% CI: 0.48, 0.54, respectively) relative to non-pregnant/non-parenting women. Excess risk for AUD was associated with education and history of arrests. There were no clear differences in AUD treatment use based on parenting or pregnancy status. Among those with AUD, the prevalence of treatment was higher among individuals aged 35–49 years compared to those 18–25 years (PR = 1.6, 95% CI: 1.19–2.14) and in those enrolled in Medicaid vs. private insurance (PR = 2.62, 95%CI:1.97–3.47). Financial barriers and not prioritized treatment were the most frequently reported barriers to treatment. It is important for healthcare providers to prioritize supporting reproductive-age women at higher risk of an AUD.

28. Sieger, M. L., Morin, J. C., Budris, L. M., Sienna, M., Ostfeld-Johns, S., Hart, L., & Morosky, C. (2024). A comparison of two statewide datasets to understand population prevalence of substance use in pregnancy: Findings and considerations for policy & research.

This USA study examined if the population prevalence of perinatal substance use detected through the Connecticut Child Abuse Prevention and Treatment Act (CAPTA) aligns with self-reported data. Using state-specific data from the Department of Health vital birth records, the substance use supplement to the Pregnancy Risk Assessment Monitoring System (PRAMS) survey and CAPTA, the authors compared the CAPTA notifications with self-report data on substance use in pregnancy from mothers who gave birth during the same timeframe. The results revealed that three times as many mothers self-reported any alcohol or drug use in pregnancy compared to the rate measured with CAPTA notifications. Compared to mothers who self-reported drug use in the third trimester, CAPTA notifications were made for statistically similar rates of Black mothers but half the self-reported rate of white and Hispanic mothers. As such, CAPTA notifications were made for twice as many Black mothers as white or Hispanic mothers (whose substance use was under-identified in hospitals). The findings reveal that further efforts need to be made to reduce fear of child protective service involvement, as to improve self-disclosure of substance use in pregnancy.

- 29. Subbaraman, M. S., Schulte, A., Berglas, N. F., Kerr, W. C., Thomas, S., Treffers, R., Liu, G., & Roberts, S. C. M. (2024). Associations between alcohol taxes and varied health outcomes among women of reproductive age and infants. *Alcohol and Alcoholism*, 59. <https://doi.org/10.1093/alcalc/agae015>**

This study from the US examined the relationship between alcohol taxes and harms associated with alcohol use in pregnancy. The relationship between nine separate tax variables specific to beer, wine, and spirits and eight alcohol use, substance use treatment, and infant and maternal outcomes were examined. Tall beverage-specific *ad valorem* tax and sales tax increased significantly on average over time; however, all volume-based beverage-specific taxes decreased from 1990 to 2020. There were no robust associations between taxes and drinking. In adjusted separate tax models, only wine volume-based taxes were significantly related to more days with ≥ 5 drinks. In treatment admissions where alcohol was reported as the primary substance of use among pregnant women, only increased spirits *ad valorem* taxes were associated with lower rates of treatment admissions (adjusted IRR = 0.95, 95% CI: 0.91, 0.99). Increased wine and spirits volume-based taxes were associated with lower odds of infant morbidities (wine aOR = 0.91, 95% CI: 0.86, 0.97; spirits aOR = 0.95, 95% CI: 0.92, 0.97). Off-premises spirits sales tax was related to lower odds of severe maternal morbidities (aOR = 0.78, 95% CI: 0.64, 0.96). The results indicate a protective association between certain taxes with infant and maternal morbidities. Future policies that index tax rates to inflation might result in further public health benefits, including for pregnant people and their infants.

- 30. Vila-Farinas, A., Varela-Lema, L., Rial-Vázquez, J., Santiago-Pérez, M. I., Candal-Pedreira, C., Rey-Brandariz, J., Guerra-Tort, C., Martín-Gisbert, L., Ruano-Ravina, A., & Pérez-Ríos, M. (2024). Influence of educational level on the prevalence of risk behaviors during the perinatal period. *Adicciones*, 36(4):371-378. doi: 10.20882/adicciones.1892**

This Spanish study assessed how maternal education levels impacted changes during pregnancy and after childbirth in diet, consumption of tobacco, electronic cigarettes, cannabis, alcohol use and exposure to environmental tobacco smoke. Galician women aged 18 – 49 ($n = 6,436$) women were included. The prevalence of different behaviours was estimated at three time points – pre-pregnancy, pregnancy and after childbirth – depending on the mother's educational level.

Regardless of the educational level, pregnancy resulted in improvements in different lifestyle considerations. However, in the first postpartum months, lifestyle risk behaviours worsened, except for exposure to environmental tobacco smoke and the use of electronic cigarettes. Most of the risk behaviours occurred on a gradient depending on the educational level, whereby the lower the educational level, the higher the prevalence of risk behaviours. The findings demonstrated that, regardless of education level, all women adopted healthier lifestyles during pregnancy, but women with a lower level of education had a higher prevalence of risk behaviors, both in the period prior to pregnancy, as well as during pregnancy and after childbirth.

- 31. Wogayehu, B., Demissie, T., Alemayehu, M., Wolka, E., & Daka, K. (2024). Magnitude and risk factors of khat, alcohol and cigarettes use among pregnant women in Africa: A systematic review and meta-analysis. *BMC Pregnancy and Childbirth*, 24(1), 795-17. <https://doi.org/10.1186/s12884-024-06999-7>**

This systematic review and meta-analysis aimed to estimate the prevalence and associated factors of khat, alcohol, and cigarette use among pregnant women in Africa. Articles published between 2002 and 2021 were included, with 71 meeting the inclusion criteria. The pooled prevalence of alcohol consumption during pregnancy was 22.2%. An analysis by UN sub-region found the highest prevalence in Middle Africa (25.69%) and lowest in Northern Africa (1.10%). Risk factors for alcohol use during pregnancy included lower education level, younger age, pre-pregnancy alcohol use, unplanned pregnancy, history of abortion, poor social support, mental distress, poor knowledge on alcohol risks, and partner alcohol use. The pooled prevalence of khat chewing was 18.93%, smoking was 11.85%, and second-hand smoke exposure was 43.45%. Significant variation in prevalence rates was found across included studies. The authors highlight the need for screening and brief interventions in antenatal care settings to reduce substance use during pregnancy.

- 32. Zahumensky, J., Boda, M., Serator, V., Psenkova, P., Ostatnikova, M., Gajdosova, M., Peskovicova, P., Dandarova, S., Sirotna, M., & Papcun, P. (2024). Risk factors for self-reported alcohol consumption during pregnancy. *Bratislava Medical Journal*, 125(11), 661. https://doi.org/10.4149/BLL_2024_101**

This study investigated the prevalence, risk and protective factors, and knowledge of alcohol use among pregnant women in Slovakia. Women ($n = 402$) received a questionnaire after giving birth which asked about alcohol consumption during the year preceding conception and throughout pregnancy. Most women ($n = 351$) reported drinking before pregnancy, however 12.8% reported complete abstinence prior to pregnancy, which was the strongest protective factor against drinking during pregnancy. Overall, 26.9% of all pregnant women in the sample continued to drink while pregnant. Unplanned pregnancy, lack of knowledge about the negative consequences, and heavy drinking before pregnancy were noted risk factors for alcohol use in pregnancy. These findings align with other data from Europe. There is a need to reduce preconception alcohol use and for efforts to focus on pregnancy planning, and education and awareness about the risks of alcohol use during pregnancy in prevention.

A. Level 1 Prevention

- 1. Ameyaw, E. K., Amoah, P. A., & Ezezika, O. (2024). Effectiveness of mHealth apps for maternal health care delivery: Systematic review of systematic reviews. *Journal of Medical Internet Research*, 26(2), e49510. <https://doi.org/10.2196/49510>**

This systematic review from researchers in China and Canada analyzed the effectiveness of mobile health (mHealth) apps on global maternal health care delivery. A total of $n = 16$ studies were included in the final review. Most mHealth apps involved sending SMS text messages and most interventions were offered in high income countries (81%). Addressing substance use during pregnancy emerged as one of the five areas where mHealth interventions were most effective, which also included maternal anxiety and depression, diabetes in pregnancy, gestational weight management, maternal health care use, and behavioural modification for smoking cessation. The authors highlight the need to increase mHealth offerings for maternal health care in low- and middle-income countries.

2. **Beasant, L., Ingram, J., Emmett, P. M., Cade, J. E., & Taylor, C. M. (2024). Adherence to the national guidance on foods and drinks to limit or avoid during pregnancy in England: The PEAR Study. *Public Health Nutrition*, 27(1), e106.**
<https://doi.org/10.1017/S1368980024000600>

This cross-sectional study from the UK explored pregnant women's adherence to guidance on the National Health Service (NHS) England website on what foods and drinks to avoid or limit during pregnancy, and whether demographic characteristics were associated with adherence. In April – November 2022, recently postpartum women residents in England during their pregnancy ($n = 598$; median age 33 years) completed an online questionnaire with questions about the consumption of twenty-one food/drink items that the NHS advises pregnant women to avoid/limit. Summary statistics were used to determine adherence to the guidance and adjusted logistic regression was used to model the associations of adherence with demographic characteristics. The findings demonstrated that adherence was generally high (>90% for eight of ten food/drink items to be avoided). In relation to alcohol, 91% ($n = 543$) indicated they adhered to the guidance to avoid alcohol. Of those who drank alcohol pre-pregnancy, 11% of women ($n = 53$) reported drinking less often and 89% ($n = 446$) now avoided alcohol use. The most common characteristic that predicted adherence for food and drink items was educational attainment; however greater maternal age and parity also impacted adherence. None of these characteristics significantly impacted adherence to alcohol guidance. As such, further research on barriers to implementation is needed.

3. **Cheung, M. M. Y., Jones, H., Eastwell, N., Zhang, T., Harford, K., Bower, C., & Elliott, E. J. (2024). Evaluation of the Fetal Alcohol Spectrum Disorder Hub Australia website. *Drug and Alcohol Review*, 43(6), 1515-1522.** <https://doi.org/10.1111/dar.13878>

This Australian study evaluated the use and effectiveness of the Fetal Alcohol Spectrum Disorder (FASD) Hub Australia website. A survey with $n = 76$ participants, including researchers, health professionals, and policymakers, revealed that most users found the site useful and would recommend it to others. The website scored well in areas like ease of use, structure, and relevance, with an average rating of 3.45 to 4.04 out of 5. Users found the content trustworthy but suggested adding more information for Aboriginal and Torres Strait Islander peoples and improving the search capacity. Google metrics showed 25,534 unique users over six months, mostly aged 18-44, with a high percentage being female. Overall, users considered the site accessible, authoritative, and valuable while still providing feedback for enhancement. The findings suggest that the FASD Hub has been successful in reaching a range of health and social care providers, researchers, and policy makers alike.

4. **Critchlow, N., Moodie, C., & Gallopel-Morvan, K. (2024). Restricting the content of alcohol advertising and including text health warnings: A between-group online experiment with**

a non-probability adult sample in the United Kingdom. *Alcohol: Clinical and Experimental Research*, 48(6), 1155-1167. <https://doi.org/10.1111/acer.15327>

This study assessed the effects of removing positive contextual factors from alcohol advertising on adults in the United Kingdom. Participants ($n = 2,421$) were randomized and shown a vodka advertisement with variations in context (e.g., with or without positive social imagery) and messaging (e.g., a multiple-text health warning vs. “drink responsibly”). The health warning label included three separate warnings: on cancer, liver disease, and alcohol use during pregnancy. The “drink responsibly” control reflected self-regulatory messages that are commonly used by alcohol companies. Participants rated the advertisements on a seven-point scale. The results showed that both removing positive social context and including a detailed health warning both reduced the appeal of the advert and the product, as well as the intention to try the product. Additionally, including the multiple text health warning increased perceptions of the product’s harm. There were no interactions between the advertisement’s context and message for any outcome. This study highlights the potential benefits of stricter alcohol advertising regulations, particularly for health promotion and harm reduction.

5. **Dilworth, S., Doherty, E., Mallise, C., Licata, M., Hollis, J., Wynne, O., Lane, C., Wolfenden, L., Wiggers, J., & Kingsland, M. (2024). Barriers and enablers to addressing smoking, nutrition, alcohol consumption, physical activity and gestational weight gain (SNAP-W) as part of antenatal care: A mixed methods systematic review. *Implementation Science Communications*, 5(1), 112-27. <https://doi.org/10.1186/s43058-024-00655-z>**

This systematic review investigated barriers and enablers to implementing international clinical guidelines to address smoking, nutrition, alcohol consumption, physical activity and gestational weight gain (SNAP-W) in routine antenatal care settings. Quantitative ($n = 22$) and qualitative ($n = 27$) studies from 14 countries were included and synthesized in the review, representing data from 7,146 antenatal care providers. There were 352 barriers and enablers identified. The predominant domain that emerged was ‘environmental context and resources’ (96% of studies), which included lack of time, access to and quality of resources, and organizational supports. The second most common domain was ‘beliefs about consequences’ (67% of studies), which had studies related to alcohol emerging as a common focus as well as those involving midwives, multidisciplinary practitioners, and general practitioners. For studies focused on smoking-related care involving obstetricians, gynaecologists, and other mixed medical professions, ‘optimism’ was the second most common domain. This study demonstrates a need for improved resources, time, and organizational support for implementation of SNAP-W antenatal care and highlights the similarities and differences of determinants of implementation across specific health behaviours and care provider groups.

6. **Falek, P., Falek, A., Adamczyk, T., Ruchala, M., Towarek, J., Dzieciol, J., ... & Burdan, F. (2024). Knowledge of the sign prohibiting alcohol consumption during pregnancy among medical students in Poland—a survey study. *Current Issues in Pharmacy and Medical Sciences*, 37(2), 92-95. <https://doi.org/10.2478/cipms-2024-0015>**

This Polish study evaluated the knowledge of alcohol and pregnancy warning signs first-year medical students. Using a questionnaire, the study authors explored if students ($n = 1,123$) recognized, had previous contact, and knowledge of the sign. The study found that over 92% of the students correctly recognized the sign, and more than 45% reported prior exposure to it, with over 53% claiming to already understand its meaning. The clear and simple design of the sign facilitated

its correct interpretation, highlighting the potential of such visual tools in public health communication. This study emphasizes the value of clear, universally understood signage for health promotion.

- 7. Frennesson, N. F., Barnett, J., Merouani, Y., Attwood, A., Zuccolo, L., & McQuire, C. (2024). Analyzing questions about alcohol in pregnancy using web-based forum topics: Qualitative content analysis. *JMIR Infodemiology*, 4, e58056. doi: [10.2196/58056](https://doi.org/10.2196/58056)**

This UK study examined what questions and topics are brought up on a UK-based parenting forum and how these relate to public health guidelines. Threads on the Mumsnet forum mentioning 'pregnancy' from the period 2022 – 2022 were analyzed and explored how they correspond to two public health guidelines: the UK Chief Medical Health Officer (CMO)'s low-risk drinking guidelines (2016) and the first COVID-19 lockdown (2020). A total of $n = 395$ threads were analyzed using a qualitative content analysis. Key topics included seeking advice on the safety of alcohol consumption during pregnancy, the safe limits for alcohol, and concerns about drinking before realizing a pregnancy. The study found that discussions on alcohol in pregnancy remained consistent over time, although more people disclosed prenatal alcohol use before the introduction of the updated CMO guidelines. This study highlights the ongoing uncertainty among the public regarding alcohol consumption during pregnancy underlining the need for clearer communication and accessible resources.

- 8. Janssen, P., Lecke, S., Renner, R., Zhang, W., Vedam, S., Norman, W. V., ... & Dennis, C. L. (2024). Teaching by texting to promote positive health behaviours in pregnancy: A protocol for a randomised controlled trial of SmartMom. *BMJ open*, 14(1), e081730. <https://doi.org/10.1136/bmjopen-2023-081730>**

This Canadian study protocol described the future evaluation of SmartMom, a prenatal education program delivered via text messaging, designed to encourage positive health behaviours during pregnancy. The program provides evidence-based information tailored to each week of pregnancy, aiming to improve maternal and newborn health outcomes. The study will be a two-arm randomized controlled trial comparing SmartMom messages with messages that provide general pregnancy information but without behaviour-change focus. The primary outcomes being assessed are whether SmartMom improves weight gain within recommended ranges for pre-pregnancy body mass index and adherence to prenatal care attendance guidelines. The goal of the study is to understand if text messages can be an efficient and cost-effective means of providing essential prenatal education.

- 9. Joyce, K. M., Davidson, M., Manly, E., Stewart, S. H., & Al-Hamdani, M. (2024). A systematic review on the impact of alcohol warning labels. *Journal of Addictive Diseases*, 42(3), 170-193. <https://doi.org/10.1080/10550887.2023.2210020>**

This systematic review synthesized the existing literature on the impact of alcohol warning labels (AWLs). Using four databases and reference lists of eligible articles, $n = 77$ articles were identified that focused on proxies of alcohol use, such as knowledge/awareness, perceptions, attention, recall, attitudes, and intentions. The findings from real-world studies indicated that AWLs increase awareness, alcohol-related risk perceptions, and recall, although these effects have diminished over time. Experimental studies showed mixed results. The content and format of AWLs, as well as sociodemographic factors, appeared to influence their effectiveness. For example, pregnancy-

related AWL awareness was highest among a) women 19 – 39 years old, b) pregnant and postpartum women who were drinkers and educated, and c) people under legal drinking age. Lower awareness of pregnancy-related AWLs was seen in older (>35) and less educated people. Future research should explore AWL content and formatting, as well as the role of sociodemographic factors as moderators.

- 10. Pettigrew, S., Davies, T., O'Brien, P., Sträuli, B., Petticrew, M., & Bowden, J. (2024). The absence of mandatory pregnancy warning labels in online alcohol purchasing contexts. *Drug and Alcohol Review*, 43(5), 1178–1182. <https://doi.org/10.1111/dar.13836>**

This Australian study examined the visibility of mandatory pregnancy warning labels on alcoholic beverages sold online, following a new regulation introduced in Australia and New Zealand in August 2023. Data for alcohol products sold on the two largest alcohol retailers' websites in Australia was captured. Data for $n = 8,343$ alcohol beverages were inspected to determine if pregnancy warning labels were visible. The research revealed that almost no alcohol products (0.1%) displayed the required warning on the main sales page, and only 7% of products included the warning through optional image rotation features. The research highlights a significant regulatory issue in ensuring that essential consumer information, like pregnancy warnings, is accessible in the increasingly prevalent online shopping environment. Additional regulation is needed to ensure that mandatory information requirements are applied in online shopping contexts.

- 11. Schwartz, D., Torres-Ulloa, I., & Corvalán, C. (2024). Effectiveness of alcohol warning labels for at-risk groups and the general public: A policy-informing randomized experiment in Chile. *Preventive medicine*, 187, 108087. <https://doi.org/10.1016/j.ypmed.2024.108087>**

This Chilean study investigated the impact of separate and combined warning labels for at-risk groups and the general population when making alcohol purchase decisions. In 2022, $n = 7,758$ adults who either consumed alcohol or were pregnant or lactating, were presented one of six warning labels (no-warning, pregnant/lactating, drinking-driving, general cancer risk, combined warnings, and assorted warnings across bottles). The authors then explored if the intention to purchase an alcoholic vs. non-alcoholic beverage was impacted by the warning label that they were randomly assigned to. The results found that the general cancer risk warning was the most effective in reducing alcohol purchases, decreasing intentions by 10.4% (95% CI: -0.071, -0.005). Combined warning labels and assorted warning labels, as well as the pregnancy/lactation warning, also reduced alcohol purchase decisions. However, the driving-drinking warning label had no significant effect. The study concluded that cancer risk warnings are the most effective, including among subgroups. To increase effectiveness, other policies should be used in addition to warning labels to address alcohol-related risks.

- 12. Smit, A. J., Al-Dhahir, I., Schiphof-Godart, L., Breeman, L. D., Evers, A. W., & Joosten, K. F. (2024). Investigating eHealth Lifestyle Interventions for Vulnerable Pregnant Women: Scoping Review of Facilitators and Barriers. *Journal of Medical Internet Research*, 26, e54366. [doi:10.2196/54366](https://doi.org/10.2196/54366)**

This review identified the strategies used in the design, reach, use, and implementation of eHealth lifestyle interventions for vulnerable pregnant women, focusing on lifestyle components like diet, physical activity, and alcohol consumption. The study conducted a search in five databases that described eHealth interventions for pregnant women that provided information on the design,

reach, use, or implementation of the intervention. A total of $n = 29$ studies were identified, that described 20 eHealth lifestyle interventions. Most eHealth interventions were delivered via apps and were commonly used to target multiple lifestyle behaviours. The most commonly targeted health behaviour was diet, followed by physical activity, stress, and smoking and alcohol use. Challenges such as financial constraints, technological issues, and limited internet access were reported as significant barriers. In reaching vulnerable pregnant women, additional obstacles included lack of interest, time constraints, and limited support from healthcare providers. Key facilitators for successful interventions included stakeholder collaboration, tailoring content to the target group's values, and reduced the workload for intervention deliverers. This review provides insights into how to effectively design and implement eHealth interventions for vulnerable pregnant women, as to increase the health of future parents and their children.

- 13. Sträuli, B., Davies, T., Jan, S., Booth, L., Laznik, N., Taylor, F., & Pettigrew, S. (2024). Uptake of mandated pregnancy warnings in the Australian alcoholic ready-to-drink beverage market. *Drug and Alcohol Review*, 43(1), 165-169. <https://doi.org/10.1111/dar.13758>**

This study examined the application of mandatory pregnancy warnings on ready-to-drink (RTD) alcoholic beverages in Australia two years into a three-year implementation of a new mandatory pregnancy warning. The sample included $n = 491$ RTD products and found that 94% had some form of pregnancy warning, but only 36% displayed the mandatory warning. The majority of products showed non-mandatory warnings, 42% had a DrinkWise warning, and 15% featured 'Other' warnings. There was no clear link between the alcohol content and the likelihood of displaying the mandatory warning. The study concluded that compliance with the mandatory pregnancy warning is still slow and that ongoing monitoring is needed to ensure the alcohol industry fulfills its obligations. Continued monitoring is needed to assess industry compliance with health-related regulations and to ensure that public health policies are fully implemented.

- 14. Williams, R., Hayton, S., Campbell, A., Kemp, H., & Badry, D. (2024). Strong Born—A First of its kind national FASD prevention campaign in Australia led by the National Aboriginal Community Controlled Health Organisation (NACCHO) in collaboration with the Aboriginal Community Controlled Health Organisations (ACCHOs). *International Journal of Environmental Research and Public Health*, 21(1), 85. <https://doi.org/10.3390/ijerph21010085>**

This commentary described the Strong Born campaign, which was launched by the National Aboriginal Community Controlled Health Organization (NACCHO) in 2023 as Australia's first national health promotion initiative aimed at addressing FASD within Aboriginal and Torres Strait Islander communities. The Strong Born campaign was developed to fill a significant gap in knowledge and health promotion regarding FASD. The campaign employed a strengths-based, culturally informed approach built through co-design with Aboriginal Community Controlled Health Organizations (ACCHOs). The Strong Born campaign developed culturally safe health promotion toolkits for both communities and health sector staff. It also offered grants to local communities to promote the campaign. The toolkits were distributed to 92 ACCHOs across Australia, marking a significant step in improving understanding and awareness of FASD among Aboriginal and Torres Strait Islander communities.

- 15. Zuckermann, A. M., Morissette, K., Boland, L., Garcia, A. J., Domingo, F. R., Stockwell, T., & Hobin, E. (2024). The effects of alcohol container labels on consumption behaviour,**

knowledge, and support for labelling: A systematic review. *The Lancet Public Health*, 9(7), e481-e494. [https://doi.org/10.1016/S2468-2667\(24\)00097-5](https://doi.org/10.1016/S2468-2667(24)00097-5)

This systematic review from Canadian authors examined the effects of alcohol container labels featuring health warnings, standard drink information, or low risk drinking guidance on alcohol consumption behaviours, knowledge of the label messages, and public support for the labels. A systematic review using a Cochrane and synthesis without metanalysis was included and $n = 40$ studies analyzing 31 labels were included. The systematic review found that 60% of studies had low or very low certainty. Alcohol warning labels were found to slow the rate of alcohol consumption, reduce alcoholic beverage selection, reduce consumption during pregnancy, and reduce consumption before driving. Interventions where alcohol warning labels were rotated found a decrease in alcohol use and reduction in alcohol sales. The authors note that limitations of the review included heterogeneity in label designs and outcome measurements. The findings suggest that warning labels can likely influence some alcohol consumption behaviour, particularly when rotating messages are being used. Alcohol container labels can be an effective component in policies designed to address population-level alcohol-related harms.

B. Level 2 Prevention

- 1. Beatty, J. R., Zelenak, L., Gillon, S., McGoron, L., Goyert, G., & Ondersma, S. J. (2024). Risk identification in perinatal health care settings via technology-based recruitment methods: Comparative study. *JMIR formative research*, 8, e48823. <https://doi.org/10.2196/48823>**

This US study analyzes how technology can be used to identify substance use risks during pregnancy. The study recruited $n = 121$ pregnant women at pregnancy intake. Women completed screening questions regarding their substance use, demographics, health, and technological access. Pregnant women recruited by the research team were provided a tablet to complete the study at the clinic following their appointment. Pregnant women enrolling in the study via a flyer used their own device to complete the screening questions at a time and place that was convenient for them. The findings suggested that more women recruited in person participated than those who were recruited through flyers (91% participation rate vs. 17%). However, the final number of participants per group was roughly equal. Participants recruited via flyers were more likely to screen positive for alcohol and substance use than those recruited at the clinic. The findings suggest that distribution of flyers with a QR code is an acceptable, efficient, and cost-effective recruitment method for screening.

- 2. Canaway, R., Dai, L., Hallinan, C., Caddy, C., Hegarty, K., & Boyle, D. (2024). The feasibility of integrating an alcohol screening clinical decision support tool into primary care clinical software: A review and Australian key stakeholder study. *BMC Family Practice*, 25(1), 408-19. <https://doi.org/10.1186/s12875-024-02662-4>**

This Australian study investigated the feasibility of integrating a clinical decision support tool into clinical management software in general practice to prompt screening for alcohol use among patients who are pregnant or planning a pregnancy. Data from a literature review and interviews with $n = 23$ stakeholders, including clinical software salespersons, clinicians, and relevant others, were analyzed and "sense-tested" by an $n = 22$ additional stakeholders. The authors found that integrating an alcohol screening tool for pregnancy into software is feasible in most general practices in Australia. The AUDIT-C screening tool was widely accepted. The greatest barriers to

screening reported by clinicians included lack of time during antenatal consultations and remuneration for longer consultations. Clinicians considered that a multifunctional tool for screening and clinical decision support for alcohol, tobacco, and other substance use, mental health, violence, and other areas important for healthy pregnancies that could be used during pregnancy and in the preconception period may be more useful than a single-purpose tool. The importance of training and education for end-users was discussed as an important enabler to use of a software tool.

3. **DiCarlo, K., & Whiffen, L. (2024). Implementation of a perinatal substance use screening protocol in the outpatient setting. *Nursing for Women's Health*, 28(2), 101-108. <https://doi.org/10.1016/j.nwh.2023.09.009>**

This quality improvement study conducted in the USA investigated the implementation of 5Ps Screen for Alcohol/Substance Use tool and the alcohol and substance use screening, brief intervention, and referral to treatment (SBIRT) process in clinical practice and training. The study was conducted in three community-based, outpatient obstetrics and gynecology clinics in southeastern Massachusetts, where it was identified that no validated screening tool was being used for universal substance use screening during pregnancy. Two phases of training were provided, which included guidance on the SBIRT process, the 5Ps screening tool, brief intervention conversations, and referral to treatment processes. Screening rates pre-implementation were 14%, which significantly increased to 45% one-month post-implementation. However, universal screening was not observed. The authors highlight that short-term improvement in screening was observed. Future investigation of its sustainability and exploration further barriers to uptake of universal screening is needed.

4. **Donaldson, T., Dang, E.P., Pierce-Bulger, M., Mitchell, K.T., Kachor, A.R. & Arvizu, R. (2024). Importance of Fetal Alcohol Spectrum Disorders prevention and intervention. *Substance Use & Addiction Journal*, 46(2):413-420. doi:[10.1177/29767342241300797](https://doi.org/10.1177/29767342241300797)**

This article described what the Centers for Disease Control and Prevention (CDC) are doing to promote screening and brief intervention by healthcare providers. The authors provide a historical perspective on alcohol use in pregnancy, including the stigma surrounding perinatal substance use and initial public health guidance and its reception. They outline how the CDC leads public health efforts to prevent perinatal alcohol use in the US and improve care for children living with FASD. CDC partners work within health systems, professional associations, universities, and community-based networks to promote alcohol screening and brief intervention as an effective preventive health service. Efforts from 11 CDC projects and their partners demonstrate the importance for FASD prevention and intervention and the ways to engage healthcare providers in expanding prevention messaging, education, and practical approaches in diverse settings.

5. **Ferraguti, G., Fanfarillo, F., Nicotera, S., Terracina, S., Moschella, C., Mattia, A., David, M. C.,... & Interdisciplinary Study Groups Sapienza, ISS, ISTAT, AIDEFAD, SITAC, SIFASD, FIMMG-LAZIO, SIPPS, SIMPESV, CIPE (2024). Italian Guidelines for the diagnosis and treatment of Fetal Alcohol Spectrum Disorders: Detecting alcohol drinking during pregnancy. *Rivista di Psichiatria*, 59(5), 241-249. <https://doi.org/10.1708/4360.43514>**

This review from Italy described the screening measures, including screening tools and biomarkers, that are available when screening for alcohol use in pregnancy. The review describes screening tools including the AUDIT-C, T-ACE, and TWEAK and a detailed food diary, and how they

can be used to identify alcohol use in pregnancy. Additionally, it describes a range of biomarkers found in the bloodstream (Phosphatidylethanol (PEth)), meconium (Fatty Acid Ethyl Esters (FAEEs) and Ethyl Glucuronide (EtG), hair, and urine. The authors comment on the opportunities and challenges of using the screening measures presented.

6. **Fetterhoff, K., Kuhns, K., & Minter, C. (2024). Integrating evidence-based screening, brief intervention, and referral to treatment into a family nurse practitioner program. *Journal of Addictions Nursing*, 35(3), 146-155. <https://doi.org/10.1097/JAN.0000000000000588>**

This study described the integration of screening, brief intervention, and referral to treatment (SBIRT) into the graduate-level Family Nurse Practitioner (FNP) curriculum in southeastern Pennsylvania to determine if educating students on SBIRT would increase their knowledge of substance use disorders and their treatment. Using a convenience sample, nurses from five courses were enrolled in an online, self-guided course on SBIRT and provided a 10-question quiz based on the education module. The results showed a statistically significant improvement in education, role adequacy (the sense that individuals have knowledge to provide accurate information), motivation to engage in SBIRT, and job satisfaction, indicating the effectiveness of SBIRT education in enhancing FNP's ability to identify and treat people with alcohol and substance use disorders.

7. **Godleski, S., Dermen, K., Feinberg, M. E., Colder, C. R., Verdaasdonk, E., & Eiden, R. D. (2024). Adaptation of a couples intervention to promote coparenting and reduce hazardous drinking during transition to parenthood. *Families Systems & Health*, <https://doi.org/10.1037/fsh0000936>**

This USA article described the integration and adaptation of two evidence-based interventions, an alcohol-use brief intervention and family-focused program on couples' heavy alcohol use during the transition to parenthood. The two evidence-based interventions beginning in pregnancy that were described included Family Foundations, a universal intervention for couples transitioning to parenthood to enhance coparenting and dyadic functioning, and a brief intervention for addressing alcohol use using a couples focused motivational interviewing technique. Lessons were learned in relation to how to talk about alcohol use given that the program was framed as a parenting program that included discussion of health behaviours, and participants were not specifically seeking treatment for alcohol use. Engagement was facilitated by supporting autonomy in decision making about alcohol use and encouraging discussion and communication within couples. The authors concluded that the pilot testing demonstrated acceptability and feasibility of adapting and integrating these intervention programs and discussed the potential to strengthen coparenting skills and promote lower risk alcohol use in the transition to parenthood.

8. **Green, C. R., Harding, K. D., Unsworth, K., Kaminsky, K., Roberts, N., Nagpal, T. S., & Cook, J. L. (2024). Reporting on health care and social service provider approaches to promoting alcohol abstinence during pregnancy. *Social Work in Public Health*, 39(5), 422-433. <https://doi.org/10.1080/19371918.2024.2323136>**

This Canadian study explored the practices of health care (HCP) and social service providers (SSP) in discussing alcohol use during pregnancy. An online survey that explored HCP and SSPs' approach to discussing alcohol and pregnancy was completed by $n = 1,123$ HCPs ($n = 588$) and SSPs ($n = 535$). Most respondents (83.9% of HCPs and 78.4% of SSPs) recommended complete abstinence from alcohol during pregnancy. However, a small number of HCPs (9.8%) and SSPs (2.2%) suggested that

low alcohol consumption might be acceptable based on international guidelines, limited evidence on harm, or as a harm reduction strategy. SSPs generally referred clients to HCPs for specific alcohol-related advice and prefer to base their guidance on public health guidelines. The findings can be used to inform future resources to support HCPs and SSPs in further recommending abstinence during pregnancy.

- 9. Green, F. O., Harlowe, A. K., Edwards, A., Alford, D. P., Choxi, H., German, J. S., ... & Velasquez, M. M. (2024). Multi-level approaches to fetal alcohol spectrum disorders prevention education and training for health professionals. *Substance Use and Addiction Journal*, 46(2), 430-438. <https://doi.org/10.1177/29767342241273397>**

This USA study described education and training approaches used by six Centers for Disease Control (CDC)-funded FASD prevention programs and how they have been adapted to the specific needs of healthcare professionals, the clinical setting, and the challenges posed by COVID-19 pandemic. Based on the organizational structure and program purpose, various methods, including staff training, alcohol screening, and broad professional education were used. For example, some programs more heavily focused on staff training and alcohol screening and brief intervention, whereas others focused on broadscale professional education and awareness. Modifications to programs were made on an ongoing basis as issues like staff shortages, COVID-19, patient and clinician discomfort arose. Adaptations to delivery modality, e.g., the use of online forums and social media, were used in response. FASD prevention education continues to face challenges such as stigma and discomfort but can be improved through tailored education and ongoing adaptation.

- 10. Häkkinen, M., Arponen, A., Jylhä, A., Sulin, K., & Gunnar, T. (2024). Phosphatidylethanol is a promising tool for screening alcohol consumption during pregnancy. *Alcohol: Clinical and Experimental Research*, 48(10), 1892-1897. <https://doi.org/10.1111/acer.15418>**

This Finnish study explored the use of phosphatidylethanol (PEth), a specific biomarker for alcohol consumption, as a tool for identifying prenatal alcohol exposure (PAE) during routine prenatal screening. The study used $n = 3000$ anonymous blood samples originally collected for blood group typing and antibody screening as part of the prenatal blood screening program. From there, the authors developed a PEth analysis method. PEth was founded in 8.4% of the sample, but the prevalence of alcohol consumption is dependent on the PEth cut off. The study demonstrated that with a sensitive PEth analysis method, it is possible to detect even minor alcohol consumption during pregnancy, which is often missed due to the lack of objective screening methods. The researchers suggest using a cut-off value of 2ng/mL for Peth in prenatal blood screening, with follow-up testing in 2-4 weeks for positive cases. By adding PEth testing to routine prenatal screenings, healthcare providers can better detect alcohol consumption during pregnancy and identify at-risk pregnancies early, leading to better monitoring, care, and interventions.

- 11. Hanson, J., Noonan, C., Oziel, K., Wounded, K. L., Darnell, S., Rosenman, R., ... & Buchwald, D. (2024). A randomized controlled trial of Native CHOICES: Impact on alcohol-exposed pregnancy risk reduction among American Indian and Alaska Native women. *Alcohol: Clinical and Experimental Research*, 49(2), 488-498. <https://doi.org/10.1111/acer.15521>**

This study evaluated the effectiveness of Native CHOICES, a culturally tailored intervention aimed at preventing alcohol-exposed pregnancies (AEP) among American Indian/Alaska Native. American Indian and Alaska Native women ages 18 – 44 who were at risk of AEP were randomly assigned to Native CHOICES ($n = 205$) or a waitlist control group ($n = 199$). Native CHOICES included two

motivational interviewing sessions with an elective contraception counselling session. Two thirds of women participated in the intervention in-person and the remainder participated through telephone or video call. At the six-month follow-up, the results found that the intervention did not significantly reduce AEP risk compared to the control group. However, an exploratory analysis revealed that women who completed the intervention in person before the COVID-19 pandemic showed some reduction in AEP risk, while this effect was not observed during or after the pandemic, when remote delivery was used. While the intervention showed limited overall success, the positive results observed pre-pandemic suggest that in-person delivery of the program may be more effective.

- 12. Hesselman, S., Asp, J., Pellas, U., Lager, S., & Wikman, A. (2024). Validity of prenatal AUDIT screening for alcohol disorders: A nationwide Swedish register study. *Uppsala Journal of Medical Sciences*, 129, 10–48101. <https://doi.org/10.48101/ujms.v129.10770>**

This Swedish study assessed the validity of the Alcohol Use Disorders Identification Test (AUDIT) as an indicator in prenatal care for alcohol use disorders and examined the identifying factors that contribute to misclassification. The study linked AUDIT screening data from the Swedish Pregnancy Register with national health databases to assess the test's diagnostic properties for detecting alcohol-related disorders. The AUDIT score was dichotomized into <6 points (low-risk use) and ≥6 points (hazardous use). Results showed that AUDIT demonstrated high diagnostic accuracy (95.7%) in detecting alcohol related disorders during the year prior to pregnancy. The sensitivity for detecting a pre-pregnancy alcohol related disorder was 33%. Women who were young, nulliparous, had low education, or had prior psychiatric care were more likely to be misclassified. This study highlights the high diagnostic accuracy of the AUDIT in detecting alcohol addiction during prenatal care but also reveals the limitations of low sensitivity. Service providers should be aware of these limitations and consider additional or complimentary methods for screening and identifying alcohol-use during pregnancy.

- 13. King, C., Laynor, G., McNeely, J., Fawole, A., Lee, M., Terplan, M., & Choi, S. (2024). Strategies to improve delivery of equitable and evidence-informed care for pregnant and birthing people with a substance use disorder in acute care settings: A scoping review protocol. *PLoS One*, 19(3), e0300183. <https://doi.org/10.1371/journal.pone.0300183>**

This USA study protocol proposes a scoping review designed to examine the current evidence on implementation and quality improvement (QI) strategies aimed at enhancing equitable, evidence-informed care for pregnant and birthing people with substance use disorder (SUD), including alcohol use disorders, in acute care settings. Although clinical guidelines for treating SUD in pregnancy exist, implementation gaps remain. The review will focus on studies (2016–2023) with various study designs (experimental, observational, descriptive). It will include both published research and grey literature. The scoping review will follow the JBI methodology will identify strengths and gaps in existing research to inform substance use treatments and care delivery for pregnant and birthing people with SUD.

- 14. King, D. K., Ondersma, S. J., McRee, B. G., German, J. S., Loree, A. M., Harlowe, A., Alford, D. P., Sedotto, R. N. M., & Weber, M. K. (2024). Using planned and unplanned adaptation to implement universal alcohol screening and brief intervention to prevent alcohol-exposed pregnancies in four primary care health systems. *Substance Use and Addiction Journal*, 46(2), 439–451. <https://doi.org/10.1177/29767342241271404>**

This case series from the USA cases from academic health systems that implemented alcohol screening and brief intervention (SBI) in primary care settings. The study used two frameworks: the Framework for Reporting Adaptations and Modifications-Expanded (FRAME) and the SBIRT Program Matrix to document both planned and unplanned adaptations made during implementation. Planned adaptations included expanded target populations, adjusted workflows, and tailored training programs. Unplanned adaptations included adjustments in recruitment strategies, transitioning to virtual training during COVID-19, and efforts to build buy-in in decentralized systems. Health systems with centralized structures and fully engaged teams experienced fewer unplanned adaptations. Despite national recommendations for annual alcohol SBI, implementation remains challenging due to system-level barriers. The results highlight the need for flexibility and adaptability in real-world implementation of evidence-based practices, including alcohol SBI.

- 15. Leruste, S., Baelen, F., Doray, B., Maillard, T., Marimoutou, C., & Spodenkiewicz, M. (2024). Obstacles and facilitators to preventing fetal alcohol spectrum disorder: A qualitative study with general practitioners. *Frontiers in Medicine*, 11, 1280349. <https://doi.org/10.3389/fmed.2024.1280349>**

This qualitative study explored the barriers and motivations of general practitioners (GPs) on Reunion Island when supporting FASD prevention. Semi-structured interviews with $n = 20$ GPs were conducted and a grounded theory analysis was completed. The findings suggested that GPs felt uncomfortable discussing alcohol use with pregnant women and reported limited knowledge and practical experience with FASD. Many were unfamiliar with local care pathways for FASD and lacked access to or awareness of resources. Government alcohol promotion campaigns were seen as conflicting with FASD prevention messaging, creating a mixed policy environment. Both patients and GPs shared a sense of discomfort and stigma around discussing alcohol use during pregnancy. Researchers suggest that GPs need to adopt a non-judgmental, proactive approach to alcohol screening and brief intervention with women of childbearing age. Increased education and awareness about FASD and clarity around referral pathways are essential for effective prevention.

- 16. Leruste, S., Doray, B., Maillard, T., Lebon, C., Marimoutou, C., & Spodenkiewicz, M. (2024). Scoping review on the role of the family doctor in the prevention and care of patients with foetal alcohol spectrum disorder. *BMC primary care*, 25(1), 66. <https://doi.org/10.1186/s12875-024-02291-x>**

This scoping review examined the role of general practitioners (GPs) in the prevention, identification, and management of FASD. Using PRISMA guidelines, researchers reviewed $n = 23$ peer-reviewed articles from multiple databases in English and French. The focus was on the range of interventions GPs can implement with women of childbearing age, their partners, and patients with FASD. Search results showed that GPs are central to the care pathway for FASD and play key roles in prevention, identification, diagnosis, follow-up, education, and the role of coordinator for patients, their families, and pregnant women and their partners. Despite their important role, FASD remains underdiagnosed, and GPs may not always have the tools or training needed for effective intervention. GPs are in a strategic position to reduce the incidence and impact of FASD through proactive, informed care. The review calls for further research, including a cluster randomized trial to evaluate whether training GPs in alcohol use screening during pregnancy can positively affect maternal alcohol use and child health outcomes.

17. London, S. M., Hanson, J. D., Sarche, M., Oziel, K., & Buchwald, D. (2024). Reach, acceptability, and sustainability of the Native Changing High-Risk Alcohol Use and Increasing Contraception Effectiveness Study (CHOICES) Intervention: A qualitative evaluation of an alcohol-exposed pregnancy prevention program. *International Journal of Environmental Research and Public Health*, 21(3), 266.
<https://doi.org/10.3390/ijerph21030266>

This study evaluated the Native CHOICES intervention—a brief, motivational interviewing-based program designed to reduce the risk of alcohol-exposed pregnancy (AEP) among American Indian women. Implemented in collaboration with a Northern Plains Tribal community, the program targeted adult American Indian women at risk of AEP. Following the intervention, a subgroup of participants ($n = 40$) participated in qualitative interviews to share their experiences and views on satisfaction with the program, acceptability and reach in their community and sustainability and impact on their behavior. Participants expressed high satisfaction with the program, citing that it increased their knowledge of AEP prevention and goal setting, provided valuable tools for making informed decisions about drinking and contraception and would be beneficial to other women in their community. Additionally, participants shared how the COVID-19 pandemic influenced their decisions regarding alcohol and birth control. Overall, the intervention was well-received and appeared to promote positive behavioral change.

18. McRee, B. G., Hanson, B. L., Vendetti, J., King, D. K., Pawlukiewicz, I., Berry, E., Johnson, J., Marshall, D., Rosato, L., Steinberg Gallucci, K., & Whitmore, C. (2024). Identifying patients at risk for alcohol-exposed pregnancies: The importance of addressing multiple risk factors. *Substance Use and Addiction Journal*, 46(2), 452–460.
<https://doi.org/10.1177/29767342241267086>

This study from the USA examined gaps in alcohol screening and brief intervention (SBI) in two reproductive healthcare systems. Electronic healthcare records for individuals age 18 to 49 were analyzed. Of $n = 11,567$ patients screened, 1,595 (13.8%) were at risk for AEPs due to the combination of alcohol use and less effective contraception but did not receive an alcohol-related intervention. The findings suggest the need for system improvements to evaluate both alcohol use and contraceptive effectiveness. This would allow healthcare providers to better identify and intervene with individuals at risk for AEPs, enhancing the effectiveness of alcohol SBI.

19. Minozzi, S., Ambrosi, L., Saulle, R., Uhm, S.S., Terplan, M., Sinclair, J.M.A., & Agabio, R. (2024). Psychosocial and medication interventions to stop or reduce alcohol consumption during pregnancy. *Cochrane Database of Systematic Reviews*, 4: CD015042.
<https://doi.org/10.1002/14651858.CD015042.pub2>

This systematic review conducted by researchers based in Italy, the USA and UK aimed to assess the efficacy of psychosocial interventions and medications to reduce or stop alcohol use during pregnancy. The authors found that psychosocial interventions reported on were primarily brief interventions, ranging from a single session of 10 to 60 minutes to five sessions of 10 minutes each. No studies evaluated the efficacy of medications for treating alcohol use disorder (AUD) during pregnancy. Compared to treatment as usual, psychosocial interventions appeared to increase the rate of continuous abstinence among pregnant women who report alcohol use during pregnancy ($RR = 1.34$, 95% CI: 1.14, 1.57). However, psychosocial interventions also appeared to have little to no effect on the number of drinks per day, although the evidence was very uncertain (mean difference -0.42 , 95% CI: -1.13 , 0.28). The authors suggest that psychosocial interventions may have had little

to no effect on the number of women who completed treatment (RR 0.98, 95% CI: 0.94, 1.02). The authors concluded that, while brief psychosocial interventions may increase the rate of continuous abstinence among pregnant women who report alcohol use during pregnancy, further studies should be conducted to investigate the efficacy and safety of psychosocial interventions and other treatments for women with AUD.

- 20. Soos, A., Plegue, M., Darwiche, A., Oshman, L., & Frank, C.J. (2024). Racial disparities in newborn drug testing after implementation of question-based screening for prenatal substance use. *Obstetrics & Gynecology*, 144(2), 233-240.**
<https://doi.org/10.1097/AOG.0000000000005631>

This USA study examined the associations between universal question-based screening for prenatal substance use and racial inequities in prenatal and newborn drug testing. A retrospective cohort study was conducted from 2014 to 2022, before and after the implementation of question-based screening in 2018. A total of $n = 12,735$ pregnant people received question-based screening. Implementation of question-based screening was associated with a decrease in prenatal urine test orders (5.0% before implementation vs. 3.1% after implementation; $p < .001$), with Black birthing parents having the largest reduction in prenatal urine drug testing (10.3% before implementation vs. 4.9% after implementation). However, rates of newborn drug testing did not change (4.7% before implementation vs. 4.5% after implementation; $p = .46$). After implementation, clinicians continued to order significantly more newborn drug tests for newborns of Black birthing parents compared with other race and ethnicity groups. The findings emphasize that the implementation of question-based screening was associated with decreased prenatal urine drug testing but no change in overall newborn drug testing or racial inequities in newborn drug testing for Black birthing people. However, further policy efforts are needed to improve substance use treatment and eliminate racial inequities in punitive policies and practices.

- 21. Stevens, M.W.R., Cooper, M., Cusack, L., Ali, R.L., & Briley, A.L. (2024). Improving the quality of antenatal screening and early intervention for alcohol and other drug use: Protocol for a multi-stage approach to systems reform. *Addiction Science & Clinical Practice*, vol. 19, no. 1. <http://doi.org/10.1186/s13722-023-00434-6>**

This Australian study protocol described a multi-stage implementation study which aims to improve the rates of screening and intervention for substance use among pregnant women, including appropriate referral for those who may be substance dependent. The study will occur in four phases: Phase 1 will identify a baseline rate of screening and subsequent care at two antenatal clinics through a retrospective case note audit. Rates of self-reported substance use identified will also be compared against representative data from Adelaide Primary Health Network to establish rates of over or underreporting. Phase 2 will involve an online Training Needs Analysis of midwifery staff working at those services, to assess their knowledge, attitudes, beliefs, and commitment to the care of women who use substances during pregnancy. Phase 3 will involve a training package for all midwifery staff at those services, focused on routine screening for substance use, and how to provide appropriate care. Outcome measures from phase 2 will be reassessed during phase 3 and any changes since training will be evaluated. Phase 4 will then repeat phase 1 to compare the changes in rates of both screening and any associated intervention before and after training. This study has the potential to make important contributions by implementing system-wide best practices in screening and early intervention in antenatal settings and evaluating the impact of these practices on rates of screening and detection.

- 22. Stevens M.W.R., Cooper M., Cusack L., Ali R.L., Holmwood C., & Briley A.L. (2024). Screening and early intervention for substance use during pregnancy: A retrospective case note review of antenatal care records. *Drug and Alcohol Review*, 43(7): 1817–1828. <https://doi.org/10.1111/dar.13927>**

This Australian study explored contemporaneous screening practices and interventions for substance use among pregnant women during routine antenatal care. A random sample of $n = 100$ pregnancy screening records from two hospitals were reviewed and compared with a subset of a nationally representative survey. The final sample of eligible cases ($n = 93$) demonstrated prioritization of screening for current use, over past use, across all substances ($p < 0.001$). Significant underreporting of past substance use was identified, with the exception of tobacco ($p = 0.224$). Tobacco was also the substance for which screening was the most likely. For all substances, interventions typically involved written resources, which were usually declined by clients. The study found inconsistent, rather than universal use of screening. As such, future efforts should be made in antenatal clinics to adopt motivational interviewing approaches and co-development of materials with stakeholder groups, such as FASD support groups and consumers, to ensure the language and information are clear and relevant to pregnant populations with substance use concerns.

- 23. Thomson, M.J., Jones, C., & Lim, N. (2024) Obstetrics and gynecology provider experience screening for harmful alcohol use: An unmet need for standardized screening and intervention. *Cureus*. 16(10):e72795. <https://doi.org/10.7759/cureus.72795>**

This USA study surveyed OB/GYN providers in a single health care system on how they screen for and manage alcohol use. The results were reported using descriptive statistics and chi-square testing for bivariate analysis. The findings suggested that 64.7% and 60.6% of OB/GYN providers screen for alcohol use most or all of the time during obstetrics and gynecologic visits, respectively. Less than half of providers referred patients with at-risk use for further interventions or treatment (41.0% referred to an addiction specialist, 41.0% recommended discussing their behaviour with their primary care provider, 35.9% referred to social work, 10.4% referred to gastroenterology or hepatology). Providers who screened did so most commonly by directly asking patients about their alcohol use (70.6% during obstetrics and 60.1% during gynecologic visits). Only 11.8% and 15.2% of providers who screened did so using standardized screening methods (e.g. CAGE or AUDIT-C) during obstetrics and gynecologic visits, respectively. Only 30.8% of the providers felt they received adequate training on AUD. Providers who had experience taking care of a patient with severe alcohol-related liver disease were more likely to refer to gastroenterology. The findings indicate that further work is needed to improve screening for and management of alcohol use in OB/GYN clinics.

- 24. Townsel, C., Smith, V.C., Senthilkumar, H., Bastian, L.R., Sanks, M., Ling, D., Benke, J., Edwards, A., Roget, N., Prokosch, K., Velasquez, M.M., Yonamine, K., Von Sternberg, K., McFadden, T., Haidar, A.A., & Harris, K.E. (2024). Answering a call to action: Reducing Fetal Alcohol Spectrum Disorders using a healthcare champion model. *Substance Use & Addiction Journal*. 46(2):421–429. <http://doi.org/10.1177/29767342241271361>**

This USA paper presented narratives from the six health sectors that created FASD Champion programs through the CDC-sponsored *Collaborative for Alcohol-Free Pregnancy*. Based on evidence that alcohol screening and brief intervention (SBI) can be effective at reducing excessive alcohol use, and that this clinical preventive service remained critically underutilized in primary care, six

professional health organizations and groups developed FASDs Champion Programs with specific focus areas: 1) the American College of Obstetricians and Gynecologists focused on reducing alcohol-exposed pregnancies; 2) the American Academy of Pediatrics focused on improving health outcomes for children with FASDs by improving pediatricians' diagnostic capacity; 3) the American Academy of Family Physicians prioritized training family physician champions to improve the delivery of alcohol SBI among adult patients; 4) the University of Alaska Anchorage in partnership with the National Association of Nurse Practitioners in Women's Health, the American College of Nurse-Midwives, and the Association of Women's Health, Obstetric, and Neonatal Nurses focused on equipping registered nurses and midwives with the knowledge and skills to prevent alcohol-exposed pregnancies and FASDs; 5) the American Association of Medical Assistants prioritized expanding the knowledge and skills of medical assistants; 6) the University of Texas at Austin established a Champions Program to train health social workers in the use of alcohol SBI. Collectively, these case examples demonstrated how the healthcare champion model is being used to reduce FASDs and how the evidence-based approach of alcohol SBI is being disseminated across the USA. Best practices for implementing alcohol SBI during the prenatal period identified across the six disciplines included: aligning and collaborating with national organizations to leverage their broad networks, infrastructure, and communication mechanisms; partnering with patient groups from the outset and throughout implementation; elevating patient experiences and incorporating patient stories into SBI education; and addressing stigma, bias, and trauma alongside FASD education.

25. Washio, Y., Erasmus-Claassen, L.A., Taylor, S.N., Zhang, Z., Browne, F.A., Myers, B., Wechsberg, W.M., Parry, C.D.H., & Petersen Williams, P. (2024) An incentive-based text-messaging intervention to reduce maternal alcohol use during pregnancy and lactation in South Africa (MaRISA study): Findings from a single-arm pilot study. *Alcohol Clinical and Experimental Research (Hoboken)*. 48(8):1600-1609. <https://doi.org/10.1111/acer.15392>

This South-African study pilot tested an incentive-based text-messaging intervention to reduce alcohol use during pregnancy and lactation through a single-arm trial. The three-month intervention, conducted in healthcare facilities in Cape Town, had two components: contingency management of alcohol abstinence confirmed by urinalysis twice weekly, and weekly health-related text messaging from an evidence-based brief intervention. Sixty participants ($n = 60$) were enrolled, of whom 31 were pregnant and 29 lactating. The number of days with four or more drinks in the past month decreased from 9 days at baseline, on average, to 1–3 days (p -value range: 0.144–0.010) at follow-up timepoints. There was a statistically significant increase in the proportion of participants with alcohol-negative urine tests ($p < 0.001$). The percentage of participants breastfeeding while using alcohol decreased from baseline to the end of 3 months in the overall sample and among those enrolled postpartum, though these were not significant (p -value range: 0.255–0.147). Maternal depression scores also decreased among participants enrolled postpartum ($p = 0.054$). Emotional abuse, but not physical nor sexual abuse, from a primary partner significantly decreased at both follow-ups in the overall sample ($p = 0.032$) and among participants enrolled while pregnant ($p = 0.015$). While reporting several positive effects in reducing maternal alcohol use and other outcomes such as depression and emotional violence exposure, further testing is warranted in a well-powered, randomized controlled trial.

26. Wisner, K. (2024). Fetal Alcohol Spectrum Disorders. *The American Journal of Maternal/Child Nursing*, 49 (3), 172–172. <https://doi.org/10.1097/NMC.0000000000000997>

This editorial described FASD and aimed to build awareness of FASD and alcohol use in pregnancy among nursing audiences by focusing on causes and definitions, best-practice screening tools, referral and response systems and processes, and advocacy opportunities. The column highlights how the use of motivational interviewing during screening may help nurses interact in a nonpunitive way and develop connection and rapport with the patient. The author also highlights that having a systematic process for referral and response to pregnant persons who report consuming alcohol is even more important and often missing. The editorial emphasized that perinatal nurses can advocate for maternal and neonatal health by learning about screening tools and educational resources and ensuring that there are structured screening and intervention processes in place in their work setting.

C. Level 3 Prevention

1. **Bosak, J., Drainoni, M., Bryer, C., Goodman, D., Messersmith, L., & Declercq, E. (2024). 'It opened my eyes, my ears, and my heart': Codesigning a substance use disorder treatment programme. *Health Expectations: An International Journal of Public Participation in Health Care and Health Policy*, 27(1), e13908-n/a. <https://doi.org/10.1111/hex.13908>**

This USA study evaluated the implementation of an adapted experience-based codesign (EBCD) process to develop a live-in treatment for pregnant and parenting women. The program would allow women to co-reside with their children and receive long term comprehensive treatment for substance use disorder (SUD) and mental illness. Data came from five sources, including interviews with pregnant or parenting women with lived experience (WWLE, $n = 13$) and SUD treatment staff ($n = 21$), observation and transcripts from group events, and meeting minutes. The EBCD process was evaluated according to the Integrated Promoting Action on Research in Health Services framework constructs: context, recipients, facilitation, and innovation. The evaluation found that both WWLE and treatment staff were engaged and the process facilitated group cohesion and collaboration. WWLE reported feeling respected, emotionally safe, and empowered. A more equitable approach was supported by including a multi-disciplinary planning group that included WWLE. Challenges to implementation included disruptions from the COVID-19 pandemic, including challenges to relationship building posed by virtual platforms, and the complexity of regulations for live-in treatment and starting a new organization. The authors purport that the EBCD process enhances participation and suggest that the codesign may increase engagement and retention among parenting women in SUD treatment.

2. **Bosak, J., Messersmith, L., Bryer, C., Drainoni, M., Goodman, D., Adams, M., Barry, T., Flanagan, C., Flanagan, V., Wolff, K., & Declercq, E. (2024). "They just looked at me like I was human": The experiences of parenting women and providers with substance use disorder treatment. *Journal of Substance use and Addiction Treatment*, 157, 209240-209240. <https://doi.org/10.1016/j.josat.2023.209240>**

This USA study investigated the barriers and facilitators to engagement and retention in a substance use disorder (SUD) live-in treatment for pregnant and parenting women. Parenting women with lived experience (WWLE, $n = 13$) in live-in SUD treatment and SUD treatment providers ($n = 19$) were interviewed and data was analyzed based on the six principles of trauma informed care (TIC). Structural/workflow process and relational/interpersonal barriers and facilitators were found. Four themes were found for operationalizing TIC and improving engagement and retention in treatment along the continuum of care: 1) peer relationships provide inspiration and reduce shame;

2) when individuals feel safe to stumble in recovery, opportunities for growth and self-efficacy improvements are provided; 3) in early recovery, reasonable, clear boundaries create a structured and protective environment; 4) engagement and trust are facilitated by non-judgemental approaches. The authors highlight the importance of integrating WWLE in research and co-design processes to develop equitable, patient-centred treatment services with improved engagement and retention.

3. **Coe, J. L., Morgan, M. H., Rehberg, K., Kranzler, E. C., Ingersoll, R., Namrow, N., & Huber-Krum, S. (2024). Evaluating the implementation of family-centered substance use treatment for pregnant and postpartum people: A mixed-methods study. *Journal of Substance use and Addiction Treatment*, 164, 209409-209409. <https://doi.org/10.1016/j.josat.2024.209409>**

This USA study explored how and the extent to which family-centred substance use treatment (FCSUT) approaches are available for pregnant and postpartum people seeking substance use disorder (SUD) treatment. Surveys were conducted with facilities that provided FCSUT during pregnancy or the postpartum period ($n = 118$). Interviews were conducted with administrators and providers ($n = 26$) and pregnant and postpartum people with lived/living experience who accessed FCSUT ($n = 27$). The survey findings revealed that most facilities offered substance use treatment, behavioural health, and parenting skills development, while a smaller proportion of facilities offered prenatal and postpartum health, sexual and reproductive health, and family services. In the interviews, participants discussed the importance of maintaining participants' familial connections while in treatment, resources for implementation and sustainability of FCSUT, the importance of program adaptation, and gaps in service delivery. The authors discuss the potential of FCSUT approaches to prevent the intergenerational transmission of adverse childhood experiences.

4. **Davis, D. W., Feygin, Y., Shipley, M., Hall, T. C., Downs, C., Hoskins, S., Pasquenza, N., Duncan, S. D., & Creel, L. M. (2024). A case report on a women's residential substance use program in a rural and urban setting. *Maternal and Child Health Journal*, 28(11), 1870-1875. <https://doi.org/10.1007/s10995-024-03993-5>**

This study described the demographic characteristics and outcomes from a live-in substance use recovery program for pregnant and parenting women in the USA. Administrative records of $n = 140$ women living in a rural county and $n = 321$ living in an urban location in Kentucky were assessed. Most women were non-Hispanic (NH) white (83.1%), 13% were Black, 3.7% were another race or biracial, and 1.3% were Hispanic. The mean age of women was about 31 years old. The mean treatment duration was 90.11 days, with no differences in goal achievement or treatment duration by race, ethnicity, age, or location. Increased treatment duration was associated with increased program success in rural and urban communities and was the best predictor of successful completion. Most women achieved program goals (67.7%), with no differences in rates of achievement by race, ethnicity, age, or location. In the urban community, Black women were 8% more likely to successfully complete the program compared to non-Hispanic white women. In the rural community, the sample of non-white women was too small to evaluate comparisons by race. Of the $n = 461$ women, 64 delivered a baby while in treatment, 62 of which were considered healthy. The authors discuss policy implications for these findings, including the need for integrated programs that address the multi-factorial needs of pregnant and parenting women in substance use recovery through co-location or partnerships.

5. **Godleski, S., Dermen, K., Feinberg, M. E., Colder, C. R., Verdaasdonk, E., & Eiden, R. D. (2024). Adaptation of a couple's intervention to promote coparenting and reduce hazardous drinking during transition to parenthood. *Families Systems & Health*, <https://doi.org/10.1037/fsh0000936>**

See above (Level 2 prevention).

6. **Gulbransen, K., Thiessen, K., Ford, N., Beck, W. P., Watson, H., & Gregory, P. (2024). Interprofessional care models for pregnant and early-parenting persons who use substances: A scoping review. *International Journal of Integrated Care*, 24(2), 24. <https://doi.org/10.5334/ijic.7589>**

This scoping review from Canadian authors examined literature published on interprofessional care models for individuals who use substances during pregnancy. Health-related databases were searched, and $n = 645$ studies were screened for full text eligibility. The review synthesized data from 11 studies, reflecting programs including co-location, partnerships with other agencies, group and peer support, and programs with a focus on cultural care, trauma-informed care, and harm reduction principles. The review highlighted that integrated care models, which involve professionals from multiple healthcare disciplines, are beneficial in providing comprehensive support. However, the success and sustainability of these programs vary, and more research is needed to evaluate their long-term effectiveness and outcomes.

7. **Hammond, A., Antoine, D., Sklar, M. & Kidorf, M. (2025). Perinatal women in substance use disorder treatment: Interest in partnering with family and friends to support recovery needs. *Journal of Addictive Diseases*, 43(2), 146-152, DOI: 10.1080/10550887.2024.2344837**

This USA study investigated the impact of having substance-free social networks (family and friends) for perinatal women in treatment for substance use disorder (SUD). Interviews were conducted with $n = 40$ pre- and postpartum women. Participants reported an average of 4.4 drug-free adults in their personal social networks. The majority of women (80%) were willing to invite at least one person to the substance use program that they were being treated at. Women endorsed various ideas for collaboration between the program and their community supports, including those related to child care, housing, attending substance use or self-help groups, and speaking with treatment providers. Almost all (95%) of participants thought it would be helpful to work with a peer recovery specialist. The authors describe that program guided activation of network supports is a testable strategy and may be supportive of recovery for perinatal women who use substances.

8. **Jones, H. E., Andringa, K., Carroll, S., Johnson, E., Horton, E., O'Grady, K., Stanford, D., Renz, C. & Thorp, J. (2024). Comprehensive treatment for pregnant and parenting women with substance use disorders and their children: The UNC Horizons Story. *Maternal and Child Health Journal*, 28:409-425. <https://doi.org/10.1007/s10995-023-03870-7>**

See above (Prevalence of, and influences and factors associated with, drinking in pregnancy).

9. **Maher, E. J., Stoner, S. A., Gerlinger, J., Ferraro, A. C., Lepper-Pappan, H. (2024). Study protocol for a randomized controlled trial of the Parent-Child Assistance Program: A**

case management and home visiting program for people using substances during pregnancy. *Trials*, 25:264. <https://doi.org/10.1186/s13063-024-08098-6>

This study protocol described a randomized controlled trial (RCT) that will be conducted in Oklahoma, USA, to examine the effectiveness of the Parent-Child Assistance Program (PCAP) compared to services as usual. PCAP is a 3-year case management and home-visiting intervention that supports substance use disorder recovery during pregnancy and aims to reduce or avoid prenatal substance exposure. The primary outcomes are related to substance use and family planning while secondary outcomes will examine connection to recovery support services and family preservation. The RCT will use an intent-to-treat design and enroll $n = 200$ individuals who are pregnant or up to 24 months postpartum who will receive PCAP or services as usual over a 3-year period. Those randomly assigned to PCAP will meet with their case manager approximately biweekly to work on goal setting and support for meeting goals. The Addiction Severity Index interview and self-administered survey will examine outcomes at baseline and at 12, 24, and 36 months. The results from this RCT will be used to inform federal financing of the PCAP program model at the state level and will contribute to the evidence on the effectiveness of the program.

- 10. McCreary, S. L., & Rodríguez, M. N. (2024). Counseling perinatal clients with substance use disorder: A relational approach. *Journal of Creativity in Mental Health*, 19(3), 474–493. <https://doi.org/10.1080/15401383.2023.2252328>**

This study from the USA explored the clinical needs of perinatal clients with substance use disorder (SUD). It highlighted the lack of specialized support for perinatal clients who face unique challenges related to their trauma history, gender, and perinatal status. The paper proposed the use of Relational Cultural Theory (RCT), which focuses on fostering growth-fostering relationships and relational resilience to enhance support networks for perinatal clients with dual diagnoses. Using a case study example, the authors offer a clinical overview of the clinical needs of clients and the ways in which relational and creative approaches can be used to support them.

- 11. Milligan, K., Tarasoff, L. A., Rodrigues, E. R., Iwajomo, T., Gomes, T., de Oliveira, C., Brown, H. K. & Urbanoski, K. A. (2024). Neonatal outcomes of pregnant women attending integrated and standard substance use treatment programs in Ontario, Canada. *Birth Issues in Perinatal Care*, 51:284–294. DOI: 10.1111/birt.12784**

This study explored the influence of treatment model on neonatal outcomes in Ontario, Canada. Administrative data was used to compare outcomes associated with integrated ($n = 564$ pregnant women) and standard ($n = 320$ pregnant women) treatment programs. Integrated treatment was described as substance use treatment programs that aim to decrease barriers to care and address the unique needs of pregnant and parenting women, including mental and physical health care and services that address the social determinants of health. Rates of adverse neonatal outcomes were higher than published rates for the general population, with no significant difference by treatment type (integrated or standard). Clients engaged in integrated treatment exhibited increased risk factors for adverse neonatal outcomes than those in standard treatment, which the authors note may have influenced findings despite being controlled for analyses. There is a need for more nuanced research on the interaction of client factors with treatment type and increased investment in services aimed at improving women's health in the preconception period and maternal and neonatal health during pregnancy, as well as long-term support for women and their children.

12. **Morgan, M. H., Coe, J. L., Kranzler, E. C., Rehberg, K., Ingersoll, R., Namrow, N. & Huber-Krum, S. (2024). Implementation of family centered substance use treatment for pregnant and postpartum people to prevent the intergenerational transmission of adverse childhood experiences. *Child Abuse & Neglect*, 157: 107066. <https://doi.org/10.1016/j.chiabu.2024.107066>**

This USA based study aimed to understand how families are integrated into Family-Centered Substance Use Treatment (FCSUT) services, the perceived benefits of FCSUT programs for families and parents, and challenges to implementation. Interviews were conducted with $n = 26$ administrators and providers working at FCSUT facilities and $n = 27$ pregnant and postpartum people who were currently receiving FCSUT services or had in the past two years. Four themes were found: 1) the importance of including families in treatment and recovery; 2) the benefits of FCSUT for parents; 3) benefit of FCSUT for families; and 4) areas for FCSUT program growth. Reported benefits included: improving parenting and communication skills; promoting healthy relationships with children, partners, and other family members; and facilitating a support system for long-term recovery. Challenges included receiving treatment while caring for children and external factors. Integrating the needs of all family members during treatment can support safe, stable, and nurturing relationships and environments for children, decreasing their exposure to adverse childhood experiences.

13. **Piske, M., Joyce, S., Yan, Y., Katsuno, N., Homyra, F., Zanette, M., Barker, B., Meilleur, L., McBride, B., Joshi, P., Sullivan, E., & Nosyk, B. (2024). Population perinatal substance use and an environmental scan of health services in British Columbia, Canada. *Drug and Alcohol Dependence*, 264, 112457. <https://doi.org/10.1016/j.drugalcdep.2024.112457>**

See above (Prevalence of, and influences and factors associated with, drinking in pregnancy).

14. **Quintrell, E., Russell, D. J., Rahmannia, S., Wyrwoll, C. S., Larcombe, A., & Kelty, E. (2024). The safety of alcohol pharmacotherapies in pregnancy: A scoping review of human and animal research: Alcohol pharmacotherapy safety in pregnancy. *CNS Drugs*, 39(1), 23-37. <https://doi.org/10.1007/s40263-024-01126-8>**

This scoping review investigated the available evidence and information on the safety of alcohol pharmacotherapies in pregnancy. There were 105 studies included in the review, focused on naltrexone ($n = 21$), acamprosate ($n = 4$), disulfiram ($n = 3$), baclofen ($n = 3$), topiramate ($n = 55$), gabapentin ($n = 32$). Some studies reported on multiple pharmacotherapies and no studies investigated nalmefene, although it was identified as a pharmacotherapy to include in the review. Studies on naltrexone primarily focused on opioid use disorders with limited evidence in the context of alcohol use disorders; however, naltrexone was seen as a safer option than using alcohol despite concerns about higher rates of some pregnancy complications. There were no clear adverse effects associated with acamprosate exposure during pregnancy, and two pre-clinical studies found potential neuroprotective properties. Evidence on disulfiram and topiramate were associated with higher risk of congenital anomalies when used during pregnancy. There was mixed evidence about the safety of gabapentin use in pregnancy and very little literature focused on the safety of prenatal baclofen use. The authors conclude that there is insufficient research on the safety of alcohol pharmacotherapy use in pregnancy.

15. Vila-Farinas, A., Pérez-Ríos, M., Montes-Martínez, A., Ahluwalia, J. S., Mourino, N., Rey-Brandariz, J., Triñanes-Pego, Y., ... & Varela-Lema, L. (2024). Perception of pregnant individuals, health providers and decision makers on interventions to cease substance consumption during pregnancy: A qualitative study. *BMC Public Health*, 24(1), 990–10. <https://doi.org/10.1186/s12889-024-18397-x>

This study examined key stakeholder perceptions of perinatal substance use treatment interventions in Spain with the goal of identifying political, organizational, and personal factors associated with successful implementation and strategies for improvement. Two focus groups and eight interviews were conducted with three target groups: 1) clinical decision makers in addiction science; 2) substance use treatment professionals, and 3) individuals who use tobacco, alcohol, or cannabis during pregnancy. Three main themes emerged: the degree of adoption and utility of interventions; needs and demands related to the organization of treatments; and personal barriers and facilitators for treatment. It was reported that treatment interventions were rarely adopted in clinical practice, despite multiple national and regional cessation initiatives. Health administrators identified a need for reliable antenatal records with substance use prevalence so to create responsive programming, while health care professionals identified more time and training needed for implementing interventions. Both administrators and professionals discussed the importance of integrating substance use cessation interventions into routine prenatal care and the need for in-house specialized units. Barriers that were identified and discussed by pregnant individuals who use substances included the difficulty of quitting, lack of awareness of the risks for the fetus and child, and inconsistent advice and messages. The authors highlight the importance of accompanying health authority cessation initiatives with organizational and behavioural changes to improve their success.

16. Wouk, K., Caton, L., Bass, R., Ali, B., Cody, T., Jones, E. P., Caron, O., Luseno, W., & Ramage, M. (2024). Patient navigation for perinatal substance use disorder treatment: A systematic review. *Drug and Alcohol Dependence*, 260, 111324. <https://doi.org/10.1016/j.drugalcdep.2024.111324>

This systematic review described patient navigation models of care for perinatal substance use in the USA. Seventeen ($n = 17$) studies were included in the review, which described outpatient ($n = 8$), hospital ($n = 4$), and live-in programs ($n = 3$). Patient navigation was found to be associated with reduced maternal substance use, increased receipt of services, and improved maternal and neonatal health. Outcomes related to engagement in substance use treatment and child custody were mixed. Program success was facilitated by co-locating care, engaging patients across the perinatal period, and building trust and communication with family members and service providers. The authors highlight the promising potential of the patient navigation model, however; comparative research with other models is needed.

D. Level 4 Prevention

1. Bosak, J., Drainoni, M., Bryer, C., Goodman, D., Messersmith, L., & Declercq, E. (2024). 'It opened my eyes, my ears, and my heart': Codesigning a substance use disorder treatment programme. *Health Expectations : An International Journal of Public Participation in Health Care and Health Policy*, 27(1), e13908–n/a. <https://doi.org/10.1111/hex.13908>

See above (Level 3 prevention).

2. Bosak, J., Messersmith, L., Bryer, C., Drainoni, M., Goodman, D., Adams, M., Barry, T., Flanagan, C., Flanagan, V., Wolff, K., & Declercq, E. (2024). "They just looked at me like I was human": The experiences of parenting women and providers with substance use disorder treatment. *Journal of Substance use and Addiction Treatment*, 157, 209240-209240. <https://doi.org/10.1016/j.josat.2023.209240>

See above (Level 3 prevention).

3. Coe, J. L., Morgan, M. H., Rehberg, K., Kranzler, E. C., Ingersoll, R., Namrow, N., & Huber-Krum, S. (2024). Evaluating the implementation of family-centered substance use treatment for pregnant and postpartum people: A mixed-methods study. *Journal of Substance use and Addiction Treatment*, 164, 209409-209409. <https://doi.org/10.1016/j.josat.2024.209409>

See above (Level 3 prevention).

4. Davis, D. W., Feygin, Y., Shipley, M., Hall, T. C., Downs, C., Hoskins, S., Pasquenza, N., Duncan, S. D., & Creel, L. M. (2024). A case report on a Women's residential substance use program in a rural and urban setting. *Maternal and Child Health Journal*, 28(11), 1870-1875. <https://doi.org/10.1007/s10995-024-03993-5>

See above (Level 3 prevention).

5. Edwards, R. C. & Hans, S. L. (2024). Young mother risk-taking moderates doula home visiting impacts on parenting and toddler social-emotional development. *Development and Psychopathology*, 36, 236-254. doi: 10.1017/S0954579422001158

This longitudinal randomized controlled trial examined the impact of doula home visiting for young, low-income mothers on parenting and toddler social-emotional development and if the intervention effects were moderated by maternal emotional and behavioural health characteristics. An intent-to-treat design was used. Women, 25 years old and younger received either doula home visitation ($n = 156$) or case management ($n = 156$; control condition) starting in mid-pregnancy. Interviews, videos of mother-child interactions, and toddler assessments were conducted at 3 weeks, 3 months, 13 months, and 30 months of age. The intervention effects were most concentrated in mothers engaged in high levels of risk-taking (delinquent behaviors, school suspensions, smoking, alcohol use, sexual risk-taking). Among higher risk-taking mothers, the intervention reduced intrusiveness during early infancy and psychological and physical aggression during toddlerhood, and increased sensitive parenting attitudes, and toddler social relatedness. Maternal depressive symptoms moderated the intervention effect for toddler behaviour problems but did not have a significant effect on parenting. The findings support doula home visiting as an effective model for enhancing sensitive and warm, non-aggressive parenting among young mothers who drink alcohol and engage in other behaviours that may impact their or their child's health and wellbeing.

6. Hammond, A., Antoine, D., Sklar, M. & Kidorf, M. (2025). Perinatal women in substance use disorder treatment: Interest in partnering with family and friends to support recovery

needs. *Journal of Addictive Diseases*, 43(2), 146-152, DOI: 10.1080/10550887.2024.2344837

See above (Level 3 prevention).

7. Jones, H. E., Andringa, K., Carroll, S., Johnson, E., Horton, E., O'Grady, K., Stanford, D., Renz, C. & Thorp, J. (2024). Comprehensive treatment for pregnant and parenting women with substance use disorders and their children: The UNC Horizons Story. *Maternal and Child Health Journal*, 28:409-425. <https://doi.org/10.1007/s10995-023-03870-7>

See above (Prevalence of, and influences and factors associated with, drinking in pregnancy).

8. Jones, H. E., Andringa, K., Carroll, S., Johnson, E., Horton, E., O'Grady, K., Stanford, D., Renz, C. & Thorp, J. (2024). Comprehensive treatment for pregnant and parenting women with substance use disorders and their children: The UNC Horizons Story. *Maternal and Child Health Journal*, 28:409-425. <https://doi.org/10.1007/s10995-023-03870-7>

See above (Prevalence of, and influences and factors associated with, drinking in pregnancy).

9. Maher, E. J., Stoner, S. A., Gerlinger, J., Ferraro, A. C., Lepper-Pappan, H. (2024). Study protocol for a randomized controlled trial of the Parent-Child Assistance Program: A case management and home visiting program for people using substances during pregnancy. *Trials*, 25:264. <https://doi.org/10.1186/s13063-024-08098-6>

See above (Level 3 prevention).

10. Morgan, M. H., Coe, J. L., Kranzler, E. C., Rehberg, K., Ingersoll, R., Namrow, N. & Huber-Krum, S. (2024). Implementation of family centered substance use treatment for pregnant and postpartum people to prevent the intergenerational transmission of adverse childhood experiences. *Child Abuse & Neglect*, 157: 107066. <https://doi.org/10.1016/j.chiabu.2024.107066>

See above (Level 3 prevention).

11. Yilmazer, T., Zhang, J., Chavez, L., Famelia, R., Feng, X., Ford, J., Kelleher, K., & Slesnick, N. (2024). Housing and supportive services for young mothers experiencing substance use disorder and homelessness: Cost-effectiveness analysis of a randomized trial. *Journal of Substance Use and Addiction Treatment*, 166. <https://doi.org/10.1016/j.josat.2024.209494>

In this USA study, a cost-effectiveness analysis was conducted on a comprehensive supportive housing intervention implemented for young mothers experiencing substance use disorder (SUD) and homelessness. Between May 2015 and October 2018, mothers between the ages of 18-24 years experiencing homelessness and SUD were randomly assigned to receive housing and support services (HOU + SS), housing-only (HOU), or services as usual (SAU). Each group included $n = 80$ participants. Incremental cost-effectiveness ratios (ICERS) were used to compare the costs of each condition for three outcomes (days of stable housing, substance use days, and depressive

symptoms) and estimate direct payor and societal costs (payor costs plus client time, transportation cost, productivity, and education). Data were extracted from financial records of the study and outcomes from the 6-month assessments. Average societal costs were \$5114 per participant for HOU + SS and \$3248 for HOU. The HOU condition was found to be more cost-effective than HOU + SS and SAU for housing stability. For the substance use outcome, HOU + SS was more cost-effective than HOU. Neither the HOU + SS nor HOU were found to be more cost-effective than SAU for reducing alcohol use or depressive symptoms. The authors discuss that although the housing-only condition was found to be a cost-effective approach, housing improvements without reductions in substance use may not be sustainable, and thus supportive services are essential for overall improvements in well-being beyond housing stability alone.

E. Supportive Alcohol and Child Welfare Policy

1. **Berglas, N. F., Thomas, S., Treffers, R., Trangenstein, P. J., Subbaraman, M. S., & Roberts, S. C. M. (2025). Understanding the effects of alcohol policies on treatment admissions and birth outcomes among young pregnant people. *Alcohol, Clinical & Experimental Research*, 49(2), 460–475. <https://doi.org/10.1111/acer.15512>**

This US study examined if different types of state-level alcohol policies were associated with substance use treatment order admissions and birth outcomes among young pregnant people. Using the data from the Treatment Episode Data Set: Admissions (TEDS-A) and Vital Statistics birth data (1992 – 2019), the authors examined 16 state-level policies. The policies were grouped into three types: youth-specific, general population, and pregnancy-specific alcohol policies and then assessed for policy effects for those under 21 compared to those over 21 (ages 21 – 24). Youth- and pregnancy-specific alcohol policies were not associated with treatment admissions or preterm birth. There were statistically significant associations between family exceptions to minimum legal drinking age (MLDA) policies and low birthweight, which were dependent on if the law was possession or consumption-focused. Several policies geared towards the general population were associated with improved birth outcomes and/or increased treatment admissions. For example, policies that limited access to spirits and beer sales were associated with decreased low birthweight. Effects of Blood Alcohol Concentration (BAC) limits varied by age, with small reductions in adverse outcomes for people under 21, and slight increases for those 21 – 24; however, treatment admission rates across ages were similar when BAC limits were in place and greater for people aged 21 – 24 when there were no BAC limits. The findings suggest it is policies geared towards the general population, and not those that are youth- or pregnancy-specific that appear effective for reducing adverse effects of drinking during pregnancy on young people.

2. **Bruguera, C., Segura-García, L., Okulicz-Kozaryn, K., Gandin, C., Matrai, S., Braddick, F., Zin-Sędek, M... & Colom, J. (2024). Prevention of alcohol exposed pregnancies in Europe: the FAR SEAS guidelines. *BMC Pregnancy Childbirth*, 24, 246. <https://doi.org/10.1186/s12884-024-06452-9>**

This study described the creation of European guidelines on how to implement preventative and treatment policies to reduce alcohol-exposed pregnancies. FAR SEAS was a tendered contract awarded by the European Commission. The FAR SEAS recommendations were built on a two-phase review of academic and grey literature interventions, key informant consultation with representatives across the European Union, and a pilot study in Mazovia, Poland. The FAR SEAS Guidelines include 23 recommendations focused on different policy areas, including

communication strategies; screening, brief intervention and referral to treatment; and treatment and social services. The recommendations adopt a women-centered and destigmatizing approach, promote universal screening for women of childbearing age inclusive of alcohol and other related concerns, and encourage individualized, comprehensive, and multidisciplinary interventions for those who require additional support. The Guidelines demonstrate the importance of multilevel approaches to FASD prevention. The Guidelines can be used to support policymakers and service leaders in implementing effective, evidence-based FASD prevention programs.

3. **Critchlow, N., Moodie, C., & Gallopel-Morvan, K. (2024). Restricting the content of alcohol advertising and including text health warnings: a between-group online experiment with a non-probability adult sample in the United Kingdom. *Alcohol: Clinical and Experimental Research*, 48(6), 1155-1167. <https://doi.org/10.1111/acer.15327>**

See above (Level 1 prevention).

4. **Deutsch, A. R., Jalali, M. S., Stout, S., & Frerichs, L. (2024). Equitable policies need equitable practices: Alcohol- and substance-exposed pregnancy as a case study. *Health Promotion Practice*, 25(1), 17-21. <https://doi.org/10.1177/15248399221107605>**

This commentary from US authors challenge the methods that are used to evaluate alcohol and substance exposed pregnancy (ASEP) prevention and intervention policies. The authors note that systems science methods (SSM), which have been used to identify public health policies and navigate the complexity of public health issues may not be the most effective in identifying policy outcomes among marginalized populations. The authors suggest that additional processes, such as identifying system structures, accounting for system differences and building in considerations related to strength and resilience, should be added to SSM projects. Such additions would help identify effective policies as well as opportunities to reduce structural inequities.

5. **Joyce, K. M., Davidson, M., Manly, E., Stewart, S. H., & Al-Hamdani, M. (2024). A systematic review on the impact of alcohol warning labels. *Journal of Addictive Diseases*, 42(3), 170-193. <https://doi.org/10.1080/10550887.2023.2210020>**

See above (Level 1 prevention).

6. **Oh, S.S., Ali, M.M., Park, J., Kang, E., Park, E-C., & Kawachi, I. (2024). Punitive state policies targeting alcohol use during pregnancy and alcohol consumption among pregnant women. *Scientific Reports*, 14. <https://doi.org/10.1038/s41598-024-74283-x>**

See above (Prevalence of, and influences and factors associated with, drinking in pregnancy).

7. **Page, S., Fedorowicz, S., McCormack, F., & Whitehead, S. (2024). Women, addictions, mental health, dishonesty, and crime stigma: Solutions to reduce the social harms of stigma. *International Journal of Environmental Research and Public Health*, 21(1), doi: 10.3390/ijerph21010063**

This article from England explores how alcohol and drug policies permeate through health and social systems to stigmatize and marginalize women. Using feminist participatory action research, women with lived experience worked alongside academic researchers to implement a qualitative study with women in treatment ($n = 28$) and their service providers ($n = 14$). The findings were cross-

referenced with another study that conducted one-on-one interviews and small focus groups with service providers. Their findings re-enforce that stigma negatively impacts the ability to identify treatment needs as well as access to timely appropriate services. Social harms to women with substance use disorders could be reduced with authentic, timely, gender- and trauma-informed practices.

8. Pettigrew, S., Davies, T., O'Brien, P., Sträuli, B., Petticrew, M., & Bowden, J. (2024). The absence of mandatory pregnancy warning labels in online alcohol purchasing contexts. *Drug and Alcohol Review*, 43(5), 1178–1182. <https://doi.org/10.1111/dar.13836>

See above (Level 1 prevention).

9. Philippopoulos, A. J., Brown, Z. E., Lewkowitz, A. K., Howard, E. D., & Micalizzi, L. (2024). The hypocritical oath? Unintended consequences of prenatal substance use policies and considerations for health care providers. *The Journal of Perinatal & Neonatal Nursing*, 38(4), 414–419. <https://doi.org/10.1097/JPN.0000000000000836>

This commentary addresses the amendments to the Child Abuse Prevention and Treatment Act in the US that fund states where there are protocols to notify child protective services in the case of perinatal substance use. The authors note that there have been diverse interpretations of the statute, leading to confusion about who the policy applies to and how it should be applied. Further, it is noted that existing perinatal substance use policies are largely punitive, leading to no effects or adverse effects on perinatal outcomes. Evidence-based policies that prioritize treatment are necessary. Implementation of policies requires stigma reduction, universal use of screening tools, and increased knowledge of perinatal substance use among providers. Efforts from policymakers, health and social service providers is necessary to help close the gaps between policy and practice and improve access to compassionate care.

10. Schulte, A., Liu, G., Subbaraman, M. S., Kerr, W. C., Leslie, D., & Roberts, S. C. M. (2024). Relationships between alcohol policies and infant morbidities and injuries. *American Journal of Preventive Medicine*, 66(6), 980–988. <https://doi.org/10.1016/j.amepre.2024.01.003>

See above (Prevalence of, and influences and factors associated with, drinking in pregnancy).

11. Schwartz, D., Torres-Ulloa, I., & Corvalán, C. (2024). Effectiveness of alcohol warning labels for at-risk groups and the general public: A policy-informing randomized experiment in Chile. *Preventive medicine*, 187, 108087. <https://doi.org/10.1016/j.ypmed.2024.108087>

See above (Level 1 prevention).

12. Sträuli, B., Davies, T., Jan, S., Booth, L., Laznik, N., Taylor, F., & Pettigrew, S. (2024). Uptake of mandated pregnancy warnings in the Australian alcoholic ready-to-drink beverage market. *Drug and Alcohol Review*, 43(1), 165–169. <https://doi.org/10.1111/dar.13758>

See above (Level 1 prevention).

13. Subbaraman, M. S., Schulte, A., Berglas, N. F., Kerr, W. C., Thomas, S., Treffers, R., Liu, G., & Roberts, S. C. M. (2024). Associations between alcohol taxes and varied health outcomes among women of reproductive age and infants. *Alcohol and Alcoholism*, 59. <https://doi.org/10.1093/alcalc/agae015>

See above (Prevalence of, and influences and factors associated with, drinking in pregnancy).

14. Trangenstein, P. J., Berglas, N. F., Subbaraman, M. S., Kerr, W. C., & Roberts, S. (2024). The relationship between alcohol availability and drink-driving policies and admissions to substance use disorder treatment during pregnancy. *Journal of studies on alcohol and drugs*, 86(3), 349–357. <https://doi.org/10.15288/jsad.23-00414>

This study from the US explored the association between general population policies and alcohol treatment admission rates among pregnant people. Data from the Treatment Episodes Data Set-Admissions and state level policy data (1992 – 2019) was examined using five policy predictors: 1) government spirits monopoly, 2) ban on Sunday sales, 3) grocery store sales, 4) gas station sales, and 5) Blood Alcohol Concentration (BAC) laws. In models with alcohol as the primary substance at treatment admission, policies prohibiting spirit sales in grocery stores had lower treatment admission rates (IRR = 0.88, 95% CI, 0.78, 0.99). States with BAC at .10% had higher treatment admission rates. When alcohol was not the primary substance at treatment admission, prohibiting spirit sales in grocery stores remained associated with treatment admission rates but there was no association for BAC laws. The findings indicated that restrictions on grocery store spirit sales and BAC laws impacted treatment admission among pregnant people, thus suggesting that alcohol policies geared for the general population are also relevant for pregnant people's treatment utilization.

15. Zuckermann, A. M., Morissette, K., Boland, L., Garcia, A. J., Domingo, F. R., Stockwell, T., & Hobin, E. (2024). The effects of alcohol container labels on consumption behaviour, knowledge, and support for labelling: a systematic review. *The Lancet Public Health*, 9(7), e481–e494. [https://doi.org/10.1016/S2468-2667\(24\)00097-5](https://doi.org/10.1016/S2468-2667(24)00097-5)

See above (Level 1 prevention).

F. Other – stigma, ethical issues, and systemic approaches

1. Binder, A., Kilian, C., Hanke, S., Banabak, M., Berkenhoff, C., Petersen, K. U., & Batra, A. (2024). Stigma and self-stigma among women within the context of the German “zero alcohol during pregnancy” recommendation: A qualitative analysis of online forums and blogs. *International Journal of Drug Policy*, 124. <https://doi.org/10.1016/j.drugpo.2024.104331>

This qualitative study from Germany analyzed online forums to explore women's perceptions of the “zero alcohol during pregnancy” recommendation. Data from nine discussion threads on five forums were analyzed using a grounded theory approach, reflecting perspectives from $n = 115$ participants. Five themes were identified: 1) low alcohol health literacy increases stigma; 2) the assumption that maternal abstinence is required to be a ‘good mother’; 3) the consequences of stigmatization and self-stigmatization; 4) the role of psychosocial factors on alcohol consumption, including partner's alcohol consumption; 5) critique of the “zero alcohol during pregnancy”

recommendation and perception of the ban as a loss of autonomy. The way that the recommendation is communicated may have unintended consequences. Misconceptions about the harms of alcohol use and setting a standard for 'good mothers' can contribute to stigma and self-stigma, which can catalyze in a reduction in help-seeking and access to healthcare.

2. **Darling, E. K., Jansen, A., Jameel, B., & Tarride, J. É. (2024). A scoping review of costing methodologies used to assess interventions for underserved pregnant people and new parents. *International journal for equity in health*, 23(1), 168. <https://doi.org/10.1186/s12939-024-02252-x>**

This scoping review explored what methods and costs have been used to assess interventions for pregnant and parenting people who have limited access to health care. Searches were conducted in eight databases and on the web for grey literature. Economic evaluations and cost analyses of interventions in twenty high-income countries were included, resulting in $n = 103$ studies of inclusion. Interventions described included home visiting programs and smoking cessation, prenatal care, perinatal mental health and substance use interventions. A quarter of the included studies were cost analyses, and the remainder were economic evaluations. The substance use interventions were delivered by community health workers, social workers, nurses, substance use treatment providers, and midwives. To increase access to healthcare, a broad range of interventions for pregnant people and new parents can help reduce health inequities. Economic evaluations can underestimate the long-term benefits; however, quantifying the downstream and long-term benefits can better inform decision-making moving forward.

3. **Eliason, S. H. Y., Miller, A. R., Gibbard, W. B., Salh, G., Lanphear, N. (2024). Asking difficult questions about Fetal Alcohol Spectrum Disorder in the context of the child, the mother, and the systems in which they live. *The Lancet Child and Health*, 8(11), 835 – 842.**

This viewpoint article explores the impact of FASD as a diagnostic term. The authors share how FASD can perpetuate a misleading narrative about maternal health and can perpetuate stigma and misinformation about who consumes alcohol. They note that existing understandings of FASD have led to racism and discrimination, rather than reflecting the advancements from the field. The authors call for action on its use as a diagnostic term, as well as the practices of how disabilities are diagnosed. The language of FASD and its prevention must be reflective of the complex factors and interactions that occur within families and greater society.

4. **Fiorentino, D., Coriale, G., Tarani, L., Fiore, M., Vitali, M., Messina, M. P., Ceccanti, M., & Interdisciplinary Study Groups Sapienza, AIDEFAD, SITAC, SIFASD, FIMMG-LAZIO, SIPPS, SIMPESV, CIPE (2024). Italian Guidelines for the diagnosis and treatment of Fetal Alcohol Spectrum Disorders: Prevention and health promotion. *Rivista di psichiatria*, 59(5), 250–258. <https://doi.org/10.1708/4360.43515>**

This Italian review describes evidence-based strategies to prevent long-term effects related to prenatal alcohol exposure. The authors note five strategies that can be used for FASD prevention 1) training and development of official alcohol use guidelines; 2) structural interventions; 3) media campaigns; 4) screening and early identification; and 5) intervention protocols. Training and development of official guidelines is identified as a pre-requisite for effective prevention. Universal prevention approaches, including mass media and public health campaigns and structural interventions that limit the availability of alcohol use in pregnancy can raise awareness about the risks of alcohol use during pregnancy. Selective and indicated interventions, including screening

and brief intervention can provide targeted support to pregnant women at risk of alcohol use and interventions for women who require additional substance use support. The authors highlight ethical issues, including stigma, that must be considered when supporting those at risk of alcohol use in pregnancy and their children.

- 5. Khan, H., Dray, R., & Pourzanjani, P. (2024). Neonate simulators: Creatively engaging social work students in understanding risks of alcohol use during pregnancy. *The British Journal of Social Work*, 54(6), 2736-2755. doi:[10.1093/bjsw/bcae054](https://doi.org/10.1093/bjsw/bcae054)**

This UK study investigated the use of simulation-based education (SBE) to address the gap in substance use training for post-qualified social workers and undergraduate social work students, focusing specifically on prenatal alcohol exposure (PAE) and its impact on fetal development. Social work students from two universities in the Southwest of the UK participated in an educational session on FASD, completed pre- and post-test questionnaires assessing knowledge, and interacted with a neonate simulator. The results showed increased knowledge about FASD, a deeper understanding of the long-term effects of alcohol use during pregnancy, and enhanced confidence in addressing these issues in future social work practice. This study highlights the value of integrating simulation-based education into training programs, especially for social workers.

- 6. Koehlmoos, T. P., Lee, E., Rivera, I., Wisdahl, J., Erdman, K., & Donaldson, T. (2024). Fetal alcohol spectrum disorders prevention and clinical guidelines research-workshop report. *BMC proceedings*, 18. <https://doi.org/10.1186/s12919-024-00298>**

This USA study described the second workshop on Fetal Alcohol Spectrum Disorder and Clinical Guidelines Research hosted by the Uniformed Services University of the Health Sciences and FASD United. The event was part of a four-year federally funded research initiative focused on FASD within the Department of Defense Military Health System. The 2023 workshop concentrated on identifying strategies for prevention, screening, diagnosis, intervention and family support. The workshop brought together $n = 130$ participants from academic, healthcare, government, and advocacy sectors. The workshop served as a platform to share emerging research and clinical practices, highlight lived experiences of families and individuals affected by FASD and explore strategies to enhance screening, diagnosis, intervention, and support services for both at-risk pregnant individuals and families affected by FASD. The workshop provided valuable avenue for discussion about the FASD continuum of care.

- 7. Leruste, S., Pouilley-Bax, A., Doray, B., Maillard, T., Monin, F., Loubaresse, C., Marimoutou, C. & Spodenkiewicz, M. (2024). Actions to prevent and identify fetal alcohol spectrum disorders to be implemented in general practice: A consensus. *Frontiers in Medicine*, 11, 1278973. <https://doi.org/10.3389/fmed.2024.1278973>**

This French study focused on improving the prevention and identification of FASD. To identify effective strategies, researchers conducted a qualitative Delphi study involving multi-professional experts, primarily general practitioners (GPs). Experts reviewed and refined twenty-four initial actions over two rounds. Eleven consensus actions were developed, including four recommendations for rapid implementation: systematic preconception consultations for women planning a pregnancy; routine assessment of environmental risk factors during child health monitoring; consistent dissemination of information about fetal alcohol risks during preconception and early pregnancy; and creation of a practical leaflet for GPs detailing how to identify FASD and

connect families with support networks. Providing brief, accessible training and practical tools for GPs can significantly improve FASD prevention and early detection. The study's consensus-based actions offer a framework for developing communication materials and standardizing clinical practice.

- 8. Leite, G. P. R., de Avó, L. R. D. S., Germano, C. M. R., & Melo, D. G. (2024). Development and psychometric evaluation of a questionnaire to measure university students' knowledge on the effects of alcohol use during pregnancy. *Frontiers in Public Health*, 12, 1399333. <https://doi.org/10.3389/fpubh.2024.1399333>**

This Brazilian study developed and validated the Fetal Alcohol Consequences Test (FACT)—a questionnaire designed to assess university students' knowledge about the effects of alcohol consumption during pregnancy. The FACT began as a 45-item true/false/I do not know questionnaire, which was narrowed to 12 validated items through expert review and psychometric testing. The final version was administered to $n = 768$ university students across Brazil. Exploratory Factor Analysis (EFA) revealed two latent factors: 1) fetal alcohol spectrum disorders and 2) conceptions and guidance about alcohol use in pregnancy. Knowledge levels were categorized as: High ($\geq 80\%$), moderate (60–79%), and low ($\leq 59\%$). The results showed that 32.03% of the students had high knowledge (10–12 points), 24.09% moderate knowledge (8–9 points), and 43.88% low knowledge (< 8 points). The questionnaire demonstrated strong reliability and robust psychometric properties, supporting its use in university students' health education processes and contributing to greater knowledge about the effects of alcohol use during pregnancy.

- 9. Myra, S. M., Wiig, E. M., & Axberg, U. (2024). I want to be a mom who is clean, who loves herself, and feels ok with herself—pregnant women's thoughts about motherhood and their unborn child when in treatment for substance use problems. *Human Systems: Therapy, Culture & Attachments*, 4(3), 163–180. <https://doi.org/10.1177/26344041241263082>**

See above (Prevalence of, and influences and factors associated with, drinking in pregnancy).

- 10. Sapru, S., Mitchell, K. & McFadden, T. (2024). Combining physician expertise and women's lived experience to educate health professionals about preventing fetal alcohol spectrum disorders. *Maternal and Child Health Journal*, 28, 229–239. doi:10.1007/s10995-023-03786-2**

This USA paper described an educational intervention where Physician Champions from the American College of Obstetricians and Gynecologists (ACOG) and trained women Speakers from FASD United — who have given birth to a child with a FASD — enhanced healthcare providers (HCP) understanding of FASD. Through semi-structured interviews with Champions ($n = 10$) and Speakers ($n = 9$), the authors assessed how the co-presentations enhanced HCPs' understanding about FASDs and addressed stigma associated with alcohol use during pregnancy. Both Champions and Speakers emphasized the need for HCPs to be nonjudgmental and create a safe space for open dialogue. They reported that residents were moved by mothers' personal stories, wanted to understand AUD better, and asked about the type of help HCPs can offer women. Residents are perceived to be more reflective and open because of the phase of their career. Combining physicians' expertise with mothers' personal stories of lived experiences of FASDs moved residents from a fact-based to an empathy-based approach to learning that is critical to address the stigma surrounding women who may be using alcohol or struggling with an AUD during pregnancy.

11. Schölin, L., & Arkell, R. (2024). Representations of 'risky' drinking during pregnancy on mumsnet: A discourse analysis. *Drug and Alcohol Review*. <https://doi.org/10.1111/dar.13948>

See above (Prevalence of, and influences and factors associated with, drinking in pregnancy).

12. Stephen, N., Doucet, S., & Luke, A. (2024) A rapid review of perinatal healthcare experiences of women with substance use disorders. *Cureus* 16(12):e75409. <https://doi.org/10.7759/cureus.75409>

This rapid review by Canadian authors synthesized the literature on the healthcare experiences of women with substance use disorders (SUDs) during the prenatal and postnatal periods. The secondary aim of the review was to discuss the implications of the findings in the context of nurse practitioner practice. Twenty-five ($n = 25$) articles were included, the majority from the USA. Using thematic analysis, five themes were identified related to the healthcare experiences of women with SUDs: 1) stigma; 2) involvement with child protective services; 3) lack of supportive education; 4) the impact of relationships, and 5) challenges accessing holistic care. The majority of the research was focused on perinatal experiences, suggesting more research is needed on postpartum care. Further research is also needed on the prenatal and postpartum experiences of women with SUDs in primary care settings receiving care from a nurse practitioner.

13. Wu, D., Shead, H., Ren, Y., Raynor, P., Tao, Y., Villanueva, H., Hung, P., Li, X., Brookshire, R. G., Eichelberger, K., Guille, C., Litwin, A. H., & Olatosi, B. (2024). Uncovering the complexity of perinatal polysubstance use disclosure patterns on X: Mixed methods study. *Journal of Medical Internet Research*, 26(31), e53171. <https://doi.org/10.2196/53171>

This study explored mechanisms, contexts, and experiences of perinatal polysubstance use (PPU) in the USA, and implications for perinatal care and public health policies. Data from X (formerly Twitter) was extracted between May 1, 2019 to October 31, 2021. A mixed methods approach was used to analyze tweets. A quantitative analysis was conducted on $n = 4,848$ PPU-related tweets and compared to 4848 non-PPU-related tweets. Qualitative analysis was conducted on a sample of 500 of the PPU-related tweets. Tweet sentiment was assessed using a lexicon and rule-based tool tailored for social media. PPU-related tweets decreased in frequency over the analysis period. Negative sentiments were significantly more common in PPU-related tweets compared to the control sample (51% vs. 27%), with positive and neutral sentiments significantly less common among PPU-related tweets compared to the control (39% vs. 46% and 10% vs. 27%, respectively). *Alcohol and drugs* were the most commonly mentioned pair of substances in PPU-related tweets, with a mostly negative sentiment. The themes of *lifestyle*, *perceptions of others' drug use*, *legal implications*, and *public health* were the most frequent re-occurring topics. Stigma was also discussed and displayed in the tweets. The authors purport that their findings demonstrate the normalization of alcohol and the general opinion that does not consider it a drug.

14. Zimmermann, M., Moore Simas, T. A., Howard, M., & Byatt, N. (2024). The pressing need to integrate mental health into obstetric care. *Clinical Obstetrics and Gynecology*, 67(1), 117–133.

In this narrative review, authors from the USA argued for the integration of mental health and substance use supports into obstetric and gynecologic care. Perinatal mental health conditions and substance use are described as well as impact of these conditions on perinatal individuals and

their infants and families, including marginalized populations that who face barriers to accessing care. The authors describe mental health and substance use issues as being underdiagnosed and undertreated among perinatal individuals. The potential to improve outcomes by integrating mental health support into obstetric and gynecologic care is summarized.

Summary of Included Studies by Method and Country of Study

Table 2: Included studies by method, country and page number

#	Author	Title	Method	Country	Page
Prevalence of, and influences and factors associated with, drinking in pregnancy					
n = 32	Bretteville-Jensen et al.	Pregnancy and pregnancy outcomes in a national population cohort of patients treated for substance use disorders	Cross Sectional	Norway	5
	Chapman et al.	The association between depression and alcohol use among pregnant adults in the USA	Cross Sectional	USA	5
	Del Campo Giménez et al.	Impact of pregnancy on women's health-related lifestyle habits: Diet, physical activity, alcohol consumption, and smoking	Cross Sectional	Spain	5
	Desiron et al.	Substance use during pregnancy	Narrative Review	Belgium	6
	Erng et al.	A novel prenatal alcohol use risk perception model: Feedback from a Delphi process	Delphi	Australia	6
	Fusco et al.	"He gets mad that I'm sober": Experiences of substance use coercion among postpartum women in recovery	Qualitative	USA	6
	Ghosh et al.	Regional disparities and correlates of alcohol use during pregnancy in India: Insights from the national family health survey-5	Cross Sectional	India	7
	Green et al.	Substance use and treatment characteristics among pregnant and non-pregnant females, 2015-2019	Cross Sectional	USA	7
	Johnson et al.	Effect of education on adherence to recommended prenatal practices among Indigenous Ngäbe-Buglé Communities of Panama	Cross Sectional	Panama	8
	Jones et al.	Comprehensive treatment for pregnant and parenting women with substance use disorders and their children: The UNC Horizons Story	Cross Sectional	USA	8
	Jones et al.	Perinatal substance use treatment and criminal legal system referral trends	Cross Sectional	USA	9
	Khan et al.	The trend of characteristics and pattern of polysubstance co-occurrences among pregnant women: TEDS-A findings	Cross Sectional	USA	9
	Legas et al.	Prevalence of hazardous alcohol consumption and associated factors among HIV-positive pregnant women attending public hospitals in Northwest Ethiopia: a multicentred cross-sectional study	Cross Sectional	Ethiopia	9
	Li et al.	Co-occurrence of mental illness and substance use among US pregnant individuals, 2012-2021	Correlational	USA	10
	Myra et al.	I want to be a mom who is clean, who loves herself, and feels ok with herself-pregnant women's thoughts about motherhood and their unborn child when in treatment for substance use problems	Qualitative	Norway	10
	Northrup et al.	Increased risk for alcohol- and other substance-exposed pregnancies among women who smoke tobacco: A secondary analysis of a primary care-based intervention	Cross Sectional	USA	11
	Oh et al.	Punitive state policies targeting alcohol use during pregnancy and alcohol consumption among pregnant women	Experimental	USA	11
	Parker et al.	Influence of childhood trauma and traumatic stress on a woman's risk of having a child with a fetal alcohol spectrum disorder	Case control	South Africa	11
	Petersen Williams et al.	Perceptions of perinatal alcohol use and treatment needs in Cape Town, South Africa: A qualitative study	Qualitative	South Africa	12
	Piske et al.	Population perinatal substance use and an environmental scan of health services in British Columbia, Canada	Cross Sectional	Canada	12
	Pistone et al.	Trapped in a maze: A meta-ethnography of women's experiences of alcohol use in pregnancy	Meta-ethnography	Sweden, Norway	13
	Popova et al.	A population-based study on women who used alcohol during pregnancy and their neonates in Ontario, Canada	Cross Sectional	Canada	13
	Powell et al.	The burden of prenatal and early life maternal substance use among children at risk of maltreatment: A systematic review	Systematic Review	Australia, UK	13
	Rausgaard et al.	Screening of substance use in pregnancy: A Danish cross-sectional study	Cross Sectional	Denmark	14

	Schölin & Arkell	Representations of 'risky' drinking during pregnancy on mumsnet: A discourse analysis	Qualitative	UK	14
	Schulte et al.	Relationships between alcohol policies and infant morbidities and injuries	Retrospective Cohort	USA	15
	Shchetinina & Slopen	Unmet need for alcohol use disorder treatment in reproductive-age females, with emphasis on pregnant and parenting populations in the United States: Findings from NSDUH 2015–2021	Cross Sectional	USA	15
	Sieger et al.	A comparison of two statewide datasets to understand population prevalence of substance use in pregnancy: Findings and considerations for policy & research.	Cross Sectional	USA	15
	Subbaraman et al.	Associations between alcohol taxes and varied health outcomes among women of reproductive age and infants	Cross Sectional	USA	16
	Vila-Farinas et al.	Influence of educational level on the prevalence of risk behaviors during the perinatal period	Cross Sectional	Spain	16
	Wogayehu et al.	Magnitude and risk factors of khat, alcohol and cigarettes use among pregnant women in Africa: A systematic review and meta-analysis	Systematic Review and Meta-analysis	Ethiopia	17
	Zahumensky et al.	Risk factors for self-reported alcohol consumption during pregnancy	Cross Sectional	Slovakia	17
Level 1 Prevention					
n = 15	Ameyaw et al.	Effectiveness of mHealth apps for maternal health care delivery: Systematic review of systematic reviews	Systematic Review	China, Canada	17
	Beasant et al.	Adherence to the national guidance on foods and drinks to limit or avoid during pregnancy in England: The PEAR Study	Cross Sectional	UK	18
	Cheung et al.	Evaluation of the Fetal Alcohol Spectrum Disorder Hub Australia website	Cross sectional	Australia	18
	Critchlow et al.	Restricting the content of alcohol advertising and including text health warnings: A between-group online experiment with a non-probability adult sample in the United Kingdom	Randomized Control Trial	UK	18
	Dilworth et al.	Barriers and enablers to addressing smoking, nutrition, alcohol consumption, physical activity and gestational weight gain (SNAP-W) as part of antenatal care: A mixed methods systematic review	Systematic Review	Australia	19
	Falek et al.	Knowledge of the sign prohibiting alcohol consumption during pregnancy among medical students in Poland—a survey study	Cross Sectional	Poland	19
	Frennesson et al.	Analyzing questions about alcohol in pregnancy using web-based forum topics: Qualitative content analysis	Content Analysis	UK	20
	Janssen et al.	Teaching by texting to promote positive health behaviours in pregnancy: A protocol for a randomised controlled trial of SmartMom	Study Protocol	Canada	20
	Joyce et al.	A systematic review on the impact of alcohol warning labels	Systematic Review	Canada, Qatar	20
	Pettigrew et al.	The absence of mandatory pregnancy warning labels in online alcohol purchasing contexts	Content Analysis	Australia	21
	Schwartz et al.	Effectiveness of alcohol warning labels for at-risk groups and the general public: A policy-informing randomized experiment in Chile	Randomized Control Trial	Chile	21
	Smit et al.	Investigating eHealth Lifestyle Interventions for Vulnerable Pregnant Women: Scoping Review of Facilitators and Barriers	Scoping Review	Netherlands	21
	Sträuli et al.	Uptake of mandated pregnancy warnings in the Australian alcoholic ready-to-drink beverage market	Cross Sectional	Australia	22
	Williams et al.	Strong Born—A First of its kind national FASD prevention campaign in Australia led by the National Aboriginal Community Controlled Health Organisation (NACCHO) in collaboration with the Aboriginal Community Controlled Health Organisations (ACCHOs)	Commentary	Australia	22
	Zuckermann et al.	The effects of alcohol container labels on consumption behaviour, knowledge, and support for labelling: A systematic review	Systematic Review	Canada	22
Level 2 Prevention					
n = 26	Beatty et al.	Risk identification in perinatal health care settings via technology-based recruitment methods: Comparative study	Case control	USA	23

Canaway et al.	The feasibility of integrating an alcohol screening clinical decision support tool into primary care clinical software: A review and Australian key stakeholder study	Mixed methods	Australia	23
DiCarlo & Whiffen	Implementation of a perinatal substance use screening protocol in the outpatient setting	Pre- Post-Test	USA	24
Donaldson et al.	Importance of Fetal Alcohol Spectrum Disorders prevention and intervention	Commentary	USA	24
Ferraguti et al.	Italian Guidelines for the diagnosis and treatment of Fetal Alcohol Spectrum Disorders: Detecting alcohol drinking during pregnancy	Review	Italy	24
Fetterhoff et al.	Integrating evidence-based screening, brief intervention, and referral to treatment into a family nurse practitioner program	Pre- Post-Test	USA	25
Godleski et al.	Adaptation of a couple's intervention to promote coparenting and reduce hazardous drinking during transition to parenthood	Descriptive	USA	25
Green et al.	Reporting on health care and social service provider approaches to promoting alcohol abstinence during pregnancy	Cross Sectional	Canada	25
Green et al.	Multi-level approaches to fetal alcohol spectrum disorders prevention education and training for health professionals	Descriptive	USA	26
Häkkinen et al.	Phosphatidylethanol is a promising tool for screening alcohol consumption during pregnancy	Observational	Finland	26
Hanson et al.	A randomized controlled trial of Native CHOICES: Impact on alcohol-exposed pregnancy risk reduction among American Indian and Alaska Native women	Randomized Control Trial	USA	26
Hesselman et al.	Validity of prenatal AUDIT screening for alcohol disorders: A nationwide Swedish register study	Cross Sectional	Sweden	27
King et al.	Strategies to improve delivery of equitable and evidence-informed care for pregnant and birthing people with a substance use disorder in acute care settings: A scoping review protocol	Study Protocol	USA	27
King et al.	Using planned and unplanned adaptation to implement universal alcohol screening and brief intervention to prevent alcohol-exposed pregnancies in four primary care health systems	Case Series	USA	27
Leruste et al.	Obstacles and facilitators to preventing fetal alcohol spectrum disorder: A qualitative study with general practitioners	Qualitative	France	28
Leruste et al.	Scoping review on the role of the family doctor in the prevention and care of patients with foetal alcohol spectrum disorder	Scoping review	France	28
London et al.	Reach, acceptability, and sustainability of the Native Changing High-Risk Alcohol Use and Increasing Contraception Effectiveness Study (CHOICES) Intervention: A qualitative evaluation of an alcohol-exposed pregnancy prevention program	Qualitative	USA	29
McRee et al.	Identifying patients at risk for alcohol-exposed pregnancies: The importance of addressing multiple risk factors	Descriptive	USA	29
Minozzi et al.	Psychosocial and medication interventions to stop or reduce alcohol consumption during pregnancy	Systematic Review	USA, Spain, Netherlands	29
Soos et al.	Racial disparities in newborn drug testing after implementation of question-based screening for prenatal substance use	Cohort	USA	30
Stevens et al.	Improving the quality of antenatal screening and early intervention for alcohol and other drug use: Protocol for a multi-stage approach to systems reform	Protocol	Australia	30
Stevens et al.	Screening and early intervention for substance use during pregnancy: A retrospective case note review of antenatal care records	Retrospective Case Note	Australia	31
Thomson et al.	Obstetrics and gynecology provider experience screening for harmful alcohol use: An unmet need for standardized screening and intervention	Cross Sectional	USA	31
Townsel et al.	Answering a call to action: Reducing Fetal Alcohol Spectrum Disorders using a healthcare champion model	Descriptive	USA	31

	Washio et al.	An incentive-based text-messaging intervention to reduce maternal alcohol use during pregnancy and lactation in South Africa (MaRISA study): Findings from a single-arm pilot study	Non-randomized Control Study	South Africa	32
	Wisner	Fetal Alcohol Spectrum Disorders	Editorial	USA	32
Level 3 Prevention					
n = 16	Bosak et al.	'It opened my eyes, my ears, and my heart': Codesigning a substance use disorder treatment programme	Mixed Methods	USA	33
	Bosak et al.	"They just looked at me like I was human": The experiences of parenting women and providers with substance use disorder treatment	Qualitative	USA	33
	Coe et al.	Evaluating the implementation of family-centered substance use treatment for pregnant and postpartum people: A mixed-methods study	Mixed Methods	USA	34
	Davis et al.	A case report on a women's residential substance use program in a rural and urban setting	Case Study	USA	34
	Godleski et al.	Adaptation of a couple's intervention to promote coparenting and reduce hazardous drinking during transition to parenthood	Descriptive	USA	25
	Gulbransen et al.	Interprofessional care models for pregnant and early-parenting persons who use substances: A scoping review	Scoping Review	Canada	35
	Hammond et al.	Perinatal women in substance use disorder treatment: Interest in partnering with family and friends to support recovery needs	Qualitative	USA	35
	Jones et al.	Comprehensive treatment for pregnant and parenting women with substance use disorders and their children: The UNC Horizons Story	Cross Sectional	USA	8
	Maher et al.	Study protocol for a randomized controlled trial of the Parent-Child Assistance Program: A case management and home visiting program for people using substances during pregnancy	Study Protocol	USA	35
	McCreary & Rodriguez	Counseling perinatal clients with substance use disorder: A relational approach	Case Study	USA	36
	Milligan et al.	Neonatal outcomes of pregnant women attending integrated and standard substance use treatment programs in Ontario, Canada	Case Control	Canada	36
	Morgan et al.	Implementation of family centered substance use treatment for pregnant and postpartum people to prevent the intergenerational transmission of adverse childhood experiences	Qualitative	USA	37
	Piske et al.	Population perinatal substance use and an environmental scan of health services in British Columbia, Canada	Cross Sectional	Canada	12
	Quintrell et al.	The safety of alcohol pharmacotherapies in pregnancy: A scoping review of human and animal research: Alcohol pharmacotherapy safety in pregnancy	Scoping Review	Australia	37
	Vila-Farinas et al.	Perception of pregnant individuals, health providers and decision makers on interventions to cease substance consumption during pregnancy: A qualitative study	Qualitative	Spain	38
	Wouk et al.	Patient navigation for perinatal substance use disorder treatment: A systematic review	Systematic Review	USA	38
Level 4 Prevention					
n = 11	Bosak et al.	'It opened my eyes, my ears, and my heart': Codesigning a substance use disorder treatment programme	Mixed Methods	USA	33
	Bosak et al.	"They just looked at me like I was human": The experiences of parenting women and providers with substance use disorder treatment	Qualitative	USA	33
	Coe et al.	Evaluating the implementation of family-centered substance use treatment for pregnant and postpartum people: A mixed-methods study	Mixed Methods	USA	34
	Davis et al.	A case report on a women's residential substance use program in a rural and urban setting	Case Study	USA	34
	Edwards et al.	Young mother risk-taking moderates doula home visiting impacts on parenting and toddler social-emotional development	Randomized Control Trial	USA	39

	Hammond et al.	Perinatal women in substance use disorder treatment: Interest in partnering with family and friends to support recovery needs	Qualitative	USA	35
	Jones et al.	Comprehensive treatment for pregnant and parenting women with substance use disorders and their children: The UNC Horizons Story	Cross Sectional	USA	8
	Jones et al.	Perinatal substance use treatment and criminal legal system referral trends	Cross Sectional	USA	8
	Maher et al.	Study protocol for a randomized controlled trial of the Parent-Child Assistance Program: A case management and home visiting program for people using substances during pregnancy	Study Protocol	USA	35
	Morgan et al.	Implementation of family centered substance use treatment for pregnant and postpartum people to prevent the intergenerational transmission of adverse childhood experiences	Qualitative	USA	37
	Yilmazer et al.	Housing and supportive services for young mothers experiencing substance use disorder and homelessness: Cost-effectiveness analysis of a randomized trial.	Cost Benefit Analysis	USA	40
Supportive Alcohol and Child Welfare Policy					
n = 15	Berglas et al.	Understanding the effects of alcohol policies on treatment admissions and birth outcomes among young pregnant people	Cross Sectional	USA	41
	Bruguera et al.	Prevention of alcohol exposed pregnancies in Europe: the FAR SEAS guidelines	Mixed Methods	Spain, Italy, Poland	41
	Critchlow et al.	Restricting the content of alcohol advertising and including text health warnings: A between-group online experiment with a non-probability adult sample in the United Kingdom	Randomized Control Trial	UK	18
	Deutsch et al.	Equitable policies need equitable practices: Alcohol- and substance-exposed pregnancy as a case study	Commentary	USA	42
	Fiorentino et al.	Italian Guidelines for the diagnosis and treatment of Fetal Alcohol Spectrum Disorders: Prevention and health promotion	Review	Italy	22
	Joyce et al.	A systematic review on the impact of alcohol warning labels	Systematic Review	Canada, Quatar	20
	Oh et al.	Punitive state policies targeting alcohol use during pregnancy and alcohol consumption among pregnant women	Experimental	USA	11
	Page et al.	Women, addictions, mental health, dishonesty, and crime stigma: Solutions to reduce the social harms of stigma	Qualitative	UK	42
	Pettigrew et al.	The absence of mandatory pregnancy warning labels in online alcohol purchasing contexts	Content Analysis	Australia	21
	Philippopoulos et al.	The hypocritical oath? Unintended consequences of prenatal substance use policies and considerations for health care providers	Commentary	USA	43
	Schulte et al.	Relationships between alcohol policies and infant morbidities and injuries	Retrospective Cohort	USA	15
	Schwartz et al.	Effectiveness of alcohol warning labels for at-risk groups and the general public: A policy-informing randomized experiment in Chile	Randomized Control Trial	Chile	21
	Sträuli et al.	Uptake of mandated pregnancy warnings in the Australian alcoholic ready-to-drink beverage market	Cross Sectional	Australia	22
	Subbaraman et al.	Associations between alcohol taxes and varied health outcomes among women of reproductive age and infants	Cross Sectional	USA	16
	Trangenstein et al.	The relationship between alcohol availability and drink-driving policies and admissions to substance use disorder treatment during pregnancy	Cross Sectional	USA	44
	Zuckermann et al.	The effects of alcohol container labels on consumption behaviour, knowledge, and support for labelling: A systematic review	Systematic Review	Canada	22
Other – stigma, ethical issues, and systemic approaches					
n = 14	Binder et al.	Stigma and self-stigma among women within the context of the German “zero alcohol during pregnancy” recommendation: A qualitative analysis of online forums and blogs	Qualitative	UK	44

	Darling et al.	A scoping review of costing methodologies used to assess interventions for underserved pregnant people and new parents	Scoping Review	Canada	45
	Eliason et al.	Asking difficult questions about Fetal Alcohol Spectrum Disorder in the context of the child, the mother, and the systems in which they live	Editorial	Canada	45
	Fiorentino et al.	Italian Guidelines for the diagnosis and treatment of Fetal Alcohol Spectrum Disorders: Prevention and health promotion	Review	Italy	45
	Khan et al.	Neonate simulators: Creatively engaging social work students in understanding risks of alcohol use during pregnancy	Mixed Methods	UK	46
	Koehlmoos et al.	Fetal alcohol spectrum disorders prevention and clinical guidelines research-workshop report	Descriptive	USA	46
	Leruste et al.	Actions to prevent and identify fetal alcohol spectrum disorders to be implemented in general practice: A consensus	Qualitative	France	46
	Leite et al.	Development and psychometric evaluation of a questionnaire to measure university students' knowledge on the effects of alcohol use during pregnancy	Cross Sectional	Brazil	47
	Myra et al.	I want to be a mom who is clean, who loves herself, and feels ok with herself-pregnant women's thoughts about motherhood and their unborn child when in treatment for substance use problems	Qualitative	Norway	10
	Sapru et al.	Combining physician expertise and women's lived experience to educate health professionals about preventing fetal alcohol spectrum disorders	Qualitative	USA	47
	Schölin & Arkell	Representations of 'risky' drinking during pregnancy on mumsnet: A discourse analysis	Qualitative	UK	14
	Stephen et al.	A rapid review of perinatal healthcare experiences of women with substance use disorders	Rapid Review	Canada	48
	Wu et al.	Uncovering the complexity of perinatal polysubstance use disclosure patterns on X: Mixed methods study	Mixed Methods	US	48
	Zimmermann et al.	The pressing need to integrate mental health into obstetric care	Narrative Review	USA	48