

# Media portrayals of alcohol use in pregnancy and fetal alcohol spectrum disorder: A scoping review

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## Abstract

**Background:** Little is known about media portrayals of alcohol use in pregnancy and fetal alcohol spectrum disorder (FASD). The media has an important role in informing the public about the potential for alcohol harms to the unborn child and shaping community understanding and attitudes toward alcohol use in pregnancy and FASD. This scoping review aimed to identify and analyze publications that explore how alcohol use in pregnancy and FASD have been portrayed in the international media across two decades.

**Methods:** Five databases were searched for peer-reviewed, English-language articles published in the medical literature between January 2004 and June 2024 that reported perceptions of, or analyzed content on, alcohol use in pregnancy and FASD in a variety of media types. Thematic analysis was used to identify themes across and between different types of media.

**Results:** We identified 18 relevant articles that analyzed content from newspapers ( $n=7$ ), online discussion forums ( $n=4$ ), Twitter (X,  $n=3$ ), Facebook ( $n=1$ ), television ( $n=1$ ), and mixed media ( $n=2$ ). Of these articles, 11 focused on alcohol use in pregnancy, two on FASD, and five on both. Five themes were identified: (1) Contradictions in messaging between media sources regarding alcohol harms; (2) Concerns about harm to children, mothers, and society; (3) Expectations of motherhood; (4) Stigma, stereotypes, and shame associated with alcohol use in pregnancy and FASD; and (5) Advocacy for FASD prevention and support.

**Conclusions:** Contradictory information provided within and between media sources sends mixed and potentially confusing messages about pregnancy-related alcohol harms. Messages must avoid stigmatizing pregnant women and individuals living with FASD. To raise awareness of alcohol harms and help prevent FASD, media communications must go beyond providing recommendations from alcohol use guidelines. Messaging should be culturally appropriate, strengths-based, and acknowledge the multiple drivers of alcohol use in pregnancy.

## KEYWORDS

alcohol use, fetal alcohol spectrum disorder, media portrayals, pregnancy, stigma

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## INTRODUCTION

Alcohol use during pregnancy is common and presents a significant public health issue. Fetal alcohol spectrum disorder (FASD) is a severe but potentially preventable neurodevelopmental disorder that results from fetal injury following prenatal alcohol exposure (PAE) (Elliott, 2015). FASD is associated with a range of lifelong physical, learning, and behavioral challenges that impact individuals and society internationally (Popova et al., 2023). Approximately 10% of pregnant women worldwide consume alcohol, but prevalence is highly variable (Popova et al., 2023). FASD prevalence is estimated to be 2%–5% in high-income countries, with higher prevalence in certain high-risk groups (Popova et al., 2023; Tsang et al., 2025).

Knowledge about and attitudes toward the harms of alcohol use in pregnancy can be influenced by friends, family, health professionals, alcohol advertising, alcohol promotions and availability, and media (Elek et al., 2013). Health professionals, such as obstetricians, midwives, and primary care physicians, play an important role in providing accurate information to support pregnant women to avoid alcohol (Meurk et al., 2014). Maternal education (antenatal and postnatal) via digital modalities has reported significantly improved patient outcomes, including increased knowledge, emotional benefits, and behavioral changes (Schnitman et al., 2022). However, few health literacy programs have been developed for pregnant women (Zibellini et al., 2021).

Research exploring women's attitudes toward alcohol use in pregnancy has found that most participants endorse abstinence as the safest course of action. However, some women question the evidence regarding the risks of low-level alcohol consumption and perceive abstinence-based recommendations as patronizing (Ujhelyi Gomez et al., 2022).

Media encompasses traditional media (newspapers, TV news, and special interest stories) and new media (social media, including Facebook, X/Twitter, and online forums). Health promotion campaigns and alcohol advertising differ in intent (these are designed to influence behavior or consumption), while media portrayals reflect cultural narratives and societal attitudes toward alcohol use in pregnancy and FASD.

Public reactions to the media, including news coverage, reveal common stereotypes relating to alcohol use in pregnancy and FASD (Aspler, Bogossian, & Racine, 2022). Further, mothers of children with FASD are highly stigmatized for consuming alcohol during pregnancy, leading to discrimination by the public (Corrigan et al., 2017). Interestingly, programs to promote health literacy and understanding about alcohol use in pregnancy and FASD show that, contrary to expectations, FASD literacy is positively associated with increased stigma (Corrigan et al., 2018).

It is important to understand how the media portray alcohol use in pregnancy and the potential for harm to the unborn child, including FASD, because this can shape society's knowledge and understanding of this public health issue, including its attitudes and behaviors. However, media portrayals may present an overly simplistic view, failing to consider the complex drivers of alcohol use in

pregnancy. This may perpetuate shame and contribute to the stigmatization of women who use alcohol during pregnancy and people living with FASD.

The aim of this scoping review is to identify and analyze publications that explore how alcohol use in pregnancy and FASD have been portrayed in the international media across two decades.

## METHODS

A literature search was performed in the Scopus, Medline, Embase, CINAHL, and PsycINFO databases. These databases were chosen to ensure comprehensive coverage of the humanities, sciences, and medical literature. The search was designed in collaboration with a university research librarian. Appendix 1 describes the search terms. The focus was on academic peer-reviewed research, so grey literature was not included.

Studies were included if they met the following criteria: (1) Described media portrayals of alcohol use in pregnancy and/or FASD; (2) Provided relevant content for analysis of media portrayals of alcohol use in pregnancy and/or FASD from any of a variety of media sources (including traditional media such as TV, newspapers, and magazines and new media such as social media and online forums); (3) Were published in peer-reviewed journals in English between January 2004 and June 2024. Articles were excluded if they reported on health promotion campaigns about alcohol use in pregnancy and FASD; health information from nonmedia sources (e.g., health professionals, guidelines); alcohol advertising and perceptions of advertising; or media portrayals of people with neurodevelopmental disabilities apart from FASD or alcohol consumption outside of pregnancy.

We used PRISMA guidelines to inform study selection, data extraction, and data synthesis (Tricco et al., 2018). As this is a scoping review, an analysis of the risk of bias across and within studies was not undertaken. The Covidence software (Veritas Health Innovation, 2024) was used to manage title and abstract review, study selection, and data extraction by two authors (FR and SM). Extracted data included study characteristics, authors, publication year, country, study design, participants, media type, article focus (alcohol use in pregnancy, FASD, or both), and relevant findings. Consensus on study selection and data extraction was reached via discussion between FR and SM.

We used an inductive approach to thematic analysis to capture how media portrayals of alcohol use in pregnancy and FASD are represented across diverse sources, allowing themes to be identified organically and reflect the complexity and variability of the discourse without imposing a predefined theoretical lens. NVivo (QSR International, 2024) was used by FR to undertake a qualitative thematic synthesis of the studies (Thomas & Harden, 2008). This initially involved free-coding the study themes relating to media portrayals of alcohol use in pregnancy and FASD. Studies were then grouped by code using an inductive approach to identify higher level descriptive and analytical themes (Thomas & Harden, 2008).

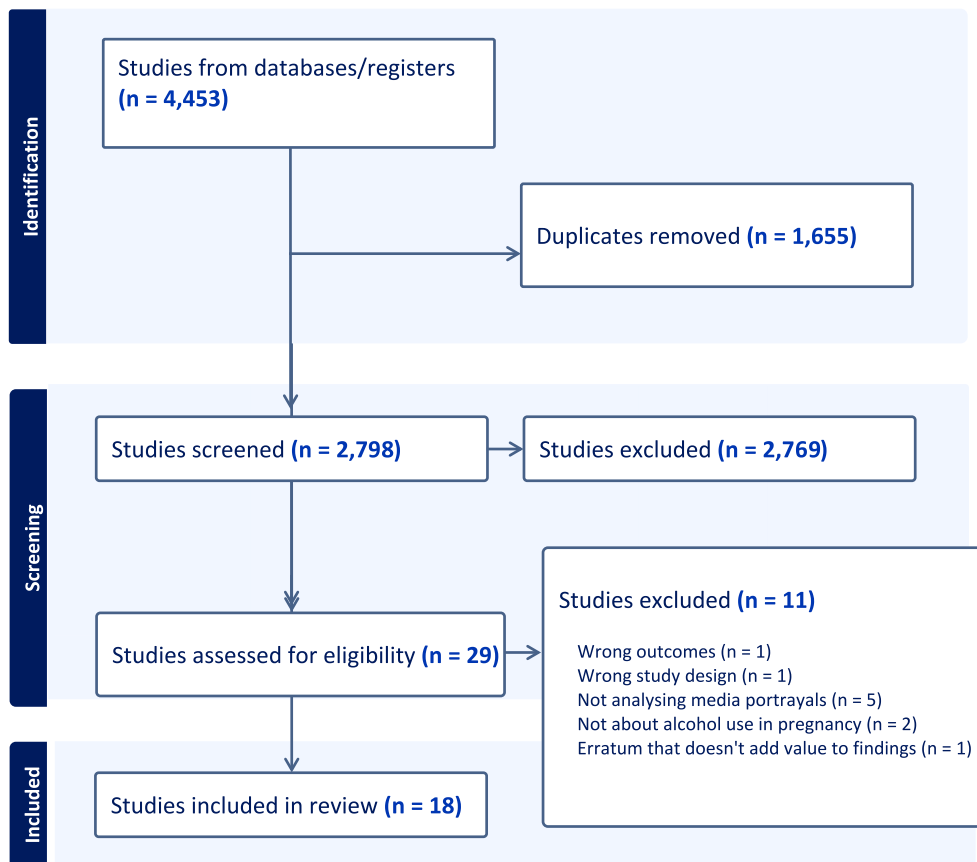


FIGURE 1 PRISMA diagram representing study selection.

In accordance with this method, descriptive themes remain closely aligned with the original studies, reflecting their findings directly. In contrast, analytical themes involved a deeper level of interpretation that extended beyond the initial data to develop new insights, theoretical explanations, or hypotheses.

## RESULTS

The database search identified 4453 potentially relevant articles. After deduplication, 2799 article abstracts were screened against the inclusion and exclusion criteria, and 29 articles were retained for full-text review. Eighteen studies satisfied all inclusion criteria (Figure 1).

Table 1 describes the characteristics and results of the final set of included studies. Studies included analyses of media portrayals from a range of sources in Australia (n=5), the United Kingdom (n=4), the United States (n=3), Canada (n=3), France (n=2), Ireland (n=2), and Germany (n=1). Two studies were conducted across multiple countries (Lee et al., 2016; Maani Hessari et al., 2019). Eleven articles focused on alcohol use in pregnancy, two focused on FASD, and five focused on both.

The 18 articles included analyses of newspapers (n=7, including a total of 2,632 newspaper articles), online discussion forums (n=4),

Twitter (X, n=3, including a total of 3,652 tweets), Facebook (n=1, including 18 posts), television (n=1), and mixed media types (n=2) (Table 1). Messages conveyed varied between the media types. For example, newspapers and TV news stories featured analysis of evidence and popular debate as interpreted by journalists, such as the evidence regarding harm from low to moderate prenatal alcohol exposure (McCallum & Holland, 2018). By contrast, online discussion forums and Facebook reflected public opinion and general knowledge more directly, as illustrated by the view that abstinence is a prerequisite for qualifying as a “good mother” (Binder et al., 2024).

Analysis of media portrayals found in Twitter (X) primarily explored advocacy debates, and discrepancies in portrayals were noted in line with the type of organization tweeting the message (Maani Hessari et al., 2019). For example, bodies funded by the alcohol industry were more likely to tweet messages about the need for individuals to take responsibility for their own drinking behavior, while charity organizations (public health and disability nongovernmental organizations) were more likely to tweet messages relating to the specific health harms associated with consuming alcohol during pregnancy (Maani Hessari et al., 2019; Schölin & Heenan, 2022).

Five themes relating to how alcohol use in pregnancy and FASD are portrayed in the media were identified: (1) Contradictions in messaging between media sources regarding alcohol harms; (2) Concerns about harm to children, mothers, and society;

**TABLE 1** Characteristics, media type, and findings of studies meeting review criteria.

Author, year	Country	Study design	Participants/ media type (year of media publication)	Alcohol use in pregnancy focus	FASD focus	Findings
<b>1. Newspapers</b>						
1. Aspler et al. (2018)	Canada	Media content analysis	286 articles from 10 major English newspapers (2002–2015)	✓	✓	The most common theme was 'crime associated with FASD'. The researchers explored connections between media coverage, common disability stereotypes (i.e., criminal behavior and "the villain"), FASD stigma, and expectations of motherhood
2. Aspler et al. (2019)	Canada	Content analysis	286 articles from 10 major newspapers (2002–2015). These articles are the same as those in Aspler 2018	✓	✓	Themes included: (1) prevalence of FASD and women's alcohol consumption; (2) research related to FASD; (3) diagnosis of FASD; (4) treatment of FASD and maternal substance abuse; (5) primary disabilities associated with FASD; and (6) effects of alcohol exposure during pregnancy
3. Connolly-Ahern and Broadway (2008)	USA	Qualitative framing analysis	239 newspaper articles (1997–2007)		✓	Information about FASD was presented in three main story types: health features, special interest profiles, and public safety news. Three frames emerged from the text: dangerous mothers, fetal wellness, and victimization
4. Cook et al. (2020)	Australia	Content analysis	1394 articles from the 18 major newspapers (2000–2017)	✓		An increasingly strong message on abstinence in pregnancy was communicated through Australian newspaper media over time. The messaging is mixed, with many articles not endorsing a clear position on alcohol use in pregnancy
5. Eguigaray et al. (2016)	Australia	Content analysis	80 articles from 21 national and metropolitan newspapers (2012)	✓	✓	Two frames: (1) sympathy (toward children, mothers or adults with FASD); (2) shame (of mothers, health professionals and government)
6. Lowe et al. (2010)	UK	Quantitative and qualitative assessment	401 newspaper articles (1980–2008)	✓	✓	Themes identified alcohol use as a social problem, public's heightened concerns about children at risk and shifts in ideas about the responsibility of pregnant women

TABLE 1 (Continued)

Author, year	Country	Study design	Participants/ media type (year of media publication)	Alcohol use in pregnancy focus	FASD focus	Findings
7. Wolfaardt et al. (2018)	Australia	Systematic content analysis	172 newspaper articles (1999–2014)	✓		Low unpaid print newspaper coverage of the <i>Australian Guidelines to Reduce Health Risks from Drinking Alcohol</i> may contribute to low community knowledge of the guidelines; 27% of the coverage mentioned alcohol use in pregnancy
<b>2. Online discussion forums</b>						
8. Binder et al. (2024)	Germany	Content analysis	5 forums with <i>n</i> = 115 participants (2018–2019)	✓		Five themes: (1) low alcohol health literacy as a breeding ground for stigmatization; (2) the widespread assumption that maternal abstinence is a prerequisite for being considered a "good mother"; (3) Interpersonal role conflicts and a guilty conscience as a result of stigmatization or self-stigmatization; (4) Paying little attention to the role of psychosocial factors in alcohol consumption, especially regarding partner responsibility during pregnancy; (5) Understanding the "zero alcohol during pregnancy" recommendation as a complete ban, associated with loss of autonomy
9. Frennesson et al. (2024)	UK	Qualitative content analysis	395 Online forum threads (2002–2022)	✓		Mothers and expecting mothers use the online forum Mumsnet to seek reassurance and information regarding alcohol in pregnancy from others in similar situations
10. Toutain (2010)	France	Qualitative	250 posts by 42 pregnant women in three Internet chat groups (2007)	✓		The recommendation for total abstinence is often misunderstood by women (abstinence is not seen as not drinking at all), as are the consequences of drinking for unborn babies
11. Toutain (2013)	France	Qualitative	35 pregnant women on Internet forums (2009–2010)	✓		Pregnant women shared false information on alcohol consumption during pregnancy and had a lack of pregnancy knowledge
<b>4. Twitter (X)</b>						
12. Culp et al. (2022)	USA	Content and thematic analysis	500 tweets (2019–2021)	✓		There are individual, interpersonal and population-level stigmas about perinatal alcohol use and negative sentiment towards women who use alcohol while pregnant

(Continues)

TABLE 1 (Continued)

Author, year	Country	Study design	Participants/ media type (year of media publication)	Alcohol use in pregnancy focus	FASD focus	Findings
13. Maani Hessari et al. (2019)	UK, Australia, Ireland	Content analysis	2805 tweets by alcohol industry-funded vs. nonalcohol industry-funded charities (2016)	✓		Alcohol industry-funded bodies were significantly less likely to tweet about physical health harms, including harms from alcohol use in pregnancy
14. Schölin and Heenan (2022)	Australia	Content analysis	347 tweets by health and disability organizations, including some alcohol industry-funded (2010–2019)	✓	✓	Tweets generally focused on FASD. Direct advice around alcohol use during pregnancy and official guidelines was infrequent
<b>3. Facebook</b>						
15. Oram et al. (2018)	USA	Mixed-methods and an inductive framework	18 Facebook posts from 42 young pregnant women (2019)	✓		Young women described craving alcohol and reasons for abstaining. There was a focus on abstinence from and negative consequences of substance use; however, some young women continue using substances (including alcohol) during pregnancy
<b>4. Television</b>						
16. Aspler, Harding, and Cascio (2022)	Canada	Discourse analysis	One television program		✓	The inclusion of a character with FASD on TV is a significant step forward; however, the reliance on stereotypical representations remains a major problem
<b>5. Mixed media sources</b>						
17. Lee et al. (2016)	UK, USA, Ireland	Content and thematic qualitative analysis	65 items, including online news media, newspapers, comments and blogs (2012–2015)	✓		Newspaper journalists exaggerated and misrepresented research findings. Communication to the press and the initial interpretation of findings played a role
18. McCallum and Holland (2018)	Australia	Qualitative framing methodology	110 media items: 60 newspaper stories, 36 articles from parenting and pregnancy websites, and 14 television news stories (2013–2014)	✓		By framing alcohol consumption during pregnancy in terms of “contested evidence and advice” and “women’s rights,” news and popular health media can be seen as complicating the government’s advice

(3) Expectations of motherhood; (4) Stigma, stereotypes, and shame associated with alcohol use in pregnancy and FASD; and (5) Advocacy for FASD prevention and support. Table 2 lists the five analytical themes identified in the review relating to media portrayals of alcohol use in pregnancy and FASD and the relevant citations for each theme.

### Theme 1. Contradictions in messaging between media sources regarding alcohol harms

Taken as a whole, the various media sources provided conflicting messages regarding alcohol use in pregnancy and FASD. On the one hand, messages could potentially alarm mothers, even leading some to question whether they should seek a termination of pregnancy. On the other hand, some messages provided recommendations that were not consistent with alcohol consumption guidelines, leading to conflicting and confusing advice (Eguigaray et al., 2016). For example, an Australian study examining portrayals of alcohol use in pregnancy in news media and in pregnancy and parenting websites during 2013–2014 found “contested evidence and advice”: conflicting expert advice and research findings, confusion by women and opposition to the official guidelines (McCallum & Holland, 2018).

Most current alcohol consumption guidelines advise women not to consume alcohol during pregnancy or when planning a pregnancy, but debate continues regarding the evidence underpinning this advice, particularly in relation to low-level or infrequent alcohol consumption (McCallum & Holland, 2018). Participants in online discussion forums suggested that the “zero alcohol during pregnancy” recommendation felt like a “ban” rather than encouraging personal responsibility (Binder et al., 2024; Frennesson et al., 2024).

While many news articles state that no amount of alcohol is safe to drink during pregnancy, others portray light drinking as being anything from harmful to not harmful, or even benefiting child development (Aspler et al., 2019). Newspaper reports of new research focused on associations between different levels of prenatal alcohol exposure (i.e., light drinking vs. heavy drinking) and FASD outcomes or approaches to diagnosis, screening, and treatment of FASD (Aspler et al., 2019; Eguigaray et al., 2016). Researchers have raised concerns about the accuracy of reporting of research findings in the media, especially in messages directed to pregnant women about the risks of drinking alcohol (Lee et al., 2016). For example, research that reported that alcohol use during pregnancy is positively associated with a higher IQ in children is complex to communicate because of the need also to convey the impact of confounding factors such as socioeconomic status (Lee et al., 2016). Additionally, some news articles framed research evidence as uncertain or open to debate, thus undermining its validity (Lowe et al., 2010; McCallum & Holland, 2018).

Some study authors suggested that messages from media sources needed to be more specific to provide helpful information.

For example, tweets by disability organizations often promote public health guidelines; however, researchers noted that the messaging can be vague (Schölin & Heenan, 2022). Newspapers that reference public health guidelines were also found to lack specific information about the recommended alcohol consumption limit (Wolfaardt et al., 2018). For example, French studies found that women in online discussion forums had misunderstood the recommendation for abstinence (whereby abstinence was not perceived as “not drinking at all”) (Toutain, 2010, 2013).

The prevalence of alcohol use in pregnancy was explored in multiple newspapers (Aspler et al., 2019; Cook et al., 2020). Given the high prevalence of PAE, the authors of one Australian study expressed concern that 50% of newspaper articles failed to adopt a firm position on drinking during pregnancy or to provide advice on abstinence (Cook et al., 2020).

Information about FASD was mixed and varied according to country and media type. Analysis of Canadian newspapers found detailed portrayals of the primary and secondary disabilities associated with FASD in addition to information on diagnosis and treatment (Aspler et al., 2019). By contrast, a study of Australian tweets found these provided limited information on the disabilities associated with FASD (Schölin & Heenan, 2022). Similarly, a French study found limited information about FASD in online discussion forums (Toutain, 2010).

### Theme 2. Concerns about harm to children, mothers, and society

Media portrayals included concerns about harm to children, mothers, and society from prenatal alcohol exposure and FASD. An analysis of portrayals of alcohol use in pregnancy in Australian newspapers across 18 years found more than half of the articles reported harms to the child from PAE (Cook et al., 2020). On X/Twitter, “most Twitter users perceived perinatal alcohol use as harmful to the baby and a violation of motherhood.” (Culp et al., 2022, p. 6.)

Interestingly, individuals with FASD were sometimes portrayed as both perpetrators and victims of crime (Connolly-Ahern & Broadway, 2008; Eguigaray et al., 2016). Media portrayals of perpetrators focused on young people's treatment by the justice system and criminal responsibility, given the young people's lack of insight into the consequences of their actions. The effectiveness and appropriateness of prison as a punishment for young people with cognitive impairment, who may lack understanding of the distinction between right and wrong (or legal and illegal), was questioned (Aspler et al., 2018). Blame and wrongdoing associated with criminal behavior led to a portrayal of shame in some instances (Aspler et al., 2018). On the other hand, some media portrayals expressed sympathy for children with FASD. Some researchers noted that sympathy for the child was more common than sympathy for the biological mother (Eguigaray et al., 2016).

Harm to the mother (including problems bonding with the newborn) was a less common theme (Cook et al., 2020). By contrast,

TABLE 2 Themes relating to media portrayals of alcohol use in pregnancy and FASD.

Themes	Description	Studies reporting this theme
<b>1. Contradictions in messaging between media sources regarding alcohol harms</b>		
Alcohol consumption guidelines	Messages provided recommendations that were not consistent with alcohol consumption guidelines, leading to conflicting and confusing advice	Aspler et al. (2019), Binder et al. (2024), Cook et al. (2020), Eguiagaray et al. (2016), Frennesson et al. (2024), Maani Hessari et al. (2019), McCallum & Holland (2018), Schölin & Heenan (2022), Toutain (2010, 2013)
Effects of alcohol exposure during pregnancy	Messages from media sources needed to be more specific to provide helpful information	Aspler et al. (2019), Connolly-Ahern & Broadway (2008), Cook et al. (2020), Frennesson et al. (2024), Lee et al. (2016), Lowe et al. (2010), Maani Hessari et al. (2019), McCallum & Holland (2018), Schölin & Heenan (2022), Toutain (2010, 2013)
Prevalence of alcohol use in pregnancy and FASD	The media reported the prevalence of alcohol use in pregnancy, but failed to adopt a firm position on drinking during pregnancy or to provide advice on abstinence	Aspler et al. (2019), Cook et al. (2020), McCallum & Holland (2018), Schölin & Heenan (2022)
Diagnosis and treatment of FASD	Information on the diagnosis and treatment of FASD	Aspler et al. (2019), McCallum & Holland (2018), Schölin & Heenan (2022)
Disabilities associated with FASD	Information on primary and secondary disabilities associated with FASD was limited	Aspler et al. (2018, 2019), Schölin & Heenan (2022), Toutain (2010)
Research related to FASD	Researchers raised concerns about the accuracy of reporting of research findings in the media, especially in messages directed to pregnant women about the risks of drinking alcohol	Aspler et al. (2019), Eguiagaray et al. (2016), Lee et al. (2016), Lowe et al. (2010), Maani Hessari et al. (2019), McCallum & Holland (2018)
<b>2. Concerns about harm to children, mothers and society</b>		
Crime prevention	Individuals with FASD were portrayed as both perpetrators and victims of crime	Aspler et al. (2018), Connolly-Ahern & Broadway (2008), Eguiagaray et al. (2016)
FASD and social harms	Media portrayals of the social harms associated with FASD focused on victims of crime and the societal impacts, including the economic, social, and emotional costs of FASD	Aspler et al. (2018), Connolly-Ahern & Broadway (2008)
Harm to the child and sympathy	Media portrayals included concerns about harm to children from prenatal alcohol exposure and FASD	Eguiagaray et al. (2016), Maani Hessari et al. (2019), Cook et al. (2020), Culp et al. (2022), Schölin & Heenan (2022)
Harms to the mother	Harm to the mother, including problems bonding with their newborn, and challenges faced by foster and adoptive parents in caring for children with FASD	Connolly-Ahern & Broadway (2008), Cook et al. (2020), Maani Hessari et al. (2019)
<b>3. Expectations of motherhood</b>		
Abstinence is a prerequisite for being a good mother	Abstinence from alcohol during pregnancy was portrayed as a prerequisite for being a "good mother." Women were expected voluntarily to abstain from alcohol during pregnancy to promote health and well-being	Binder et al. (2024), Cook et al. (2020), Eguiagaray et al. (2016), Frennesson et al. (2024), Lowe et al. (2010), Maani Hessari et al. (2019), McCallum & Holland (2018), Schölin & Heenan (2022), Toutain (2010, 2013)
Blame for risk-taking and dangerous mothers	A "dangerous mother" is an irresponsible woman who engages in risk-taking behaviors during pregnancy	Connolly-Ahern & Broadway (2008), Culp et al. (2022), McCallum & Holland (2018), Toutain (2010, 2013)
The social context and women who use alcohol in pregnancy	The challenge of being abstinent from alcohol due to cravings, being around others who are drinking or intoxicated and the challenge of maintaining social interaction without drinking alcohol	Eguiagaray et al. (2016), Culp et al. (2022), Binder et al. (2024), Oram et al. (2018), Aspler et al. (2019)
Women would not deliberately harm their child	These media portrayals construct women as being responsible for knowing the risks of PAE and for the wellbeing of the fetus as primary. The focus was solely on the mother as being responsible, rather than also considering the role of fathers, family and the broader community	Binder et al. (2024), Eguiagaray et al. (2016), Frennesson et al. (2024), Toutain (2010, 2013)

TABLE 2 (Continued)

Themes	Description	Studies reporting this theme
Women's rights	Women's rights: to their own lives, to make their own decisions about alcohol consumption and not to be morally judged for their behaviors. The policing of women's bodies	Cook et al. (2020), Frennesson et al. (2024), Lowe et al. (2010), Maani Hessari et al. (2019), McCallum & Holland (2018)
<b>4. Stigma, stereotypes and shame associated with alcohol use in pregnancy and FASD</b>		
Disability stereotypes	People living with FASD who were viewed as having a disability were variously framed as victims or villains	Aspler et al. (2018); Aspler, Harding, & Cascio (2022)
Women who use alcohol in pregnancy	Women who use alcohol during pregnancy were sometimes described as "villains" and blamed for causing FASD in their children. Others called for compassion towards women who had consumed alcohol during pregnancy	Aspler et al. (2019), Binder et al. (2024), Culp et al. (2022), Eguiagaray et al. (2016), Maani Hessari et al. (2019), Schölin & Heenan (2022), Toutain (2013)
FASD stigma	Stigma and shame were directed towards individuals with FASD	Aspler et al. (2018, 2019), Eguiagaray et al. (2016), Schölin & Heenan (2022)
Indigenous communities	The prevalence of FASD in Indigenous communities was commonly exaggerated	Aspler et al. (2018, 2019), Lowe et al. (2010), McCallum & Holland (2018), Schölin & Heenan (2022)
Young women	Alcohol consumption was portrayed as being particularly problematic for young women, contributing to the stereotyping of this group	Lowe et al. (2010), Maani Hessari et al. (2019)
Health professionals and the government	Stigma and shame were directed at health professionals and the government for their silence and role in failing to address FASD	Eguiagaray et al. (2016)
<b>5. Advocacy for FASD prevention and support</b>		
Policy action	Policy action focused on raising awareness, promoting rights and government action, investment, and program approaches	Eguiagaray et al. (2016), Lowe et al. (2010), McCallum & Holland (2018), Schölin & Heenan (2022)
Prevention of FASD	Advocates for the prevention of FASD called for specific policy action; for example, to increase funding for the prevention of alcohol use in pregnancy	Aspler et al. (2018), Cook et al. (2020), Culp et al. (2022), Eguiagaray et al. (2016), Schölin & Heenan (2022)
Funding for FASD, especially for priority groups	Researchers have suggested the need for government investment to improve the prevention, diagnosis, and management of FASD. Advocacy for people with FASD in the criminal justice system highlighted the inequalities relating to Indigenous populations	Aspler et al. (2018), Eguiagaray et al. (2016), Schölin & Heenan (2022)
Support for FASD stakeholders	Newspaper articles advocated for more support for FASD stakeholders, including individuals with FASD, their birth mothers and others.	Aspler et al. (2018)

there was fuller (and more sympathetic) coverage of the challenges faced by foster and adoptive parents in caring for children with FASD (Connolly-Ahern & Broadway, 2008).

Media portrayals of the social harms associated with FASD focused on victims of crime and the societal impacts, including the economic, social, and emotional costs of FASD (Aspler et al., 2018; Connolly-Ahern & Broadway, 2008). Crime associated with FASD was the most common theme found in Canadian newspapers (Aspler et al., 2018). An example from the Calgary Herald in 2002 was, "A 14-year-old resident of a facility for youngsters diagnosed with FAS has been charged with first-degree murder in the case" (Aspler et al., 2018).

### Theme 3. Expectations of motherhood

With some exceptions, abstinence from alcohol during pregnancy was portrayed as a prerequisite for being a "good mother" in newspapers (Lowe et al., 2010) and online forums (Binder et al., 2024). Women were expected voluntarily to abstain from alcohol during pregnancy, and there was little understanding that some women were alcohol-dependent and would need medical help to abstain. This message was reinforced by some newspapers that portrayed a "dangerous mother" as one who engages in risk-taking behaviors during pregnancy (Connolly-Ahern & Broadway, 2008; McCallum & Holland, 2018). "The 'blame risk taking mothers' frame was evident in stories reporting

on proposed punitive measures and paint a picture of irresponsible women continuing to drink in the face of public health advice to the contrary." (McCallum & Holland, 2018, p. 416). In French online discussion forums, abstinent women also framed drinking as being incompatible with being a "good mother" (Toutain, 2010, 2013). One study provided an example from a 37-year-old woman's online post: "Zero alcohol, nothing else will do!!! there are too many risks; it would be seriously irresponsible to do otherwise" (Toutain, 2013, p. 19).

A strong theme portrayed in the media was the alternative view that "women would not deliberately harm their child." With a focus on health and well-being during pregnancy, these media portrayals construct women as being responsible for knowing the risks of PAE and for the well-being of the fetus as primary (Eguiagaray et al., 2016). The focus was solely on the mother as being responsible, rather than also considering the role of fathers, family, and the broader community (Binder et al., 2024). In online forums, pregnant women expressed anxiety about having consumed alcohol by mistake or before they knew they were pregnant (Binder et al., 2024; Frennesson et al., 2024).

While the individual responsibilities of the mother were a dominant theme, there was also some nuance across various media. Analysis of newspapers revealed attention to women's rights (to their own life, to make their own decisions about alcohol consumption and not to be morally judged for their behaviors), to the policing of women's bodies, and to the risk of raising unnecessary anxiety (Cook et al., 2020; Lowe et al., 2010; McCallum & Holland, 2018). In online forums, some women expressed that they wanted to enjoy life and celebrate with others but were worried about being judged: "I am going for a nice meal to celebrate, but I am worried that people will judge me if I have a drink." (Frennesson et al., 2024). Elsewhere, consuming alcohol during pregnancy was seen not as a matter of expert opinion but as a social practice that individual women negotiate during their personal experience of pregnancy (McCallum & Holland, 2018).

Young women who posted on Facebook while pregnant shared the challenge of being abstinent from alcohol due to cravings, being around others who are drinking or intoxicated, and the challenge of maintaining social interaction without drinking alcohol (Oram et al., 2018). One example provided was from a 23-year-old pregnant woman who said, "i wish i could drink, i'm so irritated!" (Oram et al., 2018, p. 7). Some of these young pregnant women continued to use alcohol during pregnancy and expressed a need for ongoing interventions to support abstinence.

#### **Theme 4. Stigma, stereotypes, and shame associated with alcohol use in pregnancy and FASD**

Stigma, stereotypes, and shame were portrayed in relation to people with disabilities, women who use alcohol during pregnancy, people with FASD, Indigenous communities, young women, health professionals, and the government.

People living with FASD who were viewed as having a disability were variously framed as victims or objects of pity, as burdens, as superheroic, or as villainous in newspapers (Aspler et al., 2018).

One study analyzing a television portrayal of a person with FASD found the character was portrayed as a villain (Aspler, Harding, & Cascio, 2022). Given the range of neurodevelopmental impairments associated with FASD, these stereotypes represent a distorted picture that is often at odds with how people living with FASD see themselves (Aspler et al., 2018; Aspler, Harding, & Cascio, 2022). The researchers concluded the impact of these stereotypes is to generate and perpetuate stigma (Aspler et al., 2018; Aspler, Harding, & Cascio, 2022).

Women who use alcohol during pregnancy were sometimes described as "villains" and blamed for causing FASD in their children (Eguiagaray et al., 2016). Others called for compassion toward women who had consumed alcohol during pregnancy (Schölin & Heenan, 2022). Most Canadian newspapers promoted access to treatment for maternal alcohol dependency; however, some news articles called for extreme measures involving criminalization and forced interventions for women who drink during pregnancy (Aspler et al., 2019). Social media sites, such as Twitter (X), generally conveyed strong statements that reflect the stigma surrounding prenatal alcohol use and motherhood (Culp et al., 2022).

Some media (newspapers, online forums, and X/twitter) expressed sympathy toward women who consumed alcohol before they were aware of their pregnancies and stopped drinking following pregnancy recognition (Eguiagaray et al., 2016; Schölin & Heenan, 2022; Toutain, 2013). Ceasing to drink is not necessarily straightforward. In online forums, women discussed the high demands of motherhood, including the pressure to abstain from alcohol use, which created stress and anxiety and led to self-stigma. "The fear of having harmed the child will likely have negative effects on self-esteem, which leads to self-stigmatization and an assumed lack of ability to adequately fulfil the role of the mother" (Binder et al., 2024, p. 6).

Stigma and shame were also directed toward individuals with FASD (Eguiagaray et al., 2016). The language used to describe individuals with FASD in media was not always respectful; for example, referring to "alcohol-damaged kids with FASD" instead of simply referring to "children with FASD" (Schölin & Heenan, 2022).

The prevalence of FASD in Indigenous communities was commonly exaggerated (Aspler et al., 2018). Canadian newspapers (Aspler et al., 2019) and Australian tweets (Schölin & Heenan, 2022) expressed concern for the scale of the problem in Indigenous populations and for Indigenous people in justice settings. In media stories reporting on Indigenous communities, FASD was often the dominant lens in contrast to media reporting on other groups (McCallum & Holland, 2018). FASD was also framed as an outcome of colonialism (Aspler et al., 2018). Media reporting of high rates of FASD in Indigenous communities, without attending to the broader reasons for drinking, can stigmatize these people (Aspler et al., 2019).

Alcohol consumption was portrayed as particularly problematic for young women, contributing to the stereotyping of this group (Lowe et al., 2010). An analysis of tweets funded by the alcohol industry (Maani Hessari et al., 2019) highlighted the behavioral aspects of drinking, especially in adolescents and young adult women. Furthermore, images attached to the tweets by alcohol

industry-funded organizations were predominantly of young women (Maani Hessari et al., 2019).

Stigma and shame were also related to health professionals and the government for their silence and role in failing to address FASD (Eguiagaray et al., 2016). For example, some media articles expressed concern that some health professionals are not skilled or confident enough to raise the issue of alcohol use in pregnancy with their patients. Governments were blamed for being silent on the issue of FASD and needing more policies and action to develop culturally appropriate strategies to prevent and address FASD (Eguiagaray et al., 2016).

## Theme 5. Advocacy for FASD prevention and support

Advocacy for FASD prevention and support focused on government action, investment, and program approaches. Investigative journalism, via TV and in newspapers, provided an opportunity for advocacy for FASD prevention and support and called for government policy action (Eguiagaray et al., 2016; McCallum & Holland, 2018). Conversely, Australian newspapers also blamed the government for interfering in people's private lives (Lowe et al., 2010).

Advocates for the prevention of FASD called for specific policy action; for example, to increase funding for the prevention of alcohol use in pregnancy (Aspler et al., 2018), the need for culturally appropriate strategies for Indigenous groups (Eguiagaray et al., 2016), and to monitor the impacts of laws governing alcohol home delivery services (Culp et al., 2022). Ongoing policy debates were featured in tweets about FASD, including the need for investment from the government to improve the prevention, diagnosis, and management of FASD (Schölin & Heenan, 2022). Advocates called for strategic approaches to raising awareness to prevent harm and promote the rights of people living with FASD (Schölin & Heenan, 2022). Newspapers also advocated for more support for FASD stakeholders, including individuals with FASD, their birth mothers, and others (Aspler et al., 2018).

One study noted the absence of calling out the role that alcohol corporations and advertising play in being responsible for the consumption of alcohol during pregnancy (Eguiagaray et al., 2016).

Advocacy on Twitter (X) for people with FASD in the criminal justice system in Australia highlighted the inequalities relating to Indigenous populations due to overrepresentation and the need for screening, diagnosis, and services for people with FASD (Schölin & Heenan, 2022). Twitter (X) advocacy also highlighted issues of overrepresentation of individuals with FASD in the justice system and the need for procedural fairness.

## DISCUSSION

To our knowledge, this is the first literature review exploring media portrayals of alcohol use in pregnancy and FASD. Research involving content analysis and FASD from a range of media types over

20 years highlights the wide variety of sometimes conflicting messages to which pregnant women and the wider community (including people with FASD, caregivers, and health professionals) have been exposed. Media portrayals are also likely to reflect community attitudes. For example, focus groups exploring stereotypes relating to FASD (Aspler, Bogossian, & Racine, 2022) matched stereotyped portrayals in newspapers (Aspler et al., 2018, 2019).

Contradictions between media sources may challenge awareness of the harms of alcohol use in pregnancy and highlight the complexity of communicating accurately about FASD. The characteristics and emphases of messages varied between media types, reflecting varying levels of evidence use, public opinion, or advocacy. The confusion arising from these inconsistent and often contradictory messages is to be expected. We found analyses of news articles that stated that no amount of alcohol is safe to drink during pregnancy, while others portrayed light drinking as being anything from harmful to not harmful, or even benefiting child development (Aspler et al., 2019). Part of the reason for this variation may be that there is limited and mixed evidence about the harm caused by low-level alcohol use (Aspler et al., 2019).

The media can and should play an important role in informing the public about alcohol harms and public health alcohol consumption guidelines. Encouragingly, there has been a decreasing trend over time in the number of articles reporting mixed advice to women, which may be due to the release of public health guidelines on alcohol consumption (Cook et al., 2020). However, even alcohol consumption guidelines can contain unclear messaging (McCallum & Holland, 2018). For example, previous Australian alcohol consumption guidelines have stated that 'risks to the fetus from low-level drinking (such as one or two drinks per week) during pregnancy are likely to be "low" (National Health and Medical Research Council, 2009, p. 68). The current Australian Guidelines now state, "No safe level of alcohol consumption during pregnancy has been identified" and "The risk of harm to the fetus increases the more the mother drinks and the more frequently she drinks" (National Health and Medical Research Council, 2020, p. 3 and 5, respectively).

Stigma and negative stereotypes can impact individuals with FASD and broader society. Strong metaphors and expressive language used in the media might have a negative impact. This stigma can lead to silence, for example, by health professionals who feel uncomfortable asking pregnant women about their alcohol use, particularly Indigenous women (Hewlett et al., 2023). Language that avoids stigmatization and highlights the strengths of people who live with FASD can lead to social inclusion (Choate & Badry, 2019). "Stigma will continue unless specific efforts are made to change the discourse. This requires a collective effort by multiple professions who engage in research and work in this field" (Choate & Badry, 2019, p. 46).

Analysis of media content found that focusing on alcohol harms without considering the social context could stigmatize some groups (Aspler et al., 2019). For example, without consideration of the broader context of why women use alcohol, media messaging can stigmatize women who use alcohol when pregnant (Aspler

et al., 2019). Previous research has found that higher FASD literacy is linked to more stigma toward biological mothers of children with FASD (Corrigan et al., 2018). Thus, increased knowledge of FASD risks should be coupled with a communications approach that does not stigmatize mothers (Corrigan et al., 2017). More sensitive media messaging could shift public sentiment from shaming and blaming women to acknowledging their need for support throughout and beyond pregnancy (Aspler et al., 2019). The media could explore the role that many contextual factors—such as support from partners, family, or friends, access to alcohol and alcohol advertising—might play in pregnant women's consumption of alcohol.

The levers to enable change across a range of traditional and new media types are likely to vary significantly and warrant further exploration. We are aware of a recent study (published after our literature search) that undertook a thematic analysis of online forum comments and found that although online forums provide a source of peer support, these frequently spread misinformation (Frennesson et al., 2025).

The media portrayals analyzed in this review typically focused on mothers' use of alcohol, attributing blame and shame to these women. The media could shift language use to focus on PAE and the potential harm to the child, which may be less stigmatizing than "alcohol use in pregnancy." This could help to shift the blame from the individual to the substance and, in turn, to societal attitudes and norms. Inclusive communication guidelines for the media, such as those developed by the Canada FASD Research Network, can play an important role in informing journalists how to report on FASD in a way that reduces stigma (Canada FASD Research Network [CanFASD], 2023).

These findings about media portrayals may also have practical implications for prevention messaging and awareness campaigns. FASD public health campaigns can be associated with stigma (Bell et al., 2016). To avoid this, health promotion professionals and advocates need to ensure that facts are presented alongside the social context so people and groups are not further stigmatized (Aspler et al., 2019). Researchers have found that alcohol harm reduction campaigns might fill a potentially important gap if these focus on long-term harms (Dunstone et al., 2017). Health promotion programs should consider that there is a range of stigma types (including public stigma, self-stigma, stigma by association, and structural stigma), and a systematic approach for planning behavior change interventions is needed (Roozen et al., 2022). Digital tools are effective and are increasingly used as a feasible method for maternal patient education (Schnitman et al., 2022) and therefore, may play an important role in addressing the shortcomings of information included in a range of media types. It has been found that in Australian focus groups (e.g., yarning groups) that culturally responsive initiatives focusing on collective responsibility and community action may be crucial to shifting prominent alcohol norms (Lemon et al., 2022).

One study found that blame was directed by the media toward health professionals and the government for their role in failing to

address FASD, which resulted in stigma and shame for this group (Eguiagaray et al., 2016). This finding indicates a need for more skilled, confident professionals to ask about and support women who use alcohol during pregnancy, particularly as FASD is a stigmatized and hidden disorder among health professionals (Dunbar Winsor, 2021).

Media portrayals also indicate that advocates are calling for greater government investment in preventing and responding to FASD, with implications for policy development. For example, media advocacy for FASD prevention and support suggests that governments need to invest in policy action and increase funding for FASD programs (Aspler et al., 2018; Schölin & Heenan, 2022); control the advertising and availability of alcohol (Eguiagaray et al., 2016; Culp et al., 2022); employ culturally appropriate strategies (Eguiagaray et al., 2016); and support equitable access to screening, diagnosis, and services for people with FASD, including in the justice system (Schölin & Heenan, 2022).

Of note, the voices of people with FASD were missing from the included media portrayals. Inclusion of the voices and perspectives of people with FASD in media could be an important way for the public to develop a better understanding of their strengths and needs. Increased public familiarity with real-life stories may also reduce the stigma surrounding FASD. The involvement of people with FASD is important so that the dialogue can reflect both lived experiences and provide hope (Choate & Badry, 2019). A study exploring the portrayal of a person living with FASD in a USA television show concluded that "while the inclusion of a character with FASD on TV is an important step forward, reliance on these stereotyped representations remains significantly problematic" (Aspler, Harding, & Cascio, 2022, p. 335). Both more accurate dramatic media portrayals and real-life representations are needed.

We also noted an absence of studies identifying media advocacy to call out the role that alcohol corporations and advertising play in taking responsibility for the consumption of alcohol during pregnancy (Eguiagaray et al., 2016). The media could play a greater role in investigating and reporting on alcohol industry marketing, influencing alcohol research and policy.

In future research, more in-depth analysis of media portrayals of FASD may be needed. Across the 20 years that we reviewed, fewer studies analyzed media portrayals of FASD than alcohol use in pregnancy. Further, the use of research methods, such as focus groups, may help identify culturally responsive community-based initiatives (Lemon et al., 2022).

Although this is the first review of its kind, it has several limitations. While a comprehensive search was undertaken, studies may have been missed, including those from journals that are not indexed in Medline. As the literature spans 20 years, themes portrayed in the media have changed, and traditional media sources may be less relevant than new media to the contemporary context. Throughout this period, public health alcohol consumption guidelines have been developed and evolved, and, although not without contention, provide an authoritative and evidence-based source of

guidance to journalists, health professionals, and the public. With greater consensus about evidence-based messaging, other aspects of media portrayals, such as the media's role in communicating evidence-based guidelines without creating stigma, may now come into focus.

## CONCLUSIONS

More consistent messaging could improve awareness of the harms of alcohol use in pregnancy and FASD. However, media portrayals can stigmatize women who use alcohol when pregnant by placing responsibility on the individual, with little consideration of the broader social context. Stigma may prevent women from seeking and receiving compassionate medical attention and could lead to a lack of recognition of the risk of FASD in their children. Similarly, stigmatization of individuals living with FASD in the media may result in their exclusion from the medical, educational, and community supports required for lifelong health and well-being. Positive media portrayals of individuals living with FASD are needed to shift public attitudes.

More sensitive and evidence-informed media messaging could shift societal attitudes from shaming and blaming women and their children to acknowledging their need for support and acceptance in society. The use of nuanced language in this area is needed. Guidelines for media reporting on alcohol use in pregnancy and FASD should encourage the use of appropriate language, discourage stigmatizing frames, and be culturally appropriate. Public health communications to help prevent alcohol use in pregnancy and FASD need to go beyond providing information about alcohol consumption guidelines and the potential harms of alcohol use in pregnancy to acknowledge the multiple drivers of alcohol use and address stigma.

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## CONFLICT OF INTEREST STATEMENT

The authors have no conflict of interest to declare.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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**APPENDIX 1**

**Search strategy. The concepts were combined as follows: Alcohol use and pregnancy or FASD and Media. The search was conducted on July 15, 2024**

	Alcohol use	Pregnancy	FASD	Media
Medline	drinking behavior/ or alcohol abstinence/ or alcohol drinking/ or (alcohol* or liquor* or beer* or wine or spirit* or cocktail* or mixed drink*).mp	exp Pregnancy/ or (prenatal* or pregnan* or expecting* or matern* or fetus or foetus or gestation or child bear* or antenatal or gravidit*).mp. or Pregnant Women/ or Gravidity/	Fetal Alcohol Spectrum Disorders/ or (Fetal Alcohol Spectrum* or Foetal Alcohol Spectrum* or alcohol related neurodevelopmental* or prenatal alcohol exposure* or alcohol related birth defect or alcohol induced developmental* or fetal alcohol effect* or foetal alcohol effect*).mp. or (FASD or FAS or FAE or FAES or FASDS).tw.	internet/ or social media/ or Mass Media/ or Newspapers as Topic/ or Radio/ or Television/ or (internet or "web based" or mobile app* or Instagram* or Snapchat* or Facebook* or twitter* or social media* or mass media or news paper* or newspaper* or online* or magazine* or media portrayal* or television* or radio* or digital media* or electronic media* or print media* or Media content* or science communication*).mp.
Scopus	alcohol* OR liquor* OR beer* OR wine OR spirit* OR cocktail* OR "mixed drink*" or "drinking behavior*" OR "alcohol abstinence**"	prenatal* OR pregnan* OR expecting* OR matern* OR fetus OR foetus OR gestation OR child AND bear* OR antenatal OR gravidit*	"Fetal Alcohol Spectrum Disorders" or "Fetal Alcohol Spectrum*" or "Foetal Alcohol Spectrum*" or "alcohol related neurodevelopmental*" or "prenatal alcohol exposure*" or "alcohol related birth defect" or "alcohol induced developmental*" or "fetal alcohol effect*" or "foetal alcohol effect*" OR (FASD OR FAS OR FAE OR FAES OR FASDS)	internet OR "social media" OR "Mass Media" OR "Newspapers" OR radio OR television or "web based" or "mobile app*" or Instagram* or Snapchat* or Facebook* or twitter* or "social media*" or "mass media*" or "news paper*" or newspaper* or online* or magazine* or "media portrayal*" or television* or radio* or "digital media*" or "electronic media*" or "print media*" or "Media content*" or "science communication**"
Embase	"drinking behavior"/ OR "alcohol abstinence"/ OR "alcohol drinking"/ OR (alcohol* OR liquor* OR beer* OR wine OR spirit* OR cocktail* OR "mixed drink*").mp.	exp Pregnancy/ OR (prenatal* OR pregnan* OR expecting* OR matern* OR fetus OR foetus OR gestation OR "child bear*" OR antenatal OR gravidit*).mp. OR "Pregnant Women"/ OR Gravidity/	"Fetal Alcohol Spectrum Disorders"/ OR ("Fetal Alcohol Spectrum*" OR "Foetal Alcohol Spectrum*" OR "alcohol related neurodevelopmental*" OR "prenatal alcohol exposure*" OR "alcohol related birth defect" OR "alcohol induced developmental*" OR "fetal alcohol effect*" OR "foetal alcohol effect*").mp. OR (FASD OR FAS OR FAE OR FAES OR FASDS).tw.	internet/ or social media/ or Mass Media/ or Mass communication/ or (internet or "web based" or mobile app* or Instagram* or Snapchat* or Facebook* or twitter* or social media* or mass media or news paper* or newspaper* or online* or magazine* or media portrayal* or television* or digital media* or electronic media* or print media* or Media content* or science communication*).mp.
Cinahl	(MH "drinking behavior") OR (MH "alcohol abstinence") OR (MH "alcohol drinking") OR (alcohol* OR beer* OR wine OR spirit* OR cocktail* OR "mixed drink**")	(prenatal* OR pregnan* OR expecting* OR matern* OR fetus OR foetus OR gestation OR "child bear*" OR antenatal OR gravidit*) OR (MH "Pregnant Women") OR (MH Gravidity)	("Fetal Alcohol Spectrum*" OR "Foetal Alcohol Spectrum*" OR "alcohol related neurodevelopmental*" OR "prenatal alcohol exposure*" OR "alcohol related birth defect" OR "alcohol induced developmental*" OR "fetal alcohol effect*" OR "foetal alcohol effect*") OR ((TI FASD OR AB FASD) OR (TI FAS OR AB FAS) OR (TI FAE OR AB FAE) OR (TI FAES OR AB FAES) OR (TI FASDS OR AB FASDS))	(MH internet) OR (MH "social media") OR (MH "Mass Media") OR (MH "Newspapers as Topic") OR (MH Radio) OR (MH Television) OR (internet OR "web based" OR "mobile app*" OR Instagram* OR Snapchat* OR Facebook* OR twitter* OR "social media*" OR "mass media" OR "news paper*" OR newspaper* OR online* OR magazine* OR "media portrayal*" OR television* OR radio* OR "digital media*" OR "electronic media*" OR "print media*" OR "Media content*" OR "science communication**")

	Alcohol use	Pregnancy	FASD	Media
PsychInfo	"drinking behavior"/ OR "alcohol abstinence"/ OR "alcohol drinking"/ OR (alcohol*.mp. OR liquor*.mp. OR beer*.mp. OR wine.mp. OR spirit*.mp. OR cocktail*. mp. OR "mixed drink*".mp.	exp Pregnancy/ OR (prenatal*.mp. OR pregnan*. mp. OR expecting*.mp. OR matern*.mp. OR fetus.mp. OR foetus.mp. OR gestation. mp. OR "child bear*".mp. OR antenatal.mp. OR gravidit*. mp.) OR "Pregnant Women"/ OR Gravidity/	"Fetal Alcohol Spectrum Disorders"/ OR ("Fetal Alcohol Spectrum*" mp. OR "Foetal Alcohol Spectrum*").mp. OR "alcohol related neurodevelopmental*" mp. OR "prenatal alcohol exposure*").mp. OR "alcohol related birth defect". mp. OR "alcohol induced developmental*").mp. OR "fetal alcohol effect*").mp. OR "foetal alcohol effect*").mp.) OR (FASD.ti,ab. OR FAS.ti,ab. OR FAE.ti,ab. OR FAES.ti,ab. OR FASDS.ti,ab.)	internet/ OR "social media"/ OR "Mass Media"/ OR "Newspapers as Topic"/ OR Radio/ OR Television/ OR (internet.mp. OR "web based". mp. OR "mobile app*").mp. OR Instagram*.mp. OR Snapchat*.mp. OR Facebook*.mp. OR twitter*.mp. OR "social media*").mp. OR "mass media".mp. OR "newspaper*").mp. OR newspaper*.mp. OR online*. mp. OR magazine*.mp. OR "media portrayal*").mp. OR television*.mp. OR radio*.mp. OR "digital media*" mp. OR "electronic media*" mp. OR "print media*").mp. OR "Media content*").mp. OR "science communication*").mp.)