



Alcohol use and pregnancy



The beliefs and behavior of Minnesota women

Executive Summary

Project background and sample

The Minnesota Organization on Fetal Alcohol Syndrome (MOFAS) aims to eliminate disability caused by alcohol consumption during pregnancy and to improve the quality of life for those living with Fetal Alcohol Spectrum Disorders (FASD) throughout Minnesota. MOFAS works to achieve its mission by advancing public policy, educating citizens and policy makers, providing funding to community organizations, and offering resources to families such as screening and diagnosis, support groups, activities and classes.

In August 2012, Wilder Research was contracted by MOFAS to conduct a statewide assessment help the organization better understand women's attitudes and perceptions toward alcohol consumption during pregnancy. The survey is part of a statewide effort by MOFAS to prevent Fetal Alcohol Spectrum Disorders (FASD) in Minnesota. The statewide survey is intended to provide a current portrait of the behaviors and beliefs of 18 through 44 year old women regarding the use of alcohol during pregnancy.

Online surveys were conducted with a representative sample of women age 18 through 44 who lived throughout Minnesota between February and June 2013. Three hundred fifty-two women completed the online survey.

Key Findings

Key findings of this study include:

- Most Minnesota women drink alcohol, but few do so while pregnant.
- Among women who have been pregnant within the last five years, most did not feel others' drinking habits affected their alcohol use during pregnancy.
- Some women have misperceptions about the relative risk of alcohol use during pregnancy in relation to other substances. More women think that crack or cocaine use by a pregnant woman is highly likely to cause damage to a developing fetus than think the same is true for alcohol use by a pregnant woman. Furthermore, many feel as though liquor is more likely to be harmful to a baby than beer or wine.
- Most women think that alcohol use during pregnancy is uncommon. Furthermore, most report that people in their lives would be concerned if they used alcohol during pregnancy.
- Many women support public warnings and restrictions on serving alcohol to pregnant women.
- Minnesota women are still getting mixed messages about alcohol use during pregnancy from their doctors and health care providers. Collectively, nearly one in five women did not receive any messages about alcohol use from their doctor or medical provider during their most recent pregnancy, or were told that they could drink lightly, or in moderation.
- Many women have seen public awareness campaigns that warn of the danger of alcohol use during pregnancy. However, women are less familiar with the '049' campaign.



Recommendations and Next Steps

The following are recommendations for MOFAS to consider as they continue their work:

- Continue to work with health care professionals to spread information to women that no amount of alcohol is safe for the health of a developing fetus.
- Work to correct misperceptions among women who feel alcohol can be used “safely” during pregnancy.
- Consider supporting or promoting policy changes that restrict alcohol service to pregnant women, and that require establishments that serve alcohol to post more prominent warning signs about the dangers of alcohol use during pregnancy.

MOFAS has a series of listening sessions scheduled to gather public feedback to the survey findings, and to discuss strategies for using survey results for future planning, outreach, and programming. Furthermore, MOFAS has begun to explore the unique needs of specific cultural communities in Minnesota, and will continue this work in future years. MOFAS will use the study results to inform data-driven public education and public policy strategies that support MOFAS' mission.

Summary

Background

Fetal Alcohol Spectrum Disorders (FASD) is an umbrella term describing the range of effects that can occur in an individual whose mother drank alcohol during pregnancy. These effects may include physical, mental, behavioral, and/or learning disabilities with possible lifelong implications. In Minnesota, about 8,500 babies are born every year with prenatal alcohol exposure¹.

Although FASD cannot be cured, it is entirely preventable. MOFAS aims to eliminate disability caused by alcohol consumption during pregnancy and to improve the quality of life for those living with FASD throughout Minnesota. MOFAS works to achieve its mission through public policy, education, providing funding to community organizations, and offering resources to families such as screening and diagnosis, support groups, activities and classes.

The current belief in the scientific community and the U.S. Surgeon General² is that no level of alcohol consumption during pregnancy is safe for the health of the fetus and that there is a clear causal relationship between prenatal alcohol consumption and FASD.

However, there is conflicting data and explanations regarding who engages in prenatal alcohol consumption and why they do so. This survey aims to provide a current portrait of the behaviors and beliefs of Minnesota women of child bearing age regarding the use of alcohol during pregnancy.

Methods

To capture information about women's attitudes and behaviors regarding alcohol use during pregnancy, we conducted an online survey with a random sample of adult women of child-bearing age (18 – 44 years old) throughout Minnesota. Younger women (13 – 17 years old) were excluded from the study due to the difficulty of obtaining parental consent to administer surveys to minors. A random address-based sample of households in Minnesota was selected to receive a mailed invitation to complete an online survey. The mailed invitation included information about who was eligible to take the survey (women 18 – 44 who live in Minnesota) and a cover letter with an invitation to complete an online survey.

¹ Figure derived from estimates from the National Survey on Drug Use and Health Data, SAMHSA, and the Minnesota State Demographic Center.

² U.S. Department of Health and Human Services Office of the Surgeon General. (2005). U.S. Surgeon General releases advisory on alcohol use in pregnancy [Press release]. Retrieved from <http://www.surgeongeneral.gov/news/2005/02/sg02222005.html>

The initial cover letter was followed by a postcard reminder two weeks after the initial invitation. The cover letter and postcard reminder also included information about how the respondent could call Wilder Research if they preferred to complete the survey over the phone instead of online. In addition, the letter and postcard included information and a phone number for non-English speakers who wished to complete the survey via telephone with a trained bilingual Wilder Research interviewer.

To encourage respondents to complete the interview, participants were offered \$5 gift cards to either Target or Wal-Mart. Participants were also offered the opportunity to enter into a drawing for a \$50 Visa cash card. Thirty thousand invitations were mailed to random households in Minnesota. Addresses excluded correctional facilities and other similar group residences. Approximately 40 percent of all Minnesota households are home to at least one 18 – 44 year old woman. Three hundred fifty-two women completed the survey either online or over the phone.

Survey Instrument

The survey instrument was an online survey designed to gather information about alcohol use by women of childbearing age, and about knowledge, belief, and social norms regarding alcohol use during pregnancy. The survey included questions from previous surveys, as well as questions developed for this study. Since MOFAS was most interested in current beliefs and behavior about alcohol use during pregnancy, questions about alcohol use during pregnancy were asked only of women who have been pregnant within the last five years (N=197). Questions about knowledge, beliefs, and social norms were asked of all women, regardless of whether they have ever been pregnant (see Appendix A, Survey Instrument).

Limitations

Estimates derived from this survey are subject to sampling error. With a sample of 352, sampling error is estimated at plus or minus five percent. That is, we can be 95 percent confident that the true figure in the population is within five percent above or below the figure obtained in the sample. Sampling error will generally be larger for figures derived from subgroups of the sample. Caution should be used when interpreting findings from subgroups of the sample population.

In addition to sampling error, a few other study limitations should be mentioned. First, the response rate for this study was lower than expected. While the response rate is within the typical response for this type of survey methodology, Wilder Research studies often have a higher than industry standard response rate. There are many possible explanations for the lower than expected response rate, including potential survey fatigue in the study

population, stigma associated with women's health topics, and other unknown circumstances. In addition, despite the anonymity and confidentiality of respondents answers, underreporting of alcohol consumption may occur because of the social undesirability of certain responses.

Analysis

While a random sample of addresses were chosen to receive invitations to the online survey, it is possible that some portions of the population are more likely to complete online survey than others. The statistical technique of weighting was used to ensure the survey data correctly represents the general population of Minnesota women of child-bearing age. For example, if younger women are less likely to take the survey, their responses are weighted in order to adjust for their reduced response. Using data from the U.S. Census Bureau's 2011 American Community Survey, survey responses were weighted using four factors: 1) number of women age 18 – 44 living in the household, 2) age, 3) educational attainment, and 4) residency in the 7-County Metro Area. These factors were chosen based on the likelihood that they may impact the representativeness of survey results. While weighting by race/ethnicity was also planned, not enough surveys (11%) were completed by women of color to reliably weight responses by this factor.

Key Findings

Current alcohol use patterns

The single greatest predictor of alcohol consumption during pregnancy is pre-pregnancy drinking patterns. That is, women who drink more alcohol on a consistent basis are more likely to drink while pregnant (Cannon et al., 2012, Chang et al., 2006, Center for Disease Control and Prevention, 2009, Harrison & Sidebottom, 2009, McNamara et al., 2006, Meschke et al., 2008, and Perreira & Cortes, 2006). To learn more about drinking patterns among Minnesota women, respondents were asked questions about the frequency and volume of alcohol they drink. Nearly half of respondents had consumed an alcoholic beverage within the last week, and three quarters within the last 30 days. Among women who had an alcoholic beverage within the last 30 days (N=223), most (78%) had an average of one to two drinks per day on the days they drank alcohol. Additionally, one-third of women (36%) who had consumed alcohol within the last 30 days reported binge drinking (consuming four or more alcoholic drinks on an occasion) at least once during that time.

Social support for reduced alcohol consumption during pregnancy

Among women who have been pregnant within the last five years, most did not feel others' drinking habits affected their alcohol use during pregnancy.

- Three-quarters of respondents reported that their partners drank alcohol during their most recent pregnancy.
- One quarter (23%) of women whose partners drank during their most recent pregnancy reported their partner changed how much they were drinking during the time the woman was pregnant. Twenty percent of women whose partners drank during their pregnancy said their partners reduced the amount of alcohol they were drinking or stopped drinking alcohol during the pregnancy.
- Nine out of ten women felt their partner's drinking habits during their pregnancy did not affect their drinking. The remaining one in ten felt their partner's drinking habits helped them to drink less, or to drink not at all. Furthermore, 93 percent of women felt their friends and family's drinking habits did not affect their drinking during pregnancy at all.

Alcohol use patterns among women who used alcohol during their most recent pregnancy

Most Minnesota women do not consume alcohol during pregnancy. Among respondents who had a pregnancy within the last five years (N=100), many (83%) reported they did not drink alcohol (at least half a serving or more) during their most recent pregnancy. It should be noted that because very few respondents reported alcohol use during pregnancy, all figures about use during pregnancy should be interpreted with caution.

Among the 17 percent of respondents who did have at least half a serving of alcohol during their last pregnancy, 19 percent reported drinking one or two alcoholic drinks per day, on average, on the days they drank during their pregnancy (Figure 1). No women reported having engaged in binge drinking (consuming four or more drinks on an occasion) during their most recent pregnancy. All women who drank at least half a serving of alcohol during their most recent pregnancy reported they stopped or decreased their alcohol consumption when they found out they were pregnant. Finally, among women who drank at least half a serving of alcohol during their most recent pregnancy, about one-third reported drinking more toward the end of the pregnancy (35%), one-third at the beginning of the pregnancy (28%), and one-third the same throughout (33%) (Figure 2). Women were not asked to report the total number of days they consumed at least half a serving of

alcohol. Again, due to low numbers of women reporting alcohol use during pregnancy, these percentages should be interpreted with caution.

1. Average number of drinks consumed per day among women who drank at least half a serving of alcohol during their most recent pregnancy (N=17)

On the days you drank during the pregnancy, about how many drinks did you usually have a day on average?	Percent
Less than one serving per day	81%
1 drink per day	12%
2 drinks per day	7%

2. Alcohol use by stage of pregnancy (N=17)

Did you drink more at the beginning of your pregnancy, in the middle, towards the end, or the same throughout your pregnancy?	Percent
I drank more in the beginning	28%
I drank more in the middle	3%
I drank more towards the end	35%
I drank the same throughout	33%

Knowledge of the risk for harm to a developing fetus

Respondents inaccurately identified crack or cocaine as being more likely than most levels of alcohol use to cause harm to a developing fetus, when used by a pregnant woman. Respondents were asked to rate how likely some behaviors, when done by a pregnant woman, would be to cause harm to a developing baby. Respondents were asked to rank the likelihood of harm on a 5-point Likert scale, where 1 was “not at all likely” and 5 was “extremely likely.” Most respondents felt all of the listed behaviors, which ranged from occasional use of cigarettes, alcohol, or crack/cocaine to regular use of cigarettes, alcohol, or crack/cocaine, would be likely to cause harm to a developing baby. Just one level of alcohol use, daily drinking of three or more drinks per day, was ranked as highly in likelihood to harm a developing baby as regular or occasional use of crack or cocaine. A smaller proportion of women ranked other levels of alcohol use as being likely to cause harm to a developing fetus than did for regular or occasional use of crack or cocaine (Figure 3).

3. Respondents' ranking of the likelihood of harm to a developing fetus (N=352)

How likely would each of the following be to cause harm to a developing baby?	Percent who ranked each item 4 or 5
Daily drinking of 3 or more drinks per day by a pregnant woman	96%
Regular use of crack or cocaine by a pregnant woman	96%
Occasional use of crack or cocaine by a pregnant woman	95%
Drinking four or more alcoholic drinks on any occasion by a pregnant woman	93%
Daily cigarette smoking by a pregnant woman	92%
Daily drinking of one or two drinks per day by a pregnant woman	92%
Occasional alcohol use by a pregnant woman	88%
Occasional cigarette smoking by a pregnant woman	83%
Any alcohol use by a pregnant woman	78%

In general, for most alcohol-related behaviors, most women felt that the effect of the behavior would be the same regardless of when it happened in the pregnancy.

Respondents who applied a rank of 3 or above on three alcohol-related questions were asked a follow-up question about whether the behavior would be more likely to cause harm to a developing baby if it occurred early in the pregnancy, in the middle, or toward the end of the pregnancy. Respondents were also given the option to say they felt the effect would be the same regardless of the stage of pregnancy in which the behavior occurred (Figure 4).

4. Respondents' opinions on the impact of stage of pregnancy on the likelihood of harm to a developing fetus (N=352)

When would each of the following be more likely to cause harm?	Early in the pregnancy	Middle of the pregnancy	Late in the pregnancy	Same effect regardless of time
Daily drinking of 1 or 2 alcoholic drinks per day	16%	7%	4%	74%
Daily drinking of 3 or more alcoholic drinks per day	14%	4%	6%	76%
Drinking 4 or more alcoholic drinks on any one occasion	15%	7%	5%	74%

The U.S. Surgeon General and the American College of Obstetricians and Gynecologists advise against drinking at all during pregnancy. Through their work, MOFAS staff learned that some women think that certain types of alcohol are less likely to cause harm to a fetus than others. In order to learn more about these beliefs, women who completed

the online survey were asked whether they thought beer, wine, or liquor was more likely to cause harm to a developing baby. Most women (74%) thought that all types of alcohol, when used by a pregnant woman, were as likely to cause harm to a developing baby. No respondents thought that wine or beer would be more likely to cause harm to the baby. **However, one quarter of respondents thought that liquor would be more harmful than beer or wine** (Figure 5).

5. Respondents' perceptions of the type(s) of alcohol more likely to cause harm to a developing fetus (N=352)

Would harm to a baby be more likely if a pregnant woman drank beer, wine, or liquor?	Percent who ranked each item 4 or 5
All of these would cause the same amount of harm	74%
Liquor would be more harmful	26%
None of these would be harmful	1%
Beer would be more harmful	0%
Wine would be more harmful	0%

Social norms

In addition to general knowledge about the risk of alcohol use during pregnancy, MOFAS was interested in learning about the social norms among Minnesota women regarding drinking alcohol during pregnancy.

- **In general, respondents did not think alcohol use by pregnant women is common.** Eight in 10 women thought less than half or almost no women drink alcohol at least occasionally while pregnant. This figure goes up to nine in 10 when women are asked about women they know well, such as friends, co-workers, and relatives.
- **Most women felt that family members and friends would be concerned if they used alcohol while pregnant.** Nearly all women reported that their mother (96%), father (97%), or spouse (97%) would be concerned if they used alcohol while pregnant. In addition, most also thought other family members (85%) and close friends (84%) would be concerned.
- **Most women agreed that people should not offer alcoholic drinks to pregnant friends, but fewer felt others should avoid alcohol when socializing with a pregnant friend.** Eighty-one percent of women “agreed” or “strongly agreed” that one should not offer alcohol to a pregnant friend, but just 41 percent “agreed” or

“strongly agreed” that one should avoid drinking alcohol when socializing with a pregnant friend.

- **Women feel they are more likely to intervene when they see a pregnant friend drinking than a pregnant stranger.** Ninety-one percent of women “agreed” or “strongly agreed” that if someone sees an obviously pregnant friend at a bar, they should warn her not to drink alcohol. Eighty-two percent say they would actually warn her. However, just under half (48%) of women feel they should warn an obviously pregnant stranger at the bar. Fewer (28%) said they would approach a pregnant stranger at the bar and encourage them not to drink alcohol.
- **Many women support public warnings and restrictions on serving alcohol to pregnant women.** Eighty-five percent of women “agreed” or “strongly agreed” that a bartender should refuse to serve alcohol to an obviously pregnant woman. Furthermore, seven in 10 women “agreed” or “strongly agreed” that bars and restaurants should be required to post signs warning pregnant women not to drink.

Information from health care providers about alcohol use during pregnancy

The current belief in the scientific community and of the U.S. Surgeon General is that no level of alcohol consumption during pregnancy is safe for the health of the fetus. As part of their outreach and education, MOFAS provides FASD trainings for professionals, such as medical providers and other service providers. To learn more about the messages pregnant women receive from doctors and health care providers about alcohol use and pregnancy, women who had ever been pregnant (N=197) were asked what their doctor or health care provider told them about drinking alcohol during their most recent pregnancy.

Minnesota women are still getting mixed messages about alcohol use during pregnancy from their doctors and health care providers. Nearly two-thirds (63%) of women reported their doctor told them not to drink alcohol at all while they were pregnant. Eighteen percent said their doctor asked them about drinking, but did not warn them about alcohol use during pregnancy because they do not drink alcohol. Eleven percent of women said that their doctor told them to drink only lightly, or in moderation, during pregnancy. Seven percent said their doctor did not mention alcohol to them at all during their most recent pregnancy. **Collectively, nearly one in five women did not receive any messages about alcohol use from their doctor or medical provider during their most recent pregnancy, or were told that they could drink lightly, or in moderation** (Figure 5).

5. Messages received from health care providers about alcohol use during pregnancy (N=197)

During your most recent pregnancy, what did your doctor or other health care provider tell you about drinking alcohol while pregnant?	Percent
Not to drink alcohol at all	63%
My doctor asked about drinking, but didn't warn me because I don't drink	18%
To drink only lightly or in moderation	11%
My doctor did not mention alcohol at all	7%
I did not see a doctor during my most recent pregnancy	1%
That it would be ok to drink	0%

Nearly half of respondents thought that women who are trying to become pregnant should avoid alcohol. Some (28%) felt that occasional use of one serving or less would be okay for women who are trying to become pregnant. Others (20%) felt that occasional drinking of one or more serving of alcohol was okay. Very few women felt daily drinking or binge drinking were okay for women who are trying to become pregnant (Figure 6).

6. Respondents' opinions on safe levels of alcohol consumption for women who are trying to become pregnant (N=352)

What level of alcohol consumption is okay if a woman is trying to become pregnant?	Percent
None	47%
Occasional drinking of less than one serving of alcohol	28%
Occasional drinking of one serving or more of alcohol	20%
Daily drinking of ½ to 1 serving of alcohol	2%
Daily drinking of 2 servings of alcohol	3%
Drinking 4 or more drinks at a time on any occasion	0%

Knowledge of and familiarity with public awareness campaigns

MOFAS was interested in learning more about how familiar Minnesota women are with awareness campaigns designed to reduce the rate of alcohol use during pregnancy. The survey asked women about their familiarity with various public awareness techniques and campaigns. Eight in 10 women have seen messages on bottles of beer, wine, or liquor warning pregnant women not to drink alcohol; seven in 10 have seen signs in bars, restaurants, or liquor stores warning pregnant women not to drink. Three quarters of women (78%) had never heard of '049', the public awareness campaign that encourages

women to have “zero alcohol for nine months.” Sixteen percent of respondents had heard of ‘049,’ but reported they did not know what it means. The most common way women were exposed to the ‘049’ message was through brochures at a doctor’s office (15%) (Figure 7).

7. Exposure to the ‘049’ message (N=352)

Have you ever seen the ‘049’ message in these places?	Percent who responded yes
Doctor's office	15%
Magazine	10%
Billboard	7%
Online (not Facebook)	7%
Radio	5%
Baby expo	3%
Facebook	3%

Recommendations and next steps

The following are recommendations for MOFAS to consider as they move forward with their work:

- **Continue to work with health care professionals to spread information to women that no amount of alcohol is safe for the health of a developing fetus.** Nearly one in five Minnesota women who have been pregnant reported that their doctor or other health professional either did not talk to them at all about alcohol use during pregnancy, or told them they could drink lightly or in moderation. Since FASD is not curable, but is 100 percent preventable, it is essential that all pregnant women hear consistent messages from their health care professionals. MOFAS may also wish to consider learning more about whether women receive different messages from specific types of health care providers, such as nurses, family practice doctors, midwives, or obstetricians and gynecologists.
- **Work to correct misinformation about the relative risk of using alcohol in comparison to other substances.** More women felt that crack or cocaine use was likely to cause harm to a developing fetus than thought most levels of alcohol use would. Given how prevalent alcohol use is among the general population of women, it is possible that the relatively low stigma associated with alcohol use contributes to

this misinformation. Given strong reactions to the likelihood of harm resulting from crack or cocaine use, it may be helpful for women to understand that alcohol is, in fact, more likely to cause harm to a developing fetus than many other illicit substances³.

- **Work to correct misinformation about the relative risk of liquor in comparison to beer and wine.** One-quarter of women thought that liquor would be more harmful to a developing baby than beer or wine. This perception is contrary to medical research, and to recommendations from the U.S. Surgeon General, the Centers for Disease Control and Prevention, and the Substance Abuse and Mental Health Services Administration. Given the direct link of alcohol use during pregnancy to FASD, and the lifelong effects of FASD, it is important for women to understand the current recommendation that no amount, and no type of alcohol, is safe to consume during pregnancy.
- **Consider supporting movements to restrict alcohol service to pregnant women, or to require establishments that serve alcohol to post more prominent warning signs about the dangers of alcohol use during pregnancy.** Eighty-five percent of women felt that a bartender should refuse to serve alcohol to an obviously pregnant woman. Furthermore, seven in 10 women agreed that bars or restaurants should be required to post warning signs about the risks of alcohol use during pregnancy. In Minnesota, bars and restaurants that serve alcohol are required to post warning signs about the risks of alcohol use during pregnancy. However, MOFAS may wish to consider supporting efforts that would require this signage to be more prominent. Study results suggest there may be support among Minnesota women for similar policy or practice changes.

MOFAS is pursuing the following next steps related to this survey:

- MOFAS is convening several community gatherings in several locations throughout Minnesota to review key study results with the public, gather public feedback to the results, and discuss strategies for using survey results for future planning, outreach, and programming.
- More work is needed to learn more about specific cultural communities' needs, behavior, and beliefs regarding alcohol use during pregnancy. MOFAS began this work in fall 2012 by working with Wilder Research to conduct a series of key informant interviews with service providers to several American Indian communities in Minnesota. MOFAS plans to learn more from other cultural communities in future years.

³ Institute of Medicine Report to Congress on FAS (1996).
Retrieved from <http://www.come-over.to/FAS/IOMsummary.htm>

- Findings from the study will be used to help shape the design of public message and campaign strategies. For example, results indicate that some women are still misinformed about the relative risk of alcohol to a developing fetus in comparison to other substances. MOFAS may use information like this to shape a data-driven campaign to correct this and other misperceptions.
- MOFAS may also use findings from this study to shape upcoming public policy priorities.



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