

Socio-Cultural Determinants of Drug and Substance Use among Pregnant Women in Nigeria: A Literature Review

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Abstract

The increasing prevalence of drug and substance use among pregnant women poses significant risks to maternal and fetal health, particularly in developing countries like Nigeria. Drawing on the body of existing research, including publications and articles, this theoretical paper attempts to investigate the determinants of drug and substance use among pregnant women in Nigeria. The Social Learning Theory (SLT) is adopted as the theoretical framework. This paper identifies important factors that affect drug and substance use among pregnant women in Nigeria. Through a thorough analysis of secondary data. These factors include maternal age, partner/husband and maternal education level, monthly income, occupation, partner/husband's substance use, healthcare access, maternall age, socioeconomic status, lack of awareness, societal stigma, place of residence, stress, and cultural beliefs. The study also addresses the effects of drug and substance use on pregnancy outcomes and emphasizes the necessity of focused treatments and legislative changes. To reduce drug and substance use among pregnant women, this paper advocates that the government and non-governmental organizations should consider subsidizing the cost of antenatal medications, community engagement, enhancing public health initiatives, and educational programs aimed at reducing drug use and improving maternal and child health outcomes.

Keywords: Drug use, Maternal health, Nigeria, Pregnant women, Substance use,

Introduction

A drug is any substance, typically of a chemical type, that alters or changes the user's physiological or psychological state. Both medical and non-medical justifications are given for drug use. However, the time, method, and purpose of drug use can all have an impact on the user, both positively and negatively. Drug use, abuse, and misuse are all possible (Olofintuyi et al, 2019). According to Mohammed et al. (2025), substance use is the use of harmful stimulants, such as alcohol, tobacco products, caffeine, khat leaves, illegal drugs, inhalants, and other substances that can be ingested, inhaled, injected, or absorbed into the body. These substances can cause dependence and have negative effects on physiological, mental, physical, or emotional functions. Pregnancy and unborn infants are affected since a sizable part of the females who engage in this behavior are of reproductive age. These substances may be self-prescriptions, medications provided by doctors or pharmacists, or behaviors inherited from their mothers or other family members (Atiba et al, 2023).

Pregnant women, like their non-pregnant counterparts, seem to abuse a variety of drugs and substances. Commonly used over-the-counter medications, as well as substances like caffeine, alcohol, cigarettes, stimulants, sedatives, and several other illegal substances, can have long-lasting effects on an unborn child. These substances are as harmful to fetal development as illegal drugs like marijuana, cocaine, and methamphetamine (Sulyman et al., 2021). Pregnant women may use these substances for a variety of reasons, such as easing symptoms that are more prevalent in the first trimester, controlling nausea and vomiting, improving the quality and volume of their blood, helping their babies sleep better, lowering pain, and improving the babies' weight, among other reasons (Atiba et al 2023, Sulyman, et al, 2021).

Child mortality, perinatal morbidities, and congenital abnormalities are associated with substance use during pregnancy, and these risks are exacerbated by inadequate prenatal care (Lee et al., 2023). For example, if pregnant women consume crystal meth or marijuana, the fetus will also be impacted. Additionally, the woman is endangering not only her own life but also the health of the unborn child if she is addicted to cocaine, also referred to as coke, snow, or blow. Seizures, heart attacks, strokes, and respiratory failure are all potential consequences of cocaine usage. It has been determined that the main way pregnant women are exposed to unintentional caffeine intake is through the careless consumption of all meals and beverages. For instance, they may be exposed to accidental caffeine

consumption if they consume kola nuts and certain so-called cola drinks (Lee et al., 2023).

One of the major risk factors for global health, according to the World Health Organization (WHO, 2018), is hazardous alcohol consumption and substance use. These behaviors directly affect several SDGs' health-related targets, such as maternal and child health, infectious diseases (HIV, viral hepatitis, and tuberculosis), and non-communicable diseases like mental health, injuries, and poisonings. WHO (2018). According to a 2018 World Health Organization report, approximately three million people died in 2016 as a result of alcohol and other substance abuse. They also showed that alcohol use caused 26.1 million disability-adjusted life years (DALYs) and 0.7 million deaths among women. Mortalities from alcohol (including drug and other substances) were higher than those from HIV/AIDS, diabetes, and tuberculosis. WHO (2018) in 2025, Pregnancy-related substance use varies from 2.2% to 36.5% in Sub-Saharan Africa (15–17) and from 11.3% to 60% in East African nations, such as Ethiopia (18–23). 1.53 percent of people reported regularly using alcohol, cocaine, and marijuana, 0.51% exclusively using marihuana, and 0.51% only using crack (Olofintuyi, 2019).

In Nigeria, 18.28% of expectant mothers reported abusing drugs, including alcohol, cigarettes, and illegal substances like cocaine and marijuana. Additionally, 44–65% of prescription drugs were considered dangerous during pregnancy, which can lead to fetal complications like low birth weight and stillbirth (Onah et al., 2023, Kassada et al., 2013). Codeine and tramadol were the most misused substances, according to a study conducted in northern Nigeria that reported a 9.3% prevalence of psychoactive substance use disorders among females (Ibrahim et al., 2018). Pregnancy-related substance use is greatly influenced by many sociocultural factors, such as maternal age, income, education, and access to healthcare. Studies show that women who are unintended mothers and those who lack access to healthcare are more likely to take drugs, and that younger mothers, especially those under 20, are linked to higher rates of substance use (Tabatabaei et al., 2018). A key factor is educational attainment; higher education frequently results in improved health-seeking behaviors, while lower education levels are associated with increasing substance use (Horan et al., 2024). Higher rates of substance use are also associated with financial restrictions, such as an annual income below \$20,000 (Horan et al., 2024). The domicile is also important, as rural women have a harder time getting support and medical care (Tabatabaei et al., 2018). Additionally, cultural views and

interactions with intimate partners can either reduce or increase substance use, underscoring the intricate interaction of socio-cultural factors in this situation (Berra et al., 2019).

In Nigeria, interventions like the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) which was created under the World Health Organization's (WHO) umbrella and is culturally neutral, is available to screen for the use of the following substances: alcohol, cannabis, cocaine, tobacco products, amphetamine-type stimulants, sedatives and sleeping pills (benzodiazepines), hallucinogens, inhalants, opioids, marijuana, and "other drugs." Despite these initiatives, substance use is on the rise among Nigerian women, and it has been a serious health concern during pregnancy. Health care practitioners are reportedly not regularly screening pregnant women for drug and substance use, despite this concerning reality. Although the antenatal clinic offers frequent screenings for certain physical disorders (such as diabetes and anemia), health care practitioners are hesitant to screen for drugs (Adebowale et al., 2018). The dearth of research on drug and substance use among pregnant women is problematic since it makes it more difficult to develop effective policies and treatments. It is crucial to perform this research in particular settings and locales since country-specific differences in drug and substance trends may dictate the kind of laws and services required locally. However, to the best of the authors' knowledge and search, there aren't many previous studies that have tried to identify the different factors that influence drug and substance use among pregnant women in Nigeria. To fill this research gap, the purpose of this study is to identify the socio-cultural determinants of drug and substance use among pregnant women in Nigeria.

Review of Relevant Literature/Conceptualization of Key Terms

Pregnancy

Pregnancy is a dynamic process in which anatomic and physiological changes occur from fertilization to parturition (Suleyman et al., 2022). Pregnancy is a delicate time, and any mistakes made during this time could have short-term or long-term negative effects on both the mother and the unborn child. Since the majority of drugs cross the placental and hematoencephalic barriers without any prior metabolism, drug use complications are not limited to pregnant women; they also affect the fetus. These substances specifically affect the fetus's central nervous system, resulting in cognitive deficits, deformities, abstinence syndromes, and other problems in the newborn (Olofintuyi, 2019).

Drug use

Pregnancy-related drug use includes both legal and illicit substance use, which can have a serious negative effect on the health of the mother and fetus. According to Confino and Gleicher (1985), it is the administration of any chemical substance that has the potential to have negative effects, regardless of whether it is utilized for therapeutic objectives. To protect the safety of both the mother and the fetus, pregnant women frequently need to take medications for a variety of medical issues, which calls for careful evaluation of the USFDA drug risk categories (Geetha et al., 2024).

Substance Use

The complex biopsychosocial phenomena of substance use have been characterized in a variety of ways throughout history and across academic fields. The World Health Organization (WHO, 2010) defines substance use as the use of psychoactive substances, such as alcohol, tobacco, illegal drugs, and prescription pharmaceuticals, in a way that can result in dependence, negative societal effects, or health issues. Strong cravings, less control over use, physiological withdrawal symptoms, tolerance building, disregard for other pleasures, and continued use in the face of harm are all signs of substance use. Alcohol, opioids, stimulants, and cannabis are examples of chemicals that can cause substance use disorders (SUDs) when consumed compulsively despite negative consequences. Substance use during pregnancy is a serious health concern that includes the use of alcohol, tobacco, cannabis, and other illegal drugs, and can have negative effects on the health of both the mother and the fetus. The prevalence of SUDs among women of reproductive age is alarming, with high rates of alcohol and drug use, especially among those between the ages of 18 and 29 (Prince & Ayers, 2023). The most commonly used substance during pregnancy is tobacco, followed by alcohol and cannabis, and polysubstance use is common (Forray, 2016; Prince & Ayers, 2019).

Drug and Substance Use among Pregnant Women

There are serious public health issues associated with drug and substance use among pregnant women; numerous studies have shown how common these behaviors are and the negative effects they can have. Substance abuse and drug use during pregnancy are complicated issues that have a big impact on the health of the mother and the fetus. Substance abuse during pregnancy is an increasing global concern, while prevalence varies by region and population. According to Forray (2016), tobacco is the most commonly used substance, followed by alcohol, cannabis, and other illegal

substances. In the United States, more than 4.4% of pregnant women report abusing one or more substances. The prevalence of substance use disorders (SUDs) is particularly high among women of reproductive age, and the risks are higher during pregnancy, especially for those who use alcohol, tobacco, and cannabis (Prince & Ayers, 2023).

The National Survey on Drug Use and Health indicates that while pregnant women exhibit lower rates of illicit drug use compared to non-pregnant women, polysubstance use remains a concern, with nearly one-fifth of substance-using pregnant women engaging in multiple substance use (Board et al., 2023). The co-use of tobacco and other drugs exacerbates health risks for both mother and fetus, necessitating comprehensive screening and integrated treatment approaches that address both substance use and mental health (Board et al., 2023). Barriers to treatment, including socioeconomic factors and stigma, hinder access to necessary care, underscoring the need for tailored interventions to support this vulnerable population (Prince & Ayers, 2023). Multiple substance use during pregnancy is a typical occurrence that frequently co-occurs with environmental stresses and psychological disorders. This may exacerbate adverse effects and make maternal and fetal health more difficult (Forray, 2016).

Theoretical framework

Social Learning Theory (SLT)

Social Learning Theory (SLT), developed by Albert Bandura, posits that social environments teach people habits through imitation, reinforcement, and observation. Pregnant women's drug and substance usage can be explained by this hypothesis since social models, including peers, family, and the media, frequently shape their behavior. For example, if a pregnant woman has been exposed to a culture that normalizes substance use, such as witnessing her parents, boyfriends, or friends take drugs, she may emulate similar behaviors because she believes they are acceptable or even helpful for relieving stress. Furthermore, she might continue using drugs despite the risks if doing so is rewarded by social approval or momentary emotional comfort. On the other hand, substance use may be further reinforced if there are no obvious negative repercussions (such as not seeing others experience unfavorable pregnancy outcomes). Glamorized depictions of drug or alcohol use in the media can potentially influence public opinion by downplaying its negative effects during pregnancy. Additionally, addiction might persist in the absence of significant social support or positive role models due to low self-efficacy, which is a lack of confidence in one's capacity to stop. Although

SLT places a lot of emphasis on social and environmental factors, it frequently ignores the biological and psychological aspects of substance use. Hormonal changes, genetic susceptibilities to addiction, and mental health issues (such as anxiety or depression) can all contribute significantly to drug dependence in pregnant women, and SLT does not adequately account for these aspects.

Socio-cultural determinants of drug and substance use among pregnant women

Partner/husband's substance use

Partner/husband's substance use is one of the major determinants of drug and substance use among pregnant women, according to a study (Voutilainen et al., 2022). Substance abuse by a partner is a strong predictor of increased maternal alcohol use during pregnancy. A study found that reduced prenatal alcohol intake among pregnant women is associated with higher partner influence, including substance use and relationship satisfaction (Voutilainen et al., 2022; Mburu et al., 2020). Intimate relationships have a big impact on pregnant women's drug use and frequently mediate their choices. Due to the complicated dynamics involved, some women started using drugs to achieve perceived relationship standards, while others experienced conflict when their spouses objected to their drug use (Mburu et al., 2020). Substance abuse by a father is thought to be a predictor of continued substance use issues for his partner and kids because it can make it more difficult for the mother to stop using drugs and compromise her ability to provide emotional and physical support throughout pregnancy and the first few years of motherhood (Voutilainen et al., 2022; Mburu et al., 2020).

Maternal age

The age of the mother has a substantial impact on pregnant women's substance usage, with different age groups showing varied patterns. Younger and older women had considerably different predictors of alcohol use during pregnancy, which reflects different social and contextual factors. Research shows that younger pregnant women, especially those under 25, are more likely to drink alcohol in a risky manner and are more likely to have risk factors such as mental health disorders and unemployment (Genna et al., 2017). Once more, younger pregnant women, especially those between the ages of 20 and 25, had greater rates of risk factors such as being single, giving birth for the first time, smoking, and having depressive symptoms. These factors are also associated with higher

alcohol use (Genna et al., 2017). According to Meschke et al. (2013) & Genna et al. (2017), adolescent and young adult mothers are more susceptible to dangerous drinking behaviors due to peer alcohol use and coping reasons, which are diminished in older mothers. Both age groups require focused efforts to reduce prenatal alcohol exposure because older mothers' alcohol consumption is less predictable than that of younger mothers, who confront numerous recognized risk factors (Meschke et al. 2013).

Socioeconomic Status

Several studies have shown that pregnant women's substance usage is highly influenced by their monthly income, indicating the socioeconomic factors at work. Those who are unemployed or underemployed are more likely to use drugs like crack and cocaine, and pregnant women with lower incomes frequently experience more pressures as a result (Almeida et al., 2021). Higher education and early prenatal care are two positive demographic and behavioral traits that are typically seen in employed women and are linked to decreased rates of substance use during pregnancy. According to Miller et al. (2023), women without jobs, on the other hand, frequently have worse health outcomes and more financial hardship, which raises their rates of substance use. The socioeconomic context has a significant impact on substance use behaviors, as evidenced by a study that found women with opioid use disorder (OUD) in rural areas, who frequently face financial difficulties, exhibited different substance use patterns from their urban counterparts (Miller et al., 2023).

According to Kuo et al. (2017), substance use was also identified by women who are in poverty as a widespread problem that was frequently connected to their social settings and unstable financial situations. The financial strain of substance abuse exacerbates the cycle of poverty and addiction by leading to worse newborn outcomes and increased maternal hospital costs. Therefore, lowering pregnant women's substance use and enhancing maternal and newborn health outcomes depend heavily on addressing income disparities (Kuo et al., 2017). Another study found that women with lower levels of education used kola nuts far more frequently. Compared to women with higher levels of education, the higher rates among those with less education may be the result of their inadequate understanding of foods that are safe to eat during pregnancy. It might also be a reflection of the low socioeconomic standing of less educated women who would not have the money to visit PHCs and TBA clinics for treatment of symptoms like nausea and vomiting, which would lead to a greater use of kolanut in these facilities (Atiba et al., 2023).

Place of residence

Substance use among pregnant women is strongly influenced by where they live, with major differences between rural and urban populations. Pregnant women in rural areas are 8.4 times more likely to report illicit opiate use than their urban counterparts, and studies show that they also have higher rates of injectable drug use, illicit opiate use, and polysubstance use (Shannon et al., 2010). According to Jumah (2016), rural women frequently encounter particular difficulties, like restricted access to healthcare and treatment programs, which might worsen substance use disorders. In contrast, pregnant women in metropolitan areas are more likely to perceive that their prenatal care is insufficient (Miller et al., 2023). Living in a rural or regional area is linked to increased alcohol use during pregnancy because these women are less likely to have access to specialized obstetric hospitals and treatment programs, which affects their general health and involvement in prenatal care. (Burns et al., 2011)

Lack of awareness

Drug and substance usage during pregnancy is greatly influenced by a lack of knowledge, which can have negative health effects on both the mothers and the fetuses. Evidence shows that most pregnant women are unaware of how drugs and other substances affect the health of the fetus; for example, in one study, nearly 91% of participants were unaware of the effects of drugs on the fetus (Banzal et al., 2017). Additionally, 59.2% of pregnant women are not aware of the possible health concerns associated with endocrine-disrupting substances (Okman & Yalçın, 2024). The problem is made worse by the stigma and fear of legal consequences that prevent substance-using women from getting the help they need (Stone, 2015). To mitigate these risks and promote safer behaviors among expectant mothers, it is essential to raise awareness through targeted public health campaigns.

Stress

Stress is one of the major factors in substance use among pregnant women, emphasizing the link between substance use and psychological discomfort. High levels of stress during pregnancy are linked to higher odds of antenatal substance use, such as alcohol and tobacco, especially for mothers who were born in the United States as opposed to those who were born abroad (Surkan, 2022). Serious psychological distress (SPD) has also been associated with increased substance use frequency and quantity; pregnant women with SPD report substantially more days of alcohol, cannabis, and tobacco use (David et al., 2023). Stressors before and after childbirth might worsen drug use problems, as

evidenced by the fact that negative childhood experiences and recent stressful life events have been demonstrated to increase postpartum substance use rates (Stewart et al., 2023). Stress and drug use may interact in a complex way during the perinatal period, as longitudinal studies show that although stress may decline throughout pregnancy, it frequently resurfaces after delivery, correlating with an increase in substance use (Wu et al., 2021). Therefore, interventions aimed at reducing stress may be essential in reducing pregnant women's risks of substance use.

Limited access to health care/Societal Stigma

Social stigma has a significant influence on pregnant women's substance use since it makes treatment difficult and makes them feel alone and unworthy. Self-efficacy and the conviction that these women should receive care are undermined by stigmatization, which frequently results in the idea that addiction is a moral failing rather than a medical condition (Shank et al., 2024). According to Wolfson et al. (2021), societal stigma affects substance use among pregnant women by erecting obstacles at the individual, interpersonal, institutional, and population levels. These obstacles lead to feelings of fear, shame, guilt, and mistrust of services, as well as the perpetuation of negative stereotypes and high organizational expectations. These factors ultimately make it difficult for pregnant women to receive the necessary treatment support and cause underreporting of substance misuse. As a result, many pregnant women who struggle with substance use disorders might delay getting treatment, which could worsen their diseases and put them and their unborn children at greater risk (Stephenson et al., 2024).

Substance-using mothers are stigmatized by cultural attitudes that frequently blame them for birth abnormalities while ignoring paternal involvement. This prejudice affects how these women are supported and how treatment is perceived in society, which feeds into unfavorable stereotypes (Babcock, 2008). The problem is further exacerbated by the stigma attached to substance use during pregnancy, which frequently causes women to withdraw and put off getting the help they need. (Stone, 2015). Pregnancy interventions against alcohol use are made more difficult by cultural beliefs that strongly influence substance use among pregnant women by ingraining alcohol consumption into daily routines, encouraging the idea that homemade alcohol is harmless, and creating drinking-supporting social norms (Pati et al., 2018).

Adverse effects of drug and substance use

Drug and substance use during pregnancy has serious and complex negative impacts on the health of the mother and the fetus. Preterm birth, low birth weight, and neonatal abstinence syndrome are among the serious consequences that can result from substance use disorders (SUDs), which are common during pregnancy. Significant rates of alcohol, nicotine, and opiate use have been documented (El-Nahas & Thibaut, 2023). Pregnancy-related physiological changes may change how drugs are metabolized, raising the chance of developing life-threatening disorders such as maternal dysrhythmias and placental abruption for both the mother and the fetus (Barry et al., 2021). Additionally, the increase in pregnancy-associated deaths linked to drug use highlights the pressing need for efficient screening and intervention methods (El-Nahas & Thibaut, 2023). Neurocognitive and behavioral problems are among the long-term effects of substance exposure in utero for infants, which calls for a multidisciplinary approach to care that takes into account both substance use and mental health approach to care that takes into account both substance use and mental health approach to care that takes into account both substance use and mental health (El-Nahas & Thibaut, 2023; Barry et al., 2021).

Measures towards reducing drug and substance use among pregnant women

A multidimensional strategy including screening, behavioral interventions, and specialized treatment choices is used to prevent drug and substance use among pregnant women. Various guidelines promote screening and counseling as crucial techniques to detect and treat substance use in pregnant women. They emphasize the importance of integrated care approaches to address mental health and substance use disorders (Prince & Ayers, 2023). In addition to providing brief therapies, such as motivational interviewing and cognitive behavioral therapy, to address alcohol and drug dependence, healthcare practitioners are urged to regularly screen for substance use during prenatal visits using approved tools (Ordean et al., 2017). Research indicates that behavior modification strategies including social support and action planning, can successfully lower alcohol intake during pregnancy (Fergie et al., 2019). Moreover, opioid-dependent pregnant women should be treated with opioid agonists such as buprenorphine or methadone, and tobacco users should be provided with smoking cessation therapies and psychosocial support (Ordean et al., 2017).

Discussion of key issues

The problem of substance use in pregnant women is complex and influenced by several interconnected factors. Women with less education are frequently unaware of the serious risks drugs pose to fetal development, such as birth abnormalities and developmental delays and their degree of education is important. A general lack of knowledge or information exacerbates this issue; many pregnant women wrongly think that occasional drug or alcohol use is harmless, while others are ignorant of the available support options. Additional obstacles are brought about by societal stigma, as women are deterred from seeking help and continue to use drugs due to fear of criticism from medical professionals or legal consequences like losing custody of their children.

Geographical location also plays an important role because a woman's residence may either increase her exposure to drugs or restrict her access to treatment; for instance, urban regions may have greater drug availability, but rural areas typically lack specialized rehabilitation centers. Limited access to healthcare exacerbates the issue, as many expecting moms miss out on crucial opportunities for early intervention due to financial constraints, transportation issues, or just a lack of addiction treatment programs that are customized to meet their specific needs. Economic issues such as low income and unemployment can cause more stress, which can subsequently trigger drug usage as a coping mechanism. However, even women who work in low-paying, high-stress jobs may turn to drugs as a coping strategy. Pregnancy-related substance use is a chronic public health concern that calls for all-encompassing, multidimensional solutions that close the knowledge gap, lessen stigma, increase access to healthcare, offer financial assistance, and include partners in the healing process. Drug use by a spouse or partner may be one of the most significant variables as it can normalize substance use in the family and put pressure on others to continue engaging in addictive behaviors. Women who have substance-using partners frequently have more difficulty quitting, particularly if their partners don't support their efforts to stay sober. If these problems are not addressed, there may be detrimental effects on the mother's and the child's health as well as their future well being

Conclusion

Drug and substance use among pregnant women in Nigeria is a multifaceted issue influenced by sociocultural, economic, and systemic factors, requiring a coordinated response from government agencies, healthcare providers, community leaders, NGOs, families, and the media. Effective strategies must include stigma reduction through community education, poverty alleviation via

economic empowerment, culturally sensitive health interventions, improved antenatal care with substance abuse screening, and stronger policies regulating harmful substances while protecting vulnerable women. Sustainable progress hinges on collaborative efforts, adequate funding, and tailored programs that respect local traditions, with a recommended national task force ensuring unified action and long-term impact on maternal and child health outcomes.

Recommendation

Based on the paper the following recommendations were made

- The National Agency for Food and Drug Administration and Control (NAFDAC) ought to regulate the dangerous drugs and herbal concoctions sold to expectant mothers.
- Policies (such as subsidized cost of antenatal care) which protect expectant mothers from substance-related damage should be promoted by the Ministry of Women Affairs & Social Development.
- Medical professionals should educate pregnant women about the dangers of substance use and screen them for substance use. Some women overcome these challenges by building resilience through positive self-identities and support systems, underscoring the need for trauma-informed care approaches that prioritize compassion and empathy.
- Mental health specialists ought to provide pregnant women who use substances with addiction treatment, counseling, and psychosocial support.
- Traditional authorities, religious leaders, and faith-based organizations ought to speak out against harmful cultural behaviors (such using kola nuts during pregnancy) and stigmatization. They can also encourage assistance for women who are affected.
- Door-to-door awareness campaigns should be carried out by Community Health Workers (CHWs) to provide pregnant women with sufficient information regarding the negative consequences of drug and substance use.
- Husbands and other family members should refrain from encouraging substance abuse and provide emotional support to expectant mothers.
- Future healthcare professionals should receive training on managing maternal addiction from medical and nursing schools.

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