



Review Article

Fetal Alcohol Syndrome: A Menace to Maternal and Child Health

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Abstract

Fetal Alcohol Syndrome (FAS) represents a significant public health concern, affecting both maternal and child health. It results from alcohol consumption during pregnancy and leads to a spectrum of physical, cognitive, and behavioral abnormalities in the affected children. Despite extensive research, FAS remains a prevalent issue due to a lack of awareness and understanding among women of reproductive age. This study uniquely focuses on assessing the knowledge of women of reproductive age regarding alcohol intake during pregnancy and its link to FAS. By identifying gaps in knowledge and understanding, the study aims to inform more effective educational and preventative strategies. The primary aim is to investigate the impact of FAS on maternal and child health, raise awareness about its consequences, and explore strategies for prevention and management. A comprehensive survey was designed and implemented across diverse demographic groups to evaluate the awareness and knowledge of women of reproductive age about the risks associated with alcohol consumption during pregnancy. The survey included questions on FAS, its causes, sources of information, perceptions, attitudes, and barriers to knowledge. Preliminary findings indicate that there is a significant gap in knowledge among women regarding the risks of alcohol consumption during pregnancy. Many women are unaware of the full extent of FAS and its long-term effects. Misconceptions and cultural beliefs further complicate understanding and behavior. Reliable sources of information are often inaccessible or underutilized. The study underscores the critical need for improved education and awareness programs targeting women of reproductive age. Accurate knowledge is essential for preventing FAS and mitigating its impact on maternal and child health. It is recommended that healthcare providers and public health campaigns focus on disseminating clear, accessible information about

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the dangers of alcohol consumption during pregnancy. Enhanced educational interventions and reliable sources of information are vital to address knowledge gaps and change behaviors to prevent FAS.

Keywords: FAS, public health concern, lack of awareness, preventative strategies, nursing profession

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Introduction

It is medically known that a syndrome is a combination of symptoms that occur together due to an abnormal condition. However, fetal alcohol syndrome (FAS) is a condition that happens to a developing fetus when the mother consumes any amount of alcohol during pregnancy. Physical and mental defects occur in a fetus exposed to alcohol in utero which in turn affect fetal development. Fetal alcoholic syndrome is both a developmental and congenital disorder that is known by neurocognitive impairment, structural defects and growth retardation due to prenatal alcohol exposure. It is considered to be one of the leading preventable causes of developmental disabilities. It is estimated that about 119,000 children are being born with FAS each year in the world (Popova et al., 2017). Despite the prevalence of this syndrome, it is often misdiagnosed or underdiagnosed, and this makes adequate intervention very challenging. A multidisciplinary team of care providers is therefore required for accurate diagnosis of FAS.

Historical Perspective of Alcohol and Pregnancy

The physical and behavioural characteristics of children exposed to alcohol prenatally have been reported since the 1700s. In 1972, Jones and Smith coined the term Fetal Alcohol Syndrome to describe these findings in children born to alcoholic mothers. In 1996, the Institute of Medicine distinguished four different disorders resulting from Prenatal Alcohol Exposure viz: Fetal Alcohol Syndrome (FAS), Partial Fetal Alcohol Syndrome (PFAS), Alcohol-Related Neurodevelopmental Disorder (ARND), and Alcohol-Related Birth Defects (ARBD) (Stratton K. et. al., 1996). Since then, the diagnostic criteria have been revised multiple times, with different versions in use around the world. It was not recognized forty years ago that alcohol was a teratogen, or an agent that can impair fetal development (Thomas et al., 2010). In 1973, Jones et al. (2003) reported the

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first two reports of fetal alcohol syndrome (FAS), describing developmental abnormalities and dysmorphic features in eight children of alcoholic women, despite millennia of alcohol consumption. To draw attention to the shortcomings of intrauterine alcohol consumption, the second article (Jones et al., 2003) documented three children and coined the acronym FAS.

Alcohol's impact on the developing fetus has long been a source of concern. According to historical records, pregnant women were warned not to drink as early as the Bible. W.C. Sullivan made a comparison between the offspring of alcoholic mothers and the mother's sober family members and discovered that the children of the drinking mothers' odds of death in the first two years are doubled. According to Sullivan, the reason was a confluence of the negative impacts of drinking and the unfavourable social climate. Additionally, he noted that the possibility of a typical child rose when the mother was imprisoned and deprived of access to alcohol amid pregnancy (Streissguth et al., 1980; Overholser, 1990).

Prevalence of Fetal Alcoholic Syndrome

Furthermore, a patient with fetal alcoholic syndrome is at the most severe end of Fetal Alcohol Spectrum Disorders (FASD). The estimated global prevalence of alcohol use during pregnancy is 9.8%, and the estimated prevalence of fetal alcohol syndrome in the general population is 14.6 per 1000 people. Approximately, 8 out of 1000 in the population had FASD and every 1 of 13 pregnant women who take alcohol while pregnant gave birth to a baby with FASD. The rate at which women of childbearing age consume alcohol has increased globally, this has increased the incidence of FAS and has led to higher medical expenses and burden on the society at large. It was discovered that alcohol is one of the substances that cause abnormality for babies once exposed thus causing FAS and of course, it is not safe at any trimester in pregnancy. Although it is a permanent condition that cannot be cured, it can be prevented by avoiding alcohol intake which can damage or hamper fetal development. Fetal alcohol syndrome has become a big threat to maternal and child health because of the long-term disability it causes to the developing child, hence, the need for education and enlightenment about this.

FASD can be clinically identified through characteristic facial features that can be observed on examination (Denny and Blitz, 2017; Adebisi et al., 2019), some FASD are considered as hidden disabilities because in most cases there are no noticeable physical manifestations (Badry and Choate, 2015; Bell et al., 2016; Miller et al., 2017; Select Committee on Action to Prevent Foetal Alcohol Spectrum, 2019) thus increasing the

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chances of missed diagnosis or misdiagnosis (Chasnoff et al., 2015; Burd, 2015; Benz and GA, 2016; Jameson, 2017). Misdiagnosis and missed diagnoses prevent individuals from accessing early and appropriate services [16]. To diagnose any of the FASD (fetal alcohol syndrome {FAS}, partial FAS, {PFAS}, alcohol-related neurodevelopmental disorder {ARND} and alcohol-related birth defects {ARBD}), individuals must meet all or some of the range of identified criteria (Chudley et al., 2005; Cook et al., 2016; Hoyme et al., 2016). These criteria include documented or undocumented prenatal alcohol exposure, prenatal and or postnatal growth deficiency, deficient brain growth and neurobehavioral impairment- with or without cognitive impairment (Chudley et al., 2005; Cook et al., 2016; Hoyme et al., 2016). The requirements for prevention, diagnosis and management suggests a multi-sectoral approach (Rendall-Mkosi et al., 2008; Jonsson et al., 2014; Olivier et al., 2016; Bell et al., 2016; Becoming, 2016; Roozen et al., 2016).

The aim of this work is to review the impact of Fetal Alcohol Syndrome (FAS) on maternal and child health, to raise awareness about its consequences, and to explore strategies for prevention and management.

- i. to review the impact of Fetal Alcohol Syndrome (FAS) on maternal and child health
- ii. to raise the awareness about FAS health consequences
- iii. to explore strategies for prevention and management

Methods

The following search strategy was used to identify relevant research findings. The literature was searched using the keywords: pregnancy and alcohol and fetal alcohol syndrome on Medline, Expanded Academic ASAP Index, SwetsNet and PubMed databases and the World Wide Web.

THE IMPACT OF FETAL ALCOHOL SYNDROME (FAS) ON MATERNAL AND CHILD HEALTH

Each year in countries all over the world, children are born with varying degrees of brain injury resulting from prenatal alcohol exposure (PAE) (Jonsson, 2019; Warren, 2015). Such evidence underscores the need for universal prevention initiatives targeting maternal alcohol consumption, screening protocols, and improved access to assessment services, especially in special populations such as child welfare service structures. Although the science of alcohol risks to the developing fetus is plentiful, such scientific evidence has suffered significantly in overcoming the barriers on knowledge translation.

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Unfortunately, this has resulted in significant contradictions and confusion on the frontlines of public health prevention activities. Although the Lancet Journal warned of collateral damage from increased births of FASD post-pandemic (Sher, 2020), unfortunately, this again has fallen on deaf ears in our public policy. In truth, we have reached a point in 2024 where sweeping FASD under the proverbial rug is no longer a viable option. We need robust, pragmatic, and workable policy initiatives across all service structures of state and voluntary providers.

Fetal alcohol spectrum disorder (FASD) is a group of conditions that occur in an individual who was exposed to alcohol before birth. This often can include physical, behavioural and learning disability or a combination. When children grow to adulthood with FASD, they are prone to psychiatric and personality disorders, drug and alcohol addiction. There are four categories of FASD, they are;

1. Fetal alcohol syndrome: This is the most serious of the 4 stages, epidemiology studies have suggested that the facial malformation feature of fetal alcohol syndrome is a result of the fetus being exposed to alcohol during the first trimester especially the first 2 months of pregnancy. Children with FAS present with facial abnormalities, wide-set and narrow eyes, growth retardation and nervous system abnormalities.
2. Partial fetal alcoholic syndrome: Individuals with FAS experience growth issues, minor facial traits, and issues with the central nervous system (CNS). Learning, memory, attention span, communication, vision, and hearing issues are all possible in people with FAS. These issues could be mixed in them.
3. Alcohol-related Neurodevelopmental disorder: Individuals with ARND may experience behavioural and learning difficulties in addition to intellectual challenges. They may struggle academically and have issues with arithmetic, memory, focus, judgment, and impulse control.
4. Alcohol-related birth defects: These components comprise proof of neurodevelopmental abnormalities (such as a small brain [microcephaly] or other structural brain abnormalities), proof of growth retardation (poor birth weight, lack of weight gain over time, or low weight-to-height ratio).

In 2004, the Centers for Disease Control (CDC) introduced the term Fetal alcohol spectrum disorder (FASD) to describe a constellation of effects suffered by the fetus when exposed to alcohol in the womb (Figure 1). What we know now is that a large percentage of these children born of an alcohol-exposed pregnancy (AEP) will not suffer from physical or facial abnormalities. As of May 2013, the New DSM-V introduced the term

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neurodevelopment disorder due to prenatal alcohol exposure (ND-PAE). This condition is concealed or hidden within the brain but provides a strong causal effect on the individual's ability to conform to the norms of societal regulation and expectations in line with their chronological age.

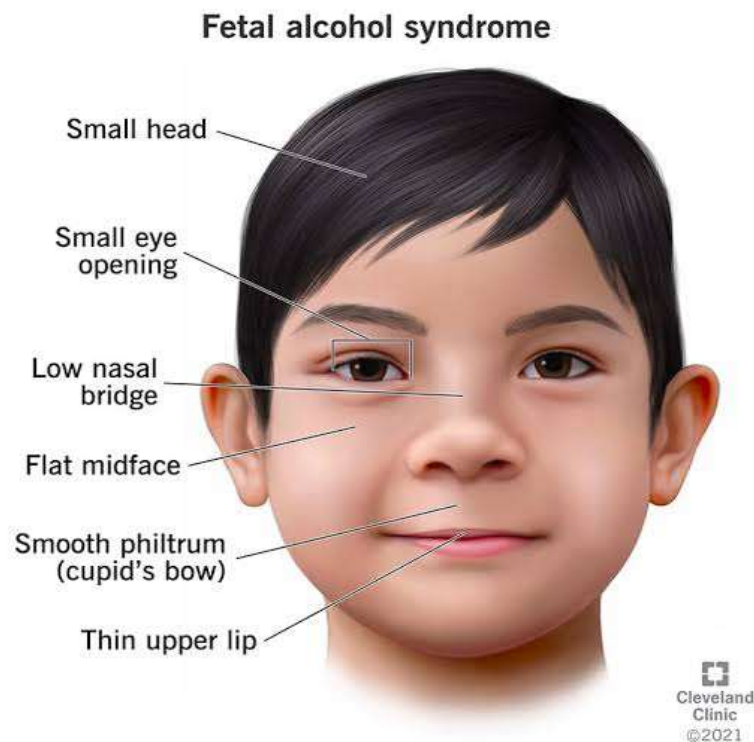


Figure 1: Pictorial diagram depicting Fetal Alcohol Syndrome

What Alcohol Does To Nutrients

Vitamin A and Alcohol Effects

When a woman drinks alcohol while pregnant, her vitamin A reserves are depleted, which may prevent the fetus's normal cell growth. The explanation that has been suggested for this is that in the presence of both alcohol and retinol, the ADH that is engaged in the rate-limiting stage of retinol oxidation will preferentially metabolize alcohol due to its higher affinity for alcohol. This leads to a deficiency in the synthesis of retinoic acid (Deltour et al., 2006). Retinoic acid is necessary for signaling and controlling the cells involved in limb morphogenesis, organogenesis, organ homeostasis, cell and

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neuronal growth and differentiation, and CNS development (West et al., 2004; Marrs et al., 2010).

Impact of Alcohol on Zinc

Chronic alcohol use itself lowers zinc availability through increased urine excretion and decreased intake and absorption. Zinc is sequestered to the liver by metallothione, a low-molecular-weight protein body when ethanol consumption causes an acute zinc shortage, which lowers plasma zinc levels. Fetal zinc shortage is the result, as lower quantities are available for placental transport (Summers et al., 2009; Ghishan et al., 2002).

Choline's Reaction to Alcohol

A person's protein expression and cell signaling are impacted by alcohol consumption because ethanol competes with water for the phosphatidylcholine-catalyzed process (Zeisel and de Costa, 2009; Exon, 2002; Klein, 2005).

Symptoms and Causes of Fetal Alcohol Syndrome

Without ingestion of alcoholic drinks in any quantity or concentration, fetal alcoholic syndrome cannot occur. The alcohol can be in the form of wine, beer, hard ciders and hard liquor. The alcohol taken by the mother goes into the bloodstream and is transported to the fetus as well. The body system of the fetus cannot metabolise alcohol like that of the mother, hence, it stays for a longer period in the body.

Furthermore, alcohol can hamper with normal growth and development of the fetus especially the nervous system, which can happen in any of the following ways:

1. It can distort the cells of the fetus at any stage of physical development causing congenital abnormalities.
2. Alcohol also affects the manner nerve cells develop and their mobility to form parts of the brain and their functionality
3. The end products of alcohol which is toxic can accumulate in the brain part of the fetus thus causing learning or memory difficulty
4. Alcohol causes vasoconstriction which in turn reduces blood flow, oxygen and food supply to the fetus in utero.

Though organs like the brain continue to develop throughout pregnancy, the onset of fetal development which is from the first day of conception to 12 weeks of gestation is the most important and since it is not possible to state the part of the body developing, it is dangerous to take alcohol at any time during pregnancy.

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Furthermore, women waiting to get pregnant should be wary of all drinks containing alcohol irrespective of their percentage because it may be difficult to diagnose pregnancy early enough and development of vital organs must have commenced during such time.

Risk Factors

Maternal Factors

Without a doubt, FAE, and the less conspicuous FAS, are 100% avoidable. Avoiding alcohol is all that is required. Regretfully, things are never quite that easy. As a socially acceptable substance, alcohol consumption patterns and sexual experimentation are typically established in adolescence and continue throughout college. Studies have shown that the percentage of women who regularly consume alcohol has risen concerningly, especially among younger women and adolescent girls. May and others, (2005). Research on alcohol consumption during pregnancy that involved over 100,000 women was published in the Journal of Obstetrics and Gynecology in 1998. (Stratton & Associates, 1996). According to the study, some groups of pregnant women were shown to have higher alcohol consumption rates:

Paternal Factors

It is not just women who have the power to affect their children's health. Men also have a role to play. Drugs that lower a man's sperm count and decrease sperm motility include alcohol, tobacco, marijuana, and cocaine. These drugs enter the testicles through the bloodstream. By altering the method by which sperm are chosen to fertilize the egg, this may obstruct reproduction. Research indicates that one of the most common causes of male impotence is alcohol consumption and that about 80% of men who are chronic alcohol users are infertile (Jeffery et al., 2001; Lieber, 2003). A study indicates that father drunkenness raises the danger for their child in the June 1996 issue of the American Journal of the American Academy of Child and Adolescent Psychiatry.

Additional Factors

A further significant issue that may impact the growing fetus is malnutrition brought on by alcohol. Because alcohol reduces hunger and interferes with the usage, digestion, and absorption of nutrients, it also significantly increases the excretion of vitamins and minerals in the urine, which increases the risk of nutritional deficiencies. Zinc deficiency caused by alcohol has a long history. A link has been shown between low birth weight congenital abnormalities and zinc deficiency. A direct correlation has been found between spina bifida and folic acid deficiency, which is caused by alcohol-induced urine

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excretion. Animal research, however, suggests that the negative effects of alcohol will still be seen in offspring, even in cases when nutritional status is properly managed (Das and Vasudevan, 2007). Improving moms' diets may, but is not certain to, prevent the emergence of more deformities

Effects of Fetal Alcohol Syndrome during Early Childhood

As the child is growing, the following will be observed over time;

1. Delayed speech and language difficulty
2. Short attention span
3. Hyperactivity
4. Poor intelligent quotient
5. Poor reasoning and judgment skills
6. Poor performance in school

Effects of Having a Child with Fetal Alcohol Syndrome on the Mother

1. Psychological and emotional effects, once mothers are informed about the medical conditions and the long-lasting effects drinking alcohol during pregnancy has brought on the child, they may feel guilty and remorseful which can eventually lead to mental conditions like depression.
2. Social stigma and judgment from friends and families may further bring a sense of rejection to a mother who has a child with fetal alcoholic syndrome.
3. Children with FAS have learning, behavioural and developmental impairments, thus need continuous medical attention and social education which can be emotionally and physically challenging to the mother.
4. Furthermore, this condition can put a strain on the family dynamics which can lead to rejection, divorce and sometimes, siblings may feel abandoned.

Diagnostic Investigations

To start with, there is no blood test to diagnose the fetal alcoholic syndrome, diagnosis can only be done through these two methods; Adequate history taking: This must be rightly and tactfully done because patients may not give truthful histories of their social lives. Your Physician will have to talk about using alcohol when pregnant. Your obstetrician or other healthcare professional can assess your risk of fetal alcohol syndrome if you disclose the kind and quantity of alcohol you consumed. The mother's and the unborn child's health can be evaluated by physicians during pregnancy, even if fetal alcohol syndrome cannot be identified before the baby is delivered.

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Keep an eye out during your child's early weeks, months, and years of life for any indications of fetal alcohol syndrome. In addition to evaluating your baby's physical attributes and identifying their characteristics, you should also keep an eye on their development both mentally and physically.

Screening methods

A systematic drinking history is crucial and should be gathered from all patients during the initial history and in future prenatal treatment, as the pregnant lady who consumes alcohol cannot be identified by appearance or socioeconomic features.

Women in their childbearing age should be encouraged to abstain from drinking alcohol even before thinking of conception.

Screening Tools

Amidst the numerous screening tools available to screen for alcohol are the following:

T-ACE: It only takes a minute or less to ask four T-ACE questions. With a score of two or more, the T-ACE is positive. For every yes response on the A, C, or E questions, one point is awarded. A pregnant woman receives two points if she states that she has to drink more than two drinks to get "high" or feel the consequences of alcohol intoxication.

T-ACE

- T Tolerance: How many drinks does it take to make you feel high?
- A Have people annoyed you by criticizing your drinking?
- C Have you ever felt you ought to cut down on your drinking?
- E Eye opener: Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover?

The T-ACE is used to screen for pregnancy risk drinking, defined here as the consumption of 1 ounce or more of alcohol per day while pregnant. Scores are calculated as follows: a reply of "More than two drinks" to question T is considered a positive response and scores 2 points, and an affirmative answer to questions A, C, or E scores 1 point, respectively. A total score of 2 or more points on the T-ACE indicates a positive outcome for pregnancy-risk drinking (Sokol et al., 1989) The AUDIT-C for Pregnancy is a quick and easy tool to use, with three key questions. The answers provide an indication of risk level, which can facilitate targeted follow-up questions and support. The AUDIT-C for Pregnancy is a fast and easy-to-use tool for assessing alcohol use during pregnancy.

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Low risk (0 to 7 points): You probably do not have a problem with alcohol. ...
Medium risk (8 to 15 points): You may drink too much on occasion. ...
High risk (16 to 19 points): Your drinking could lead to harm if it has not already. ...
Addiction is likely (20+ points): Your drinking is likely causing harm.

CAGE: It is another Alcohol questionnaire that asks four simple questions, it focuses on the lifetime and not just the present. CAGE stands for;

C - Have you felt the need to cut down on your drinking?

A - Do you feel Annoyed by people complaining about your drinking?

G - Do you ever feel Guilty about your drinking?

E - Do you ever drink an Eye-opener in the morning to relieve the shakes?

THE AWARENESS ABOUT FAS HEALTH CONSEQUENCES

There is growing appreciation among health and social care providers, especially those working in community-based programs with women or young people with substance use problems and/or who have experienced violence, maltreatment, or trauma, that a high number of their program participants may have been prenatally exposed to alcohol or have fetal alcohol spectrum disorder (FASD) (College of New Caledonia, 2012). Similarly, educators and child welfare researchers and practitioners are increasingly recognizing that a diagnosis of FASD in children or youth represents both an opportunity to identify and implement FASD-informed adaptations and shifts in practices to support the young person and as an opportunity to better understand and address the complex needs of the mother and family in recognition of the multiplicity of issues associated with FASD (Blackburn, 2010; Badry and Choate, 2015; Rutman, 2016).

There are programs where a team of mentors in the Parent Child Assistance Program (PCAP) helped women overcome their addictions in a cycle of three years (Pei et al., 2019). Another program, called the EARLY, divided women into three groups. One group received a face-to-face intervention of 60 min; the second group watched a video and received a 5 min intervention; and the third group received informational brochures. After a follow-up, the most significant decrease in risk was seen for those who received face-to-face counseling (Jacobsen et al., 2022).

Alcohol consumption during pregnancy could come together with maternal polysubstance abuse, and these conditions bring many unanswered questions, both for clinicians and researchers. It is challenging for clinicians to talk to mothers about alcohol

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and drug use during pregnancy, and this can lead to severe consequences for the babies. Neonatal abstinence syndrome (NAS), or neonatal opioid withdrawal syndrome (NOWS), results from acute discontinuation of transplacental opioid exposure following delivery. Infants with NAS are at risk for long-term mental and physical health problems. Therefore, infants will benefit from connections with a primary care provider before hospital discharge and entities designed for early childhood intervention and developmental assistance (Schroeder and White, 2021). Long-term interdisciplinary cooperation is needed to provide adequate comprehensive complex assistance.

Another critical and sensitive issue is the need for a broader elaboration of relevant and sensitive tactics for communicating and building therapeutic relationships with FASD patients and their family members. Due to these difficult topics, clinicians in Lithuania tend to avoid straight and open communication about the disorder with children and adolescents. Clinicians often find it difficult and uncomfortable to talk to patients, their parents, or guardians about FASDs, especially about the harm caused by alcohol consumption during pregnancy. Due to cultural contexts, stigma, and negative public opinion, diagnosis is avoided and missed, thinking that denying a diagnosis could be beneficial to the social adjustment of the patient. This is an obstacle to elaborating relevant treatment pathways and estimating the scope of the need for assistance. The key message to convey to patients with FASDs remains unclear and little researched. Whether patients with FASDs are more sensitive to the effects of alcohol and should avoid it in their lives or consume less than others has not been established.

Because FASDs are associated with learning disabilities, it is necessary to raise awareness not only among medical professionals but also educators. Adopted children, and especially teenagers, need complex support, including in the medical, educational, and social sectors. Prevention programs for adopted children with FASDs need individual approaches to find appropriate sociocultural aspects and highlight sensitivity to alcohol. Clinical and research attention should be increased to overcome the stigma associated with FASDs and be focused on the necessary recognition and medical support at an early age and the psychosocial and educational aspects in adolescence.

STRATEGIES FOR PREVENTION AND MANAGEMENT

Prevention of alcohol exposed pregnancies within has received dismal attention for public health over the years (Curran, 2024). Although indigenous researchers have done the groundwork and produced critical evidence to inform public health strategies, prevention still receives very little attention. Epidemiologists addressing the prevalence

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of alcohol use in pregnancy have shown exceedingly high rates, such as the longitudinal study by Barry and colleagues offering a 65% alcohol in pregnancy rate (Barry et al., 2007). This study has been followed by single studies by Mullally and colleagues finding an 82% rate (Mullally et al., 2011) and O’Keeffe and colleagues bring in a similar 80% rate in 2015 (O’Keeffe et al., 2015). Together these three studies offer a heightened awareness that fetal harm from an alcohol exposed pregnancy is at high levels within Irish culture. It goes without saying that the prevention of fetal alcohol harm offers tremendous benefits of both social and monetary value to society. Although Ireland is making tentative steps in its prevention strategies, there is still a great need for such strategies to be universal and continuous in application.

Prevention needs to be about empowering women of childbearing age with the correct information. What is shown in research is that cultural insensitivity to both the prevention of alcohol-exposed pregnancies and the psychosocial interventions for children living with an FASD contains high-risks of imparting stigma, which isolates both women and children from professional help and supports. Clearly, an alternative to punitive, insensitive approaches is that education, drug and alcohol services with a maternal focus are strategically positioned to prevent the harm associated with prenatal alcohol exposure. Studies have shown that pregnant women who abuse alcohol want to know, and want clear informed information that is rooted in scientific rigor, as women want to protect their fetus and are open to change (Holland et al., 2015; Murphy & Rosenbaum, 1999).

Management and Treatment

Fetal Alcohol Syndrome is a lifetime disability which will affect the child throughout life. However, this fact notwithstanding, the affected child can be managed symptomatically if identified early.

Early identification will reduce the severity and make the child useful in his/her capacity, thus living a relatively normal life.

Treatment options can include;

Behavioural and education therapy for emotional and learning difficulty.

This takes care of behavioural issues. The following advice may be useful to you as a parent of a child with fetal alcohol syndrome in managing behavioural issues related to the syndrome. Acquiring these abilities (also referred to as parent education) may involve:

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- Acknowledging your child's capabilities and shortcomings
 - Putting daily schedules into action
 - Creating and implementing basic guidelines and restrictions
 - Repetition/reinforcing learning by keeping things simple and utilizing precise, plain language.
 - Highlighting appropriate behaviour and reinforcing it with prizes
 - Preventing others from taking advantage of your child, as many fetal alcohol syndrome patients are susceptible to this.
2. Using drugs like antipsychotics for behaviour issues.
 3. Building strong family support and avoiding neglect and stigmatization.

However, the following are protective factors that can reduce the negative impact of Fetal Alcohol Syndrome on a child.

- Early diagnosis before six years of age.
- Assisting them to live a relatively normal life
- Avoiding neglect

Implications to Nursing Education, Research and Practice

1. This study will help to widen the Nursing curriculum to include attitudinal change and improvement in acquiring skills to assess and manage children with fetal alcoholic syndrome.
2. It will help Nurses to have updated knowledge on how to structure interviews to obtain detailed and focused information while taking history from pregnant women.
3. It gives room for further research studies on fetal alcoholic syndrome
4. It will increase the knowledge of Nurses on prompt diagnosis of children with fetal alcoholic syndrome.

Recommendations

1. The government should organize comprehensive preventive programs on the avoidance of alcohol during pregnancy and its effect on unborn children.
2. The Government should promulgate law against alcohol
3. It is recommended that Nurses should undergo more training on how to provide alcohol screening and prompt intervention.
4. Screening tools should be accessible for use.

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Conclusion

Fetal alcohol syndrome has become a big threat to maternal and child health nursing because of the long-term disability it causes to the developing child. Hence, the need for education and enlightenment about this. It was announced recently (February 2024) that the National Agency for Food and Drug Administration and Control (NAFDAC) banned the production, sales and consumption of alcohol in small sachets in Nigeria, this is believed will reduce the accessibility and affordability of alcohol which will translate to reduced consumption. This I believe is a step in the right direction and more of such is required to stamp down this generational menace.

More economic analysis is required before a nationwide comprehensive preventive program can be scaled up. It's also critical to remember that putting preventive measures in place does not mean that families of children with FAS/FASD no longer need to arrange support services.

References

Adebiyi, B.O., Mukumbang, F.C., Beytell, A. (2019). A guideline for the prevention and management of Fetal Alcohol Spectrum Disorder in South Africa. BMC Health Services Research, 19:809 <https://doi.org/10.1186/s12913-019-4677-x>.

American Academy of Pediatrics. Fetal Alcohol Spectrum Disorders (<https://www.healthychildren.org/English/health-issues/conditions/chronic/Pages/Fetal-Alcohol-Spectrum-Disorders.aspx>). Accessed 2/2/2024.

American College of Obstetricians and Gynecologists. Fetal Alcohol Spectrum Disorders FAQs (<https://www.acog.org/programs/fasd/fasd-faqs>). Accessed 2/2/2024.

Centres for Disease Control and Prevention. Fetal Alcohol Spectrum Disorders (FASDs) (<https://www.cdc.gov/ncbddd/fasd/data.html>). Accessed 2/2/2024.

Badry D, Choate P. (2015). Fetal Alcohol Spectrum Disorder: a disability in need of social work education, knowledge and practice. Soc Work Soc Sci Rev.; 17(3): 20–32.

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ISSN: 3043-6087. Science and Education Development Inst., Nigeria

Bailey, B.A; Sokol, R.J. (2011). Prenatal alcohol exposure and miscarriage, stillbirth, preterm delivery, and sudden infant death syndrome. *Alcohol Res Health*, 34, 86–91.

Barry, S., Kearney, A., Lawlor, E., McNamee, E., & Barry, J. (2007). The Coombe Women's Hospital study of alcohol, smoking and illicit drug use, 1988-2005. *Dublin: Coombe Women's Hospital*.

Bayer, S.A., Altman, J., Russo, R.J. and Zhang, X. (2003). Timetables of neurogenesis in the human brain based on experimentally determined patterns in the rat. *Neurotoxicology*, 14:83-144.

Blackburn C, Whitehurst T. (2010). Foetal Alcohol Spectrum Disorders (FASD): raising awareness in early year's settings. *Br J Spec Educ.*; 37(3):122-9.

Becoming RD. (2016). FASD. Informed: strengthening practice and programs working with women with FASD. *Subst Abus.* 10:13-20.

Bell E, Andrew G, Di Pietro N, et al. (2016). It's a shame! Stigma against fetal alcohol Spectrum disorder: examining the ethical implications for public health practices and policies. *Public Health Ethics.* 9:65-77.

Benz J, GA CR. (2009). History, challenges, and future directions. 14:231-7.

Burd, L., Klug., M. and Martsolf, J. (2004). Increased sibling mortality in children with fetal alcohol syndrome. *Addict Biology*, 9:179-86.

Burd L. (2016). FASD and ADHD: are they related and how? *BMC Psychiatry.* 16:325.

Chasnoff IJ, Wells AM, King L. (2015). Misdiagnosis and missed diagnoses in Foster and Adopted children with prenatal alcohol exposure. *Pediatrics.* 135:264-70.

Chudley AE, Conry J, Cook JL, et al. (2005). Fetal alcohol Spectrum disorder: Canadian guidelines for diagnosis. *CMAJ.* 172:S1-S21.

Clarren, S.K. and Smith, D.W. (2008). The Fetal Alcohol Syndrome. *New England Journal of Medical science*, 298:1063-7.

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ISSN: 3043-6087. Science and Education Development Inst., Nigeria**

Coles, C.D. (2011). Critical periods for prenatal alcohol exposure: Evidence from animal and human studies. *Alcohol Health Research World*, 18(1):22-29.

Coles, C.D. (2011). Discriminating the Effects of Prenatal Alcohol Exposure from Other Behavioural and Learning Disorders. *Alcohol Res. Health*, 34:42-50.

College of New Caledonia (2013). FASD Informed Practice for Community Based Programs. Burns Lake, BC: College of New Caledonia; 2012. Available at: <http://www.cnc.bc.ca/Assets/PDFs/FASDInformedPracticeFinalVersionSeptember9-2013.pdf>.

Cook JL, Green CR, Lilley CM, et al. (2016). Fetal alcohol spectrum disorder: a guideline for diagnosis across the lifespan. *CMAJ*. 188:191-7.

Creeley, C.E. and Olney, J.W. (2013). Drug-Induced Apoptosis: Mechanism by which Alcohol and Many Other Drugs Can Disrupt Brain Development: *Brain Science*, 3:1153-1181.

Curran, W.C. (2024). The Prevention and Management of Fetal Alcohol Spectrum Disorder(s) (FASDs) in Ireland: A Public Policy Gap? Public Policy. IE. Evidence for Policy. UCD Geary Institute for Public Policy, University College Dublin, Belfield, Dublin 4, Ireland.

Das, S.K. and Vasudevan, D.M. (2007). Alcohol-induced oxidative stress. *Life Science*, 81:177-87.

Davis, W.L., Crawford, L.A., Cooper, O.J., Farmer, G.R., Thomas, D.L. and Freeman, B.L. (2000). Ethanol induces the generation of reactive free radicals by neural crest cells in vitro. *Journal of Craniofacial and Genital Development Biology*, 10:277-93.

Deltour, L., Ang, H.L. and Duester, G. (2006). Ethanol inhibition of retinoic acid synthesis as a potential mechanism for fetal alcohol syndrome. *FASEB Journal*, 10:1050-7.

Denny LC, S Blitz R. (2017). Fetal alcohol syndrome and fetal alcohol Spectrum disorders. *Am Fam Physician*.;96:515-22.

This work is licensed under a [Creative Commons Attribution 4.0 Unported License](https://creativecommons.org/licenses/by/4.0/)
ISSN: 3043-6087. Science and Education Development Inst., Nigeria

Dobson, C. C., Mongillo, D.L., Brien, D.C., Stephila, R., Poklewska-Koziell, M., Winterborn, Holloway, A.C., Brien, J.F. and Reynolds, J.N. (2012). "Chronic PAE Increases Adiposity and Disrupts Pancreatic Morphology in Adult .

Holland, K., McCallum, K., & Blood, R. W. (2015). Conversations about alcohol and pregnancy. *Canberra: Foundation for Alcohol Research and Education*.

Jacobsen, B.; Lindemann, C.; Petzina, R.; Verthein, U. (2022). The Universal and Primary Prevention of Foetal Alcohol Spectrum Disorders (FASD): A Systematic Review. *J. Prev.*, 43, 297–316.

Hoyme HE, Kalberg WO, Elliott AJ, et al. (2016). Updated clinical guidelines for diagnosing fetal alcohol spectrum disorders. *Pediatrics*. 138:e20154256.

Jonsson E, Salmon A, Warren KR. (2014). The international charter on prevention of fetal alcohol spectrum disorder. *Lancet Glob Health*. 2:e135–7.

Jonsson, E. (2019). *Fetal Alcohol Spectrum Disorders (FASD): A Policy Perspective*. SAGE Publications Sage CA: Los Angeles, CA.

Jamieson PA. The challenge of supporting children with fetal alcohol Sp

Jones KL, Smith DW, Ulleland CN, Streissguth P. (1973). Pattern of malformation in offspring of chronic alcoholic mothers. *Lancet*. 9;1(7815):1267-71.

Marianian, A. Y. and Molchanova, E. V. (2020) "Social and Economic Effect of Comprehensive Prevention of Fetal Alcohol Syndrome and Fetal Alcohol Spectrum Disorders in Children: A Review", *Journal of Pharmaceutical Research International*, 32(23), pp. 115–123. doi: 10.9734/jpri/2020/v32i2330798.

Millar JA, Thompson J, Schwab D, et al. (2017). Educating students with FASD: linking policy, research and practice. *J Res Spec Educ Needs*. 17:3–17.

Murphy, S., & Rosenbaum, M. (1999). *Pregnant women on drugs: Combating stereotypes and stigma*. Rutgers University Press. https://books.google.com/books?hl=en&lr=&id=-Rh0om_pYeYC&oi=fnd&pg=PP11&dq=Murphy+and+Rosenbaum+1999&ots=1hjXkMVn_d&sig=D0rwLA9XuFO1ibcC0K6z2VP7X30

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ISSN: 3043-6087. Science and Education Development Inst., Nigeria

Mullally, A., Cleary, B. J., Barry, J., Fahey, T. P., & Murphy, D. J. (2011). Prevalence, predictors and perinatal outcomes of peri-conceptional alcohol exposure-retrospective cohort study in an urban obstetric population in Ireland. *BMC Pregnancy and Childbirth*, 11(1), 27.

National Institute on Alcohol Abuse and Alcoholism. (<https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/fetal-alcohol-exposure>) Fetal Alcohol Exposure (<https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/fetal-alcohol-exposure>). Accessed 2/2/2024.

O’Keeffe, L. M., Kearney, P. M., McCarthy, F. P., Khashan, A. S., Greene, R. A., North, R. A., Poston, L., McCowan, L. M., Baker, P. N., & Dekker, G. A. (2015). Prevalence and predictors of alcohol use during pregnancy: Findings from international multicentre cohort studies. *BMJ Open*, 5(7), e006323.

Olivier L, Curfs LMG, Viljoen DL. (2016). Fetal alcohol spectrum disorders: prevalence rates in South Africa. *South African Med J*;106:103–6.

Pei, J.; Carlson, E.; Tremblay, M.; Poth, C. (2019). Exploring the contributions and suitability of relational and community-centered fetal alcohol spectrum disorder (FASD) prevention work in First Nation communities. *Birth Defects Res.*, 111, 835–847.

Popova S, Lange S, Probst C, Gmel G, Rehm J. (2017). Estimation of national, regional, and global prevalence of alcohol use during pregnancy and fetal alcohol syndrome: a systematic review and meta-analysis. *Lancet Glob Health*. 5(3):e290-e299. doi: 10.1016/S2214-109X(17)30021-9. Epub 2017 Jan 13. Erratum in: *Lancet Glob Health*. 2017 Mar;5(3):e276.

Schroeder, M.; White, J. (2021). Neonatal Abstinence Syndrome: Prevention, Recognition, Treatment, and Follow-up. *S. D. Med. J. S. D. State Med. Assoc.*, 74, 576–583.

Select Committee on Action to Prevent Foetal Alcohol Spectrum Disorder (2015). The preventabledisability. https://parliament.nt.gov.au/__data/assets/pdf_file/0005/363254/Final_FASD_Report.pdf. Accessed 1 Nov 2019.

Sher, J. (2020). Fetal alcohol spectrum disorders: Preventing collateral damage from COVID-19. *The Lancet Public Health*, 5(8), e424.

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ISSN: 3043-6087. Science and Education Development Inst., Nigeria

Stratton K, Howe C, Battaglia F, (1996). Fetal alcohol syndrome: diagnosis, epidemiology, prevention, and treatment. Washington DC: National Academies Press; eds. Institute of Medicine.

Reid N, Dawe S, Shelton D, et al. (2015). Systematic review of fetal alcohol spectrum disorder interventions across the life span. *Alcohol Clin Exp Res.*;39:2283–95.

Rendall-Mkosi K, London L, Adnams C, et al. (2008). Fetal alcohol spectrum disorder in South Africa: situational and gap analysis. Pretoria: UNICEF; 2008. https://www.unicef.org/southafrica/SAF_resources_fetalalcohol.pdf (Accessed 14 Sept 2017)

Roozen S, Black D, Peters G-JY, et al. (2016). Fetal alcohol Spectrum disorders (FASD): an approach to effective prevention. *Curr Dev Disord Rep.* 3:229–34.

Rutman, D. (2016). Becoming FaSd Informed: Strengthening Practice and Programs Working with Women with FaSd. *Substance Abuse: Research and Treatment.* 10(S1) 13–20 doi: 10.4137/SaRt.S34543.

Williams JF, Smith VC, ABUSE COS. (2015). Fetal alcohol Spectrum disorders. *Pediatrics.* 136:e1395–406.

Warren, K. R. (2015). A review of the history of attitudes toward drinking in pregnancy. *Alcoholism: Clinical and Experimental Research*, 39(7), 1110–1117.