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A Qualitative Study on "Fetal Alcohol Syndrome" (FAS)

Mr. Aamruth Kumar Lakkineni[1]
[1]*Asst. Prof. of Zoology, Indira Priyadarshini Govt. Degree College for Women (A), Nampally, Hyderabad, India.*
Email: *aamruthlakkineni23@gmail.com*[1]

Abstract
This post positivist qualitative research was designed to address factors that contribute to alcohol consumption during pregnancy and the amount of information regarding fetal alcohol syndrome. For this purpose, the team has conducted face to face interactions with 45 alcoholic female participants in the urban and slum areas where the women frequently consume the alcohol on the occasion of their functions and local festivals irrespective gender in some areas Telangana state. 20 to 40% of our study sample reported having parents who had a history of alcohol abuse during their child hood and 18 to 35% had children who exhibited fetal alcohol syndromes. Suggestions for program improvement were discussed,
Keywords *FAS, FASD, Abnormal facial features, Emotional behavior, Demographics, rehabilitation center, paradigm conditions, and open Codin.*

1. Statement
"Fetal alcohol spectrum disorders is a group of conditions that can occur in a person whose mother drank alcohol during pregnancy. These effects can include physical problems and problems with behaviour and learning".
A person with an FASD might have,

- Low body weight
- Poor coordination
- Difficulty with attention
- Poor memory
- Difficulty in school [especially in maths]
- Speech and language delays
- Shorter-than-average-height
- Abnormal facial features; such as a smooth ridge between the nose Shorter-than-average-height

1.1 Aim
To bring awareness among the people in the community and prevention of FASD

1.2 Objectives

- Recognize the wide range of physical and behavioral effects of alcohol exposure.
- Understand why the effects of alcohol exposure vary widely.
- Be an effective advocate for services for affected children and adults at school and in community

1.3 Purpose
The purpose of this study is to demonstrate and explain the effectiveness of the implementation of a counseling and treatment program for women in Indian community that are pregnant or of childbearing age in an outpatient setting that will promote wellness in the care and management of women so that the families can get the care they need and the children have the ability to reach their full potential and function in society [1].

1.4 Problem and Literature
Fetal alcohol Disorder Spectrum is a condition that affects children worldwide. According to the CDC's National Center for Health Statistics guidelines, Prevalence of FAS was highest among American Indian/Alaska Native children (2.0 [CI = 1.4-2.8] per 1,000 children aged 7–9 years) in the 2010 census (CDC.org). This is the highest prevalence among populations. There are many factors that can contribute to these statistics, such as, lack of knowledge, lack of support from family or significant others as well as lack of community

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healthcare presence to guide and teach the patient. This is where this program was designed to be put in place. By providing support for these women through education programs as well as providing interventions such as medications, counseling, information and support we can intervene and make a difference in the lives of the women of the community as well as the lives of their unborn infants.

2. Research methodology

The team of this project has selected the methodology for this study is survey, data collection from different books and media, visiting the hospitals and consulting the Doctors etc. [2]. The term fetal alcohol syndrome was first used in 1973 - The discovery and evolution of fetal alcohol syndrome in 1973, University of Washington physicians Kenneth Jones and David smith documented a pattern of development delays and birth defects that can occur in the children of women who abused alcohol during pregnancy these children possessed similar facial abnormalities and brain defects etc.

About this Study

- The study uses self-reported data collected from the Behavioral Risk Factor Surveillance System (BRFSS), a state-based, landline and cellphone survey of U.S. adults aged 18 years and over
- To estimate current drinking and binge drinking for pregnant people aged 18-49 years, data from the 2018-2020 BRFSS were analyzed for all 50 states† and the District of Columbia

Alcohol in the mother's blood passes to the baby through the umbilical cord. There is no known safe amount of alcohol during pregnancy or when trying to get pregnant. There is also no safe time to drink during pregnancy. **Alcohol** passes freely from the mother to the fetus. The fetal liver cannot metabolize alcohol efficiently [3]. Blood alcohol levels are equivalent between the woman and fetus by 1 hour. Alcohol levels in amniotic fluid are lower but persist for longer. There is a barrier "organ" that allows the baby to get the proper nutrients and oxygen while removing unnecessary wastes and carbon dioxide through the mother's blood supply. This "organ" is called the **placenta**. The fetus is attached to the placenta by its umbilical cord (it is cut at birth to form your belly button). In the placenta, the maternal blood supply is separate from the fetal blood supply but there is an **interstitial** space through which nutrients, oxygen, and wastes can be transferred. Because of the physiochemical properties of alcohol (it is polar and small in size), it can easily diffuse from the maternal blood to the fetal blood through the interstitial space of the placenta. Once alcohol has entered the fetus, it travels throughout the fetus's body where it can damage the face, **brain**, or any other organ that is developing at the time of exposure. In the placenta alcohol follows nutrients across the interstitial space from the maternal to the fetal blood supply. The baby gets as much alcohol as the mother gets. In the womb, a baby doesn't have a fully developed liver that can process or break down alcohol, so it can easily get to and damage the baby's organs. That can cause:

Miscarriage - You can lose your baby during the early few months of pregnancy.

Stillbirth - You can lose your baby in the womb during the second half of your pregnancy.

Preterm labor - Drinking can make your baby arrive too early. Premature babies can have many health problems. Those often include breathing trouble and other issues linked to immature lungs.

Birth defects - Some babies are born with heart or kidney problems. Others may have trouble seeing or hearing or other health issues. Some of the most severe problems happen when a pregnant woman drinks in the first trimester, when the baby's brain starts to develop. But the second and third trimesters aren't safe either. The brain is still developing then, and this process can be interrupted by even moderate amounts of alcohol. There is no "safe" amount of alcohol that pregnant women can drink. And there is no time during pregnancy when it's considered safe to drink alcohol, either.

2.1 Brain Structures Affected

Prenatal alcohol exposure effects all regions of the brain Areas that are particularly susceptible include:

Corpus Callosum - Communication between two hemispheres of the brain

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Frontal lobe - Control emotional responses, processing of humor, expressive language; responsible for abstract thinking; involved in processing information and deciding how to act
Hippocampus - Memory, learning, emotion
Amygdala - Fear, stress, anxiety, anger, aggression
Globally 8 in 1,000 kids born with fetal alcohol syndrome. The study estimated that one out of 13 women, who consumed alcohol at any point or frequently during pregnancy, gave birth to a child with FASD. While the European region reported the highest levels worldwide, the Eastern Mediterranean Region has showed the lowest

2.2 Signs and Symptoms

The severity of fetal alcohol syndrome symptoms varies, with some children experiencing them to a far greater degree than others. Signs and symptoms of fetal alcohol syndrome may include any mix of physical defects, intellectual or cognitive disabilities, and problems functioning and coping with daily life.

2.3 Physical defects

- Physical defects may include:
- Distinctive facial features, including small eyes, an exceptionally thin upper lip, a short, upturned nose, and a smooth skin surface between the nose and upper lip
- Deformities of joints, limbs and fingers
- Slow physical growth before and after birth
- Vision difficulties or hearing problems
- Small head circumference and brain size
- Heart defects and problems with kidneys and bones

2.4 Brain and central nervous system problems

- Problems with the brain and central nervous system may include:
- Poor coordination or balance
- Intellectual disability, learning disorders and delayed development
- Poor memory
- Trouble with attention and with processing information
- Difficulty with reasoning and problem-solving
- Difficulty identifying consequences of choices
- Poor judgment skills
- Jitteriness or hyperactivity
- Rapidly changing moods

2.5 Social and behavioral issue

Problems in functioning, coping and interacting with others may include:

- Difficulty in school
- Trouble getting along with others
- Poor social skills
- Trouble adapting to change or switching from one task to another
- Problems with behavior and impulse control
- Poor concept of time
- Problems staying on task
- Difficulty planning or working toward a goal

2.6 State-level estimation of alcohol uses among women - 2019

This data given below is by “Behavioral Risk Factor Surveillance System” (BRFSS), a telephone survey that tracks national and state-specific self-reported health risk behaviors of adults, 18 years and older, in the United States. The data given below shows that the estimated number of women aged 18 to 44 who reported
Any alcohol use - The prevalence estimates of any alcohol use among women aged 18 to 44 ranged from 30.4% in Utah to 72.7% in the District of Columbia (median: 55.3%).

- 30.4% - 49.9%
- 50.7% - 55.6%
- 55.8% - 59.4%
- 59.9% - 72.7%

Having four or more drinks - On any one occasion during the past 30 days (binge drinking), The prevalence estimates of binge drinking among women aged 18 to 44 ranged from 10.9% in Utah to 32.3% in the District of Columbia.

- 10.9% - 16.8%
- 16.8% - 19.2%
- 19.3% - 22.3%
- 22.4% - 32.3%

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Page No: 407-418

Binge drinking - Among women who reported any alcohol use, in the past 30 days. The estimated prevalence of binge drinking among women aged 18 to 44 who reported any alcohol use ranged from 25.3% in Mississippi to 44.6% in the District of Columbia.

- 25.3% - 33.4%
- 33.7% - 35.4%
- 35.8% - 38.3%
- 38.5% - 44.6%

And also Fetal alcohol spectrum disorders (FASDs) are a group of conditions that can occur in a person whose mother drank alcohol during pregnancy. Surveys from the United States found that about 10% of pregnant women drank alcohol in a month, and 20% to 30% drank at some point during the pregnancy. 3.6% of pregnant American women met criteria for an alcohol use disorder in a 2001 epidemiological study. The risk of FASD depends on the amount consumed, [4] the frequency of consumption, and the points in pregnancy at which the alcohol is consumed.

Other risk factors include -

- Mother's older age
- Smoking
- Poor diet

The lifetime cost per child with FASD in the United States was $2 million in 2002, however in 2021, Canada revealed that the annual cost for FASD individuals was $9.7 billion (including the costs of the Criminal Justice System, healthcare, and education among others).

In South Africa, some populations have rates as high as 9%. The negative effects of alcohol during pregnancy have been described since ancient times.

3. Types of FASD

FASDs encompass a range of physical and neuro developmental problems that can result from prenatal alcohol exposure.

The most severe condition called FAS and some others are as follows:

3.1 Fetal Alcohol Syndrome (FAS)

FAS represents the most involved end of the FASD spectrum. People with FAS have central nervous system (CNS) problems, minor facial features, and growth problems.

People with FAS can have problems with learning, memory, attention span, communication, vision, or hearing. They might have a mix of these problems. People with FAS often have a hard time in school and trouble getting along with others.

3.2 Alcohol-Related Neuro Developmental Disorder (ARND):

People with ARND might have intellectual disabilities and problems with behavior and learning. They might do poorly in school and have difficulties with math, memory, attention, judgment, and poor impulse control.

3.3 Alcohol-Related Birth Defects (ARBD):

People with ARBD might have problems with the heart, kidneys, or bones or with hearing. They might have a mix of these.

3.4 Partial fetal alcohol syndrome (pFAS) :

It refers to individuals with a known, or highly suspected, history of prenatal alcohol exposure who have alcohol-related physical and neurodevelopmental deficits that do not meet the full criteria for FAS. pFAS-sub types.

3.5 Neurobehavioral Disorder Associated with Prenatal Alcohol Exposure (ND-PAE)

People with ND-PAE have problems with thinking, behavior, and life skills. ND-PAE occurs from being exposed to alcohol during pregnancy [5]. A child or youth with ND-PAE will have problems in three areas:

1. Thinking and memory, where the child may have trouble planning or may forget material he or she has already learned
2. Behavior problems, such as severe tantrums, mood issues (for example, irritability), and difficulty shifting attention from one task to another
3. Trouble with day-to-day living, which can include problems with bathing, ressing for the weather, and playing with other children

Child with FAS

“Most of these children will require lifelong care, so the earlier they have access to appropriate therapy and supports, the better their long-term health and

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social outcomes will be," Popova added. For the study, published in the journal JAMA Pediatrics, the team looked at the prevalence - or the frequency that FASD - occurs for children from birth to age 16 in 187 countries. While the European region reported the highest levels worldwide at nearly 20 cases of FASD per 1,000 children, the Eastern Mediterranean Region has showed the lowest FASD prevalence. The US showed 15 cases of FASD per 1,000 children, while Canada reported eight cases per 1,000 children. In 76 countries, more than one out of 100 young people reported FASD.The researchers also found that FASD occurred more frequently among children in care (such as foster care or orphanages), in the criminal justice system, in psychiatric care and aboriginal young people compared to the general population. "There is a need for targeted screening and diagnosis for these high-risk populations as well as interventions to prevent alcohol use among mothers of children with FASD in relation to subsequent pregnancies," Popova said. Public health messages about the risks of drinking alcohol during pregnancy and routine screening by health care professionals to detect alcohol consumption before or at early stages pregnancy should be followed, the researchers said.

4. Prevalence of Alcohol consumption

Alcohol use during pregnancy continues to be a serious problem. Alcohol use during pregnancy can cause birth defects and developmental disabilities known as fetal alcohol spectrum disorders (FASDs) and might increase the risk for miscarriage and stillbirth. Screening for alcohol use combined with brief counseling by primary care providers, integration of mental health services, improved access to care, and community-based interventions might reduce alcohol use during pregnancy and the risk for poor pregnancy and birth outcomes.

In a new MMWR article, CDC (Centers for Disease Control and Prevention) researchers found

- Nearly 1 in 7 pregnant people reported current drinking, meaning at least one drink of any alcoholic beverage in 30 days.
- About 1 in 20 pregnant people reported binge drinking, meaning four or more drinks on one occasion at least once in 30 days.
- Pregnant people 25-34 years were less likely to report current drinking than those aged 35-49 years. College educated, employed, and unmarried pregnant people were more likely to report current drinking.
- A new finding in this report is that pregnant people who experienced frequent mental distress (14 or more days of poor mental health in the past 30 days) and those who did not have a usual healthcare provider were more likely to report alcohol use.
- Overall, these prevalence estimates are consistent with slightly increasing trends in current and binge drinking observed in the same survey since 2011. However, alcohol use among pregnant people was not higher in 2020 than in 2019, despite some evidence of increased alcohol sales and consumption among the general public during the COVID-19 pandemic.

*People who reported their sex at birth as female were asked if they were currently pregnant. Areas

5. Evaluated for FASD Diagnosis

The term FASDs is not meant for use as a clinical diagnosis. Diagnosing FASDs can be hard because there is no medical test, like a blood test, for these conditions. And other disorders, such as ADHD (attention-deficit/hyperactivity disorder) and Williams syndrome, have some symptoms like FAS.To diagnose FASDs, doctors look for:

- Prenatal alcohol exposure; although confirmation is not required to make a diagnosis
- Central nervous system problems (e.g., small head size, problems with attention and hyperactivity, poor coordination)
- Lower-than-average height, weight, or both
- Abnormal facial features (e.g., smooth ridge between nose and upper lip)

5.1 FASDs: Treatments

FASDs last a lifetime. There is no cure for FASDs, but research shows that early intervention treatment services can improve a child's development. DC has

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Issue: 03 March 2024
Page No: 407-418

provided the information on this study. CDC does not necessarily endorse the views or information presented. CDC cannot answer personal medical questions. It is better to talk to health care professional about specific questions concerning appropriate care, treatment, or other medical advice. No two people with FASDs are exactly alike. Children with FASDs can have impairments in learning, memory, behavior, social interactions, or combinations of these impairments. Some children have poor growth, including reduced head size. A minority of children with FASDs have minor facial features that reflect problems in brain growth before birth. These symptoms and features can range from mild to severe. Treatment services for people with FASDs are most effective when they address a person's specific impairments and build upon his or her own strengths. Early Intervention Services There is no cure for FASDs, but research shows that early intervention treatment services can improve a child's development. Early intervention services help children from birth to 3 years of age (36 months) learn important skills. Services include therapy to help the child talk, walk, and interact with others. Therefore, it is important to talk to child's doctor as soon as possible if a child has an FASD or other developmental problem. In a majority of states, children with a diagnosis of fetal alcohol syndrome (FAS) are immediately eligible for early intervention services. Even if child has not received a diagnosis, he or she might qualify for early intervention treatment services. The Individuals with Disabilities Education Act (IDEA)external icon says that children younger than 3 years of age who are at risk of having developmental delays may be eligible for services. In addition, treatments such as speech therapy for language delays, or physical therapy for motor issues, often do not need to wait for a formal diagnosis [6].

5.2 Protective Factors

Studies have shown that some positive factors can help reduce secondary effects of FASDs and help people with these conditions reach their full potential.1 Protective factors include:

5.3 Early diagnosis:

A child who is diagnosed at a young age can be placed in appropriate educational classes and get the social services needed to help the child and his or her family. Early diagnosis also helps families and school staff to understand why the child might act or react differently from other children sometimes.

5.4 Involvement in special education and social services:

Children who receive special education geared towards their specific needs and learning style are more likely to reach their full potential. Children with FASDs have a wide range of of learning needs and behavior challenges that might need to be addressed. Special education programs can better meet each child's needs. In addition, families of children with FASDs who receive social services, such as counseling or respite care have more positive experiences than families who do not receive such services.

5.5 Loving, nurturing, and stable home environment:

Children with FASDs can be more sensitive than other children to disruptions, changes in lifestyle or routines, and harmful relationships. Therefore, having a loving, stable home life is very important for a child with an FASD. In addition, community and family support can help prevent secondary conditions, such as criminal behavior, unemployment, and incomplete education.

5.6 Absence of violence:

People with FASDs who live in stable, non-abusive households or who do not become involved in youth violence are much less likely to develop secondary conditions than children who have been exposed to violence in their lives. Children with FASDs need to be taught other ways of showing their anger or frustration.

6. Types of Treatments

Several types of treatments are available for people with FASDs. They can generally be broken down into five categories:

1. Medical Care
2. Medication
3. Behavior and Education Therapy

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Issue: 03 March 2024
Page No: 407-418

4. Parent Training
5. Alternative Approaches

6.1 Medical Care

People with FASDs have the same health and medical needs as people without FASDs. Like everyone else, they need well-baby care, vaccinations, good nutrition, exercise, hygiene, and basic medical care. But, for people with FASDs, concerns specific to the disorder must also be monitored and addressed either by a current doctor or through referral to a specialist. The types of treatments needed will be different for each person and depend upon the person's symptoms.

Types of medical specialists might include:

- Pediatrician
- Primary care provider
- Geneticist/ Dysmorphologist
- Otolaryngologist
- Audiologist
- Immunologist
- Neurologist
- Mental health professionals (child psychiatrist and psychologist, school psychologist, behavior management specialist)
- Ophthalmologist
- Plastic surgeon
- Endocrinologist
- Gastroenterologist
- Nutritionist
- Speech-language pathologist
- Occupational therapist
- Physical therapist

6.2 Medication

Nomedications have been approved specifically to treat FASDs. But, several medications can help improve some of the symptoms of FASDs. For example, medication might help manage high energy levels, inability to focus, or depression. Following are some examples of medications used to treat FASD symptoms:

6.3 Stimulants

This type of medication is used to treat symptoms such as hyperactivity, problems paying attention, and poor impulse control, as well as other behavior issues.

6.4 Antidepressants

This type of medication is used to treat symptoms such as sad mood, loss of interest, sleep problems, school disruption, negativity, irritability, aggression, and anti-social behaviors.

6.5 Neuroleptic

This type of medication is used to treat symptoms such as aggression, anxiety, and certain other behavior problems.

6.6 Anti-anxiety drugs

This type of medication is used to treat symptoms of anxiety. Medications can affect each child differently. One medication might work well for one child, but not for another. To find the right treatment, the doctor might try different medications and doses. It is important to work with your child's doctor to find the treatment plan that works best for your child.

7. Behavior and Education Therapy

Behavior and education therapies can be important parts of treatment for children with FASDs. Although there are many different types of therapy for children with developmental disabilities, only a few have been scientifically tested specifically for children with FASDs.Following are behavior and education therapies that have been shown to be effective for some children with FASDs:

7.1 Good Buddies - A children's friendship training to teach individuals with an FASD appropriate social skills1

Children with FASDs often have difficulty learning subtle social skills from their own experiences; those kinds of skills are typically "learned by osmosis" on the playground, such as how to slip into a group, appropriate sharing, or dealing with teasing. This intervention uses a group format to teach age-appropriate social skills over 12 weekly sessions for parent and child. Sessions are organized around and toward each child hosting a play date with a classmate or peer.

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Volume: 02
Issue: 03 March 2024
Page No: 407-418

7.2 Families Moving Forward (FMF) program to provide support for families who deal with challenging FASD behaviors2

This intervention is most appropriate for children with severe, clinically significant behavior problems based in part on positive behavior support techniques. It is a feasible, low-intensity, sustained model of supportive consultation with a parent or caregiver (rather than directly with the child). The intervention lasts 9 to 11 months, with at least 16 every-other-week sessions, typically lasting 90 minutes each. Services are carried out by mental health providers with specialized training.

7.3 Math Interactive Learning Experience (MILE) program to help with mathematics difficulty3

Deficits in mathematical functioning have been reported consistently among alcohol-affected individuals. The MILE program is designed to improve the child's mathematical knowledge and skill. Children complete 6 weeks of one-to-one tutoring using specifically adapted materials (eg, vertical number line, timers, etc.) that are appropriate to their academic level. Parents also receive training on behavioral regulation techniques to optimize the child's readiness to learn.

7.4 Parents and Children Together (PACT) a neurocognitive habilitation program to improve self-regulation and executive function:

Building upon techniques developed from the brain injury literature, this intervention used 12 weekly sessions with parents and children to address and improve behavior regulation and executive function (that is, planning, organizing, and understanding of others). It uses a particularly engaging metaphor of "how does my engine run" to teach children awareness of their current behavioral state and specific techniques for optimizing that state for the current situation.

7.5 Parent Training

Children with FASDs might not respond to the usual parenting practices. Parent training has been successful in educating parents about their child's disability and about ways to teach their child many skills and help them cope with their FASD-related symptoms. Parent training can be done in groups or with individual families. Such programs are offered by therapists or in special classes. Although each child is unique, the following parenting tips can be helpful.

- Concentrate on your child's strengths and talents
- Accept your child's limitations
- Remember, much of your child's challenging behavior is because of brain-based challenges rather than willful misbehavior
- Be consistent with everything (discipline, school, behaviors)
- Use concrete language and examples
- Use stable routines that do not change daily
- Keep it simple
- Be specific-say exactly what you mean
- Structure your child's world to provide a foundation for daily living
- Use visual ads, music, and hands-on activities to help your child learn
- Use positive reinforcement often (praise, incentives)
- Supervise: friends, visits, routines
- Repeat, repeat, repeat

8. Alternative Approaches

With any disability, injury, or medical condition, many untested therapies become known and are promoted by informal networks. These therapies are referred to as alternative treatments. Before starting such a treatment, check it out carefully, and talk to your child's doctor. Your child's doctor will help you weigh the risks and benefits of these therapies. Some of the alternative treatments used for people with FASDs include:

- Biofeedback
- Auditory training
- Relaxation therapy, visual imagery, and meditation (especially for sleep problems and anxiety)
- Creative art therapy
- Yoga and exercise
- Acupuncture and acupressure

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Page No: 407-418

- Massage, Reiki, and energy healing
- Vitamins, herbal supplements, and homeopathy
- Animal-assisted therapy

9. Fetal alcohol spectrum disorder: An overview

There has been an increase in awareness of fetal alcohol spectrum disorders in both the lay and academic press of late. However, evidence from national, regional and local conferences as well as a pilot survey of awareness (unpublished data) suggests they remain a set of conditions that are poorly understood in the UK both by the general public and health practitioners. This is despite the conditions being relevant to specialties as diverse as obstetrics, pediatrics, general practice, neurology, public health and psychiatry. This study provides an overview to inform medical practitioners of important aspects related to their practice.

9.1 Knowledge of Fetal Alcohol Spectrum Disorders

Knowledge levels of fetal alcohol spectrum disorders by the general public and health professionals in the UK are not accurately known. Most relevant studies have taken place in the USA and Canada where there is greater general awareness of the disorder. Nanson et al. surveyed a group of paediatricians and general practitioners (GPs). She showed that whilst most people had heard of fetal alcohol spectrum disorders, less than 50% knew much about how to recognize it. Ten per cent of those who did recognize the condition did nothing about it.

9.2 Stohler

studied 40 high risk pregnancies to see if fetal alcohol syndrome was detected in the offspring. A specially trained research assistant identified 16 cases resulting from these pregnancies. None had been identified by routine pediatric screening. Further, 73% of the case notes made no record of maternal alcohol consumption despite the mothers being known to be in a high-risk group.

9.3 Kesmodel et al.

studied a group of pregnant Danish women. The majority (74%) felt that drinking in pregnancy was acceptable; 65% reported they had received little or no information from their midwife about possible dangers. This is consistent with data collected by the UK government in their alcohol reduction strategy: it was found that 61% of women drank during pregnancy to some level.7

9.4 MacKinnon

studied a group of teenagers in America. Although 97% had heard of alcohol causing problems during pregnancy, 48% thought that the condition related to the baby being addicted to alcohol and just over 50% felt the condition could be cured. Similar information needs to be collected in the UK urgently in order to inform health promotion strategies.

10. Management

Management of fetal alcohol spectrum disorders classically is divided into two main areas,

- First, recognition of the dangers of alcohol consumption in pregnancy and the prevention of damage to the fetus.
- The second area is less well researched but relates to the management of people who have the condition. The emphasis on prevention has been the most highly publicized of the two with numerous authors stressing the level of risk that is harmful, early detection of at risk mothers, the need for information sharing between professionals and public as paramount priorities. Emerging methods such as the use of routine screening tools such as TWEAK, hair sampling, or meconium testing have been suggested. However, the ethical debate around their use is in its infancy thus clarification is required before they can be recommended routinely. Research into protective factors during pregnancy has been inconclusive and contradictory. The use of vitamin E as a potential antioxidant has been shown beneficial in some studies and ineffective in others. Clearly, much has still to be done before conclusive information can be given to mothers contemplating pregnancy. For this reason, we continue to emphasize the general abstinence message.

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Page No: 407-418

11. Analysis of data

We do not know exactly how many people have fetal alcohol spectrum disorders (FASDs). Several different approaches have been used to estimate how many persons are living with FASDs in the population. FASDs include several diagnoses related to exposure of the baby to alcohol during pregnancy. More specifically, fetal alcohol syndrome (FAS) is the most involved diagnosis, used when several physical and developmental abnormalities are present. Using medical and other records, CDC studies have identified 0.2 to 1.5 infants with FAS for every 1,000 live births in certain areas of the United States.1 The most recent CDC study analyzed medical and other records and found FAS in 0.3 out of 1,000 children from 7 to 9 years of age. 2Studies using in-person assessment of school-aged children in several U.S. communities report higher estimates of FAS: 6 to 9 out of 1,000 children. Few estimates for the full range of FASDs are available. Based on the National Institutes of Health-funded community studies using physical examinations, experts estimate that the full range of FASDs in the United States and some Western European countries might number as high as 1 to 5 per 100 school children (or 1% to 5% of the population). The lifetime cost for one individual with FAS in 2002 was estimated to be $2 million. This is an average for people with FAS and does not include data on people with other FASDs. People with severe problems, such as profound intellectual disability, have much higher costs. It is estimated that the cost to the United States for FAS alone is over $4 billion annually. Estimates of alcohol use among women of childbearing age vary from state to state. Data come from the Behavioral Risk Factor Surveillance System (BRFSS), a telephone survey that tracks national and state-specific self-reported health risk behaviors of adults, 18 years and older, in the United States.

What Can Be Done to Prevent Fetal Alcohol Spectrum Disorders?

Women Can,

- Talk with their healthcare providers about their plans for pregnancy, their alcohol use, and ways to prevent pregnancy if they are not planning to get pregnant.
- Stop drinking alcohol if they are trying to get pregnant or could get pregnant.
- Ask their respective partners, families, and friends to support their choice not to drink during pregnancy or while trying to get pregnant.
- Ask their healthcare providers or other trusted people about resources for help if they cannot stop drinking on their own.
- Healthcare providers can
- Screen all adult patients for alcohol use at least yearly.
- Advise women not to drink at all if there is any chance they could be pregnant.
- Counsel, refer, and follow up with patients who need more help.
- Use the correct billing codes so that alcohol screening and counseling is reimbursable.

12. Findings

According to the "Gender, Alcohol and Culture: An International Study" (GENACIS) in India, 5.8% of all female respondents reported drinking alcohol at least once in the last 12 months. In India, it is noticed that the alcohol use is more prevalent in tribal women, tea plantation workers, women of lower socioeconomic status, commercial sex workers (women who sell sex for livelihood) and to a limited upper crust of the rich and is not favored by women from the middle or upper socioeconomic classes. In these high risk groups, the prevalence is around 28-48%. [7] The present review focused on reported data on maternal drinking behaviours. Some of the studies also reported paternal drinking patterns or grand parental drinking patterns. The role of paternal drinking and Trans generational toxicity on fetal development and FASD is not well understood. This may be found?

Conclusion

Drinking alcohol at the time of pregnancy should consider as a serious issue. Awareness should be widely spread about FASD among the people. From a global perspective, in order to reduce the harm Caused by alcohol, policies need to take in to account specific situations in different societies.

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Average volumes consumed and patterns of drinking should be recorded. Not only women, but men drinking pattern also should be taken into an account. National monitoring system need to be developed to keep the track of alcohol consumption and it consequences should be raised awareness among the public. it's up to both government and concerned citizens to encourage debate and formulate effective public health policies that minimize the harm caused by alcohol.

Suggestions/ Recommendations

The original aim of this study is to provide a first step on the road to theory-based and evidence-based intervention development. After identifying the risk related to different behavioral patterns, we could provide guidelines for prevention workers working with different target populations (eg, alcohol-dependent pregnant women or teenage mothers). The next step could then be to map the determinants of those behaviors in those populations (ie, why individuals engage in the relevant undesirable and desirable behaviors), so that these can be targeted by behavior change principles that are then integrated into prevention campaigns. However, it seems that the literature as yet has little guidance to offer. Because designing effective interventions first and foremost requires a thorough understanding of the target behavior(s), it is therefore important that future research considers the limitations identified in this review so that in the future, a clearer picture may emerge.

First Recommendation:

is to address specifically to epidemiological researchers and that should be based on the observation that the majority of studies assess the maternal drinking as part of a prevalence study. Because these studies form the largest part of the available data regarding associations between maternal alcohol consumption and FASD outcomes, it is important to pay close attention to the measurement of alcohol consumption, even in epidemiological studies with different primary aims.

Second Recommendation:

in general, researchers should anticipate the need to aggregate their measures of alcohol consumption with measures from other studies:in other words, conversion to consumption in metric units, such as grams of alcohol, in a specified time period, such as week or month, should be possible. If such conversion cannot be performed, the study cannot contribute to an accumulation of evidence. This recommendation translates into a number of specific suggestions. Most of these are covered by following guidelines for the measurement of alcohol consumption, such as those specified by Dawson and Sobell and Sobell, but specifically, it is recommended that future studies assessing specific maternal drinking behaviors should report at least the following (see below for the recommended approach in each case):

1. How the sample was selected (e.g., retrospective) and which method was used (e.g., convenience sampling method).
2. The maternal characteristics variables (e.g., age, descent and educational level).
3. Which method (or specific questions) was used to assess maternal alcohol consumption (e.g., alcohol timeline follows back approach).
4. The timing of exposure when assessing maternal alcohol consumption (eg, first trimester pregnancy).
5. The frequency of exposure when assessing maternal alcohol consumption (eg, number of exposure sessions per week or month).
6. The amount of alcohol consumed per exposure session.36
7. The sample size.
8. What was considered as one standard drink using International System of Units (ie, grams or millilitres of alcohol).
9. If discontinuous (categorical) measures cannot be avoided, clear justification of the employed cut-offs.

Third recommendation:

refers to the complexity of exploring the association between maternal alcohol consumption and filial FASD.One cannot recruit children with FASD and then proceed to select children without FASD. This is not helpful because the number of children without FASD but with parents with matched

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alcohol consumption patterns is the variable of interest. The proportion of children with FASD within each group of parents with a given alcohol consumption pattern is the dependent variable to measure. Moreover, social facilitation by paternal drinking is significantly associated with maternal drinking. The origin of FASD is therefore based on maternal drinking behaviors and by many other factors (eg, genetic and epigenetic predisposition, maternal body makeup and lifestyle). Gupta and colleagues emphasized that FAS etiology, and also other diagnosis within the FASD spectrum, is based on a complex interaction of different factors whereby cautious interpretation is warranted.

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