Alcohol During Pregnancy and Lactation: Bridging Discordant and Equidistant Views on Maternal and Child Outcomes

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For a long time, the importance of alcohol in the health programmes of individuals have variously been presented and debated. While some studies attribute light to moderate alcohol intake to reduction in cardiovascular mortality, others suggest lowered risk for diabetes and Alzheimer’s disease among others. However, the number of studies reporting adverse alcohol effects among people, especially women, far out-numbers those reporting perceived benefits for alcohol use. This paper took a meta-analytic approach to examine the hazards of alcohol intake among pregnant and lactating mothers as reported in many studies. From the works reviewed, alcohol produces a variety of hazards, both direct and indirect not only to the drinking mothers but mostly to their innocent and unborn children. Apart from irreversible situations such as liver cirrhosis which may afflict drinking mothers, children suffer uncountable physical, mental, behavioural and psychological distortions classified under the Fetal Alcohol Spectrum Disorders (FASDs). These disorders affect children’s developmental, cognitive and social abilities. It is the concern of this paper that the lack of consistent agreement by several researches on the definition of “light and moderate drinking” is not universally applicable and the situation is therefore compounded by individual differences in alcohol tolerance levels. The paper concludes that pregnant and breastfeeding mothers have a choice to abstain from alcohol to spare the society of a sullen and malfunctioning generation.

Keywords: Alcohol, pregnancy, lactation, maternal outcomes, child outcomes

Background to the Study
Society has placed a special premium on women based on their irreplaceable roles as mothers and therefore important channels for the transmission of moral values to children and the younger generation. But women's pristine nature and roles seem to be threatened by sustained reawakening campaigns which have at the same time exposed them to numerous forms of daring behaviours including alcohol consumption. It appears
the sudden rediscovery by women of their helpless subjugation by men (an outcome of the 1960s/70s liberation movement on issues such as reproductive rights, domestic violence, maternity leave, equal pay, sexual harassment – the end of the dominant submissive model in men’s and women’s relationship), may, in addition to several other social forces (cues), have engendered their spirited behaviours to “reclaim” their self-esteem. Generally, cues are psychological or environmental events that a person has learned to use as reasons for drinking (Korhonen, 2004). Worldwide estimates of alcohol use report that a large proportion of women continue to drink during pregnancy (Lui, Terplan & Smith, 2008). When women drink alcohol, they are susceptible to numerous forms of direct and indirect hazards that contribute to an increased mortality rate (Standridge, Zylstra, & Adams, 2004). There is also ample evidence that people who drink alcohol are prone to the development of liver cirrhosis, breast cancer and cardiovascular problems, (Brannon & Feist, 2007). Mennella (1999) has observed that cultural folklore of many societies encourage lactating women to drink alcohol to optimize breastmilk for infant nutrition. A number of these women who are heavy drinkers are also prone to infertility (Eggert, Theobald & Engfeldt, 2004) miscarriage, stillbirth and may in addition experience amenorrhea which is the cessation of the menstrual cycle (Standridge et al, 2004). The United States National Institute on Alcohol Abuse and Alcoholism (NIAAA), has therefore warned that every woman is different and no amount of drinking is 100 percent safe, 100 percent of the time for every individual.

Following the concern about the frequency with which women, and lactating women in particular use alcohol, we chose to embark on the meta-analyses of studies reporting alcohol use by women and what such research says concerning the dangers of alcohol use by mothers. Noting also that women in the southern part of Nigeria specifically use the local palm wine as a catalyst for the production of breastmilk as well as elixir for good health – even mothers who are not conventional drinkers, we moved to search for literature evidence on this behaviour and investigate to what extent this practice, which has not been scientifically supported, has effects on children’s lives. In the process, we found one evidence which shows that traditionally, in some Nigerian communities, palm wine is given to women after childbirth to help stimulate the production of milk and to young women in fattening rooms (Eluwa Njoku, Ekanem & Akpantah, 2009). Nevertheless, in most of African and other societies, “more women than men abstain from alcohol…but the difference between men and women disappears when the focus is on drinkers only and when a pattern of regular consumption of large volumes of alcohol is considered (Obot, 2006). This paper is therefore a meta-analytic attempt at examining the trend of studies currently in the public domain about alcohol use by women and how these studies appraise the effects of alcohol on women’s childbearing capabilities, especially in relation to the health of the child.

History of Alcohol Use and Community Health
Available evidence has indicated that alcohol beverages have been part of social life for a very long time, yet societies have always found it difficult to understand or restrain their use (Wilsnack, Wilsnack and Obot, 2005). This may be due to social representations of alcohol as stimulant, food, medicine, source of leisure, reducer of tension and anxiety, quencher of thirst, energy giver and agent for digestion (Cabral, Farate & Duarte, 2007). Among pregnant women, alcohol has also been (mis)represented as source of breastmilk for children among other falsely transmitted concepts. Though alcohol discovery may have been accidental, occurring naturally in decaying fruit or fermenting bowls of grain in which air-borne yeasts and natural sugars combined, humans soon learned how to deliberately produce it (Korhonen, 2004).
Alcohol drinking is not only detrimental to the health of women, it is also risky to both the fetus and newborns if drinking women are potential or lactating mothers. In the past, numerous studies have shown children to be vulnerable to a number of development-threatening teratogens such as alcohol, drugs, radiation and viruses during the critical period of conception or lactation (Jones, Smith, Ulleland & Streissguth, 1973; Evans, Tenkku, Kennedy, Zoorob & Rudeen, 2014; Chasnoff, 1988; Jacobson, Jacobson & Humphrey, 1990). This leads to the manifestation of several developmental disorders ranging from “quantifiable” physical defects to “unquantifiable” mental abnormalities. However, because of its widespread availability as a licit drug, alcohol seems to be the most abused among several prevalent teratogens.

In the 1970s researchers identified fetal alcohol syndrome as one among serious conditions affecting up to half of babies born to alcoholic mothers (Jones et al. 1973). Children with fetal alcohol syndrome may have distinct facial features such as skin folds at the corner of the eye, small head circumference, thin upper lip, small midface, low nasal bridge, indistinct groove between nose and upper lip, short nose and a small eye opening. These conditions which are generally categorized as fetal alcohol spectrum disorders (FASDs) affect fetal growth resulting in abnormal facial features, low weight, impaired attention and lead to other conditions such as mental retardation, impulsive behaviour and other birth defects. According to Buddy (2009) when women drink alcohol, they are at the same time inducing their unborn children to drink. In another work (Buddy, 2010), the author found that children who have been affected by prenatal exposure to alcohol due to their mother’s drinking during pregnancy can develop a wide range of birth defects, from mild to significant.

These defects can include growth deficiency, facial anomalies, (i.e. abnormalities) and central nervous system damage. The researcher (Buddy) therefore suggests that these deficiencies are indications of the fetal alcohol syndrome (FAS), one among the fetal alcohol spectrum disorders. Fetal alcohol spectrum disorders (FASD) is an overall term used to describe abnormalities that can occur in a child whose mother drank alcohol during pregnancy, including physical, mental, behavioural and or learning disabilities. At the moment, there is no general agreement on the quantity of alcohol that is suitable for a pregnant woman, while some sources suggest no drink at all, others say a glass may be safe. FASD is not intended to be a clinical diagnosis, but an umbrella term used to include a number of diagnoses such as: Fetal alcohol syndrome (FAS), fetal alcohol effects (FAE) partial fetal alcohol syndrome (PFAS), alcohol related neurodevelopmental disorders (ARND) and alcohol-related birth defects (ARBD). Variability in the manifestation of FAS in both animal and human studies due to utero alcohol exposure is the reason for the usage of FASD to reflect the entire continuum of effects associated with alcohol exposure (Paley & O’Conner, 2011). Fetal alcohol syndrome (FAS) is one of the most widespread birth defect syndrome caused by maternal alcohol consumption during pregnancy. This is confirmed by Brannon and Feist (2007), who submit that the second direct hazardous effect of excessive alcohol drinking during pregnancy is the increased risk of developmental problems for the fetus, the most severe being the fetal alcohol syndrome (FAS). To be diagnosed with fetal alcohol syndrome, a child would manifest any or all of the following conditions:

- Growth deficiency.
- Central nervous system damage.
- Unique cluster of minor facial anomalies, such as small eyes, smooth philtrum (vertical groove above the lips) and a thin upper lip.
- Prenatal alcohol exposure.

A more comprehensive classification by the Missouri Department of Mental Health identifies the following descriptions as indications of fetal alcohol syndrome disorders (FASD):
Table 1:  
Indications of Fetal Alcohol Syndrome Disorders as Identified By the Missouri Department of Mental Health

- Small body size and weight.
- Slower than normal development and failure to catch up.
- Deformed ribs and sternum.
- Curved spine and hip dislocations.
- Bent, fused, webbed or missing fingers or toes.
- Limited movements or joints.
- Small head.
- Facial abnormalities.
- Small eye openings.
- Skin webbing between eyes and base of nose.
- Drooping eyelids.
- Near-sightedness.
- Failure of eyes to move in the same direction.
- Short upturned nose.
- Sunken nasal bridge.
- Irritability in infancy.
- Flat or absent groove between nose and upper lip.
- Thin upper lip.
- Opening in roof of mouth.
- Small jaw.
- Low set or poorly formed ears.
- Organ deformities.
- Heart defects or heart murmurs.
- Genital malformations.
- Kidney and urinary defects.
- Central nervous system handicaps.
- Small brain.
- Faulty arrangement of brain cells and connective tissue.
- Mental retardation – occasionally severe.
- Learning disabilities.
- Short attention span.
- Hyperactivity in childhood – poor body, hand and finger coordination.

Source: Missouri Department of Mental Health-Online site

These defects are varied and manifest themselves in diverse ways depending on every mother’s level of inclination towards alcohol use. Outside the clinical setting, some variations of alcohol defects may be difficult to diagnose in children making it more difficult for mothers, caregivers and teachers to report cases of these abnormalities. However, predisposition is proportionally related to amount of alcohol intake.

This has continuously informed the exploration of strategies capable of helping practitioners to ascertain the presence of alcohol related effects in children. One notable effort in that direction is the development by the United States Institute of Medicine of the diagnosis of Alcohol Related Neuro-Developmental Disorders (ARND) (1996) for children who exhibited Central Nervous System (CNS) damage and those who had pre-natal alcohol exposure without obvious growth deficiencies or facial features. Another initiative was the development of the caregiver interview for brain function component of FAS Diagnostic Evaluation form (Astley & Claren, 1999). These psychometric tools were evolved to assist practitioners and other stakeholders in the management of alcohol related disorders among children. However, the sensitive nature of alcoholism in women calls for fuller understanding of why people should or must drink even when they are torn between the approach-avoidance conflict in drinking.

Exploring Plausible Models and Arguments for Alcohol Use

Investigators trying to understand drinking and alcohol abuse have proposed several models to explain behaviour related to alcohol consumption (Brannon & Feist, 2007). Thus, while drinking has universally been accepted as an important ingredient of social life, drunkenness remains sinful and unacceptable, creating the moral or freewill model of drinking versus the medical model which emanated from inability of people to be properly guided by the moral dictum of drinking. According to Brannon & Feist (2007), this came about because “unacceptable behaviours that were formerly
seen as moral problems progressed to become medical problems and, thus, subject to scientific explanation and medical treatment”. The medical model thereafter developed (transformed) into the disease model – with the claim that people with problem drinking have the disease of alcoholism. Laying credence to this model is a recent study which reported a significant negative association between moral-ethical self and levels of irrational beliefs that were implicated in drug/alcohol use (Ottu, Afolabi, Ekore & Osinowo, 2013). This result suggests that low or impaired moral-ethical self is associated with high levels of irrational beliefs and behaviour. The study also found a significant effect of unethical-moral self on alcohol-related thought processes (irrational beliefs) of psychiatric patients with drug/alcohol-related case notes. Other theories also make other attempts to explain drinking behaviour. For example, while the tension-reduction hypothesis holds that people drink alcohol because of its tension-reducing effects, the social learning model conceptualizes drinking as a learned behaviour which draws from three basic reasons: positive reinforcement, cognitive mediation and modelling.

Drinking behaviour, like every human action, can be termed social action because it rubs off on the activities of other people. Some human actions are however difficult to explain when their purpose is not clearly defined. One of such behaviours could be the drinking of alcohol by pregnant and lactating women. What are the inherent benefits of alcohol for pregnant and breastfeeding mothers? Although an answer to this question may be varied due to individual differences in the conception of social values and worldview, a social psychological explanation may be hinged on women’s desire to focus on themselves which can be explained using the self-awareness theory. The theory submits that when people focus their attention on themselves, they evaluate and compare their behaviour to their internal standards and values (Carver, 2003; Duval & Silvia, 2002). A number of researchers (e.g. Aronson, Wilson & Akert, 2010) suggest people sometimes attempt to escape the self (negative-self focus) through alcohol abuse. However, self-focus is not always averse as focusing on a major success, for example, can be very pleasant through the positive presentation of one’s activities (Silvia & Abele, 2002).

To further the understanding of why women negotiate the drinking of alcohol during pregnancy, Stuart (2009) adopted a grounded theory approach to probe existing social, cultural and gender roles among Maori women. The study found that Maori pregnant women manage decisions about drinking alcohol using a process of trading off - a method supported by three key strategies: drawing on resources, rationalizing and taking control of the role. Similarly, Fisher (2000) has said that there are many reasons why a woman may use drugs (e.g. smoking): power relations, the construction of her social identity, social control and poverty are all closely related to why women use drugs.

Based on these, the present review was curious about the central theories or models that may guide women’s involvement with alcohol. It is worthy of note that the opening statement in this work probed into the self-concept of women as one of the possible causes of women’s drinking behaviour – which fits into a number of the models examined here. It is however not easy to say what pattern of drinking most pregnant and lactating women adopt considering the fact that there are differential effects of light, moderate and heavy alcohol intake on maternal and child outcomes. For example, conflicting evidence have significantly blurred the direction of intervention strategies to curb alcohol effects. Many research sources accordingly implied the use of alcohol in dimensional ways. As observed by one UK cohort study, even moderate consumption of alcohol during pregnancy may be associated with certain symptoms of Fetal Alcohol Syndrome like declining IQ (Humphriss, Hall, May, Zuccolo, and Macleod, 2013), and women are often counseled to abstain from imbibing any amount of alcohol shortly before and during pregnancy. It is also
often advised that women should prolong this period of abstinence throughout breastfeeding, or at least to avoid drinking alcohol during specific hours before nursing because various other disorders of the newborn have been linked to alcohol in breast milk” (Bonyata, 2011). Briggs, Freeman and Yaffe (2002) have also revealed that there is increasing evidence that exposing the fetus to alcohol in utero may result in intrauterine growth and postnatal development retardation.

Women and Alcohol: The Nigerian Situation

Though a greater number of Nigerian women are not known to (openly) drink alcohol (such as beer and champagne) like their counterparts in western societies. Close observation has shown that a good number of these women secretly indulge in alcohol mostly in the post-natal drinking of palm wine and other alcohol erroneously believed through social lore to help in boosting or optimizing breastmilk production for nursing infants. This is truly a common practice especially among women in the riverine communities where wine palms grow in abundance. This belief may inadvertently expose more children to the dangerous effects of alcohol and the concomitant manifestation of uncountable developmental abnormalities. Some women have actually confessed to receiving pediatric advice to take alcohol to enhance milk production, in addition to personal health benefits. As observed by Gureje, Degenhardt, Olley, Uwakwe, Udofia, Wakil, Adeyemi, Bohnert and Anthony (2007), women in Nigeria are beginning to drink even more than men. This position which is also corroborated by Dumbili, (2013), means that there need by medical experts to be vigilant and ready to advice and counsel women on the detrimental effects of alcohol intake during pregnancy. For instance, it has also been observed that among the Ubulu people of Delta State, drinking of palm wine is highly recommended for pregnant women and nursing mothers as a means (myth) of enhancing breastmilk (Dumbili, 2013). As if to further support alcohol intake by women, some scientific research have indicated that palm wine contains calories, little protein and vitamins A & B (Chandrasekhar, Sreevani, Seshapani & Pramodhakumari, 2012). Although, to some extent, people believe in the efficacy of palm wine as an antidote to malaria and measles in children, it is important to discourage these pockets of harmful beliefs before it becomes a popular and health-threatening behaviour among the populace. Even as palm wine is low in alcohol by volume, (three percent), continuous consumption of palm wine (sometimes called “sweet soluble”), may slowly contribute to birth defects in the long run (Dumbili, 2013). However, Jeff Brown, a nutritional dialectics has reported that palm wine in its natural form is a low alcoholic drink containing as little as three percent of alcoholic content, but when fermented could yield as high as 12 percent content.

In Akwa Ibom State where a lot of palm wine production takes place, both the young and old in traditional communities are attracted to this drink more by its attested nutritional value than the alcoholic content. It may therefore appear that the alcoholic content and associated risk may therefore be discounted as “side effects” even with the inherent risk. Despite this risk, many forms of alcohol abuse are still observed among Nigerian women. For instance Ajiboye and Abimbola (2012) have reported that among the Ogu people of Badagry, Lagos State, it is common to find men and women of various ages drinking alcohol (locally made gin) in the public during festivals and associated events. During such public engagements, pregnant women in their various trimesters are not restrained from such alcohol use. Invariably, it is assumed that men unwittingly support their wives’ consumption of alcohol (a form of group conformity for social validation) which increases proneness to pregnancy complications. Due to such careless and other forms of unmindful alcohol behaviour, data on pregnancy outcomes related to drugs or alcohol exposure are increasingly relevant in many countries. Such data will facilitate a deeper and cross-
cultural understanding of the factors that influence people's behaviour considering medical concerns about consequences of exposure to alcohol for maternal and child outcomes.

Cross-Cultural and World Situation
Attitudes towards alcohol consumption show cross-cultural similarities just as research findings are also mixed across societies. Having carefully reflected on the risk of alcohol intake during pregnancy (conception period) and the burden (or responsibility) which mothers and society are left to bear when a child is plagued with a developmental ailment or condition, Armstrong (2003) in her thought provoking book explored the risks and responsibilities shared by society through the careless use of alcohol by mothers during the conception of a child. In support of worldwide concern on women's alcohol use, Julie Mennella and Gary Beauchamp of the Monell Chemical senses in Pennsylvania, USA based on research on the effects of alcohol on the developing child, found that even the odour of a mother's milk can change with her ingestion of alcohol and the baby has to suckle more vigorously even as he takes in less milk on average. The study therefore invalidates the erroneous assumption that alcohol consumption increases the production of breastmilk. In fact, babies suckle frequently but take in less milk in 3-4 hours after mother has had a drink, indicating about 23% decrease in milk volume with one drink (Mennella & Beauchamp, 1991; 1993; Mennella, 1997, 1999). In yet another work, Mennella (2001) while examining the effect of alcohol on lactation found that contrary to widespread assumption of boosting breastmilk production, alcohol actually reduce breastmilk production and instead affect infant's sleep and motor development. According to the study, there is no scientific evidence to support the popular wisdom that drinking beer (and palm wine) or any other alcohol for that matter will boost a woman's milk supply. Candidly, to say the obvious, drinking alcohol rather disrupts the hormones that are involved in milk production. Mennella further explains that while prolactin (a hormone that aids milk production) increases with alcohol consumption, oxytocin (a hormone that is responsible for milk letdown) decreases. So, there is a stalemate between milk production and supply.

Researchers therefore think this may explain why babies have a harder time breastfeeding when their mothers drink alcohol. Also a pattern of reduced sleep by infants whose mothers were light drinkers have also been found in some studies (e.g. Mennella & Gerrish, 1998) while other studies indicate decrease in gross motor development (e.g., Little Lambert, & Worthington-Roberts, 1989). Of particular interest is a study on suckling rats (Subramanian, 1988) shows an inhibitory effect of alcohol on the release of prolactin – the hormone that helps to synthesize mammalian milk. The study reveals that alcohol also affects oxytocin which governs the milk-ejection reflex in humans. Oxytocin is governed by many sensory pathways which include vision, touch, smell, hearing or thinking. Its operational mechanism is such that, when a mother hears her baby cry, oxytocin causes her breastmilk to let down (Huotari, 1997). Another study by Chien, Huang, Hsu, Chao and Liu (2009) to determine whether traditional Chinese alcoholic diet affects lactation parameters and causes short-term changes in maternal milk and blood composition revealed that consumption of alcoholic soup led to increased breast milk concentrations of TAG and concentrations of triacylglycerol (TAG), insulin and lactate above blood levels before consumption of soup. It was therefore concluded that the consumption of an alcoholic soup affected the composition of maternal blood and breast milk and leads to delay in time of milk ejection.

Research on breastfeeding and alcohol is admittedly far from conclusive, and at times, even contradictory (Huotari, 1997). Additional evidence by Hale (2008) says that mothers who ingest alcohol in moderate amounts can generally return to breastfeeding as soon as they feel neurologically
normal. Certainly, alcohol has been found to make children drowsy and weak, and some of alcohol's damaging effects on the brain include blurred vision, difficulty walking, slowed reaction time, and impaired memory. Some of these impairments are detectable after only one or two drinks and quickly resolve when drinking stops. However, a person who drinks heavily over a long period of time may have brain deficits that persist well after he or she achieves sobriety (Alcohol Alert, 2004). Generally, empirical evidence reveals that women are at greater risks than men on the use and effects of alcohol. This is due to the fact that though men are on the average heavier than women, such weight in women are accounted for by more fat compared to more water in men, and fat retains more alcohol than water. For example, White, Jamieson-Drake, & Swartzwelder (2002) found among college undergraduates that females are at a greater risk than males for experiencing blackouts – a tendency which, probably, results from differences in how men and women metabolize alcohol. This may therefore mean that when pregnant or lactating mothers drink, they are more likely than men to suffer many forms of vulnerabilities which include but not limited to cirrhosis, (Loft, Olesen & Dossing, 1987), and are also very likely to make the unborn or lactating child, especially females, vulnerable to several forms of fetal alcohol spectrum disorders (FASDs).

Researchers studying the effects of alcohol use have generally used animals rather than humans in their investigation due to ethical concerns. However, there are others who study alcohol effects on the brain as aided by advanced technology such as the Electroencephalography (EEG), magnetic resonance imaging (MRI), diffusion tensor imaging (DTI), position emission tomography (PET) and electrophysiological brain mapping (EBM).

An interesting study by Eluwa, Njoku, Ekanem and Akpantah (2009) who investigated the detrimental effect of alcoholic content on cerebral cortex of pregnant rats at the Faculty of Basic Medical Sciences, University of Calabar, revealed that maternal administration of beer and palm wine from the 7th through the 13th day of gestation has teratogenic effect on rats’ fetal cerebral cortex. This indicates that alcoholic beverages used during pregnancy are detrimental to the growth and development of the developing fetus – whether animal or human.

Alcohol is a low molecular substance and is therefore quite capable of crossing the placental barrier and entering the foetus, causing the level of alcohol in the fetus to be approximate to that of the mother (Streissguth, 1990). Campaigns against alcohol use by women have been undertaken at different levels by the Nigerian government. For example, during the celebration of the 2010 world breastfeeding week, the Anambra State Commissioner for Health, also warned women against drinking palm wine because of its alcoholic content. He however encouraged them to drink fruit juice to enhance the flow of breast milk. In a similar exercise, the Cross River State Commissioner of Health, during the 2012 breastfeeding week warned women against drinking palm wine to boost breast milk but to be in a relaxed state of mind to naturally aid the flow of breast milk warning that women should not allow their husbands to share the breast with the babies while breastfeeding lasts to avoid inflicting wounds on the breasts and exposing the children to infection (Una, 2013, pp. 20). On the other hand, breastfeeding on demand is also a good approach to enhance breast milk (Rhan, 2012).

In the extensive literature, there are a lot of breastmilk and alcohol theories out there, providing a range of opinions and conflicting advice on alcohol and breastfeeding. While some health care advisors, providers, and alcohol prevention organizations feel it is best to avoid all alcohol while nursing, (e.g. National Institute on Alcohol Abuse and Alcoholism, NIAAA) others feel that occasional moderate drinking is acceptable. Still, others feel that if mothers consume alcohol, it should be pumped and dumped for 24 hours before breastfeeding. (Rhan, 2012). In view of this,
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Jack Newman of the La Leche League International, (LLLI)—an International non-profit, non-sectarian advisory council dedicated to providing education, information, support and encouragement to women who want to breastfeed, suggested as follows: “Reasonable alcohol intake should not be discouraged at all. As is the case with most drugs, very little alcohol comes out in the milk. The mother can take some alcohol and continue breastfeeding as she normally does. Prohibiting alcohol is another way we make life unnecessarily restrictive for nursing mothers”. A related and tacitly permissive position advanced by supporting the school of thought that alcohol has mixed effect on breastfeeding is that of Melissa Nagin. This suggests that alcohol which shows up in foremilk and hindmilk does affect the central nervous system of the mother and child, although light occasional drinking is not considered a major risk for the breastfeeding mother and child. However, the American Academy of Pediatricians, like the NIAAA, advise that while nursing a baby, women should avoid drinking alcohol because it can pass through the mother to the baby. Back home in Nigeria, controversies still trail the propriety or otherwise of alcohol use by pregnant women. According to Obinna (2013, pp. 13) in a recent newspaper publication titled: “Scientists disagree over intake of alcohol in pregnancy”, there is evidence that the existing disagreement between professional on alcohol use during pregnancy is yet to abate. The article highlights issues such as miscarriage, stillbirth, low birth weight in addition to problems with speech, attention span, heightened aggression, delinquent behaviour and mental problems as grave outcomes of alcohol-related problems during pregnancy. Several authorities have also confirmed the negative effects of heavy alcohol intake on children and mothers. In the words of Osahon Enabulele, one time President of the Nigerian Medical Association (NMA): “Indeed children born to pregnant mothers who indulged in heavy drinking (not light drinking) of alcohol may develop Fetal Alcohol Spectrum Disorders, with cognitive and behavioural disorders/learning disability.” He however advocated that more research is still needed among Nigerian pregnant mothers to ascertain the direct effects of drinking different doses of alcohol at particular times during pregnancy, since pregnant mothers may have different tolerance levels or alcohol handling abilities due to personality differences in the levels of enzyme required to break down alcohol. We support this proposal but not without a call for commitment for researchers, and government through funding.

However, in a major effort to increase the pool of empirical work in the area of alcohol and pregnancy, scientists from the University of Bristol and Oxford University interviewed 4000 mothers about their drinking habits when they were 18 weeks pregnant and then followed the children through their development years. After the exercise, which used a genetic approach, they found that when mothers consumed more than three drinks a week during the 18-week period, this affects their baby’s brain in the womb and their I.Q. at 8 years span when the children were assessed. The effect of alcohol was only seen among children of women who were moderate drinkers and no evident effect was found among children of mothers who abstained during pregnancy. There were no reports of extreme drinkers among participants. This strongly suggests that even presumably harmless exposure of foetus to alcohol in the womb could lead to difference in child intelligence quotient scores. The result of this study suggests caution among women who may indulge in alcohol consumption.

In a similar study at the David Geffen School of Medicine, UCLA, researchers followed 1,628 women and their offspring from pregnancy to the time the children were five. The mothers were asked to assess their own drinking during pregnancy in interviews conducted at antenatal appointment, usually at about 17 weeks. The women were asked if ever it is right to drink alcohol while pregnant and they were then categorized as: “abstaining during pregnancy”;

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“light drinkers (one to four drinks a week); “moderate drinkers (five to eight)” or “heavy drinks (nine or more).” The researchers found that having up to eight small drinks a week had no effect on the five year olds’ IQ, attention span, self-control and ability to organize themselves. The result of this study though also cautionary, appears more permissive on women’s alcohol use. It has therefore been difficult to get a clean and consistent position on whether pregnant or lactating women should drink or abstain from alcohol. Mukherjee (2013) a consultant psychiatrist puts it succinctly: “Women should simply be told not to drink alcohol. Mixed message would be at odds with current scientific evidence and risks alienating responsible women who rightly believe that an occasional small drink during pregnancy is unlikely to cause harm”. Nevertheless, recently, while reacting to an early report from the Nigerian Tribune, Adebola Roberts, a consultant obstetrician and gynecologist at the University College Hospital (UCH), Ibadan, said: Unfortunately, Nigeria’s health ministry does not have any guidelines on alcohol use in pregnancy. According to Roberts, what women are told is to abstain from alcohol in the first three months of pregnancy and afterwards never to exceed two units of alcohol per week. He went on to say that one unit of alcohol is equivalent to a shot of hard drink or a bottle of beer or stout. He further explained that cases of babies born with fetal alcohol spectrum disorders are still rare in Nigeria due to low consumption of alcohol among Nigerian women. In his words “In my number of years of medical practice, I have not seen any baby born with fetal alcohol spectrum disorders and this is probably because there is low alcohol consumption in our women. It is now that incidence of alcohol use among women is on the rise with the advent of new age drinks which contain alcohol in them. This view is to some extent at variance with Gureje et al.’s (2007) and Dumbilis’s (2013) position on the level of involvement of Nigerian women with alcohol.

Curiously, another study by Yvonne Kelly and Colleagues (2013) published in the British Journal of Obstetrics and Gynaecology (BJOG) submits an indifferent view on women’s involvement with alcohol. In the longitudinal study, children of alcoholic mothers were followed for the first seven years of life. The study collected data from the millennium cohort study, a national study of infants born in the United Kingdom between 2000-2002. At nine months, their mothers were asked whether they had drunk alcohol during pregnancy. Around 57% said they abstained while 23% were light drinkers. At age seven parents and school teachers were asked to assess their (children’s) social and emotional behaviour— including hyperactivity and attention problems. Their mathematics, reading and spatial skills were also tested. The findings hinted that boys born to alcohol drinkers had fewer behavioural problems and better reading and spatial skills than those born to mothers who did not drink during pregnancy. However, this study tended to support light drinking of alcohol in favour of abstinence. It has been argued that light drinkers may have come from a higher income group or more educated background than abstainers, which may provide other evidence for better behavioural, reading and spatial skills. Women’s involvement with alcohol has therefore remained a controversial issue that may take a long time to resolve since people ethically reserve the right to choose their behaviours within the confines of the law. Additionally, since alcohol consumption is socially and legally acceptable (alcohol is a licit drug), it becomes difficult to centrally regulate alcohol consumption through legislation. A useful option therefore, is to persuade women to learn restraint by giving up drinking in the interest of health and sane generation.

**Conclusion: Ongoing Scientific Responses and New Social Advocacies**

Since FAS was first identified in 1973 efforts have been underway to prevent alcohol-exposed pregnancies (AEPs) and reduce the risk of FASDs. A number of procedures have been adopted to get pregnant women...
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One of such methods is the use of “brief intervention for Alcohol use. In one study O'Connor and Whaley (2007) examined the efficacy of the technique to help pregnant women achieve abstinence from alcohol. The researchers selected two hundred and fifty-five pregnant women who were participants of a nutritional intervention programme titled: “Public Health Foundation Enterprises Management Solutions Special Supplemental Nutrition Programme for Women, Infants and children”. In the process some of the women were found to have reported involvement with alcohol, and were assigned to two experimental conditions – (1) assessment-only condition and (2) brief intervention condition. The women were followed to their third trimester of pregnancy. The brief intervention consisted about 10-15 minutes of counselling by a nutritionist using a scripted intervention manual. Newborn outcomes such as birth weight, birth length and viability were assessed. The result indicated that women in the brief intervention condition were 5 times more likely to report abstinence than after the intervention relative to other women in the assessment-only condition. It was also observed that newborns whose mothers received brief intervention had improved newborn birthweights and birthlengths than the other group. Also, fetal mortality rates of mothers receiving brief intervention were 3 times (0.9%) lower than those of the women in the assessment-only condition which was 2.9%. The study therefore indicated that ethically-suitable para-medical interventions conducted in community settings have significant multiplier implications for maternal and child health outcomes. At the moment, two parallel studies involving the survey of mothers and medical professionals are ongoing in Nigeria to establish the level of awareness of these stakeholders on Fetal Alcohol Syndrome in our family and health care systems. The studies were conceived as an empirical support to the present work especially in the area of preventive measures to guard against the condition. It is expected that the outcome of these studies will go further to improve the level of preventive knowledge and quality of scientific interventions for already existing conditions.

Apart from approaches of this nature, women’s alcohol involvement can also be addressed through family networks. Informed family members can serve as advocacy agents against alcohol involvement by other family members. Numerous advocacies made for the stability and well-being of families are predicated on the status of the family as a microcosm of society. It is at this smaller unit that social control against alcohol can be most effective. Those who study families and marriage are concerned with how family structures should serve as platform for the growth and wellbeing of the individual. In the recent past, family circles have been grappling with the responsibility of managing vulnerable members who engage in drug abuse and other forms of delinquent or criminal behaviour as drug abuse attains a global social problem. Rather than persistently blame individual members who become victims of drug abuse, this approach should turn the search light on the numerous family conditions that serve as elixirs of alcohol and drug abuse. As is well known, using drugs for unwarranted reasons is drug misuse and using drugs as a means to learn how to live life is drug abuse. Family advocates should therefore partner researchers to consolidate on social control against alcohol. Most theories of addictive behaviour clearly acknowledge that there are two major sources of reinforcement for substance use and misuse: positive reinforcement and negative reinforcement (Koob, 2004). While positive reinforcement is linked to the positive hedonic effects of many substances of abuse, negative reinforcement are linked to the ability of some substances to relieve negative affective states (Koob, 2004). Research should therefore persevere in identifying personality as one individual differences factor in drug abuse. Psychometric instruments such as the substance use risk profile scale (Woicik, Stewart, Pihl & Conrod, 2009) assess implicating personality dimensions such as hopelessness, anxiety, sensitivity,
impulsivity and sensation seeking as notable correlates of several patterns of substance use. This may however be without problems because human development occurs very slowly and individuals are socialized over time by family and other social groups according to prevailing social norms (Simons-Morton & Farhat, 2010). Optimistically, since the family situates as “the most visible agent of social control” for the individual, behaviours have a greater tendency to be modeled as a reflection of specific family values."

Outside the sphere of social control, self-regulation appears to be the most effective method of withdrawal from alcohol use. According to Carver and Scheier (1982), self-regulation refers to the effortful ability to plan and achieve adaptive outcomes through self-directed behaviour, often by delaying gratification. Thus, women can adopt this strategy in addition to Kanfer’s (1970) expanded psychological strategies. Kanfer (1970) had offered the first comprehensive psychological, theoretical explanation of self-regulation as a concept consisting of self-monitoring, self-evaluation, and self-reinforcement. These are sequential social psychological approaches which require individuals to (1) watch out for alcohol (2) ensure that there is no alcohol involvement and (3) strive to maintain a favourable status-quo of no alcohol intake respectively. This will however require much of self-determination – a form of self-motivation necessary to reach set goals. A successful approach in self-regulation will therefore involve disciplined implementation of chosen strategies towards alcohol abstinence. Miller and Brown (1991) had suggested an expanded framework of self-regulation which contains seven dimensions: (1) informational input (2) self-monitoring of current progress made towards a personal goal (in this case alcohol abstinence) (3) motivation for change (4) commitment to reach the change goal (5) development of a plan to reach the personal goal (plan that should be woven on self-determination) (6) working according to plan and (7) re-evaluation of the plan. It is believed that individuals who genuinely desire change would work purposefully to keep alcohol at bay. A consistent and purposeful action plan is all that is required by pregnant and lactating women to keep a wide distance from drugs and alcohol. All that is required is a decision to do so, and mothers should graciously take that decision to actualize the views from Grantly Dick-Reads, which posits that: “The newborn baby has only three demands. These are warmth in the hands of (his) mother, “safe” food from her breasts, and security in the knowledge of her presence. Breastfeeding satisfies all three”.

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