IJADR International Journal of Alcohol and Drug Research

The Official Journal of the Kettil Bruun Society for Social and Epidemiological Research on Alcohol

doi: 10.7895/ijadr.v4i2.213 IJADR, 2015, 4(2), 171 – 174 ISSN: 1925-7066

Letter to the Editor: Why do pregnant South African women drink alcohol? A call to action for more qualitative investigations

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Abstract

Even though the adverse effects of alcohol consumption during pregnancy have been well documented, millions of babies each year continue to be affected by fetal alcohol spectrum disorders (FASD). This is concerning given that FASD is completely preventable. FASDs have been documented across a variety of races and geographical regions worldwide, yet the highest known prevalence rates are recorded in Africa. Specifically, for every 1000 children born in the Western Cape Province of South Africa, approximately 59.3 to 91.0 are determined to have fetal alcohol syndrome, the most severe form of FASD. While the risk factors contributing to FASDs have been examined quantitatively among South African women, there is a dearth of qualitative investigations that articulate and contextualize the underling motivations, beliefs, and attitudes that influence these risk factors. Qualitative investigations have been conducted in other geographic regions (e.g., Australia), but are not generalizable to South Africa. Qualitative investigations, which explore the familial, social, cultural, and economic factors that influence maternal drinking, are needed to inform future health promotion programs and interventions aimed at decreasing and ultimately eliminating maternal alcohol consumption among South African women.

The purpose of this commentary is to compare and contrast global prevalence rates of fetal alcohol spectrum disorders (FASDs) and to serve as a call to action for additional research in communities that exhibit excessively high prevalence rates. The Western Cape of South Africa will be used as a heuristic example of an area ripe for additional inquiry into *why* mothers consume alcohol during pregnancy.

The Impact of Alcohol Consumption During Pregnancy

Consumption of alcohol (a teratogen) during pregnancy can result in children potentially experiencing lifelong disabilities, mental deficiencies, developmental delays, and physical anomalies which are collectively referred to as FASDs (Riley, Infante, & Warren, 2011). The most extreme form of FASD, known as fetal alcohol syndrome (FAS), was first reported in medical literature approximately 40 years ago when doctors described birth anomalies following prenatal exposure to alcohol (Jones & Smith, 1973; Jones, Smith, Ulleland, & Streissguth, 1973). FAS represents the leading known cause of preventable mental retardation in the United States (Sampson et al., 1997). The Institute of Medicine (IOM) contends there are several diagnostic criteria for identifying FASD: (a) FAS with or without a history of maternal alcohol exposure; (b) partial fetal alcohol syndrome (PFAS) with a history of maternal alcohol exposure; (c) alcohol-related neurodevelopmental disorder (ARND); and (d) alcohol-related birth defects (ARBD) (Stratton, Howe, & Battaglia, 1996). Children and adolescents with FASD experience adverse health, delayed social or motor skills, learning difficulties, impaired memory, and attention deficits (Williams, 2011). Moreover, those with FASD are predisposed to unemployment, homelessness, alcohol/drug use, encounters with law enforcement, unintended pregnancies, sexually transmitted diseases, and physical injuries (Popova, Stade, Bekmuradov, Lange, & Rehm, 2011; Rasmussen, Andrew, Zwaigenbaum, & Tough, 2008).

Despite being 100% preventable, FASD continues to adversely impact millions of individuals, with worldwide prevalence estimates being one in every 100 live births (Jonsson, Salmon, & Warren, 2014; May et al., 2009). Given that FASD is incurable, management of FASD is centered on early intervention through medical, mental, educational, and social support services that increase an individual's quality of life. The overall annual cost of FAS in productivity loss, life-long cost of medical care, and rehabilitation in the United States is estimated to be over four billion dollars (Carmichael-Olson et al., 2009; Lupton, Burd, & Harwood, 2004). However, others contend that costs associated with FASD are much higher than these estimates (Carmichael-Olson et al., 2009). FASD's global

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Financial support: The open access publishing fees for this article have been covered by the Texas A&M University Online Access to Knowledge (OAK) Fund, supported by the University Libraries and the Office of the Vice President for Research.
Keywords: Alcohol; Fetal Alcohol Syndrome; Drinking; Pregnancy; Maternal Health; Child Health

prevalence is projected to increase in subsequent years as a result of increasing alcohol consumption among women of child bearing age (Thomas, 2012; World Health Organization [WHO], 2014). This is concerning given public awareness about alcohol-related birth defects is still very low worldwide (Jonsson et al., 2014).

What Regions Across the World Exhibit the Highest Rates of FASD?

FASD has been documented across a variety of races and geographical regions worldwide (Abel, 1995). For instance, prevalence rate for FASD is estimated to be as high as 2%-5% among school children in the United States and some Western European countries (May et al., 2009). Nationwide prevalence for FAS in the United States is approximately 0.05 to 3.0 per 1,000 births (May & Gossage, 2002; 2001; Stratton et al., 1996). In mixed racial and socio-economic populations in the United States, the prevalence range of FAS is as high as 2.0 to 7.0 per 1,000 (May et al., 2009). In other countries, such as New Zealand, the rate of FAS is estimated at 0.11 per 1,000 (Leversha & Marks, 1995). However, in parts of France FAS and FASD prevalence rates are 1.2 and 4.8 per 1,000, respectively (Dehaene et al., 1991). FASD in Italy is estimated at 2.3% to 6.3% (May et al., 2011). Prevalence rates for FAS and PFAS in regions of Italy are even higher, ranging from 4.0 to 12.0, and 18.1 to 46.3 per 1,000 children, respectively (May et al., 2011).

The highest known prevalence rates of FASDs are recorded in Africa (May et al., 2013). Specifically, for every 1,000 children born in the Western Cape Province of South Africa, approximately 59.3 to 91.0 are determined to have FAS, the most severe form of FASD (May et al., 2013). In this region, the prevalence per 1,000 for FASDs is estimated at: 45.3 to 69.9 for PFAS, 30.5 to 46.8 for ARND; and 135.1 to 207.5. In other words, 13.6%-20.9% of children born in the Western Cape Province of South Africa are born with a FASD.

Why Are FASD Rates Highest in Western Cape Province, South Africa?

While maternal consumption of alcohol varies among populations throughout the world, research has shown that South Africa has one of the highest levels of alcohol consumption per drinker in the world (Parry et al., 2005; Peltzer & Ramlagan, 2009). In the Western Cape Province, approximately 34% of women who reside in urban areas, and 41%-51% of women who live in rural areas, consume alcohol during pregnancy (Croxford & Viljoen, 1998; 1999). This is vastly greater than the percentages of pregnant women who drink alcohol in either the United States (10%) or Sweden (12%) (Comasco, Hallberg, Helander, Oreland, & Sundelin-Wahlsten, 2012; Havens, Simmons, Shannon, & Hansen, 2009).

Population-based studies carried out in South Africa link the higher prevalence of FASD to extremely high levels of heavy episodic drinking (commonly referred to as binge drinking and defined as 4+ drinks during one occasion for females and 5+ drinks during one occasion for males) among low socio-economic women (May et al., 2008; May et al., 2009). Despite widespread poverty, commercially produced alcoholic beverages are consumed in substantial quantities because they are readily available, affordable, and socially acceptable (May et al., 2008; Peltzer & Ramlagan, 2009). May et al. (2005) refers to this social norm as the "Dop legacy." Western Cape Province represents the largest wine producing region in South Africa (The Agriculture and Agri-Business, 2005), and dating back to European Colonialism, seasonal workers were provided with alcohol as partial payment for work through a formal system known as "Dop." While this system no longer exists, alcohol consumption in this region remains pervasive (May et al., 2007; May et al., 2008; May et al., 2005; Viljoen et al., 2005).

Overall, there are several well documented risk factors that contribute to the increased prevalence of FASD/FAS among South African women in the Western Cape: behavioral risk factors (e.g., smoking, drug abuse, alcohol initiation at an early age, having multiple sexual partners); alcohol-related socio-cultural risk factors (e.g., physical access to alcohol, social tolerability to drinking, limited access to social resources); non-alcohol related socio-cultural risk factors (e.g., lower SES, lower income, unintended pregnancies, nonuse of effective contraception, high gravidity and parity, pregnancy at an advanced maternal age); educational risk factors (e.g., lower educational attainments); interpersonal risk factors (e.g., co-habitation with an alcoholic spouse/partner, being in violent relationships, have social networks and sexual partners who drink heavily); residential risk factors (e.g., reside in rural farming communities); and familial risk factors (e.g., having parents who consumed excessive amounts of alcohol) (Desmond et al., 2012; May et al., 2008; May et al., 2005; O'Connor et al., 2011; Urban et al., 2008). In regards to environmental maternal risk factors, there is discrepancy as to whether alcohol-use is impacted by overall living conditions as measured by access to indoor water supply. Others have documented that alcohol consumption was more prevalent in pregnant women who had been diagnosed with HIV than those without this disease (Desmond et al., 2012; Parry et al., 2005). Finally, poor nutrition among pregnant mothers has been postulated as amplifying the teratogenic effects of prenatal alcohol exposure (Carter, Jacobson, Molteno, & Jacobson, 2007; Keen et al., 2010; Shankar, Ronis, & Badger, 2007). This connection seems plausible given food insecurity (i.e., food unavailability, eating less) has been significantly linked with alcohol consumption (Eaton et al., 2014).

While the risk factors associated with maternal alcohol consumption in South Africa have been extensively examined, it is important to note that these investigations have been quantitative in nature. As a result, their emphasis has not been on articulating and contextualizing the underling motivations, beliefs, and attitudes that influence these risk factors. For instance, it is unclear whether pregnant women in South Africa are drinking because they have low educational attainment and are unaware of the risks associated with this behavior, or whether pregnant mothers are drinking because they are

already engaged in other high risk behaviors (e.g., smoking, drug use, and having multiple sexual partners) and don't perceive alcohol consumption as a risk to their health or the health of their unborn child. It is also uncertain how these pregnant women navigate the social pressures of drinking and whether social expectations and interactions have influenced their inability to abstain from alcohol consumption during pregnancy. Engaging such women and understanding the familial, social, cultural, and economic factors that influence their drinking behavior is crucial in order to provide the necessary foundational knowledge that can inform and help tailor innovative preventive initiatives.

Qualitative studies conducted in Australia and the United Kingdom have indicated that some pregnant women perceive alcohol as important to their social lives and did not consider consumption of self-defined "acceptable" levels of alcohol (one glass of wine once or twice a week) as enough to pose a risk to their child's development and well-being (Meurk, Broom, Adams, Hall, & Lucke, 2014; Raymond, Beer, Glazebrook, & Sayal, 2009). Many of these women felt the positive benefits obtained from alcohol drinking (e.g., stress relief) outweighed the potential risks (Raymond et al., 2009). While these findings provide insights into maternal drinking, they cannot be generalized to South African women given the varying contextual differences across these geographically distinct societies and cultures. Thus, we believe it is imperative that additional qualitative research is done to determine how women from other ethnicities and socio-economic groups make decisions about their drinking behaviors during pregnancy. Moreover, we contend that qualitative investigations are most needed in areas where maternal drinking and FASD/FAS are most prevalent such as the Western Cape of South Africa. Given that the damaging consequences of prenatal exposure to alcohol experienced by more than a million children per year are completely preventable, this should be a call for immediate action and greater emphasis on research to investigate *why* mothers choose to consume alcohol during pregnancy.

References

Abel, E. L. (1995). An update on incidence of FAS: FAS is not an equal opportunity birth defect. *Neurotoxicology and Teratology, 17*(4), 437–443.

Carmichael-Olson, H., Ohlemiller, M. M., O'Connor, M. J., Brown, C. W., Morris, C. A., & Damus, K. (2009). A call to action: Advancing essential services and research on Fetal Alcohol Spectrum Disorders: A report of the National Task Force on Fetal Alcohol Syndrome and Fetal Alcohol Effect. US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center on Birth Defects and Developmental Disabilities.

Carter, R. C., Jacobson, S. W., Molteno, C. D., & Jacobson, J. L. (2007). Fetal alcohol exposure, iron-deficiency anemia, and infant growth. *Pediatrics, 120*(3), 559–567. doi:10.1542/peds.2007-0151

Comasco, E., Hallberg, G., Helander, A., Oreland, L., & Sundelin-Wahlsten, V. (2012). Alcohol consumption among pregnant women in a Swedish sample and its effects on the newborn outcomes. *Alcoholism: Clinical and Experimental Research, 36*(10), 1779–1786. doi:10.1111/j.1530-0277.2012.01783.x

Croxford, J., & Viljoen, D. (1998). *Prospective analysis of alcohol ingestion in 636 pregnant women in rural and urban areas of the Western Cape* (Unpublished doctoral dissertation). University of Cape Town Division of Human Genetics, Cape Town.

Croxford, J., & Viljoen, D. (1999). Alcohol consumption by pregnant women in the Western Cape. *The South African Medical Journal, 89*(9), 962–965.

Dehaene, P., Samaille-Villette, C., Boulanger-Fasquelle, P., Subtil, D., Delahousse, G., & Crepin, G. (1991). [Diagnosis and prevalence of fetal alcoholism in maternity]. *La Presse Médicale, 20*(21), 1002.

Desmond, K., Milburn, N., Richter, L., Tomlinson, M., Greco, E., van Heerden, A., . . . Rotheram-Borus, M. J. (2012). Alcohol consumption among HIV-positive pregnant women in KwaZulu-Natal, South Africa: Prevalence and correlates. *Drug and Alcohol Dependence, 120*(1-3), 113–118. doi:10.1016/j.drugalcdep.2011.07.004

Eaton, L. A., Pitpitan, E. V., Kalichman, S. C., Sikkema, K. J., Skinner, D., Watt, M. H., . . . Cain, D. N. (2014). Food insecurity and alcohol use among pregnant women at alcohol-serving establishments in South Africa. *Prevention Science, 15*(3), 309–317. doi:10.1007/s11121-013-0386-6

Havens, J. R., Simmons, L. A., Shannon, L. M., & Hansen, W. F. (2009). Factors associated with substance use during pregnancy: Results from a national sample. *Drug and Alcohol Dependence, 99*(1-3), 89–95. doi:10.1016/j.drugalcdep.2008.07.010

Jones, K. L., & Smith, D. W. (1973). Recognition of the fetal alcohol syndrome in early infancy. *The Lancet, 302*(7836), 999–1001. doi:10.1016/S0140-6736(73)91092-1

Jones, K. L., Smith, D. W., Ulleland, C. N., & Streissguth, P. (1973). Pattern of malformation in offspring of chronic alcoholic mothers. *The Lancet, 301*(7815), 1267–1271. doi:10.1016/S0140-6736(73)91291-9

Jonsson, E., Salmon, A., & Warren, K. R. (2014). The international charter on prevention of fetal alcohol spectrum disorder. *The Lancet Global Health, 2*(3), e135–e137. doi:10.1016/s2214-109x(13)70173-6

Keen, C. L., Uriu-Adams, J. Y., Skalny, A., Grabeklis, A., Grabeklis, S., Green, K., . . . Chambers, C. D. (2010). The plausibility of maternal nutritional status being a contributing factor to the risk for fetal alcohol spectrum disorders: The potential influence of zinc status as an example. *Biofactors, 36*(2), 125–135. doi:10.1002/biof.89

Leversha, A. M., & Marks, R. E. (1995). The prevalence of fetal alcohol syndrome in New Zealand. *The New Zealand Medical Journal, 108*(1013), 502–505.

Lupton, C., Burd, L., & Harwood, R. (2004). Cost of fetal alcohol spectrum disorders. *American Journal of Medical Genetics, 127C*(1), 42–50. doi:10.1002/ajmg.c.30015

May, P. A., & Gossage, J. P. (2001). Estimating the prevalence of fetal alcohol syndrome: A summary. *Alcohol Research and Health, 25*(3), 159–167.

May, P. A., & Gossage, J. P. (2002). The prevalence of fetal alcohol syndrome within three New Mexico ethnic communities. National Institute on Alcohol Abuse and Alcoholism.

May, P. A., Gossage, J. P., Kalberg, W. O., Robinson, L. K., Buckley, D., Manning, M., & Hoyme, H. E. (2009). Prevalence and epidemiologic characteristics of FASD from various research methods with an emphasis on recent in-school studies. *Developmental Disabilities Research Reviews, 15*(3), 176–192. doi:10.1002/ddrr.68

May, P. A., Blankenship, J., Marais, A. S., Gossage, J. P., Kalberg, W. O., Barnard, R., . . . Seedat, S. (2013). Approaching the prevalence of the full spectrum of fetal alcohol spectrum disorders in a South African population-based study. *Alcoholism: Clinical and Experimental Research, 37*(5), 818–830. doi:10.1111/acer.12033

May, P. A., Fiorentino, D., Coriale, G., Kalberg, W. O., Hoyme, H. E., Aragón, A. S., . . . Ceccanti, M. (2011). Prevalence of children with severe fetal alcohol spectrum disorders in communities near Rome, Italy: new estimated rates are higher than previous estimates. *International Journal of Environmental Research and Public Health, 8*(6), 2331–2351. doi:10.3390/ijerph8062331

May, P. A., Gossage, J. P., Brooke, L. E., Snell, C. L., Marais, A. S., Hendricks, L. S., . . . Viljoen, D. L. (2005). Maternal risk factors for fetal alcohol syndrome in the Western Cape province of South Africa: A population-based study. *American Journal of Public Health, 95*(7), 1190–1199. doi:10.2105/ajph.2003.037093

May, P. A., Gossage, J. P., Marais, A. S., Adnams, C. M., Hoyme, H. E., Jones, K. L., . . . Viljoen, D. L. (2007). The epidemiology of fetal alcohol syndrome and partial FAS in a South African community. *Drug and Alcohol Dependence, 88*(2-3), 259–271. doi:10.1016/j.drugalcdep.2006.11.007

May, P. A., Gossage, J. P., Marais, A. S., Hendricks, L. S., Snell, C. L., Tabachnick, B. G., . . . Viljoen, D. L. (2008). Maternal risk factors for fetal alcohol syndrome and partial fetal alcohol syndrome in South Africa: A third study. *Alcoholism: Clinical and Experimental Research, 32*(5), 738–753. doi:10.1111/j.1530-0277.2008.00634.x

Meurk, C. S., Broom, A., Adams, J., Hall, W., & Lucke, J. (2014). Factors influencing women's decisions to drink alcohol during pregnancy: Findings of a qualitative study with implications for health communication. *BMC Pregnancy & Childbirth, 14*(1), 246. doi:10.1186/1471-2393-14-246

O'Connor, M. J., Tomlinson, M., LeRoux, I. M., Stewart, J., Greco, E., & Rotheram-Borus, M. J. (2011). Predictors of alcohol use prior to pregnancy recognition among township women in Cape Town, South Africa. *Social Science & Medicine, 72*(1), 83–90. doi:10.1016/j.socscimed.2010.09.049

Parry, C. D., Plüddemann, A., Steyn, K., Bradshaw, D., Norman, R., & Laubscher, R. (2005). Alcohol use in South Africa: Findings from the first Demographic and Health Survey (1998). *Journal of Studies on Alcohol and Drugs, 66*(1), 91–97.

Peltzer, K., & Ramlagan, S. (2009). Alcohol use trends in South Africa. *Journal of Social Sciences, 18*(1), 1-12.

Popova, S., Stade, B., Bekmuradov, D., Lange, S., & Rehm, J. (2011). What do we know about the economic impact of fetal alcohol spectrum disorder? A systematic literature review. *Alcohol and Alcoholism, 46*(4), 490–497. doi:10.1093/alcalc/agr029

Rasmussen, C., Andrew, G., Zwaigenbaum, L., & Tough, S. (2008). Neurobehavioural outcomes of children with fetal alcohol spectrum disorders: A Canadian perspective. *Paediatrics & Child Health, 13*(3), 185–191.

Raymond, N., Beer, C., Glazebrook, C., & Sayal, K. (2009). Pregnant women's attitudes towards alcohol consumption. *BMC Public Health, 9*, 175. doi:10.1186/1471-2458-9-175

Riley, E. P., Infante, M. A., & Warren, K. R. (2011). Fetal alcohol spectrum disorders: An overview. *Neuropsychology Review, 21*(2), 73–80. doi:10.1007/s11065-011-9166-x

Sampson, P. D., Streissguth, A. P., Bookstein, F. L., Little, R. E., Clarren, S. K., Dehaene, P., . . . Graham, J. M., Jr. (1997). Incidence of fetal alcohol syndrome and prevalence of alcohol-related neurodevelopmental disorder. *Teratology, 56*(5), 317–326. doi:10.1002/(sici)1096-9926(199711)56:5<317::aid-tera5>3.0.co;2-u

Shankar, K., Ronis, M. J., & Badger, T. M. (2007). Effects of pregnancy and nutritional status on alcohol metabolism. *Alcohol Research and Health, 30*(1), 55-59.

Stratton, K., Howe, C., & Battaglia, F. C. (Eds.). (1996). *Fetal alcohol syndrome: Diagnosis, epidemiology, prevention, and treatment.* National Academies Press.

The Agriculture and Agri-Business. (2005). *A consensus on land reform, economic development, environment, food security, sustainable livelihood and desired intervention strategies.* Unpublished manuscript.

Thomas, G. (2012). *Levels and patterns of alcohol use in Canada.* Canadian Centre on Substance Abuse.

Urban, M., Chersich, M. F., Fourie, L. A., Chetty, C., Olivier, L., & Viljoen, D. (2008). Fetal alcohol syndrome among grade 1 schoolchildren in Northern Cape Province: Prevalence and risk factors. *The South African Medical Journal, 98*(11), 877–882.

Viljoen, D. L., Gossage, J. P., Brooke, L., Adnams, C. M., Jones, K. L., Robinson, L. K., . . . May, P. A. (2005). Fetal alcohol syndrome epidemiology in a South African community: A second study of a very high prevalence area. *Journal of Studies on Alcohol, 66*(5), 593–604.

Williams, M. (2011). Fetal alcohol syndrome: Dashed hopes, damaged lives. *Bulletin of the World Health Organization, 89*(86), 398–399. doi:10.2471/blt.11.020611

World Health Organization. (2014). *Global status report on alcohol and health – 2014.* Geneva: World Health Organization.