

**Knowledge Transfer Publication Series:  
Economic and Social Research Council and  
The Scottish Government Joint PhD Scheme**

**Understanding of the use of alcohol in pregnancy amongst  
women in Scotland**

**First Year Update**

Katharine Ford

The overall aim of the project is to understand women's alcohol consumption during pregnancy in Scotland.

Research objectives:

- Identify the main characteristics and causes of FAS from literature upon the syndrome and associated alcohol disorders and identify how these risk factors are distributed across women in Scotland.
- Identify the current levels of young women's alcohol consumption, and the factors that influence it, for example, region within Scotland, socio-economic factors and lifestyle factors.
- Examine the prevalence of low birth weight across the sample size and see if this is connected to levels of alcohol consumption during pregnancy.

## **Key Findings**

- One in 4 women consume alcohol during pregnancy, while a similar proportion smoke during pregnancy.
- The Growing Up in Scotland (GUS) survey shows that women's alcohol consumption during pregnancy increases with income and social class.
- More women consume alcohol during pregnancy within rural areas across Scotland than in urban areas.
- Women who are white are more likely to drink alcohol during pregnancy than women from other ethnic groups.
- Women are more likely to smoke during pregnancy if they have 'never worked' or are from a low social class.
- From the survey analysis it is clear that alcohol consumption during pregnancy and a low weight at birth are not correlated.
- Smoking during pregnancy and a low weight at birth are correlated.
- There is contestation surrounding the prevalence of FAS, partly due to the difficulty in diagnosing the condition.

## Alcohol Consumption

There is a global concern over the levels of alcohol intake and the health implications of consuming alcohol. It is estimated that within Scotland there is a £2.2 billion 'clear-up' of the misuse of alcohol. This cost is spread over the NHS (£405 million); social work services (£170 million); criminal justice and the fire service (£385 million); wider economic costs (£820 million) and human/social costs (£470 million) (The Scottish Government, 2008). Tackling alcohol misuse is the Scottish Governments number one priority for public health. Scotland has one of the fastest growing chronic liver disease and cirrhosis death rates in the world (Scottish Government, 2008) and therefore alcohol harm reduction measures are necessary.

Figures reveal that there is a trend across Scotland for women to consume high levels of alcohol. It is estimated that approximately 1 in 7 women in Scotland drink alcohol hazardously and 1 in 24 women in Scotland have some degree of alcohol dependence (Info Scotland, 2008). Alcohol-related deaths among women have doubled in Scotland within the last decade (Alcohol Focus Scotland, 2007). Part of the anxiety over the increased levels of women's alcohol consumption is due to concern over women's alcohol consumption during pregnancy. The risks of alcohol consumption in pregnancy are well documented within the United States, and the negative impacts it can have upon the health of the unborn foetus are well recognised. Within the UK there has recently been debate over a 'safe' level of alcohol consumption during pregnancy. Previous health recommendations had stated that a small amount of alcohol would be safe during pregnancy. The current advice of the Scottish Government is that women should now avoid alcohol whilst pregnant or trying to conceive due to the risk of Foetal Alcohol Syndrome (FAS) and Foetal Alcohol Spectrum Disorders (FASD). This change in recommendation has led to many women reporting feeling confused and unsure over a safe practise of alcohol intake during pregnancy.

## Foetal Alcohol Syndrome

It is widely recognised that 'prenatal exposure to alcohol carries a wide range of consequences for foetal health, including increased risk of respiratory distress syndrome at birth, increased risk of premature birth, and central nervous system defects. The most serious manifestation is Foetal Alcohol Syndrome (FAS)' (Malet et al, 2006 p.787). The term Foetal Alcohol Syndrome (FAS) was introduced in 1973 by Jones and Smith who also developed the terminology Alcohol Related Birth Defects (ARBD) (Calhoun and Warren, 2007). Jones and Smith used the term FAS 'to describe the characteristic dysmorpohological abnormalities of children born to chronically alcoholic mothers' (Barrison et al, 1985 p.11). FAS and FAE consist of a range of malformations, growth retardation and abnormalities, which have 'considerable individual variation' (Barrison et al, 1985 p.12) and children with the syndrome can have abnormal facial features, respiratory distress at birth, low birth weight, hyperactivity, epilepsy, foetal malformation, growth retardation and increased susceptibility to infection. It is also recognised that women who drink alcohol during pregnancy have an increased chance of prenatal death, and a greater risk of stillbirth and spontaneous abortion. Abel (1998b) observes that FAS is entirely preventable, as the syndrome stems from a modifiable behaviour (Abel, 1998b). There are no set boundaries as to what defines FAS as children are each affected by the syndrome differently. The complexity of the different symptoms that are involved with the diagnosis of FAS makes clear-cut diagnosis of the syndrome very difficult. The detection of FAS is also highly dependent upon the willingness and ability of a doctor to identify the syndrome and FAS is therefore a highly complex and much debated disorder.

There is much dispute surrounding the existing global prevalence of FAS. A large proportion of the studies into FAS are American, and it is recognised that studies into FAS are lacking across Europe and within Scotland. Abel (1988) identifies the global rate of FAS to be '1.9 per 1000 births' (Abel, 1988 p.1). Ethern et al (2008) found that FAS existed within '0.5 to 3 children per 1,000 live births in the US'

(Ethern et al, 2008 p.2). Poskitt identified that for the United Kingdom the prevalence of FAS was '1 or 2 cases per 1000 births' (Poskitt, 1984 p.159).

May et al (2006) argue that the rate of FAS in the Lazio region of Italy is '3.7-7.4 per 1,000 children and total FASD 20.3-40.5 per 1,000', this is a very high prevalence rate in contrast to other observed rates, and the findings in this study suggest that the prevalence of FAS may even be higher than estimated here. This raises the 'substantial question as to whether FAS prevalence is accurately reported or estimated in the United States or any Western European country' (May et al, 2006 p.1572).

In 1983 Beattie identified 40 cases of FAS within the west of Scotland. Within the Scottish media it is clear that there is uncertainty surrounding the prevalence of FAS and alcohol related harm. It is reported that in Scotland as many as 300 babies a year are damaged by alcohol consumption during pregnancy (Scotsman, 2007), however Scottish estimates on FAS (based on estimates from other European countries) suggest that 37 babies a year are born with FAS in Scotland, and as many as 340 babies are being born with FASD (Scotsman, 2007). Other figures have indicated that up to 1 in 10 and as many as 9,000 could be suffering from FASD in Scotland (Foster, 2007). Despite this, there has not been an epidemiological survey upon FAS within Scotland and it remains unclear how many cases of FAS exist within the country. It is also thought that many cases of FAS are not diagnosed, and therefore there is a hidden population of FAS sufferers across Scotland (Sunday Herald, 2008).

## **Methodological approach**

In order to examine the effects of alcohol in pregnancy in Scotland and to fulfil the research aims the Growing up in Scotland (GUS) data set was analysed. The GUS survey is 'a large-scale longitudinal social survey designed to examine the characteristics, circumstances and behaviours of children from birth to late adolescence (and possibly beyond)' (Growing up in Scotland, 2007). The study is funded by the Scottish Government Directorate of Education and follows 8,000

children with the aim to help inform policy governing children and their families within Scotland, and to provide a large resource for secondary analysis. The GUS study is based upon two cohorts of children, the birth cohort aged at approximately 10 months at the time of interview and the child cohort, aged at approximately 34 months. Interviews were primarily conducted with the child's natural mother; however, some respondents were the child's natural father or main carer. Only the responses from the birth cohort where the respondent was the child's natural mother were used in the analysis.

Three logistic regression models were run with the three dependent variables of alcohol consumption in pregnancy, smoking in pregnancy and low birth weight. Logistic regression is a statistical modelling technique used 'in the social sciences to explore and extend understanding of the processes underlying social phenomena such as behaviour or attributes' (Dale et al, 2000 p.146).

## **Research Results**

It is clear from analysing literature upon Foetal Alcohol Syndrome that there is conflicting advice upon the risk factors of FAS. Some of the identified risk factors of FAS are alcohol consumption during pregnancy, smoking during pregnancy, poverty and ethnicity. Low weight at birth is recognised to be a symptom of FAS and an effect of alcohol consumption during pregnancy.

From this research it was observed that a large proportion of women are continuing to consume alcohol during pregnancy. A quarter of all women interviewed within the GUS Sweep 1 birth cohort reported alcohol consumption of some level during pregnancy. It was also indicated that income and class play an important role in patterns of women's alcohol consumption during pregnancy. Women from higher social classes and with higher incomes were more likely to drink alcohol during pregnancy, this is an important and unexpected finding of this research. The findings for alcohol consumption during pregnancy are slightly different than what we might have expected as a large proportion of

literature upon FAS and alcohol consumption links alcohol consumption during pregnancy to poverty and lower social classes. However the results clearly show that it is the upper class women and women on higher incomes who are continuing to drink alcohol during pregnancy. What remains unclear is the amount that these women are continuing to drink during pregnancy and whether or not they are 'binge' drinking.

The data revealed that there is a strong pattern of rural alcohol consumption during pregnancy. Ethnicity also plays a role in women's alcohol consumption during pregnancy. The findings suggest that women are more likely to drink alcohol during pregnancy if they are white.

Evidence shows that 'smoking is linked to a variety of adverse pregnancy outcomes including low birth weight, spontaneous abortion, and infant death' (Giglia et al, 2007 p.943). The findings indicate that 1 in 4 women smoke during pregnancy; however this was not the same group of women who drank alcohol during pregnancy. It was also evident that women with a lower income are more likely to smoke during pregnancy.

The findings of this study suggest that a low birth weight is linked with a lower social class. FAS is linked with poverty and malnutrition which are features of a low social class. An important finding is that that the affect of alcohol during pregnancy is not a significant factor in the incidence of low birth weight. This is surprising given the strong links between alcohol consumption and low birth weights within the literature upon FAS.

It is also important to note that at the time the survey data was collected, the guidelines for alcohol consumption in pregnancy were that a small amount of alcohol would be acceptable and would not cause harm to the unborn foetus. The guidelines have since changed to zero consumption during pregnancy and the effect of this change in recommendation cannot be evaluated from this older data set.

## The PhD

Over the next three years the PhD aims to evaluate women's alcohol consumption during pregnancy in Scotland. The first stage will involve carrying out a survey of both pregnant and non pregnant women. Two surveys will be prepared, one will be distributed to pregnant women in antenatal clinics, and the second will be a household-based survey. The survey will examine women's drinking habits during pregnancy and attitudes towards drinking during pregnancy. It will also evaluate women's awareness of the risks of consuming alcohol during pregnancy and attitudes to current public health campaigns/ advice on drinking during pregnancy. It therefore aims to examine women's experiences of alcohol consumption and identify effective interventions. The drinking habits of relatives, peers and older generations will also be considered in this research, to see how these may impact women's alcohol consumption patterns. In order to further understanding of the social and cultural context of alcohol consumption during pregnancy, the second stage of the research design will draw on an in-depth qualitative methodology using Biographic-Narrative Interpretative Method (BNIM). The third stage of the research will identify effective interventions for pregnant women's alcohol consumption. In particular it will explore how appropriate the existing advice on alcohol consumption is, and how effectively the groups most at risk are targeted through existing interventions. This stage of the research will involve possible interviews with Health Workers and Midwives.

## About the PhD student

Katharine has a BA (Hons) in Human Geography (2007) from the University of Liverpool. Over the past year she has completed her Masters in Research Methodology in Population Studies within the department of Geography at the University of Liverpool. Katharine is due to commence her PhD in October 2008 also at the University of Liverpool. As part of the scheme Katharine is placed at the Scottish Government within Health Analytical Services Division each September of her PhD to engender knowledge transfer.

For enquiries contact Katharine at [k.ford@liv.ac.uk](mailto:k.ford@liv.ac.uk)

## About the University of Liverpool

Katharine is based within the Department of Geography, part of the faculty of Social and Environmental Studies at the University of Liverpool. Supervisors for the PhD are Dr. Clare Holdsworth (Department of Geography), Dr. Jude Robinson (Health and Community Care Research Unit) at the University of Liverpool and Iain MacAllister from the Scottish Government.

This document and further information about social and policy research commissioned and published on behalf of the Scottish Government, can be viewed on the Internet at: <http://www.scotland.gov.uk/socialresearch>. If you have any further queries about social research, please contact us at [socialresearch@scotland.gsi.gov.uk](mailto:socialresearch@scotland.gsi.gov.uk) or on 0131-244 7560.