



# The RELEVANT Study: Rethinking Stillbirth through Behaviour Change

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Improved antenatal education and public health campaigns about stillbirth and risk factors are needed. Interventions to address the behavioural risk factors for stillbirth need to be designed at individual and population levels. Healthcare professionals require further training and specific guidance to support women with health promotion and behaviour change.

## What is stillbirth?

In Ireland, a stillbirth is defined as a baby born with no signs of life at 24 weeks gestation or later, or with a birthweight of 500g or more.<sup>1</sup> However, stillbirth definitions differ depending on the country.<sup>2</sup>

**Stillbirth is one of the most common adverse pregnancy outcomes**, with rates higher than neonatal deaths. In 2019 in Ireland, the rate of stillbirth was 4.06 per 1,000 births compared to a rate of 1.99 per 1,000 for neonatal death.<sup>3</sup>

## Behavioural risk factors for stillbirth

<b>Smoking</b>	An increase in the no. cigarettes smoked per day is associated with an increased risk of stillbirth; includes active and passive smoking.
<b>Alcohol and illicit drug use</b>	The use of high amounts of alcohol during pregnancy has been associated with an increased risk of stillbirth, since there is no evidence of a safe dose, the international recommendation is to avoid alcohol consumption during pregnancy. Research has also associated the use of any illicit drug use to an increased risk of stillbirth.
<b>Overweight or obesity</b>	A body mass index (BMI) $\geq 25$ increases the risk of stillbirth; there is also an association between an increase in weight and increase in risk. Modifiable risk factors can be targeted through weight management behaviours such as physical activity and diet.
<b>Sleep position</b>	Supine sleep position is associated with an increase risk of stillbirth. It is recommended to advise women to sleep on their left side after 28 weeks gestation.
<b>Attendance at antenatal care</b>	Attending <50% of the recommended visits is associated with an increased risk of stillbirth.

## What do we already know?

There are multiple risk factors associated with stillbirth. These include sociodemographic characteristics, such as maternal age, ethnicity, or socioeconomic status; maternal medical factors, including maternal medical conditions (e.g. diabetes, hypertension), mental health conditions, obstetric history (e.g. parity, previous pregnancy loss, multiple pregnancy, history of C-Section); pregnancy complications and fetal factors such as placental insufficiencies; and behavioural-related factors such as substance use or weight management behaviours.

**Some of these behaviours have potential to be modified, the focus of this project is on behavioural risk factors.**

# The overall aim of the RELEVANT study is to build an evidence base to inform the development of a behaviour change intervention to tackle modifiable risk factors for stillbirth (substance use, attendance to antenatal care, maternal weight and sleep position)

## What did we do?

01

Review of the literature<sup>4</sup>



To define the problem and select target behaviours



Literature review



Four main modifiable risk factors with a behavioural component were found to have the strongest evidence:

- Substance use (smoking, alcohol, illicit drugs)
- Maternal weight
- Attendance & compliance with antenatal care
- Sleep position.

02

Quantitative website content analysis<sup>5</sup>



To identify what needs to change. Are pregnant women being informed about stillbirth risk factors online?



92 Irish & UK websites analysed for absence or presence of content regarding stillbirth



- <50% of websites contained information about stillbirth
- <30% contained information about risk factors for stillbirth
- **Only one website contained all the information sought about stillbirth (e.g. definition, prevalence, etc.) & risk factors.**

03

Qualitative evidence syntheses<sup>6,7,8</sup>



To identify barriers and facilitators to women's behaviour change



3 meta-syntheses were conducted, one for each target behaviour: substance use, weight management, attendance at antenatal care



Identified areas of concern:

- **Health literacy, awareness of risks & benefits**
- **Insufficient & overwhelming sources of information**
- **Lack of opportunities & healthcare professionals attitudes interfering with communication & discussion**
- **Social influence of environment**
- **Social judgement, stigmatisation of women.**

04

Qualitative study with women<sup>9</sup>



To explore women's experiences of behaviour change during pregnancy & awareness regarding stillbirth and associated risk factors



Semi-structured interview study conducted with 18 women in the postpartum period



- Behaviour change during pregnancy perceived as easy and natural
- Women had high level of awareness regarding health advice, but very limited regarding stillbirth
- **There is a lack of discussion with healthcare professionals about stillbirth & risks, so women rely on their own information-seeking behaviours**
- General positive attitude towards receiving information about stillbirth; knowledge perceived as key.

05

Systematic review of interventions<sup>10</sup>



To identify what interventions have been designed so far in the context of stillbirth prevention



Systematic review conducted to identify interventions; their components were coded using the Behaviour Change Technique Taxonomy (v1)



- 9 interventions were included in analysis.
- The most common BCT used was "Information about health consequences", followed by "Adding objects to the environment".
- The maximum number of BCTs was 11 and the minimum was 2.

06

Quantitative study with healthcare professional (HCP)s<sup>11</sup>



To explore HCPs awareness about stillbirth & behavioural risk factors & perceived facilitators and barriers to communicate with women about stillbirth & behavioural risk factors



Online survey



Antenatal care attendance, followed by smoking, was considered most important risk factors to discuss. Over half considered it necessary to mention the risks for stillbirth to influence women's behaviours during pregnancy. Maternal weight was the risk factor that HCP found hardest to discuss with women. **Only over half of the HCPs felt confident and trained to inform women regarding health behaviours & stillbirth risks.**

Women shared their experiences of behaviour change during pregnancy and information provision during antenatal care in our qualitative study.<sup>9</sup>

The women in our cohort had good awareness about how to remain healthy during pregnancy and what are the recommendations, but had very limited knowledge about stillbirth. **There was a lack of links between their knowledge about behavioural risk factors and potential associated outcomes such as stillbirth.**

Most women had not received any information about stillbirth or risk factors during antenatal care, and in the cases where they did, this information was focused on sleep position and monitoring fetal movements only.

Women also reported that the discussion regarding health habits in general was very scarce, and they had to use their own information sources to be informed.

I think most women are more concerned with development issues with like the drinking and smoking and things like that.

They are more thinking.. "okay, when my baby comes out is it going to have learning issues?" No one actually thinks about stillbirth



I thought that the having no drinks would be harder than it was because I'd never been one to be able to go months and months without drinking a glass wine here and there. But It was actually easier than I thought because I was doing it for my baby.

It was just a brief conversation that was had in the earlier stages [about left side sleeping]. And I don't even know why.

I think it is good to know about stillbirth because I think it's a very Irish thing maybe, that we don't talk about things that we don't want to talk about. I just think it should be. It should be spoken about. [...] We're told about everything else. Then, you know, if there's risk factors for stillbirth we should be made wherever of it.

## What are the implications of this work?

- **Improved antenatal education and public health campaigns** to enhance health information about stillbirth and behavioural risk factors are necessary.
- **Improved knowledge** on the complexities and multifactorial influences affecting women's behaviour change during pregnancy. There is a need for **reliable, consistent and evidence-based information resources** to inform all women.
- Health literacy and reproductive education should be promoted from the **pre-conceptual period** to facilitate family planning and recognition of pregnancy symptoms.
- Behaviour change is affected by multiple factors from the individual to the societal level. Policy makers should consider addressing behavioural risk factors for stillbirths in terms of **health, education, employment, housing and social equality**.
- Healthcare professionals require further training to understand the complexities of the behavioural risk factors for stillbirth. Training should include aspects of **identification of risks and sensitive communication**.
- **Antenatal education standards and healthcare professionals' training programmes** should provide guidance to support healthcare professionals in promoting health with their patients, and also be able to discuss risk factors for stillbirth or other potential adverse pregnancy outcomes.
- Healthcare professionals should **incorporate risk factors, health habits and stillbirth in their routine discussions** with women, especially in terms of outcomes for their babies, to motivate women to engage in behaviour change.
- Designing and implementing an **evidence-based behaviour change intervention** to address the risk factors for stillbirth is necessary.

## What's next?

The findings of the studies making up this project will inform the development of an evidence-based behaviour change intervention for stillbirth.

## References

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