Project Details	
Project Code	MRC21PHBr Zuccolo
Title	No alcohol in pregnancy: "better safe" or "better worry"? A digital and social media analysis of the acceptability and unintended consequences of the abstinence message.
Research Theme	Population Health
Summary	This project aims to further understanding of the acceptability, effectiveness and unintended consequences of the abstinence in pregnancy message. It combines innovative approaches from machine learning, quantitative and qualitative research methods to analyse rich, time-sensitive social media data. This work will directly feed into shaping health promotion campaigns for messages around risks in pregnancy.
Description	Prevention of prenatal alcohol exposure (PAE) is a global public health priority, and the leading preventable cause of developmental disability worldwide. Despite the UK Chief Medical Officer recommending abstaining from all alcohol throughout the entire pregnancy since 2016, over 50% of UK women still report drinking at some point in pregnancy, and 25% of 18-25 year olds are unaware of the message to abstain. One possible explanation could be that the message is not well communicated or well accepted in the UK. Some critics of the message have suggested that there is a collateral danger for maternal mental health, with women suffering from anxiety and even seeking abortion, driven by guilt and fear of the consequences of their alcohol intake. However, evidence of this does not exist at present. The abstinence message seems more accepted elsewhere in the world, with some (particularly US-Canada-based) celebrities endorsing it publicly (eg Meghan Markle, the Kardashians). The effect of such endorsements both in terms of raising awareness and acceptability, as well as effectiveness in terms of changing prenatal drinking behaviour, has never been investigated before, and neither have any potential unintended consequences of the message itself. Social media/digital data, including trends in Google searches, offer a rich, timely and accessible way of evaluating awareness and impact of the abstinence in pregnancy message in the UK. The new UKRI Strategy recognises social media as a key forum to engage the public in "discussions about research and its application through innovation." Using a combination of publicly available data from Google searches, Twitter/Reddit/Instagram and individual-level data from the Children of the Children of the 90s Study, this project aims to: 1. Review the literature on evaluating messaging on prenatal health 2. Evaluate the acceptability of the abstinence in pregnancy message through engagement and thematic analyses of digital/social media content 3. Validate the effectiveness of different types of communication of the abstinence in pregnancy message, including official guidance dissemination and celebrity/influencers endorsement 4. Investigate potential unintended consequences of the abstinence in pregnancy message, in particular maternal guilt, anxiety, termination Aim 1 will allow to gain insight into social media platforms and methodologies used, as well as what health behaviours have been evaluated to date. Aim 2 will involve qualitative analyses on online engagement with official campaigns, articles on digital media sources and social media activity, to evaluate reactions to

the abstinence in pregnancy message and their significance in terms of acceptability.   Aims 3 and 4 will be informed by an innovative causal inference approach for time series. For example: how many Google searches or other engagement were generated by official campaigns to promote awareness of the abstinence in pregnancy message? how does this compare to the reactions to media activity/communications by celebrities/influencers, or less official campaigns? Existing methods allow using real-world data eg Google searches or engagement on social media platforms. The same methods can be used to study possible unintended consequences of the message, by focusing on search terms including 'guilt', 'anxiety', 'termination'.   Knowledge advances will be translated to shape health promotion campaigns for messages around risks and behaviours in pregnancy, an area of great public health significance, thus maximising the impact of this doctoral research.   This project is a unique opportunity for a student with strong quantitative skills to apply causal inference methods to social media data and gain practical experience in novel sentiment analyses of online engagement, to optimise the impact of safety messaging in pregnancy.

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