SKIP-IT: Smoking In Pregnancy, Intervening with Texts

AIMS

Smoking during pregnancy carries serious risks to the health of mothers and babies. We aimed to develop and test an intervention that used story telling and picture text messages to help women to stop smoking during and after pregnancy. The study had two stages. In stage 1 we aimed to complete development of the storyline working with representatives of an organisation that supports women in the target group, then turn the story into texts that would be sent to participating women between antenatal booking and 6 weeks following their due date. Stage 2 was a feasibility study that aimed to find out: if pregnant women who smoke would agree to take part in a study where they received the texts; if they would remain in the study until the end; if they enjoyed the texts and found them helpful; if the intervention potentially, could help pregnant women give up smoking.

KEY FINDINGS

- Stage 1. We successfully developed a story about a young woman (Megan) who wants to give up smoking while pregnant, obtaining positive feedback from clinical staff and pregnant women who were involved with smoking cessation services.
- Stage 2: 299 women were given study information but only 38 agreed to talk to the research team and 28 agreed to take part. We tried several strategies, including extending the recruitment period and using social media but recruitment remained low.
- Many of the women who agreed to take part in the study then did not answer the telephone or respond to follow-up resulting in missing data at the follow-up time points. Most remained in the study and continued to receive the text messages.
- Women that took part in telephone interviews were positive about the content and timing of the text messages.

WHAT DID THE STUDY INVOLVE?

The SKIP-IT intervention involved text messages from a fictional character - Megan. The storyline was developed by a writing group including the research team and women's representatives. Texts included behaviour change techniques. These are strategies that help people change their behaviour to achieve better health, e.g. strategies for problem-solving, changing people's beliefs and perceptions about consequences of behaviour. For example 'Megan' texts: *'Caitlin and I spoke about ways she can quit... she could play with Leia* (her daughter) *to take her mind off smoking.'* This suggests using social support (i.e. Megan and Caitlin are supporting each other) and distraction (i.e. playing with Leia). In stage 2 we planned to recruit 70 women up to 14 weeks of pregnancy, who smoked. Potential participants were identified though antenatal and smoking cessation clinics, and self-referral in five Health Boards in Scotland and one trust in England. Participating women were randomly split into two groups, half were sent the text messages and the other half were not (control group). Each woman was involved in the study for around 10 months, until around 13 weeks post due date. Telephone questionnaires were carried out at 5 time points.

WHAT WERE THE RESULTS AND WHAT DO THEY MEAN?

633 women were potentially eligible, 299 were given study information by NHS staff (130 by post, 128 verbally), only 38 agreed to be contacted by the researchers and of these **28 (74%)** agreed to take part. Most lived in deprived areas and were employed in manual occupations, half were expecting their first baby. Following recruitment, it was very difficult to contact women by telephone or post for the follow-up questionnaires, despite considerable effort. However most women chose to continue receiving the text messages until the end of the story. Overall 23 interviews were undertaken. Women were generally positive about the texts: *'I did think it help a lot, like, getting the texts and having somebody that you could relate to' it just kind of made me feel like it's ok to have a bit of a bad day, and it's ok to have a good day as well. So yeah'* . The table below shows the small number of results we obtained from women about how much they were smoking at each time point. From the women who did provide results, the proportion not smoking at 36 weeks pregnant was higher in the group who received text messages. This was found to be similar at 1 week and 6 weeks after the text messages stopped. The numbers, however, are too small to draw wider conclusions about the effectiveness of the intervention.

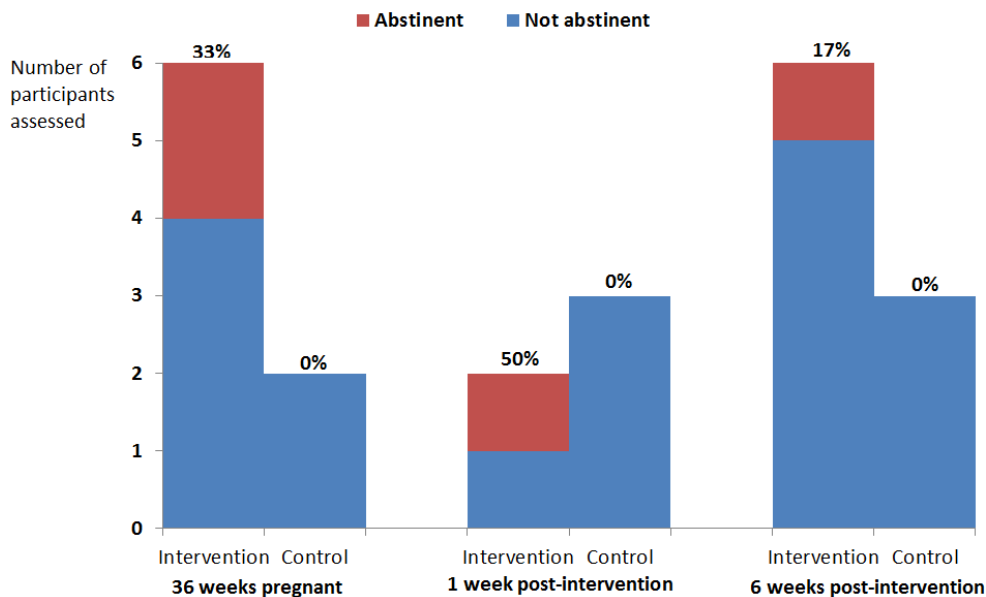| Self-reported smoking behavior		Women who received the text messages					Women who did not receive the text messages				
		Base-line	4 weeks post-random-isation	36 weeks preg-nant	1 week post-inter-vention	6 weeks post-inter-vention	Base-line	4 weeks post-random-isation	36 weeks preg-nant	1 week post-inter-vention	6 weeks post-inter-vention
		N* = 15	N = 9	N = 6	N = 2	N = 6	N = 12	N = 4	N = 2	N = 3	N = 3
Number of cigarettes currently smoked each day	None	3 (20%)	3 (33%)	4 (67%)	1 (50%)	1 (17%)	3 (25%)	2 (50%)	0 (0%)	1 (33%)	0 (0%)
	1-5	7 (47%)	4 (44%)	1 (17%)	0 (0%)	2 (33%)	4 (33%)	1 (25%)	2 (100%)	0 (0%)	2 (67%)
	6-10	3 (20%)	1 (11%)	0 (0%)	1 (50%)	2 (33%)	3 (25%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	11-15	1 (7%)	0 (0%)	1 (17%)	0 (0%)	0 (0%)	0 (0%)	1 (25%)	0 (0%)	1 (33%)	0 (0%)
	16+	1 (7%)	1 (11%)	0 (0%)	0 (0%)	1 (17%)	2 (17%)	0 (0%)	0 (0%)	1 (33%)	1 (33%)

*N is the number of women who answered the questionnaire at that time point

The graph below shows the Russell Standard Abstinence Rates, which measures the number of women who have abstained from smoking for several weeks. This shows similar results to the previous table with all the abstinent women being in the intervention group (shown in red), although again the study was not designed to be large enough to draw wider conclusions about effectiveness at this stage. The graph also highlights the low number of women willing to provide data and how this was lowest (only 5 women at the first time point after women gave birth).

Russell Standard Abstinence Rates

■ Abstinent   ■ Not abstinent

Number of participants assessed

33% 0%   50% 0%   17% 0%

| Intervention | Control | Intervention | Control | Intervention | Control |
| **36 weeks pregnant** | | **1 week post-intervention** | | **6 weeks post-intervention** | |

WHAT IMPACT COULD THE FINDINGS HAVE?

The purpose of this study was to develop an engaging story that would be delivered as text messages to encourage pregnant women to stop smoking and to test whether we could recruit and retain enough women in the study to make a larger study feasible. The text messages were well received by participants however few women were willing to be contacted initially or at follow-up. This study highlights the importance of doing feasibility studies prior to undertaking a full scale trial to test both the intervention and the study methods. This study has shown us that our current recruitment methods are not feasible. Further research could include looking at other recruitment methods, finding out more about how women are referred to smoking cessation services and support in pregnancy.

HOW WILL THE OUTCOMES BE DISSEMINATED?

We have already presented our emerging findings at a number of conferences. We will also publish at least two papers in peer-reviewed journals – one paper will discuss how we developed the intervention and one paper will publish the findings from the study.

This Research Project Briefing has been developed with feedback from our unit Patient Public Involvement group and will be distributed to all the clinical staff involved, and to all the women who participated in the study.

CONCLUSION

Using storytelling as a means of delivering behaviour change messages may be acceptable to pregnant women who smoke although our study methods were less so. Our qualitative data showed women liked the texts and that the storyline and pictures were well received. We found that women generally related to 'Megan'. However, we found that women who smoke in pregnancy were unwilling to discuss taking part in the study and women who chose to take part often did not then want to speak to the study team at later time points. This means that our study methods were not feasible for a larger trial. While our data found that more women who received texts did stop smoking the number of women that we have results for is too low to draw any conclusions as these difference could have occurred by chance. Smoking during pregnancy carries considerable health risks for mothers and babies. Engaging with pregnant women who smoke is difficult but identifying successful methods for doing so is an important research priority.

RESEARCH TEAM & CONTACT

PROFESSOR HELEN CHEYNE

📍 **NMAHP-RU, University of Stirling**

Unit 13 Scion House, Stirling University Innovation Park, FK9 4NF

✉️ **h.l.cheyne@stir.ac.uk**

📞 **+44 (0)1786 466289**

Additional Information
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