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'Someone batting in my corner':

experiences of smoking-cessation support via text message

Abstract

Background
The txt2stop trial demonstrated that smoking-cessation support delivered by text message doubles biochemically verified abstinence at 6 months. There was no significant heterogeneity in any of the pre-specified subgroups.

Aim
To explore participants' experiences of the txt2stop intervention via a qualitative study using telephone interviews.

Design and setting
Qualitative telephone interviews in the community.

Method
Thematic content analysis of 1283 feedback forms was conducted to develop a topic guide for 25 telephone interviews. Key themes were identified and described. Any differences in the experiences of those who did, and did not, successfully quit were specifically explored.

Results
Participants liked the fact that smoking-cessation support delivered by text message was convenient, easy to access, and chemical free. They reported that the intervention was a reminder that they were quitting and why, provided emotional support, was a reminder of the physical benefits of stopping smoking, and they saved messages so they could refer back to them. However, the intervention was not helpful for all. Receiving texts about smoking could also stimulate craving, and the timing, frequency, and duration of messages were not optimal for some participants. Those who did not quit reported that additional factors influenced them, such as periods of stress or social events, or reported that they had been unable to cope with the physical effects of withdrawal, and combining text-message support with medication could help with this.

Conclusion
Although the intervention did stimulate craving in some participants at some times, recipients reported that it also provided emotional support and reinforcement at temporally appropriate moments. It was successful at helping people to quit smoking but could be used together with other forms of smoking-cessation support.

Keywords
primary care; qualitative; smoking cessation; SMS text message; telephone interview.

INTRODUCTION

Tobacco use is a leading cause of preventable death, estimated to cause more than 5 million deaths each year worldwide.[1,2] In the UK, two-thirds of smokers report that they would like to stop.[3] Although a high proportion of smokers will attempt to quit, only around 2–3% will be successful each year;[4] as a result, there is a need for novel and effective approaches to support quitting.

The txt2stop trial demonstrated that mobile-phone-based text-messaging support can double smokers' chances of quitting (10.7% txt2stop versus 4.9% control, relative risk 2.20, 95% confidence interval = 1.80 to 2.68, $P<0.0001$).[5] The intervention is effective in all socioeconomic groups, in younger and older smokers, on its own, and when combined with other smoking-cessation support (for example, medication).[5] Analysis demonstrated that mobile phone-based text messaging support is highly cost effective.[6] However, the proportion of smokers with biochemically verified continuous abstinence at 6 months was modest (10.7%).[5]

The txt2stop intervention involves participants being asked to set a quit date within 2 weeks of randomisation. They received five text SMS (short message service) text messages per day for the first 5 weeks and then three per week for the next 26 weeks. Messages were sent by a computer program but developed with the input of smokers and smoking-cessation professionals. The intervention included motivational messages and behaviour-change techniques. The messages:

- provided feedback to individuals about the physical changes that occur as a result of quitting at the time that they might have been expected to experience those changes;
- encouraged participants to persevere with the quit attempt;
- provided information about the consequences of smoking, how to quit, how to remain smoke free and how others will approve quit success;
- prompted participants to avoid environments where they would normally smoke;
- encouraged participants to identify the challenges in quitting and plan how to overcome them; and
- promoted the use of the QUIT smoking-cessation telephone helpline and nicotine-replacement therapy (NRT).

The program was personalised using an algorithm based on the demographic and other information collected at baseline, such as the smoker's concerns about weight gain following quitting. By texting the word 'crave' to the trial short code number participants with cigarette cravings would receive instant messages to distract and support them during the craving episode.

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How this fits in

The txt2stop trial established that smoking cessation support more than doubles biochemically verified smoking cessation at 6 months. However, as in many other trials of smoking cessation interventions the majority of participants did not quit for 6 months. This study shows that smokers' experiences of receiving messages were surprisingly similar, even for those who did not quit. The messages were a convenient and acceptable source of support and a reminder why they were quitting. A few smokers found the messages reminded them of smoking and so became counter productive in their quit attempt. Healthcare professionals should offer text message support as an option for smoking cessation, but such support may need to be supplemented by medication in some individuals.

Participants could also request a quitting buddy to whom they could send text messages for support; if they opted for this, they were matched with another participant of the same sex quitting at a similar time. With their permission, the study staff sent details of the buddy's mobile number and the name they wanted to be known by in the trial. By texting the word 'lapse', participants would receive a series of three text messages that encouraged them to resume their quit attempt.

A detailed description of the behaviour-change techniques highlighted in the txt2stop intervention and its development are reported elsewhere.[7–9] This study set out to explore participants' experiences of the txt2stop intervention, specifically exploring differences in accounts between those who achieved biochemically verified continuous abstinence at 6 months and those who did not.

METHOD

Feedback forms

The txt2stop trial recruited 5800 participants. At the end of the final follow-up questionnaire, there was a blank form on which participants were invited to give feedback regarding the trial or intervention. In total, 1283 feedback forms were received. One of the researchers purposively selected 100 forms from those received between July and December 2009; these included forms from:

- intervention-group participants;
- control-group participants;
- those who quit; and
- those who did not quit.

The content of the forms was coded to identify key themes, then the 1283 forms were read to check that all the key themes were identified. The themes that were identified informed the topic guide used in the qualitative interviews.

Telephone interviews

The sample. As a first stage, one researcher identified 20 potential interviewees from among the 100 feedback forms, including individuals who had experienced a range of outcomes from the trial. Information from the trial database was used to ascertain quit status. As smoking status is not static, interviewees were asked their quit status during the interview (Table 1).

Participants were interviewed until 'saturation' was reached;[10] this was achieved within the first 20 interviews. Another five trial participants who did not return a feedback form were interviewed to identify whether their experiences of the intervention differed from those of the participants who did provide feedback

The researcher purposively sought to interview a sample that was diverse in terms of age, sex, quit status, and ethnicity.

Recruitment. In total, 25 participants were interviewed (four of the original sample selected could not be contacted and were replaced by people with similar characteristics. The researcher sent all prospective interviewees a text message explaining that they had been selected to take part in the telephone interviews. Prospective interviewees were then telephoned so that the purpose, process, and ethical safeguards for the interviews could be explained; they were also sent a written information sheet. Participants sent their consent by text message, email, or postal slip, and were paid a £10 honorarium.

Interviews. The researcher who conducted telephone interviews was not involved in the trial or development of the intervention. Interviews lasted 15–20 minutes, and were recorded and transcribed verbatim.

The researcher used NVivo 7 to manage the text and undertake a thematic analysis.

Analysis

Braun and Clarke's approach to thematic analysis was used to generate the key themes from the material.[11] This is a flexible and pragmatic six-stage method

Table 1. Interviewees by quit status

	First interviewees (*n* = 20), returned feedback form		Additional interviewees (*n* = 5), did not return feedback form		
	Trial data quit status[a]	Self-reported quit status[b]	Trial data quit status[a]	Self-reported quit status[b]	Self-reported quit status at interview (total)
Intervention group					
Quit during trial, not smoking at time of interview	10	8	2	–	8
Quit smoking during trial for ≥14 days, relapsed at time of interview	3	7	2	3	10
Didn't quit during trial for more than a few (13) days	3	2	–	1	3
Did not quit, reduced consumption and maintained it at point of interview	2	1	–	–	1
Control group					
Quit, not smoking at time of interview	2	2	1	1	3

[a]Quit status ascertained by reference to biochemically verified continuous abstinence according to trial database at close of trial and information provided on feedback forms if completed. [b]Quit status subsequently ascertained by self report during interview.

for identifying, analysing, and reporting thematic patterns in qualitative material. The stages include:

- transcription;
- familiarisation with the text;
- generation of initial codes;
- searching for themes;
- reviewing themes; and
- generating thematic maps.

The researcher generated the initial codes, which were reviewed by both authors. An example of coding is provided in Appendix 1.

RESULTS

The 25 participants comprised 13 females and 12 males and six participants were aged <25 years (range 20–61 years). Four interviewees were from 'non-white' backgrounds (one Black British, one Asian British, one Asian Indian, and one mixed race) and 21 were white (20 white British and one white Irish).

Participants reported that mobile-telephone SMS messaging was an acceptable, easy way of receiving smoking-cessation support:

'I didn't really have to do an awful lot. You know, it was just, er, it was just simple and anybody could do it … you know, it wasn't complicated or anything, and um it didn't take too much of your time.' (White British, female, aged 50)

Interviewees liked the fact that it was a 'chemical-free', 'low-threshold' intervention, requiring little time commitment, and that messages were 'pushed' to them via easy-to-use technology with which they were already familiar. They reported that the intervention was accessible to diverse social groups:

'It is good because, I mean, I don't know anyone that doesn't have a mobile … like, you know, short of being under 10 now, most people have a mobile and, you know, even older people have a mobile, like my mum texts more than I do. I think, you know, there might be a small group that'd be excluded like maybe … quite, like, a lot older, but … I think from … you know, 15 to, I don't know, 55 it would be helpful. I really do.' (White British, female, aged 21)

Three aspects of the intervention were identified as helpful. It provided:

- a reminder that the individual was quitting and why;
- emotional support; and
- a reminder of the physical benefits achieved by quitting.

Reminder about quitting and quit reasons

Receiving the text messages on a regular basis could act as a reminder that the individual was quitting and their reasons for doing so. Some interviewees described finding it surprisingly easy to forget that they were attempting to quit, particularly in contexts where others around them smoked and might offer them cigarettes. Others reported that, although they knew they were quitting, it was easy to lose sight of their reasons and motivations for doing so:

'It reminds you why you want to stop,

you know, 'cause some — it can get lost along the way, it's kind of like, you know, something happens and you think "oh I just want a cigarette," but they'll basically remind you that, you know, the reason why you did want to stop in the first place.' (White British, male, aged 26)

Some interviewees spoke of the value of being able to store those messages that they liked so they could refer back to them:

'One of them was one that I've actually kept in my phone, which I loved ... um one about it being about spirit and not strength or something like that, and I actually keep that on my phone and I use that for other things in my life as well.' (White British, female, aged 39)

For some, the mobile phone itself became a constant reminder of their intention to quit:

'I have to have my phone with me 24 hours a day 'cause of my job, it's ... it's like one of my hands, I have to have it [...] *even if I wasn't necessarily reading the messages, it was a reminder.'* (White British, female, aged 28)

'You're involved, whether it's something on the internet or something on your mobile phone ... mobile phone's better 'cause it's just such a ... we're so attached to these things now aren't we? They're always with us. It's very personal.' (White British, female, aged 39)

Emotional support

Some participants reported that quitting smoking was a difficult and lonely task, and that non-smokers often did not appreciate how challenging it could be. The intervention was described as 'somebody watching over me', (white British, female, aged 53) 'batting in my corner', (British female, aged 39), 'somebody holding your hand', (white British, female, aged 59), even though participants also reported knowing that the messages were delivered by a computer program:

'I thought they [messages] *were excellent. I thought they were absolutely excellent. I mean the first few days I was sort of waiting for my phone to beep, it was, it was like having ... I don't know, somebody there reinforcing what you were doing* [...] *It was sort of like just a little reinforcement that there was somebody out there who knew I'd stopped smoking, even if it wasn't a personal thing.'* (White British, female, aged 53)

The function of the messages in countering the feelings of isolation was reported to be especially valuable:

'NRT is just a lonely existence, you know, you're just taking it and that's it. There's no other ... distraction there, you know, a lot of it's just down to your willpower really, whereas with txt2stop you've got something that's ... like I say, it's like the angel on your shoulder all the time, isn't it? Constantly giving you a prod going: "Come on, you're doing really well. Yeah, stick with it".' (White British, female, aged 39)

Reminder of physical benefits of quitting

Participants reported that the messages that told them about the physical benefits of quitting at the time this occurred, were particularly motivating. For example, one such text read: 'TXT2STOP health update! Well done, your oxygen levels are now normal. Check out your web page www.txt2stop.org to see how you're getting healthier.' This type of message was especially motivating when the messages were reinforced by bodily changes that participants felt taking place:

'If you've got through 48 hours, you know, and you've not killed somebody or kicked someone up the butt or whatever [laugh] *... you get a text message that says well actually now your body is much better than it was 24, 48 hours ago ... and it reminds you of anatomy, you know the physiology of what's happening. That's very supportive. That's, that's ... pulling you, even if you were sitting there thinking: "I'm going to go and buy some, I'm going to get ... " and then the text comes through and reminds you of how far you've come. Brilliant, that is, that's genius actually, I think."* (White British, female, aged 39)

'What you're saying is after so many days [...] *you'll be getting more oxygen into your system ... er, you'll find breathing easier, and that's what kept me... sort of* [made me] *realise, I'm going to keep on doing this ... 'cause everything, like, you sent me, I was feeling. I had the notion of what was happening.'* (White British, male, aged 48)

Success

Participants' definitions of the intervention's success were broader than the trial definition of success (not smoking for 6 months) and included helping them abstain for longer than they had during previous quit attempts or reducing their tobacco consumption:

'Well I don't think I had it in me to do it on my own steam without support so doing txt2stop and getting that continuous support, I think that's helped 'cause it's made me realise why I wanted to stop smoking in the first place. It was, with text messages coming through and stuff like that, it just helped massively.' (White British, female, aged 25)

'txt2stop has, er, helped me to cut it down yeah, to my present level, yeah. And I'm sure, I'm positive that it saves you money [...] *Now I buy a pack of 10 instead of 20, which lasts me about 2 days. Before that I used to buy a packet of 20, which, er, only lasted me say about one and a half days, I mean less than that even.'* (Asian Indian, male, aged 61)

The experience of continuing smokers

In many instances, the accounts of the experience of the intervention for those who quit at 6 months, and those who had not, were similar although continuing smokers reported that additional factors had a stronger influence on them than the intervention. Those who relapsed reported that the influence of overwhelming external factors triggered smoking; factors included stress, upcoming social events associated with smoking, holidays, family problems, health problems, and working with smokers.

Those who relapsed sometimes reported that text messaging alone was not 'strong' enough; they reported being unable to cope with physical withdrawal symptoms. These responders tended not to dismiss txt2stop outright but to suggest that, in retrospect, they would have been better to combine it with medication:

'I used to use like, have nicotine replacement therapy as well with it, 'cause I thought on its own it weren't very helpful to be honest.' (White British, female, aged 23).

Others acknowledged that they had not been very motivated to quit:

'It did suggest doing, um ... having, um, patches as well in one of my texts, you know, it's like, you know, go to your doctor's and all that sort of stuff, and I think if I'd done that and incorporated it into the scheme then I probably might have been a bit more successful overall maybe.' (White British, male, aged 26)

Stimulating cravings

A few responders reported that receiving messages about quitting could stimulate a craving for cigarettes. For some, this occurred at times when they would not ordinarily be smoking or thinking about smoking — receiving a text message would remind them of smoking. Some participants said txt2stop made them want to smoke more; for others, the text messages were initially helpful but, as time went on, began to remind them of smoking:

'It ended up working against me, 'cause every time I got a text I thought about smoking [...] *Towards the end I just felt it was reminding me of it rather than helping me sort of thing.'* (White British, female, aged 26)

'After the first 3 weeks, they were doing my head in to tell the truth. Because I was conquering it, but then I'd say I weren't thinking about a fag for 2 or 3 hours, then I'd get a text message off you. Then I'd start thinking about a fag then, do you know, I'd think "Oh I want a fag now".' (White British, male, aged 41)

Message content

Although there were examples of participants reporting having followed advice in text messages regarding practical steps and plans — such as those intended to help avoid smoking triggers — this was not often mentioned.

A small number of participants reported enjoying the trivia messages and found they distracted them from smoking, but many could not see their purpose, did not find them useful or enjoyable, and, at worst, found them irritating and annoying.

Intervention duration and style

Responders varied in terms of how many messages they wanted and for how long they wanted the intervention to continue.

For some, the reduction in message frequency after 5 weeks to three per week was welcome or overdue, while others reported that the support was withdrawn too quickly. Some smokers who had quit advocated sending (less-frequent) messages for up to a year after quitting:

'Well I would have said about 3 months of, um, like, quite constant ones and then perhaps, you know, dwindling off from there, but I could have done with the constant ones for a bit longer.' (White British, male, aged 29)

'I wish that I would get the odd text just asking, you know, how I were doing and stuff

like that and still the odd text of support as well [...] *Sometimes when I'm getting a bit down and stuff like that I just think "Oh, I could right murder a cig," so I think that if you still got some messages, even up to a year after, there's still that support there because some people do start again don't they?'* (White British, female, aged 25)

Other participants would have liked to have the option to restart the programme and make another quit attempt, which was not possible in the context of the clinical trial:

'I would have liked a facility where I could have restarted once. I know you can't have people doing that all the time but I phoned up and I spoke to one of your colleagues and she said, "Oh, you know, sort of tough, get on with it" in a much nicer way, and, um, so I was getting messages for people who were like maybe 4 weeks into it and in fact I wasn't.' (Mixed race, female, 56)

Receiving messages intended for successful quitters could also reinforce a sense of failure:

'It probably made me smoke more after I relapsed [laugh]. *'Cause, well, it made me feel worse* [...] *It reinforced the fact that I'd failed.'* (White Irish, male, aged 49)

Control group

The control-group participants did not report either being put off quitting or feeling supported in quitting.

DISCUSSION

Summary

Participants reported that text messages were an acceptable and convenient way of receiving smoking-cessation support. From their perspectives, text messages provided emotional support and encouragement, and reduced the sense of isolation during the quit attempt. Messages reminded them that they were quitting and why they were doing so. Participants also reported that messages about the physical benefits of quitting were especially helpful. Their definitions of success were broader than the trial definition and included quitting for longer than in previous attempts and cutting down cigarette consumption.

Accounts of experiences of the intervention were often similar in those who quit at 6 months and those who did not. However, for continuing smokers, external factors such as stress or social events triggered relapses. Some needed additional help with withdrawal symptoms, while others acknowledged they had never been very motivated to quit.

A few participants reported that text messages could stimulate a craving for cigarettes and some also stated that continuing to receive messages after a quit attempt had failed could be demoralising. In addition, many participants did not like the messages containing trivia; some said they would have liked the intervention to continue for longer, to be able to reset a quit date, or to alter the number of messages they received.

Strengths and limitations

To the authors' knowledge, this is the first published qualitative study of participants' accounts of their experiences of automated text-message-based smoking-cessation support. The differences in accounts between those who had, and had not, quit for 6 months were specifically explored. The analysis of the content of more than 1000 feedback forms combined with telephone interviews allowed for triangulation of the results.

There are challenges in communication by telephone. As an example, telephone interviewing may have resulted in more superficial and briefer responses to questions than would have been the case if the interviews had been conducted face to face;[12] indeed comments on feedback forms were often brief. However, given the nature of the intervention, it was an appropriate method, which, with limited resources, allowed for the interviewing of individuals who were geographically dispersed.

Two people who successfully quit in the control group were also interviewed to allow the researchers to identify experiences of support from trial participation separately from those attributed to receiving the text messages. No differences in accounts were noted according to participants' age, sex, or ethnicity in this small qualitative study. Subgroup analysis of the trial results showed no differences in the intervention effect by age and ethnicity. Five people who did not provide feedback forms were interviewed to check if they had different experiences. Only five interviews were needed to achieve saturation as their experiences were similar to those of participants who completed forms.

Comparison with existing literature

In keeping with findings in other work, participants viewed the mobile phone as an essential, everyday item, owned by most people and featuring easy-to-

use technology.[13,14] The particular 'push' factor of text messages[14] made this a simple, low-commitment way to receive smoking-cessation support. The 'always-on-you' nature of the mobile phone,[15,16] enabled it and the text messages to be a continuous reminder about quitting, while the technology allowed participants to retain messages and refer back to them; a benefit described elsewhere.[17] As in other studies, the mobile phone was perceived as a highly personal object;[17,18] this appeared to underpin experiences of the intervention as a personalised source of support and may have contributed to participants humanising the intervention.

A weight-loss study reported that modifiable message timing was important, as was the experience of the intervention as monitor and motivator.[14] The txt2stop pilot study found that users wanted flexibility in setting a quit date and intervention intensity;[7] in a questionnaire sent to 297 txt2stop intervention group participants (response rate 58%), 25/172 (15%) responders reported that text messages reminded them of smoking[19] which demonstrates that the qualitative findings in this study are consistent with these quantitative findings.

Implications for practice

Smoking-cessation experts, a GP, and potential participants developed the text messages for txt2stop,[19,8] which were modified following feedback from focus groups and piloting.[19] The methodology to develop content may have contributed to participants' experience of the messages as supportive and their 'humanisation' of the intervention. Following txt2stop's trial publication, the Department of Health in England worked with the trial authors to develop a new smoking-cessation support service delivered via text message (http://smokefree.nhs.uk/ways-to-quit/support-on-your-mobile/). Due to the research findings of the study presented here, the service does not include messages with trivia and participants can opt for a standard (five messages per day) or light (three messages per day) support. As in the txt2stop intervention, participants who do not quit or who experience cravings as a result of the messages can stop the messages by replying 'stop' to any that they receive. Smokers can rejoin the programme and reset a quit day.

There remain further areas for investigation. Although participants asked for greater user control, the effect of modifying the intervention intensity and duration on outcomes should be established. Text messaging is increasingly employed for health promotion in other areas,[14,20–32] but long-term rigorous trials evaluating their effects on objective outcomes are needed.

Some participants described not being able to cope with nicotine withdrawal; smoking-cessation support delivered by text message is effective when combined with other methods of smoking-cessation support.[5] As such, healthcare providers should consider offering smokers medication to alleviate withdrawal symptoms, alongside information about text-message support.

This research informs healthcare providers about participants' experiences of smoking-cessation support delivered by text message, allowing them to provide smokers with better information about the new service.

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Ethical approval

The study was reviewed by the Research Ethics Committee of the London School of Hygiene and Tropical Medicine (St Thomas's Ethics committee REC 06/q0702/169).

Provenance

Freely submitted; externally peer reviewed.

Competing interests

The authors have declared no competing interests.

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Appendix 1. Coding example:

Both of the following were coded as 'relapse accounts':

'Well, um unfortunately since, I have started smoking again, which is um, it's a bit of a shame really. I had a bit of a like tragedy, a bit of an upset in the family and I've started again.' (White British, Male, aged 44).

'I've stopped it completely for about er 1 week, then er what happened, I'll tell you honestly, a bit of er stress in the house with arguments with my family, my wife especially and er so then I just went out and bought a cigarette.' (Asian Indian, Male, aged 61).