Tobacco smoking continues to be a major public health problem. Few smokers present themselves for treatment, and it is important to offer a range of interventions that appeal to different individual needs and preferences. Computer-tailored feedback can fill the gap between generic self-help and intensive clinical therapy. Using focus groups, we investigated smokers’ perceptions of generic self-help materials and computer-generated individually tailored feedback reports. Participants recognized the generic nature of self-help material and welcomed the concept of personal support, but were concerned about some aspects of the material. Findings supported the continuation of the development and delivery of computer-tailored feedback, but more research is warranted to optimize the content and style of the feedback for individual perceptions and expectations.

Tobacco smoking continues to be a major public health problem. Clinical services to help smokers to quit are available in the United Kingdom through the National Health Service, but are taken up by few (Bauld, Chesterman, Judge, Pound, & Coleman, 2003). Because so few people present themselves for treatment to existing services, there is an urgent need to develop and deliver cost-effective interventions to the larger population, rather than to the dependent smokers who seek specialized help (Lichtenstein & Glasgow, 1992), and it is important to offer a range of interventions that appeal to different individual needs and preferences (Resnicow, Royce, Vaughan, Orlandi, & Smith, 1997).

Developments in technology have made it possible to generate printed self-help material replicating individual counseling, filling the gap between generic self-help, intended for everyone, and intensive clinical therapy. With the use of computers, these customized health messages, derived from an individual assess-
ment and based on characteristics unique to one person, (Kreuter, Strecher, & Glassman, 1999) can be produced for individuals on a large scale, reaching many more members of a target population than is possible with traditional one-to-one counseling. Tailored health materials for smoking cessation have been in use for over a decade, and have been shown to have a small but significant effect over standard materials in helping smokers to quit (Lancaster & Stead, 2005). However, there is little standardization of either the content or the design and layout of these communications and little evidence of what features of tailored communications are effective (Strecher, Velicer, & Little, 2001). In addition, little is known about the public perception of these computer-tailored self-help materials as an aid to quitting.

A broad program of research aimed to extend the reach of a developed system of tailored feedback (Sutton & Gilbert, 2007), adapting the content to different levels of readability and literacy, and delivering the intervention to a large population in primary care, using proactive recruitment to encourage a higher and more representative sample (Schmid, Jeffery, & Hellerstedt, 1989). While studies have shown a favorable response to the direct marketing of materials by a health service (Etter & Perneger, 2001; Lennox et al., 2001; Paul, Wiggers, Daly, Green, & Walsh, 2004), the views and reactions of the public to this method of recruitment have not been sufficiently explored to determine the acceptability of the approach.

In preparation for a large-scale trial of effectiveness (Gilbert, Sutton, Nazareth, Morris, & Godfrey, 2008), we examined the views of smokers in the general population in a series of focus groups to gain an insight into their perception of, and attitudes to, tailored materials for smoking cessation. We also explored the reactions of smokers to the method of recruitment and the delivery of an intervention using this version of computer-tailored feedback.

Method

Tailored Materials

A computer-based system for generating individually tailored feedback reports was developed as a supplement to enhance the effectiveness of telephone counseling (Sutton & Gilbert, 2007). Previous studies of the effectiveness of tailored feedback for smoking cessation have been based on the transtheoretical or “stages of change” model (TTM (Prochaska & Velicer, 1997) (e.g., Lennox et al., 2001; Aveyard, Griffin, Lawrence, & Cheng, 2003). However, this model has attracted a great deal of criticism (West, 2005), and the use of one model exclusively to drive the tailoring does not allow for individual variation from that pattern of change. Stronger tailoring programs can be produced by using multiple theories to inform the process (Strecher, 1999). This version of tailored
feedback used concepts from different theoretical models that have been shown to be relevant to behavior change, including social cognitive theory (Bandura, 1986) and the perspectives on change model (Borland, Balmford, & Hunt, 2004). The tailored feedback aims to change the cognitive determinants of smoking and smoking cessation by addressing attitudes, beliefs, and expectations toward quitting to enhance perceived self-efficacy and to encourage a re-evaluation of the social environment. By identifying specific factors that influence behavior and decisions, it offers information to help individuals to bring about the desired cognitive states or behavior for successful quitting. The tailored feedback reports were also developed in consultation with smoking cessation counselors, and also include conventional wisdom, e.g., the importance of setting a quit date. Our material, therefore, is more psychologically detailed than those used in previous studies (e.g., Aveyard et al., 2003; Lennox et al., 2001).

The process of producing tailored feedback materials is based on analysis of information provided by the smoker, and follows the typical counseling type approach of assessment, data processing, and feedback to the client. Thus, it is important that tailored feedback materials incorporate the counseling principles of consistency, empathy, non-judgmental counseling, and reflective listening. To ensure that the style and content of the materials incorporated these major factors and implied a credible and trusting relationship, the materials were formatted to resemble a personal letter rather than a promotional leaflet, with the title “Personal Quit Advisor” and an email address.

**Focus Groups**

Theoretical sampling, (Kitzinger, 1995) in which participants are selected to represent a range of the study population, was used to recruit smokers from different socioeconomic backgrounds in the general population. The purpose of the discussions was to explore the suitability of the materials for individuals from different educational and social backgrounds, and also to explore perceptions of both generic self-help material and tailored feedback, and how it could be improved. The homogeneity of the group was important to encourage free-flowing exchange of views and to prevent any feeling of inhibition and discomfort in the group arising from disparate socioeconomic levels in the discussion of reading level. To achieve this and to encourage more vocal expression from smokers from all backgrounds, we split groups according to educational level and sex. Participants and groups were, therefore, typical of the levels of literacy rather than representative of the whole population.

A semi-structured interview guide led from the general to the specific, addressing attitude and response to health messages in general, participants’ perception of, and attitude to, the tailored feedback, their understanding of the purpose and content of the letter, and reaction to receiving the letter. Information regarding
intentions to quit and to use the self-help material were implicitly elicited. Perceptions of the assessment tool (a 35-item self-completion questionnaire) were also explored.

All participants were sent examples of different versions of the three-page feedback letter before coming to the group. On arrival, they were given 10 minutes to peruse a selection of generic self-help booklets (e.g., *The Quit Guide to Stopping Smoking* produced by the charity QUIT, and *Smoking and How to Give Up* produced by the British Heart Foundation, 2003) before the discussion began. During the discussion, participants were also given the opportunity to look through the assessment instrument, and complete it if they wished.

Four focus groups were conducted, with a total of 19 participants, recruited either from the control group of a pilot study (Gilbert, Nazareth, & Sutton, 2007) or from the general population by a professional recruiter. The groups were held in the Medical School at the Royal Free Hospital, each lasting approximately 90 minutes, and, with the participants’ permission, were audio-recorded. Participants received an incentive payment of £30. The groups were split by gender and by highest qualification. Groups 1 and 3 were female; Groups 2 and 4 male. Participants in Groups 1 and 2 were all in non-manual or professional occupations, and participants in Groups 3 and 4 were in manual or non-professional non-manual occupations. They ranged from those who had recently quit, were planning to try to quit in the near future, to those who had no interest in quitting (Table 1).

**Data Analysis**

The group discussions were transcribed, identifying each participant and linking them to their smoking status. Analysis of the data was based on the framework system (Ritchie & Spencer, 1994), a content analysis method rooted in *a priori* determination of categories and themes, appropriate to this study where the aim was to obtain specific information to make recommendations and decisions about the design of an intervention. The transcripts were first read for general impressions, then content analyzed to identify the themes and key points relating to the research question. Important issues emerging from the discussions were merged with previously developed categories. The data was systematically mapped onto the thematic framework developed with the aid of charts and spreadsheets.

**Results**

The findings from the groups are summarized under topic guide headings. Some emerging themes from the group discussions are also included (Table 2).
Table 1

Participant Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>5</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Age</td>
<td>39</td>
<td>26</td>
<td>30</td>
<td>26</td>
</tr>
<tr>
<td>Qualifications</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;=GCSE</td>
<td>6</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>=&gt;A level</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-manual</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Manual</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean age completed education</td>
<td>32</td>
<td>21</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Smoking habits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily smoker</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Current smoker</td>
<td>3(^a)</td>
<td>3</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Planning to quit</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>No. of cigarettes per day</td>
<td>20</td>
<td>8</td>
<td>13</td>
<td>15</td>
</tr>
</tbody>
</table>

\(^a\)Two participants in this group had recently quit.

Media Publicity and Generic Leaflets

Thoughts on advertising and media revealed a general feeling permeating all groups that the media are saturated with information about quitting. While there was a recognition that media and publicity can raise awareness, and advertisements may “hit the spot,” comments displayed aversion to the scare tactics utilized in the media, and suggested that smokers will simply “switch the channel over” or “use the remote.” However, participants understood the generic nature of the material, emphasizing the necessity for more relevant information and a more personal approach addressing individual needs, and endorsing the need for the development of individually tailored material (Box 1).
Table 2

<table>
<thead>
<tr>
<th>A priori categories from interview guide</th>
<th>Themes emerging from the discussions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media and generic leaflets</td>
<td>Counseling principles</td>
</tr>
<tr>
<td>Computer-tailored feedback:</td>
<td>Source of advice</td>
</tr>
<tr>
<td>Concept</td>
<td>Motivation</td>
</tr>
<tr>
<td>Content</td>
<td></td>
</tr>
<tr>
<td>Interactive elements</td>
<td></td>
</tr>
<tr>
<td>Assessment instrument</td>
<td></td>
</tr>
</tbody>
</table>

Box 1

These things always, they’re scaremongering you into it. The fear factor. Scare tactics aren’t going to make me quit, it will make me want a fag. (Group 4 smoker)

For example, if it was me and I gave the details of my lifestyle then someone could say right your lifestyle and you smoking this amount it is going to mean that this is most likely to happen to you. If you stopped, you could go this far. If it was something like that, obviously that is more personal. You cannot just do that in a leaflet. I think what you could do is look through these and pluck out what is beneficial and useful. A lot of stuff I don’t think is necessary here. (Group 2 smoker)

Computer-tailored Feedback Letter

*Concept.* Many participants found the principle of tailoring—that of using and repeating information given—acceptable, recognizing that the material was intended for one individual, pinpointing particular characteristics relevant to that individual. The majority of participants agreed that it provided a strong reassurance of support, they liked the concept of personalization and acknowledged the impact of a letter that reflected their answers. Most also appreciated the use of counseling principles in the method. “The way it uses information and repeats the information that people have written down” was seen as “quite a positive thing.”
However, while acknowledging the importance of personal support, some participants, notably men, were ambivalent about how helpful it would be, and demonstrated a lack of understanding of the counseling process. They displayed antipathy toward the process of reflective feedback, together with criticism of the use of a computer program to produce the material (Box 2).

<table>
<thead>
<tr>
<th>Box 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, if I had got one of these, something tailored to what I said on my questionnaire, I would have been quite pleased, something just for me and to have it set out quite clearly with the exercises at the end. I would have liked that, I would have done it. It is better when things are made easier for you. I think that was a really good idea. <em>(Group 1 ex-smoker)</em></td>
</tr>
<tr>
<td>They are actually bothering with me and, because I have sent in the questionnaire, you actually want me to. You know what I mean, I think it is pretty good. <em>(Group 4 smoker)</em></td>
</tr>
<tr>
<td>I think that the concept is right. I would be pleased to receive a letter which reflected what I had said in a questionnaire. I wouldn’t be hugely energised or enthused by this, I would be pleased that it was supportive, but it would not really help. <em>(Group 2 smoker)</em></td>
</tr>
<tr>
<td>It tells you quite a lot of the stuff that you have already put on the questionnaire prior to it. It goes over it, like “you said your reason for quitting was for health reasons” and then later on “you see yourself addicted to smoking,” “you are worried about gaining weight if you stop smoking.” All these things don’t really need to be repeated. <em>(Group 2 smoker)</em></td>
</tr>
<tr>
<td>Why are you telling me what I told you. I already know what I told you, why are you telling me again. I ain’t got amnesia, see what I mean. <em>(Group 4 smoker)</em></td>
</tr>
</tbody>
</table>

*Content.* Questions to elicit criticism and suggestions for improvement prompted a common theme addressing the amount of negative information in the material. Participants complained that there was too much factual information of a negative nature, wanting more positive feedback, and more about the benefits of quitting. Nevertheless, while insisting that “we already know the dangers,” comments confirmed a lack of awareness of some of the health risks, and an indication that additional health information might promote further thought about quitting.

One participant insisted that a warmer approach is needed, and illustrated how some smokers have insight into the need to feel good about themselves. They
appreciate the involvement of the individual in the counseling process and want help to feel more confident and empowered to continue.

Participants were positive about the use of visual aids in the feedback and indicated that they could see how it could help and encourage reflection, although again, some expressed ambivalence about whether use would be made of them (Box 3).

Box 3

— it is full of too many paragraphs of factual information, or debatably factual information. It’s negative, it’s poking and prodding and pushing you, . . . . (Group 1 smoker)

You know, once I have written a questionnaire saying I am giving up, I am giving up for health reasons, I don’t really need to be told that smoking is dangerous for me. (Group 2 smoker)

The bit about the smoking causes tooth loss and ulcers and lung cancer, I didn’t know it caused the other cancers.—I didn’t know it causes ulcers. It is actually very good. (Group 3 smoker)

You need to start saying to people, you are strong enough, you can beat it. You need to sit down and tell people that you are strong enough. Giving people power in their heads. There is information I like in it, but I just think that the whole thing, on a whole, isn’t very warm. So if every morning I said to you “yes it’s alright mate, it’s another day. Every morning your tar rate is going down—feel better if you didn’t smoke a cigarette,” you would try it for a whole day. (Group 4 smoker)

If you’re writing it registers more in your head instead of just thinking it. Yes it does actually make sense. If I read that “I want to quit because” you’d think I don’t know. But then if I wrote it down there I’m gonna have to think why I want to quit, I have to think of something and then you do think. (Group 4 smoker)

Some people are list makers and some people aren’t. There would be some people who would quite like to make use of these things, but I am not particularly a list maker so I wouldn’t. (Group 2 smoker)

Assessment Instrument and Method of Recruitment

It is believed that a good assessment tool alone can promote thought and awareness, and prompt action. This was confirmed in remarks that the questionnaire contained “really good” and “really interesting” questions. One participant
who “would rather die than give up smoking” admitted that the assessment prompted thoughts of quitting. Comments also showed that smokers made a connection between answering the questions and “working it out for themselves,” thus promoting the effort and determination needed in quitting. However, for some, the questionnaire was seen merely as a survey tool, as “filling in another form” (Box 4).

Box 4

—because I was thinking about quitting and just thought I should and didn’t really know why. . . . I had not really thought about it before in detail. Looking at this made me analyse it and really identify why it was that I wanted to quit. So for me, it was great. I had a reason then for giving up. I did after that. (Group 1 ex-smoker)

Something that makes you think, you can relate it to yourself, now I can think about this. It gets my attention. Bits of this are beginning to—I am almost on the verge of saying “I am thinking about giving up.” (Group 1 smoker)

I should have to think of an answer, because I’m supposed to want to quit smoking. (Group 4 smoker)

Some concerns were raised over the method of recruitment and the voice behind the feedback letter. Participants were worried about receiving unsolicited mail from a stranger and also questioned the credibility and authenticity of the source of the feedback. A view of the medical profession as “information givers” and “experts” was evident, and indicated that a communication would be acceptable coming from their GP, adding to its credibility (Box 5).

Box 5

That’s like a cold call. Isn’t that a bit offensive though. I would be thinking what is my doctor doing giving out that information. If it came out of the blue I would worry. If my doctor handed it to me, yes. If it is coming from your doctor it is not like he is telling anybody else. If I was asked by the doctor, I would do it. (Group 3 dialogue)

The letter doesn’t actually feel very personal. The logo, Personal Quit Advice. I presume you do actually have a personal quit advisor, a named person. (Group 2 smoker)
Motivation

An emerging theme in discussions and one that participants kept returning to was the question of motivation. Participants generally agreed that self-help material “is aimed at people who are thinking about quitting.” For these materials to be of any use, one would need the initial motivation. However, it was agreed that while there is a need for motivation from within, a combination of events can prompt smokers to want to quit. Advertising media and health messages in the form of tailored feedback can promote awareness and encourage movement toward quitting. However, a catalyst is needed to prompt the decision to quit. There are, nevertheless, smokers still wanting and expecting a magic bullet, not appreciating the need for some effort and determination, but looking for an outside agent, unable to see how tailored feedback “would physically be able to stop me just from reading it” (Box 6).

Box 6

I only looked at the literature because I knew I wanted to give up. I made that decision beforehand so it wasn’t as if I came across it and thought it would be a great idea. (Group 1 ex-smoker)

You can’t help people that aren’t willing to help themselves. It has got to be 1% the support network and 99% you for it to happen. (Group 4 dialogue)

One day you just don’t want to smoke any more, it just clicks in your head. (Group 4 smoker)

Everyone I have ever asked has said the same thing, “I woke up one day and decided to quit.” (Group 1 smoker)

Discussion

Previous studies have examined the effect of computer-tailored feedback for smoking cessation, suggesting a small but useful effect on quit rates (Lancaster & Stead, 2005). However, studies are not comparable in terms of the content of the intervention and little is known about the public perception of individually tailored self-help materials. The aim of this study was to explore the perception, in smokers in the general population, of a version of computer-tailored feedback for smoking cessation, in preparation for a large-scale trial of effectiveness (Gilbert et al., 2008). While the concept of individualizing printed self-help feed-
back material for help with quitting smoking was, on the whole, positively accepted, several critical themes emerged from the discussions.

Although there was a degree of consensus, attitudes seemed to be a function of readiness to quit, and perceptions of the feedback were influenced by the smoking status of the participant. The view that smokers would only complete the questionnaire if they were ready and interested in quitting was pervasive. However, results from a pilot study suggest that smokers low on readiness to quit can be engaged in this assessment and intervention (Gilbert et al., 2007). Information about the health risks is intended to motivate these smokers low on readiness toward quit attempts. Nevertheless, most participants held the view that negative health information was unnecessary. Evidence that while personalized information can increase intentions, negative information can have the opposite effect (Berry, Michas, & Bersellini, 2003) suggests the need to assess the balance of negative health facts and positive encouragement. Social cognitive theory (Bandura, 1986) proposes that behavior change is a result of positive expectations of the outcomes of the change, plus a positive expectation of one’s ability to succeed. Thus, framing information about the health risks in more positive terms, i.e., as the benefits of quitting, and empowering the smoker by encouraging a deeper ownership of their own health and offering knowledge about how to change their behavior, may be more appropriate in motivating smokers to attempt to quit and achieving a more successful outcome.

The system of computer-tailored feedback combines self-help with the approach used in intensive counseling, and in doing so utilizes the principles of reflective listening, using repetition of what the client has said, and providing personalized feedback based on analysis of information provided. The method is dependent on acceptance by the recipient of the similarity with the counseling process, and criticism of the reflective nature of the feedback showed that expectations and attitudes to quitting can influence this acceptance. In addition, an essential element of tailored feedback is that the source, or “voice,” behind the letter, must have perceived credibility. The expertise and professionalism of the person or team behind the communication must be apparent; anonymity may undermine the credibility of the advice.

Just as differences in smoking status can influence the perception and acceptability of the feedback, individual differences and expectations can also affect the perception of the material. Person variables, for example depression, anxiety, and cognitive style, can interact with the advice given to produce outcomes other than the ones intended (Abrams, Mills, & Bulger, 1999), and these variables, as well as lifestyle factors, could be used to enhance the content and individual relevance of the material. However, good psychometric properties necessitate long assessment instruments, and additional personality and lifestyle assessments would result in an unacceptably long questionnaire. Difficulties arise when brief versions are used for tailored communications, producing “inherently less reliable and valid”
instruments, with “less sensitivity, specificity and predictive validity,” resulting in mismatched tailored messages because of error variance or noise (Herzog, Abrams, Emmons, Linnan, & Shadel, 1999). Thus, a compromise must be made between the inclusion of such measures and an assessment instrument of acceptable length.

Focus groups, with their advantages of group dynamics and interactions, can provide a climate conducive to the generation of ideas and discussion of issues. Grouping participants according to their gender and socioeconomic background, intended to provide a safe environment to express views and prevent feelings of inhibition, was appropriate for the purpose of obtaining views on the readability of the material (Gilbert, Sutton, & Nazareth, 2009). An alternative group composition based on readiness to quit could have served the same purpose in groups with smokers in different stages of readiness. Nevertheless, these benefits to participants can also be a limitation of research. Views expressed can be biased by the group process, and discussions dominated by stronger members of the group, those with different opinions deferring to others. Other limitations of this research include the small size of the groups, and while this research gives an insight into the perceptions and attitudes of smokers towards individualized printed self-help material, the views expressed in these groups may not be representative of the smoking population.

Conclusion and Recommendations

Positive feedback from participants confirmed the need to continue to develop and deliver computer-tailored feedback as a smoking cessation intervention. Research is in progress to evaluate the effectiveness in changing the smoking behavior in a large population, of a system of computer-tailored feedback developed and adapted from these studies (Gilbert et al., 2008). However, more research is warranted to investigate certain aspects of the tailoring process to optimize both the content and the style of the feedback for individual perceptions and expectations. Personality variables could enhance the personal relevance of the feedback reports, and a reassessment of the balance of negative information and positive encouragement is necessary to ensure that motivation is increased without unnecessary distress. It is also important that printed feedback replicates the professionalism of a clinical setting in terms of the credibility of the source of the advice.

Smokers are a heterogeneous group in terms of personality and expectations, and this method of encouragement and advice, and the mode of delivery, is not appropriate for all. It is essential that the development and improvement of a range of interventions that appeal to different individual needs and preferences should continue in order to sustain the reduction in smoking prevalence.
Acknowledgment

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