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ORIGINAL ARTICLE

"After all – It doesn't kill you to quit smoking": An explorative analysis of the blog in a smoking cessation intervention

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Abstract

Background: A growing body of literature demonstrates internet-based smoking cessation interventions as a promising aid in helping people quit smoking. However, the underlying mechanisms of how these interventions influence the cessation process are still relatively unknown. Several studies have indicated blogging as a potential source in providing social support to users of internet-based smoking cessation interventions and thereby enhance their change of succeeding in quitting. *Objective*: The study aimed to investigate themes discussed on a blog in an internet-based smoking cessation intervention. In addition, we examined if blogging could provide social support for people in a smoking cessation process. *Method*: The study was based on messages posted from 1 January 2012 to 29 February 2012 on the blog of the internet-based smoking cessation programme DDSP, operated by the Danish Cancer Society. Messages were coded according to themes using Grounded Theory, and additionally data about bloggers were analyzed. *Result*: In total, 1663 messages were posted within the 2-month period, and we identified 16 themes. The majority of messages contained personal stories or experiences (53%), provided emotional support (34%) or congratulated other users (17%). The messages were found capable of supplying social support to members on the blog. In addition, we found that only a minority of users who viewed the blog participated actively in posting messages, and only a minority was highly active bloggers. ***Conclusions*: The blog offers a unique platform for informal conversations about quitting smoking and is important in providing social support to people in a smoking cessation process.**

Key Words: *Blog, internet-based smoking cessation intervention, smoking cessation, social forum, social media, social support*

Introduction

A growing body of literature demonstrates that internet-based smoking cessation interventions (IBSCI) can be effective in helping smokers quit smoking [1–4]. There is, however, substantial variation in quit rates [4,5] and limited documentation of which elements of IBSCI are essential in helping members to obtain cessation. Studies have suggested the 24–7 availability [6], blogging [7], interactive elements [1], video testimonies [3], mixture of digital media [8] and the possibility of tailoring the intervention to be associated with higher quit rates [5].

In 2008, an expert panel sponsored by the U.S. Public Health Service suggested social support as one of the most important components in effective smoking cessation interventions [9]. A way of integrating social support into the digital world is by adding blogs – a practice commonly used in IBSCI [4]. Blogs have been found to influence people in a smoking cessation process in several ways [10,11] mostly by fostering social support [12] and by creating self-evaluation and self-reflection [13]. Regardless of the promising results, the impact of blogging on quit rates is still relatively unknown. One study conducted as a randomized controlled trial showed no difference in quit rates between people with access to a blog and the control group [14]. In contrast, a newer study showed that blogging was associated with higher cessation rates [15].

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Figure 1. "My page" in DDSP translated into English.

IBSCI have the benefit of being able to log user activities automatically and thereby enable researchers to know exactly what information is given to a specific user at a certain point in time. One place where logging is a less efficient method is on a blog. We can log activities related to sending and reading messages but the actual content within messages has to be researched qualitatively to create insight into the exchange of information. The fact that the information is totally user-driven makes the blog an interesting study field for researchers as it displays thoughts, feelings and opinions of people in a smoking cessation process. Previous studies have suggested blogs in IBSCI to facilitate social support [7,12,15] but this study is to our knowledge the first to test this hypothesis through an explorative analysis of posted messages.

The intervention

In 2010, the Danish Cancer Society launched www.ddsp.dk – a fully automated smoking cessation intervention called Dit Digitale Stopprogram (DDSP) (Your Digital Quit Programme). The programme uses internet, e-mail and mobile phone text messaging and target smokers who are in the action phase of the smoking cessation process [16]. Theoretically, the programme is based on the Social Cognitive Theory [17], the Trans Theoretical Model of Change [16], Self-Regulation Theory [18] and Appreciative Inquiry [19]. The webpage includes: "My page", "Profile", "My quit plan", "Exercises", "Blog", "Videos", "Urgent assistance" and a "Library" (shown in Figure 1). In the previous year, 6167 members enrolled in the programme; the majority was women (60%), and the mean age of users was 40 years. Members spent on average about 6 minutes and viewed 8 pages during each visit at DDSP.

The blog on DDSP

Logging of activities among all users in DDSP shows that the blog is the most visited page in the programme. The majority of users are passively observing the blog without posting messages as only 7% of all users participate actively in posting messages. During the previous year, 6939 messages were posted by a total of 451 bloggers.

Method

Messages posted on the blog between 1 January 2012 and 29 February 2012 were collected for analysis. Coding categories were constructed using Grounded

Table I. Data on bloggers and messages derived from DDSP in the period from 1 January 2012 until 29 February 2012.

Messages (n = 1663)	
Original messages (n)	376
Reply messages (n)	1287
Reply per original messages (n)	3.4
Messages per blogger (n)	8
Bloggers (n = 206)	
Women (%)	75%
Age (mean)	43 years
Smoking time (mean)	25 years
Amount of cigarettes (mean)	19 per day
Bloggers posting less than 25 messages (%)	95 %
Bloggers posting more than 25 messages (%)	5 %

Theory [18]. Categories were discussed and adjusted by the first author (CLB), second author (PD) and third author (LSE) before and during the coding process. One author (CLB) coded all messages. To validate coding we selected a random sample of 100 messages that were coded by CLB, PD and LSE independently and subsequently checked for consistency. Inconsistent coding was discussed and resolved. A comparison between the resolved coding and coding by CLB showed an accuracy of 83% across all categories. Each message was coded according to its type (being a reply or an original message) and categorized according to its content. Messages were coded in several categories if the content covered more than one theme.

Results

Description of bloggers

Table I shows data on bloggers and messages derived from DDSP between 1 January 2012 and 29 February 2012. 1663 messages were posted by a total of 206 members of whom 75% were women. A total of 376 original and 1287 reply messages were posted, giving a mean of 3.4 replies per original message (range 1–17). Only 10% of original messages were unanswered, and even short messages created replies. The length of blogs was between 1 and 524 words and contained on average 69 words.

Of the members, 30% posted only original messages, and 16% posted only reply messages. Members of the blog had a mean age of 43 years, the youngest being 17 and the oldest 72. They had been smoking on average19 cigarettes per day (range 1–40) for a mean of 25 years (range 1–56). Members of the blog were in all stages of cessation and represented both people who considered quitting and people who had been abstinent for more than a year.

There was considerable variation in blogging activity among bloggers. The majority (n = 195) was less active and posted between 1 and 25 messages, corresponding to 53% of all messages, during the 2 months. In addition, bloggers who were highly active (n = 11) posted between 25 and 180 messages and were responsible for 47% of all posting activity. There were no major differences between highly and less active bloggers in age, gender, number of cigarettes per day, and time as a smoker.

Themes presented on the blog

We identified 17 different themes within the 1663 messages (Table II). On average, each message was coded in 2 categories, ranging from 1 to 7. Original messages contained most words and covered on average 2.7 different themes, whereas reply messages were shorter and covered only an average of 1.9 themes. The majority of original messages covered "Personal stories and experiences" (95%), "Achievement stories" (33%) and "The wish to quit" (27%). In contrast, the majority of reply messages covered "Giving emotional support or encouragement" (44%), "Personal stories and experiences" (41%), and "Congratulations" (23%).

Main themes

Personal stories and experiences (53%)

The theme "Personal stories and experiences" was present in the majority of messages and covered personal narratives about quitting. Messages within this theme contained both practical and emotional experiences. For instance:

> Today was my first smokefree day and it was quite easy. I felt the urge to smoke at times, but it's mostly the thought of not being "allowed" to smoke. I went to the gym and by then I already felt better.

Other themes were often presented in the form of a personal story. Hence, few messages were exclusively dealing with this theme.

Giving emotional support or encouragement (34%)

The "Giving emotional support or encouragement" theme was represented in 44% of all reply messages but in only 3% of original messages. The messages expressed sympathy and were written in an empathic tone, such as:

Table II. Occurrences of themes in all messages on the blog of DDSP during 1 January 2012 to 29 February 2012.

Themes	All messages (%)	Original messages (%)	Reply messages (%)	Written by women (%)
Personal stories and experiences	53	95	41	81
Giving emotional support or encouragement	34	3	44	83
Congratulations	17	1	23	77
Giving cessation advice or providing coping mechanisms	13	8	15	79
Benefits of not smoking	12	17	11	74
Achievement stories	10	33	3	76
Helping devices	9	14	8	85
Thank you replies	9	4	10	80
The wish to quit	9	27	3	84
Disadvantages of quitting	9	18	6	89
Craving and smoking cues	6	16	4	80
Attitude towards quitting	6	3	7	71
Relapse or lapse	4	10	3	78
Comments on DDSP	4	5	4	78
Relationship to smokers	3	6	3	89
Commonplace remarks or corrections	3	2	3	79
Asking for emotional support or help	3	9	1	93

> I want to tell you to hang in there. You have to stay brave and stubborn. It can be tough at times, but there is hope for the future. It's a difficult task to break the old habit and it takes time.

The form was appreciative and had an "encouraging" tone. The support was given to people who expressed obstacles in quitting or as an appreciation for those who had experienced achievement.

Congratulations (17%)

Congratulating others was done almost exclusively in reply messages and was usually a response to those who had experienced achievement of some sort. A typical message read:

> I want to congratulate you on being smoke free for ten days; it is a major achievement reaching this point.

These messages where often short and given as a combination of achievement recognition and a personal comment, such as "I look forward to reaching the same place" or "I remember how it felt getting that far".

Giving cessation advice or providing coping mechanisms (13%)

Blogs that expressed troubles in quitting generated responses on how to handle the quit. These responses were mostly advice on how to mentally approach obstacles or they provided coping mechanisms of a more practical character, such as recommending an NRT product. One message read:

> Just some good advice: I use nicotine spray when I experience craving. I started to work out, and knitting to keep my fingers activated. These things make me think less of smoking.

Advice was mostly given by sharing personal experiences and techniques, and only a few referred to professional guidelines offered by professionals such as nurses, doctors or health institutions.

Benefits of not smoking (12%)

The "benefits of not smoking" theme covered positive experiences after quitting. These positive outcomes could be both physical and mental. A message read:

> I love being able to breathe without coughing. My skin is by far better looking and the girls now notice me. The best thing is that I'm no longer a slave of nicotine. As William Wallace from the film Braveheart would have put it: Freedom!

The majority of messages about benefits also treated the theme of "Achievements" or "Giving emotional support or encouragement".

Achievement stories (10%)

The theme about achievements represented a range of different achievements and a description of the benefits obtained. Some were smaller, like succeeding in attending completing a party without smoking, and some were larger celebrations of being smoke free for 6 months:

> I've been smoke free for 6 months! I've saved 4000 Danish kroner (≈US$670). I put the money aside for a motorcycle trip. I rarely think about smoking. After all – it doesn't kill you to quit smoking.

Focus on achievements was mainly on being able to control the situation and on telling a success story.

NRT and help devices (10%)

The majority (70%) of messages concerning help devices mentioned products containing nicotine. The messages were typically a recommendation of a particular product. A comment about the nicotine product Quikmist read:

> I've bought the new Quikmist and find it effective. It really takes away the severe craving. I would rather use it than relapsing.

Additional treatments that were mentioned were: Champix, alternative medicine, books and internet pages.

Thank you replies (9%)

"Thank you replies" were responses to people who had provided support or given feedback. It was common for authors of an original message to return to the blog to express gratitude for the replies they received. For instance:

> Thank you for your lovely and wise reflections – that was exactly what I needed.

If the original message had dealt with the challenges of quitting the "Thank you reply" usually contained an updated status of the situation and a presentation of the coping mechanisms used.

The wish to quit (9%)

Themes dealing with the "The wish to quit" was posted by both quitters and bloggers who wanted to quit. The messages contained their expectations and hope of success, for instance:

> I am among those who are trying to gain the courage to quit. Why am I postponing it? Please somebody tell me off – I have to get started. But I am so afraid of failing.

The wish to quit was usually expressed alongside a description of motivators for quitting. The most commonly mentioned motivators were the wish to "be free from cigarettes" or "to stop having a bad conscience because of smoking". Few comments containing this theme mentioned smoking-related diseases as a motivator for quitting.

Disadvantages of quitting (9%)

Messages about "Disadvantages of quitting" focused on barriers to quitting and were mainly related to withdrawal symptoms. A message read:

> I've experienced a down. I could all of a sudden start crying. I didn't want to get up in the morning. I couldn't find joy in anything. My family have put up with quite a lot.

The theme of disadvantages was often mentioned in combination with a desire to quit, or stories were told of ups and downs during cessation.

Remaining themes included: "Craving and smoking cues" (6%), "Attitude towards quitting" (6%), "Relapse or lapse" (4%), "Comments on DDSP" (4%), "Relationship to smokers" (3%) and "Asking for emotional support or help" (3%).

The blog displayed both ups and downs, but focused mainly on the positive aspects of cessation. The overall impression was that the tone in messages where empathic, supportive and appreciative. The representation of people in different phases of cessation formed a group with different perspectives and experiences and a sense of caring between those who had achieved cessation for a long time and those in the start of quitting.

Discussion

The main findings can be summarized as follows:

- The majority of messages told a personal story, provided emotional support, encouraged or congratulated.
- Messages shared the characteristic of being highly empathic, personal, supportive and appreciative.
- The highly including atmosphere allowed smokers at all stages of cessation to express emotions and experiences relating to quitting.
- The blog constitutes the most visited site of the program; however, only a minority of users are active in posting messages.

Social support on the blog

The American psychologist Sheldon Cohen defines different types of social support – two of which are relevant in relation to the results from this study. The first is *emotional support*, that is the "expressions of sympathy, caring, reassurance, and trust and the

provision of opportunities for emotional expressions and venting" [12]. The second is *informational support*, that is, the "provision of relevant information intended to help the individual cope with current difficulties typically in the form of advice or guidance" [12]. We identified social support on the blog to be mainly "emotional support" provided through messages that gave emotional support, encouraged or congratulated. In addition, "informational support" was provided through messages that shared experiences, gave cessation advice or provided coping mechanisms.

Inclusion and personal affiliation strengthen the feeling of belonging to a group [10]. Therefore, the social support, whether being emotional or informational, is strengthened by the strong sense of community between members. In addition, the sense of being recognized for an accomplishment can heighten the self-efficacy and self-competence of members and, thereby, increase their chance of quitting [10]. This assistance is important, as previous studies have linked the presence of social support to likelihood of succeeding in quitting [10,12].

Diversity in a social forum

Different approaches have been taken to increase connections and activities on blogs in IBSCI, for example: separate forums for people in a specific phase of cessation [7], one-to-one contact between members, user-initiated groups, and buddy list to keep track of friends [13]. In this study, we found diversity between members to foster a broad range of available role models that created both upward and downward social comparison [20]. Members who are initiating cessation can be inspired and motivated by stories and encouragement given by successful quitters (upward social comparison). On the other hand, members who are successful in quitting are reminded of how it felt being in the very start of cessation and are, thereby, strengthening their wish to stay abstinent (downward social comparison). This approach that includes smokers from all phases of cessation is supported by previous studies that suggest a "diffusion of cessation" within groups of people. For example, Westmaas and colleagues suggest that the presence of former smokers in a network influences the dissemination of knowledge on how to quit and, thereby, facilitates cessation within the network [10]. Christakis and Fowler found that groups of connected people quit in concert, and that a number of non-smokers in a network improves the chance of beginning cessation [21]. In addition, the broad representation seems to be preferred by users, as forums separated according to different stages in the cessation process have only limited participation [7].

The majority of members on the blog were women. This reflects an unequal gender distribution generally found on smoking cessation blogs and in IBSCI in general [13]. In addition, previous studies have found gender differences in the content that is being posted on online interactions [7] and in the way social support influences cessation [10]. One study found women to be more inclined than men to provide emotional support, whereas men mostly seek and provide practical information [7]. The low representation of men in IBSCI and suggestions on how to enhance their participation on a blog should be investigated further.

Active versus passive use of a blog

Pattern of use of DDSP supports findings from studies of activities in smoking cessation forums; only a minority of users participates actively in blogging, even though many users passively observe interactions [13,15,22]. No studies have investigated this phenomenon in isolation, but few have suggested possible consequences of active versus passive use of a blog.

Cobb and colleagues showed increased cessation rates among bloggers who were highly active and shared a dense connection to a social network for smoking cessation compared to people who were weakly connected and interacted less [13]. In addition, Schwarzer and Satow found the amount of activity on a blog to be associated with higher quit rates [15]. The display of personal experiences shows that blogs is used as a platform for self-reflection and evaluation of actions and thoughts during cessation. This "personal translucence" can be achieved only by actively posting personal messages [23].

However, passive observation of social forums has also been suggested to increase the chances of quitting, as viewing a blog might convey a feeling of getting emotional support in spite of not actually receiving or sending personal messages [10]. This might explain why several studies have found that most people view the blog without actively participating [7,11,13,14,21]. The spread of lurking behaviour could indicate that users perceive the blog as a place that influence them in their process of quitting.

Limitations

The representation of different users of DDSP varies considerably over time due to the relatively low number of active bloggers and external events such as campaigns. Consequently, the composition of bloggers in different phases of cessation and will

vary over time meaning that the data from this study may not represent blog content in general. This study does, however, have a number of strengths. The collection of data from a blog offers a unique possibility for scientist to observe interactions between members incognito. The forum represents a broad variation of comments, streams of thought, experiences and considerations exchanged between anonymous individuals and constitutes an interesting insight into how social support is provided through a blog in an IBSCI. Further study is needed to link blogging activity to cessation status and to investigate how passive versus active participation influence cessation.

Conclusion

This study showed that the blog in an IBSCI can provide social support for people in a smoking cessation process mainly through personal stories, emotional support, encouragement and congratulations.

Conflicts of interest

The authors declare that there is no conflict of interest.

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