RESEARCH NOTE

The identification of framed messages in the New York State Smokers’ Quitline materials

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Abstract

Research suggests that smoking cessation messages are most persuasive when framed in terms of the benefits achieved from quitting (i.e. gain-framed) than when framed in terms of the costs of not quitting (i.e. loss-framed). It is unknown, however, if these findings about optimal message frames have been translated into public health practice. The current study examined message framing in telephone counseling sessions with smokers calling the New York State Smokers’ Quitline (NYSSQ). We conducted a content analysis of all NYSSQ print material and 12 Quitline service calls. Two independent raters coded each message within these documents as being gain-framed, loss-framed or non-framed. Messages from the service calls also were coded for their function (e.g. information provision, information gathering). Interrater reliability was acceptable (kappa > 0.80). Of the 997 print messages evaluated, 21.6% were gain-framed, 13.8% were loss-framed and 64.6% were non-framed. For the service calls, only the messages with an information provision function included framed content. Of the 420 information provision messages, 10.2% were gain-framed, 1.7% were loss-framed and 88.1% were non-framed. The loss-framed and non-framed messages indicate missed opportunities for providing gain-framed messages within the Quitline services, thus emphasizing a possible gap between research and practice.

Introduction

For almost two decades, researchers have examined the effectiveness of gain- and loss-framed messages for persuading health behavior change. Indeed, individuals respond differently to factually equivalent information depending on whether it is framed in terms of costs (loss-framed) or benefits (gain-framed). According to the framing postulate of prospect theory [1], people are more apt to take risks when considering the potential negative consequences (or losses) associated with a choice. Conversely, people tend to avoid risk when considering the benefits (or gains) associated with a decision. Applying these framing postulates to the health promotion domain, Rothman and Salovey [2] proposed that (i) loss-framed messages emphasizing costs persuade individuals to engage in behaviors that are inherently risky, given their potential to indicate the presence of disease (e.g. detection behaviors such as mammography screening) and (ii) gain-framed messages emphasizing benefits convince individuals to engage in behaviors that are not accompanied by risk or uncertainty (e.g. prevention behaviors such as sunscreen use). According to this
hypothesis, because smoking cessation is a prevention behavior with a fairly certain outcome (i.e. quitting smoking is associated with preventing health problems), smoking cessation messages should be maximally persuasive when framed in terms of the benefits of quitting (gain-framed).

A growing body of evidence supports this hypothesis. Providing smokers with gain-framed smoking cessation messages in brochures resulted in somewhat stronger intentions to quit than brochures containing loss-framed messages [3]. Participants who received video-based gain-framed messages were more likely to acknowledge the benefits of quitting, to have greater self-efficacy for quitting and to reduce the amount they smoked 30 days after the intervention, compared with participants who received loss-framed messages [4]. Most recently, we conducted a clinical trial examining the effectiveness of a message framing, video and print intervention paired with sustained-release bupropion for smoking cessation. Among participants who completed the trial, continuous abstinence from smoking was higher in the gain-framed versus the loss-framed group [5].

With accumulating evidence demonstrating a consistent advantage for gain-framed smoking cessation messages, the purpose of this study was to examine whether these findings are influencing public health practice. In a scientific culture where basic and clinical research is emphasized and readily funded, the knowledge resulting from research unfortunately often fails to be integrated into practice [6]. The current study describes message framing in telephone counseling sessions with smokers calling the New York State Smokers’ Quitline (NYSSQ).

Methods

The data source

The framed content of the smoking cessation print messages and telephone counseling sessions delivered by the NYSSQ was examined. Staffed by trained information specialists and accessed by calling a toll-free number, the NYSSQ provides support to smokers and their family and friends [7]. Callers receive telephone counseling and print materials encouraging cessation. Callers who meet eligibility criteria can also receive a free, 2-week supply of nicotine replacement therapy (patches, lozenges or gum). The NYSSQ is one of the busiest state quitlines in the United States, receiving close to 5000 calls per week and has established research infrastructure, which permits studies such as the one described in this paper to be conducted. This study was approved by the Institutional Review Boards of the Yale University School of Medicine and the Roswell Park Cancer Institute.

The messages

The framed content of the 51 print documents available for mail distribution or by download from the NYSSQ website was examined. These materials included (i) standard information (e.g. general smoking cessation information, nicotine patch instructions, tips on staying smoke free and information on triggers and withdrawal; n = 8), (ii) topic-focused information (e.g. pregnancy and smoking; n = 23) and (iii) motivational information (n = 20). All callers receive copies of the standard information. Callers only receive the topic-focused and motivational information relevant to their concerns. These materials were originally created in 2000 and were revised numerous times between 2000 and 2007.

In addition, the framed content of 12 calls randomly selected from the Quitline’s secure online recording database was examined. All calls occurred between April and July 2007. Eight calls were initial intake interviews and four were 2-week follow-up calls. The intake calls lasted 25 min on average. They consisted of smoking cessation coaching and questions to determine callers’ eligibility for the free nicotine replacement medication. A different Quitline Specialist conducted each intake call. The follow-up calls were made by Quitline Specialists to ensure that callers had received the patches and to inquire about the quitting process. These
calls lasted 10 min on average, and each was conducted by a different Quitline Specialist.

Coding procedures

Each message in the print materials was identified and numbered. A message was considered to be a bulleted point or a complete sentence. The Quitline Specialists’ dialogue during the call was transcribed from the online database. Messages from the transcripts were identified and numbered; each sentence was classified as a message. Two independent raters coded all the messages as gain-, loss- or non-framed. Messages from the call transcript also were coded for one of the following functions: information provision, information-gathering, active listening, demographic or logistic questions and other. The guidelines used to code the message frame and function are provided in Table I. The purpose of coding message function was to distinguish between messages that could be framed or provided an opportunity for framing and messages that could not be framed. Information provision, information-gathering, and active listening messages represented potential opportunities for framed message content. Message function of the print materials was not coded. By design, all the print messages should have an information provision function. The raters compared the codes. Discrepancies were discussed until there was agreement; when agreement was not reached, a senior researcher with message framing expertise (AEL or BAT) resolved the discrepancy.

Analyses

Interrater reliability was assessed using kappa coefficients to control for chance agreement. Frequency statistics were calculated to determine the portion of gain-, loss- and non-framed information conveyed in the print materials and during the service calls. Frequencies also were calculated according to message function. Chi-square tests with contingency correction were conducted separately for the intake and follow-up calls to examine the variation in counseling styles across Quitline Specialists. The chi-square tests were conducted on messages with an information provision function only.

Results

Before resolving discrepancies, interrater reliability for coding message frame (kappa_{print} = 0.81; kappa_{call} = 0.94) and function (kappa_{call} = 0.85; [8]) was acceptable. As presented in Table II, of the 997 print messages evaluated, 21.6% were gain-framed, 13.8% were loss-framed and 64.6% were non-framed. Of the 1319 messages evaluated from the call transcripts, 3.3% were gain-framed, 0.5% were loss-framed and 96.1% were non-framed. When considering message function, only messages that had an information provision function included framed content. Of the information provision messages, 10.2% were gain-framed, 1.7% were loss-framed and 88.1% were non-framed.

For intake calls, the framed content of the information provision messages did vary across Quitlines Specialists ranging from 1.8% (n = 1/55) to 26.7% (n = 4/15) for gain-framed messages and 0.0% to 3.3% (n = 1/30) for loss-framed messages. For the follow-up calls, the gain-framed content ranged from 0.0% to 28.6% (n = 2/7) and the loss-framed content ranged from 0.0% to 20.0% (n = 1/5) between Quitline Specialists. These between-individual differences were not significant, Ps > 0.06.

Discussion

The content analysis of NYSSQ print materials and call transcripts revealed that callers are receiving mostly non-framed messages. Some gain-framed and a small number of loss-framed messages were intermixed amid these non-framed messages. The high percentage of non-framed messages is due largely to the emphasis on client assessment and data gathering during the telephone call and the provision of standard instructional information in the print materials. The presence of loss-framed messages and the delivery of only a few gain-framed messages highlight a discrepancy that has begun to emerge between message framing research and practice.
Table I. Message coding guidelines and sample messages

<table>
<thead>
<tr>
<th>Message frame</th>
<th>Coding guideline</th>
<th>Print</th>
<th>Call transcript</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain-framed</td>
<td>Messages emphasize (a) the benefits attained from quitting smoking (e.g., If you quit smoking, you will live longer,) or (b) the costs avoided by quitting smoking (e.g., If you quit smoking, you decrease your risk of lung cancer,)</td>
<td>When you stop [smoking], your body begins to repair itself immediately.</td>
<td>‘That’s great it sounds like you really understand all the health benefits of quitting’.</td>
</tr>
<tr>
<td>Loss-framed</td>
<td>Messages emphasize (a) the costs attained from continuing to smoke (e.g., If you continue smoking, you are more likely to die sooner,) or (b) the benefits missed by continuing to smoke (e.g., If you continue smoking, you will not have healthy lungs,)</td>
<td>Smokers are more likely to get colds and flu.</td>
<td>‘Well [all cigarettes are] bad for you. It’s just that they say that the menthol smokers tend to inhale deeper’</td>
</tr>
<tr>
<td>Non-framed</td>
<td>Messages without emphasis on the costs or benefits of quitting or failing to quit smoking.</td>
<td>The nicotine patch must always be worn on dry skin.</td>
<td>‘Our starter kit is a free four-week supply of the patches and you typically want to use them for a ballpark of eight weeks before you’re ready to go wing it on your own’.</td>
</tr>
<tr>
<td>Message function</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information provision</td>
<td>Messages in which the Quitline Specialist is providing advice, instructions or tips for quitting or using the patch.</td>
<td></td>
<td>‘Now if you work on the triggers those times of the day that you are smoking and adjust those patterns, that’s how you are going to be really successful’.</td>
</tr>
<tr>
<td>Information gathering</td>
<td>Messages with the purpose of gathering information but have potential to be followed by a framed response by the Quitline Specialist.</td>
<td></td>
<td>‘Have you ever tried to quit before?’</td>
</tr>
<tr>
<td>Active listening</td>
<td>Messages in which the Quitline Specialist acknowledges a caller’s response to an information gathering question or to an inquiry by the caller and could potentially be framed.</td>
<td></td>
<td>‘Great!’</td>
</tr>
<tr>
<td>Demographic/logistic</td>
<td>Messages with the purpose of gathering demographic information or providing information about the logistics of receiving information or patches in the mail.</td>
<td></td>
<td>‘How do you spell your last name?’</td>
</tr>
<tr>
<td>Other</td>
<td>Messages that did not fit in the other categories (e.g., messages outlining the content of the call).</td>
<td></td>
<td>‘Okay, I’m going to ask you some medical background questions’.</td>
</tr>
</tbody>
</table>
The emergence of this discrepancy is not surprising. Message framing research has only come to the forefront within the past two decades, with its application to smoking cessation only emerging in the last 10 years. Perhaps as the field of message framing research matures, its impact on practice will become more prominent. However, a watchful-waiting approach to knowledge translation is not ideal—it could take years for message framing to be integrated into smoking cessation initiatives. A better mechanism is needed to convey information to practitioners regarding promising and innovative smoking cessation practices [6].

A second reason for the gap between message framing research and practice lies in the lack of translational research. Although most of the smoking cessation and message framing studies were conducted in field settings (e.g. county fairs [3]), it is not until recently that researchers have begun to examine the utility of framed messages in situations that could translate to clinical or medical practice (e.g. a dentist’s office [9], a clinical trial in a medical setting [5]). Translational research evaluating the feasibility, efficacy and effectiveness of integrating gain-framed messages into existing smoking cessation services would provide practitioners a strong rationale for incorporating framed messages into regular practice.

Our observations from the current study suggest that appropriately framed messages could be incorporated seamlessly into regular Quitline services. The gain-framed content of NYSSQ materials could be increased by reframing non-framed messages. For example, an information provision message such as ‘Cravings are a common aspect of quitting smoking’ could be enhanced to state ‘One major challenge when quitting smoking is coping with urges, but remember having a plan to deal with these cravings will help you stay quit’. Framed content also could be increased by supplementing non-framed messages with gain-framed information. This approach allows key questions and facts that cannot be reframed to be conveyed accurately while being enhanced by gain-framed information. For example, essential information about how to use a nicotine patch cannot be reframed but could be supplemented with a gain-framed message (e.g. ‘Studies have shown that smokers who use nicotine replacement therapy are more successful in quitting smoking than smokers who do not use medications’).

Moreover, certain information-gathering and active listening statements represent unrealized opportunities for inserting gain-framed information. The information-gathering question, ‘Would you like to receive information about the brand of cigarettes that you smoke?’ could be revised to ask ‘Would you like to receive information about the brand of cigarettes you are planning to quit so that you can remind yourself of all of the chemicals you will no longer be putting in your body?’ An active listening statement (e.g. ‘Great!’) that follows a caller’s response where he or she indicated a readiness to quit now could state ‘Great! The benefits of quitting smoking begin immediately, and by quitting smoking now you are greatly reducing your risk for health problems’. Alternatively, additional information-gathering questions could be added to encourage the caller to consider quitting in a gain-frame. As such, an assessment of the benefits of

### Table II. Description of message content by message frame and function

<table>
<thead>
<tr>
<th></th>
<th>Messages count (n)</th>
<th>Gain-framed (n)</th>
<th>Loss-framed (n)</th>
<th>Non-framed (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print materials</td>
<td>997</td>
<td>21.6% (215)</td>
<td>13.8% (138)</td>
<td>64.6% (664)</td>
</tr>
<tr>
<td>Call transcripts—total</td>
<td>1319</td>
<td>3.3% (44)</td>
<td>0.5% (7)</td>
<td>96.1% (1268)</td>
</tr>
<tr>
<td>Call transcripts—message function</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information provision</td>
<td>31.8% (420)</td>
<td>10.2% (43)</td>
<td>1.7% (7)</td>
<td>88.1% (370)</td>
</tr>
<tr>
<td>Information gathering</td>
<td>28.8% (380)</td>
<td>0</td>
<td>0</td>
<td>100% (380)</td>
</tr>
<tr>
<td>Active listening</td>
<td>0.04% (51)</td>
<td>0</td>
<td>0</td>
<td>100% (51)</td>
</tr>
<tr>
<td>Demographics/logistics</td>
<td>17.2% (227)</td>
<td>0</td>
<td>0</td>
<td>100% (227)</td>
</tr>
<tr>
<td>Other</td>
<td>18.3% (241)</td>
<td>0</td>
<td>0</td>
<td>100% (241)</td>
</tr>
</tbody>
</table>

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quitting smoking could easily be inserted into the intake interview (e.g. ‘What benefits do you expect to get from quitting smoking?’).

In addition to capitalizing on opportunities to deliver gain-framed messages, loss-framed messages could be eliminated from the Quitline Specialists’ dialogue and print materials. Removing loss-framed messages from the NYSSQ print materials could be accomplished easily. A loss-framed statement (e.g. ‘If you are an average smoker you waste $42.00 a week on cigarettes’) could be rewritten in terms of gains (e.g. ‘If you quit smoking, you will save $42.00 a week’). The delivery of exclusively gain-framed and non-framed messages during telephone counseling would require ongoing staff education, training and monitoring. As the data from this study suggest that there is some variation in Quitline Specialists’ tendency to deliver framed information. Thus, some counselors may need more training than others.

The findings from the current investigation should be considered in the context of their limited generalizability. Whether the study findings generalize to other quitlines is unclear because only NYSSQ materials and transcripts were coded. However, if translation of message framing research is not occurring at the NYSSQ, which has a well-established research infrastructure, it is likely that is not happening at less research intensive quitlines. The small number of call transcripts evaluated also limits the generalizability of study findings. We only evaluated the content of Quitline Specialists’ dialogue. We were unable to ascertain the impact of gain-framed information on the frame of callers’ responses and questions. Finally, research is yet to identify an optimal amount of framed information necessary to elicit behavior change. As a result, we cannot determine whether some of the Quitline Specialists are meeting the optimal threshold for gain-framed message content. However, with emerging research suggesting that multiple doses of framed information with a high proportion of gain-framed messages are best [10], it likely that the NYSSQ would benefit from increasing the gain-framed content in their print materials and telephone counseling.

Despite these limitations, the apparent need for translational message framing research and the suggestion that gain-framing messages can be implemented seamlessly at a smoking quitline together have provided impetus for further investigation. For example, we currently are conducting a study to test the effectiveness of a training program to facilitate the delivery of gain-framed messages by Quitline Specialists. Twenty-eight NYSSQ Specialists have been trained to deliver exclusively gain-framed messages in their counseling. Also, all the NYSSQ print materials have been reframed to include gain-framed and non-framed messages only. Findings from this randomized controlled evaluation of gain-framed NYSSQ services are forthcoming.

**Funding**

National Institutes of Health grants (K12-DA000167, R21-CA127818) and by a contract from the New York State Department of Health.

**Acknowledgements**

The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute on Drug Abuse, the National Cancer Institute, or the National Institutes of Health.

**Conflict of interest statement**

None declared.

**References**

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Received on October 14, 2008; accepted on July 9, 2009