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Characteristics of Narrative Interventions and Health Effects: A Review of the Content, Form, and Context of Narratives in Health-related Narrative Persuasion Research

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Abstract

In recent years, many studies have been conducted on persuasive effects of narratives in a health context. A striking feature of this research area is the diversity of the narratives that are used in the various studies. Narratives that convey a health message differ widely on a large number of dimensions related to the content, form and context. We expect that these characteristics are potential explanatory factors in the effectiveness of the narratives. To provide an overview of the different characteristics of narratives in health effects research and of the persuasive effects that were found, we review 153 experimental studies on health-related narrative persuasion with a focus on the narrative stimuli. The results show that: a) with regard to the content, showing the healthy behavior in a narrative (as opposed to the unhealthy behavior with negative consequences) may be associated with effects on intention. Narratives that contain high emotional content are more often shown to have effects. b) With regard to the form, for print narratives, a first-person perspective is a promising characteristic in light of effectiveness. c) With regard to the context, an overtly persuasive presentation format does not seem to inhibit narrative persuasion. And d) other characteristics, like character similarity or the presentation medium of the narrative, do not seem to be promising characteristics for producing health effects. In addition, fruitful areas for further research can be found in the familiarity of the setting and the way a health message is embedded in the narrative. Because of the diversity of narrative characteristics and effects that were found, continued research effort is warranted on which characteristics lead to effects. The present review provides an overview of the evidence for persuasive narrative characteristics so far.

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Highlights

- Health-related narrative persuasion studies show a wide variety of narrative materials in terms of content, form and context.
- As a content characteristic, showing the healthy behavior in the narrative seems to be associated with effects on intention.
- A promising form characteristic of print narratives is the use of a first-person perspective.
- An overtly persuasive context does not necessarily preclude narrative effects in a health context.
- The diversity of narrative characteristics and effects invites continued research on health-related narrative persuasion.

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Narratives are increasingly used in health communication to reach public health goals, such as promoting behaviors that are aimed at the prevention and detection of illnesses (Frank, Murphy, Chatterjee, Moran, & Baezconde-Garbanati, 2015; Thompson & Kreuter, 2014). For instance, narratives, in which experiences of characters are presented, have been developed to promote health behaviors as diverse as smoking cessation (Houston et al., 2011), breast cancer screening (Kreuter et al., 2008), and HIV prevention (Berkley-Patton, Goggin, Liston, Bradley-Ewing, & Neville, 2009). Research has shown that narratives can serve as effective health interventions. Compared to other types of messages, some narratives are able to create story-consistent beliefs and attitudes, increase behavioral intentions, and stimulate healthy behaviors (e.g., Dillard, Fagerlin, Dal Cin, Zikmund-Fisher, & Ubel, 2010; Falzon, Radel, Cantor, & d'Arripe-Longueville, 2015; Lemal & Van den Bulck, 2010). However, not all research shows effects of narratives. Some narratives are found not to be powerful enough to create an effect on determinants of health behavior (e.g., Greene, Campo, & Banerjee, 2010; Dunlop, Wakefield, & Kashima, 2010; Nyhan, Reifler, Richey, & Freed, 2014). Meta-analytic studies show that narratives have small effects on persuasive outcomes overall, but significant variation in these narrative effects is also detected (Braddock & Dillard, in press; Shen, Sheer, & Li, 2015; Zebregs, Van den Putte, Neijens, & De Graaf, 2015). These findings suggest that even though narratives can serve as a promising health communication tool, not all narratives are effective. Thus, it becomes an important question which narratives are used in this research area and which are the active ingredients of these narratives (cf. Green, 2008).

When surveying the area of health-related narrative persuasion research, it becomes apparent that the narrative materials that were used differ widely on a large number of dimensions. For instance, on one hand, Dillard et al. (2010) used a print narrative about a person who decides to have a colonoscopy after having thought about the pros and cons. On the other hand, Dunlop et al. (2010) used a narrative of video stills with a voice-over about a woman who experiences negative consequences of smoking. These narratives differ in the type of behavior that they show (the promoted, healthy behavior vs. the discouraged, unhealthy behavior) and the presentation medium of the narrative (print vs. audio-visual), among other

differences. Because differences such as these are substantial, we expect that they can be important for explaining the contradictory results that were found for the effectiveness of narratives (cf. Shaffer & Zikmund-Fisher, 2013). Addressing these differences may shed light on why certain studies have found persuasive effects and others have not. In addition, when such differences are not controlled, they might constitute threats to the internal validity of research findings. To control for them, a systematic review is necessary. This study reviews the existing research on health-related narrative persuasion with a focus on the narrative materials. It provides an overview of the different characteristics of narratives in health effects research and of the persuasive effects that were found.

Definition of Narrative

To delineate the research field, it is important to start with a definition of the key term: narrative. Several scholars who study narrative effects give different definitions, but most scholars agree that the definition of narrative includes at least one character, who experiences at least one event (Bal, 1997; Green, 2006; Kreuter et al., 2007; McDonald, 2014; Rimmon-Kenan, 2002). A character is an agent who is human or human-like in that they act with intentions to achieve goals (Bal, 1997, Rimmon-Kenan, 2002). An event is a transition from one state to another temporally and causally connected state (Bal, 1997; McDonald, 2014). Most narratives consist of multiple events that are also connected in such a sequential, causal way. The term causal here refers not only to causality in a strictly necessary way (e.g., Mary released the breaks of the car on top of the hill and thus it started rolling down), but also to reasons for events (e.g., Mary was mad at her friend and thus she started spreading rumors about her). Although events may be presented in a non-chronological order, the underlying structure is one of cause and effect or action and reaction, that connects the narrative events and characters in a story structure (Green, 2006; Rimmon-Kenan, 2002).

As narratives present characters experiencing events, they are set in a spatiotemporal framework (Herman, 2009; McDonald, 2014). The events take place at a certain time and place, also called the setting. These elements (i.e. characters, events, space and time) make narratives

specific and concrete. Narratives are about particular instances occurring to a specific person or persons in a certain setting. The focus on specific instances contrasts to, for instance, scientific explanations that give information on how the world tends to be, based on multiple instances and persons (Bruner, 1986; Herman, 2009). The presentation of individual cases of something that happened to certain characters in a certain situation (e.g., Sarah, aged 16, was vaccinated against HPV yesterday), is what sets narratives apart from other types of messages. Non-narrative messages like informational or statistical texts present more general information that is abstracted from multiple cases (e.g., 60% of girls between 14-18 have been vaccinated against HPV). Based on these considerations, the definition of narrative that is used in this review is: A presentation of concrete event(s) experienced by specific character(s) in a setting.

Previous Reviews

Several previous reviews on narrative effects have shown that narratives can be effective in entertainment-education (Shen & Han, 2014) and persuasive contexts (Zebregs et al., 2015), providing valuable insight into the overall strength of narrative effects. However, these reviews have not distinguished between different types of narratives based on their characteristics, which is what this review sets out to add to the research field. Shen and Han (2014) meta-analyzed 22 studies on entertainment-education. They found that entertainment-education narratives had a small but significant effect on persuasion. Shen et al. (2015) assessed 25 studies comparing narrative to non-narrative messages. They found a small but significant effect of narrative, and identified the type of advocated behavior as a moderator. Narratives had effects for prevention and detection behaviors, but not for cessation behaviors (e.g., quitting smoking). We propose that, in addition to the type of behavior, characteristics of the narrative itself can also be factors responsible for variation in research results, and such knowledge on features of effective narratives should enable us to offer guidance for message design and production in health interventions and campaigns.

Zebregs et al. (2015) included 15 studies that tested persuasive effects of narrative versus statistical texts.

Their results indicated that there was a difference in effects on beliefs and attitudes on one hand, and effects on intentions on the other, in that statistics were more effective for beliefs and attitudes, whereas narratives were more effective for intention. In contrast, Braddock and Dillard (in press) selected for their meta-analysis 74 studies that compared narratives to a control condition that included no (relevant) message. Their results showed that, compared to a zero-effect baseline, narrative had effects on story-consistent beliefs, attitudes and intentions. However, they also found indications for significant variation in the effects that were not due to the tested moderators: fictionality and medium. Therefore, they urged researchers to look for other moderators.

Other reviews have focused on the association of narrative engagement (Tukachinsky & Tokunaga, 2013) and transportation into a narrative world (Van Laer, De Ruyter, Visconti, & Wetzels, 2014) with narrative effects. Tukachinsky and Tokunaga (2013) concluded on the basis of 45 studies that engagement with the narrative and its characters was positively related to attitudes and intentions implied by the narrative. Van Laer et al. (2014) showed that the specific type of engagement with a story conceptualized as transportation, or the extent to which a story recipient imaginatively enters the story world, predicted beliefs, attitudes and intentions. Thus, the link between narrative engagement and persuasion has been firmly established by previous reviews. Therefore, we will include results on engagement variables in our review, but these will not be our primary focus. The emphasis of the present review is on narrative characteristics. We will do a systematic review of all relevant studies in order to give a complete overview of the narratives that have been used in research on narrative health communication, that can serve as a starting point for further research.

Narrative Characteristics

In studies on health-related narrative persuasion, different types of narratives have been used. For instance, some studies have used narratives that mainly consist of positive events experienced by characters (e.g., Falzon et al., 2015; Lu, 2013), whereas other studies have used stories that focus on negative events for characters (e.g., De Wit, Das, & Vet, 2008; Dunlop et al., 2010). As another

example, a narrative can be told from different perspectives (Bal, 1997). In prior research, both first-person narratives, in which someone tells what happened to him- or herself (e.g., De Wit et al., 2008; Falzon et al., 2015), and third-person stories, in which a narrator tells about events that happened to someone else (e.g., Dunlop et al., 2010; Gray & Harrington, 2011), have been used. Since messages that differ on these sorts of characteristics still present specific cases of what happened to characters, they all fall under the definition of narrative. However, they exhibit such variety that their persuasive impact may depend on their specific characteristics.

Narrative characteristics can vary along different dimensions. A fundamental distinction lies in the content and form of the narrative (see Bal, 1997; Rimmon-Kenan, 2002). Main elements of the content are the characters, events, and setting that are presented in the story. For instance, characters can be more or less similar to the target recipients and events can differ in their valence (Shaffer & Zikmund-Fisher, 2013). The form refers to the way the content is presented in the narrative. For instance, the view the reader is given on the story content can vary between different perspectives; and the events can either be presented chronologically or non-chronologically (Brewer & Liechtenstein, 1982). An additional dimension relevant to health-related narrative persuasion research is the context of the presentation of the narrative. For instance, the context of a narrative can consist of an entertainment format. In such a context, the reader is generally unaware that the narrative has a persuasive intention (Slater & Rouner, 2002). The context of a narrative can also consist of an advertisement or a health education brochure (e.g., Chang, 2008; Dillard et al., 2010), in which the persuasive intent is more explicit. These dimensions of narrative content, form and context are presented in [Table 1](#) together with examples of characteristics. These dimensions will guide the review of narrative characteristics carried out in this paper.

As [Table 1](#) shows, some of the characteristics are specific to narrative in that they are irrelevant to other text types. These characteristics are tied to the definition of narrative, with its characters, events and setting. Perspective for instance refers to the point of view from which the narrative events are presented (Bal, 1997). Other characteristics are non-specific to narratives and are present in other text types as well. For instance, the valence

of a text, or whether the presented information is predominantly positive or negative, can differ in narratives as well as in other text types like informational or argumentative texts (Updegraff & Rothman, 2013).

The present review will explore the characteristics of narrative stimuli in existing health-related narrative persuasion research as potential explanatory factors of their effectiveness. In this context, effectiveness refers to changes in story-consistent beliefs, attitudes, intentions, and behavior that are directed at the physical and mental health of a person. Of course, narrative characteristics are not the only factors that play a role in the effectiveness of a story. This process is also influenced by characteristics of the recipient and the situation in which the recipient is exposed to the narrative (Bilandzic & Busselle, 2013; Green & Brock, 2002). Research has shown that recipient factors can increase engagement and effectiveness, like transportability or the propensity to become engaged in narratives (Dal Cin, Zanna, & Fong, 2004), prior knowledge (Green, 2004), and need for affect (Appel & Richter, 2010). In addition, factors in the situation can distract the recipient and decrease engagement, like carrying out an added secondary task (De Graaf, Hoeken, Sanders, & Beentjes, 2009; Green & Brock, 2000) or being exposed to noise in the environment (Zwarun & Hall, 2012). Most likely, the full process of persuasion is determined by a joint function of narrative, recipient and situational factors. However, we isolate the narrative factor in this equation to achieve optimal clarity. In this way, we attempt to identify promising characteristics that seem to make narratives more effective in a health context.

Method

Search Strategy

We systematically searched for studies that tested the persuasive effects of narratives. The databases Communication and Mass Media Complete, PsycINFO, and MEDLINE were consulted. We used key terms related to the independent variable of narrative and synonyms such as story, testimonial, exemplar, and anecdote*. These were paired with search terms related to the dependent variable persuasion such as persuas*, belief, attitude, and

intention. This search resulted in a list of possibly relevant journal publications, conference papers and dissertations. In addition, prior review articles (e.g., Tukachinsky & Tokunaga, 2013; Van Laer et al., 2014) and central empirical articles were consulted for relevant references (e.g., Moyer-Gusé & Nabi, 2010; Murphy, Frank, Chatterjee, & Baezconde-Garbanati, 2013). Finally, we searched for articles that included references to central theoretical and empirical articles (e.g., Braverman, 2008; Green, 2006).

Selection Criteria

From the search results, we selected studies for inclusion in the systematic review on the basis of several criteria. First, the study had to include participants who were exposed to a narrative. This criterion means that at least a part of the participants had to read, view or listen to a representation of events happening to specific character(s), thus including textual, as well as audio or audiovisual narratives. However, we excluded studies on interactive narratives (e.g., Downs, Murray, de Bruin, Penrose, Palmgren, & Fischhoff, 2004), because in these studies the narrative elements presented to the participants were not stable within conditions. Second, the study had to measure persuasive effects of being exposed to the narrative. Persuasive effects could be effects on beliefs, attitudes, intentions or actual behaviors. Beliefs included different perceptions that persons can have about the real world, such as risk perceptions, beliefs in benefits of the health behavior, or self-efficacy. Third, the study had to address a health topic. Health was defined broadly, as any topic relating to the physical and psychological well-being of a person. Included topics could also concern the health of another person as the recipient, such as organ donation, or decisions for others (e.g., whether to vaccinate a child). Fourth, the study had to have a (quasi-) experimental design. Thus, the study exposed different groups of participants to different conditions, so that conclusions could be drawn about effects. Fifth, the study had to be published since the year 2000. This criterion was based on the publication of the founding article that coined the term *narrative persuasion*, by Green and Brock (2000). This article provided the impetus for the research field of this review. Finally, the study had to use either college-aged participants or older. Studies with children of high-school age or younger were excluded because they are still de-

veloping their cognitive skills (Strasburger, Wilson, & Jordan, 2014). Therefore, narrative effects on children may be different and should be studied separately.

Applying the selection criteria to the papers found in the database search resulted in a total of 141 papers that reported 153 (quasi-)experimental studies in which participants were exposed to a narrative and health-related effects were measured (see references marked with * in reference list). When multiple articles reported on the same data, the article that reported the most relevant information was retained. When the same data were presented in both published (peer-reviewed journal articles) and unpublished reports (e.g., conference papers and dissertations), we included the published article. This selection covered a wide range of narratives from professionally produced audiovisual entertainment-education programs (e.g., Asbeek Brusse, Smit, & Neijens, 2010) to a few lines of anecdotal evidence embedded in a print advertisement (e.g., Cox & Cox, 2001). In addition, a variety of health topics and procedures were included, from mental health (e.g., Chang, 2008) to osteoporosis (e.g., Volkman & Parrott, 2012), and from influenza vaccination (e.g., Prati, Pietrantonio, & Zani, 2012) to HIV/Aids prevention (e.g., Igartua, Cheng, & Lopes, 2003). Finally, many different target groups were studied. Both student samples with a relatively high level of education (e.g., Banerjee & Greene, 2012a) and specific groups with a relatively low level of education (e.g., McQueen, Kreuter, Kalesan, & Alcaraz, 2011) were targeted with the narratives. In addition, both people who were already diagnosed with a certain disease (e.g., Falzon et al., 2015) and people who were not (yet) ill (e.g., Gray & Harrington, 2011) were studied.

The selected studies had one of two different designs. Either the study compared a narrative condition to a control condition, such as a non-narrative message (e.g., Moyer-Gusé & Nabi, 2010) or a no message condition (e.g., Lapinski & Nwulu, 2008), or the study compared different versions of a narrative, in which a characteristic of the narrative or its context was manipulated (e.g., Hoeken & Sinkeldam, 2014). Some studies combined both possibilities (e.g., Keer, Van den Putte, De Wit, & Neijens, 2013). From the comparison of a narrative condition to a control condition, conclusions can be drawn about the effectiveness of the narrative used in the study. From the comparison of different versions of a narrative, conclu-

sions can be drawn about the effectiveness of the characteristic that the study manipulated. We will review both types of studies and compare results across research designs.

Review Strategy

To gain insight into the characteristics of the narrative stimuli, we reviewed the selected reports for inclusion of the materials that were used. Of 29 studies, the materials were available either in the report or in a digital appendix. In addition, materials of 23 studies could be found in other sources, like a dissertation that reported the same experiment, or the episodes of entertainment programs that were used. Of 63 studies, we located authors and contacted them to request the materials that they had used. We obtained narrative materials of 36 studies in this way. In sum, we collected 88 narratives. Some of these narratives were used in multiple studies. Thus, we could analyze the narrative materials of 91 studies (59.5% of the 153 included studies). The stimuli of the remaining 62 studies included in the review were not obtained, either because we were unable to locate the authors, or the authors did not respond or were unable to provide us with the narrative materials. For the review of the characteristics of the latter narratives, the descriptions and exemplary passages in the reports will be used.

First, we will review the studies that compared a narrative condition to a non-narrative condition (or no message control). We will analyze the characteristics of the narratives used in the studies that found an effect and the ones that have not and try to discern a pattern. If certain types of narratives produce effects more often, this would be an indication that the characteristics of these narratives are promising for persuasion in a health context. Second, we will review the studies that compared different versions of a narrative. We will identify which characteristics have been manipulated and provide an overview of which version was more effective in the different studies. If a certain version is consistently more effective, this would be an indication that this type of narrative seems persuasive. Studies that combined manipulations of the narrative and comparisons of a narrative to a control condition will be included in the review of manipulations, because narrative characteristics varied within these studies. Finally, we will draw conclusions about which characteristics

more often add to the persuasiveness of narratives and which characteristics do not, and we will identify gaps in the literature of which characteristics have not been researched enough to draw clear conclusions.

To characterize the narratives used in the studies, we will discuss the characteristics they show based on the dimensions outlined in [Table 1](#). We will provide an overview of the narrative characteristics in the studies and of the effects that were found on health-related beliefs, attitudes, intentions, and actual behavior. In this way, we aim to characterize the narratives in health-related narrative persuasion research and attempt to find patterns in the results of these studies.

Results

Comparing Narratives to Control Conditions

[Table 2](#) describes studies that have compared a narrative to a non-narrative or no message control condition (and did not include an additional manipulation within the narrative). The table lists effects that were found in these studies on persuasion (beliefs, attitudes, intentions and behavior) and engagement variables (transportation, identification and related constructs). Only direct effects are included in the table. Moderated effects (by factors like participant group) are not reported. When the study included multiple control conditions (e.g., a statistical message and a no message control), the control condition in which the least information was provided to participants was selected (e.g., no message, or a health warning without evidence), if sufficient information on this condition was provided in the report. The table shows that these studies employed a wide range of narratives, with print, audio and audiovisual narratives being represented. In the print narratives, there was generally one clear protagonist who carried out health-related actions and/or experienced health-related consequences. In the audiovisual narratives, it occurred more often that multiple characters were involved in the health-related sequence of events (e.g., discussing screening or urging others to get screened, Murphy et al., 2013). In some studies, it also occurred that participants were exposed to multiple (print or audiovisual) narratives with different protagonists (e.g.,

Jung Oh & LaRose, 2015; Shaffer, Templin, & Hulsey, 2013c). In addition, the narratives were presented in several different contexts, from advertisements in which the persuasive intent is clear to isolated texts with implicit persuasive intent. Several of the narratives in these studies produced persuasive effects on story-consistent beliefs and attitudes, intentions and/or actual behavior compared to the control group. We will discuss effects on each of these persuasive outcomes and the content, form, and context characteristics of the narratives that were used.

Beliefs and attitudes.

Approximately half of the studies that measured health-related beliefs or attitudes found an effect of the narrative on story-consistent beliefs or attitudes. Regarding the content that was presented, the narrative stimuli in these studies differed in several respects. Some of the narratives showed the character's compliance with a recommended healthy behavior, like a protagonist who decided to get screened (Dillard et al., 2010), whereas other narratives showed noncompliance with a recommendation and hence negative consequences, like a protagonist who did not get vaccinated and thus contracted hepatitis B (De Wit, Das, & Vet, 2008). In addition, some of the characters had a background similar to the target group, resulting in a familiar setting (Hernandez & Organista, 2013), whereas other characters were not matched to the recipients (Bahk, 2001). These content characteristics also varied in the studies that did not find effects on story-consistent beliefs and attitudes, giving no clear indication of promising narrative characteristics.

Regarding the form of the narratives, equal numbers of print and audiovisual narratives were used in the studies that found effects on beliefs or attitudes and the studies that did not find effects, suggesting that the presentation medium of the narrative is not related to persuasion. However, within the print narratives that produced effects on beliefs and attitudes, all were in the first-person perspective. Within the print narratives that did not find effects on beliefs and attitudes, about half used a first-person perspective, whereas the other half used a third-person perspective. Thus, although a first-person perspective does not guarantee persuasive impact, it does seem to increase the chance of effects on predictors of behavior.

In narratives presented through other media, perspec-

tive was less clear-cut. Audiovisual narratives often featured multiple characters and regular cuts in which the camera angle changes from one character to the other. Almost all audiovisual narratives employed in these studies contained multiple characters, whether they found effects on beliefs and attitudes or not. Regarding the way a message was embedded in the narrative, almost all narratives integrated the message within the causal structure of the sequence of events, regardless of effects. A few narratives also included the message in dialogue between characters (e.g., Murphy et al., 2013). These characteristics did not show enough variation to allow for inferences about a pattern with regard to their effectiveness.

Regarding the context, the narratives that produced effects on beliefs and attitudes, showed substantial differences. Some were embedded in a public service announcement, which clearly had persuasive intent (e.g., Limon & Kazoleas, 2004), whereas others were presented in an isolated way, which made persuasive intent less clear (e.g., Greene & Brinn, 2003). The finding that narratives in contexts with as well as without explicit persuasive intent produced effects, suggests that it does not matter whether the context indicates clear persuasive intent for impact on beliefs and attitudes.

Intention.

Approximately half of the studies that compared narrative to control conditions measured intentions. Several of these studies found effects of the narrative on at least one story-related intention. With regard to the content, the narratives that produced effects on intention differed in the events they present. In half of these narratives, the protagonist showed healthy behavior like exercising (Falzon et al., 2015) and in the other half, the protagonist showed unhealthy behavior like tanning (Greene & Brinn, 2003). However, when this was compared to the studies that did not find an effect on intention, only one of the narrative stimuli included a protagonist that showed healthy behavior. The other studies that did not find an effect on intention used narratives that presented unhealthy behavior. These results suggest that even though the majority of studies used narratives in which unhealthy behavior was shown (with negative consequences), the few studies in which the narratives showed healthy behavior more often found an effect on intention. Even though

negative stories can also have effects on intention, positive stories showing healthy behavior and desirable consequences seem to be associated with effects more often.

Other characteristics varied within the narratives that produced effects as well as within the narratives that did not produce effects on intention. Many studies used narratives with student protagonists when participants were students, but some studies did not (Asbeek-Brusse, et al., 2010; Dunlop, et al., 2010). Medium as well as perspective also varied, regardless of whether effects on intention were found. The context was about equally divided between overtly indicating persuasive intent (e.g., being read from a script by a health educator in Larkey & Gonzales, 2007) and not clearly indicating persuasive intent. Similar to the results for beliefs and attitudes, this indicates that context does not play a role in effects of the narrative.

Behavior.

Only five studies measured actual behavior. Two of these studies found persuasive effects of the narrative (Jung Oh & LaRose, 2015; Lemal & Van den Bulck, 2010). With regard to the content that was presented, the narrative materials that were used in these studies differed in several respects. Lemal and van den Bulck (2010) exposed participants to one narrative with a single protagonist, whereas Jung Oh and LaRose (2015) used four testimonials of different characters. In addition, the protagonist in the narrative used by Lemal and Van den Bulck showed unhealthy behavior with negative consequences, being diagnosed with skin cancer, whereas the characters in the stories of Jung Oh and LaRose showed healthy behavior with positive consequences, snacking fresh and nutritious food.

With regard to the form of the narratives, the studies that found effects on behavior both used print narratives in the first-person perspective, whereas two of the studies that did not find effects on behavior, used narratives in the third-person perspective (Greene & Brinn, 2003; Mazor, Baril, Dugan, Spencer, Burgwinkle, & Gurwitz, 2007). This result is in line with the results for beliefs and attitudes, suggesting that a first-person perspective increases the chance that persuasive effects are found. With regard to the context of the narratives, the studies that found effects differed. Jung Oh and LaRose (2015) presented the materials after giving an implementation for-

mation instruction, which clearly indicated that the narrative was intended to help you form a healthy intention, whereas Lemal and Van den Bulck (2010) presented the narrative without an overtly persuasive context. These results again indicate that both overtly persuasive and covertly persuasive narratives can have persuasive effects.

Final observations on comparing narratives to control conditions.

Only two of the studies found a negative effect of narratives in the sense that the control messages appeared more persuasive than the narrative messages. Nyhan et al. (2014) showed that a narrative text about a young child who became very ill with a measles infection (that he contracted because he was not vaccinated) increased beliefs in the side-effects of the measles vaccination. It is possible that recipients of this narrative misinterpreted the consequences presented in the narratives as resulting from the vaccination. Thrasher et al. (2012) found that cigarette label warnings in narrative form resulted in lower perceived effectiveness than cigarette label warnings in didactic form. However, this was also the only study that used a measure of perceived effectiveness instead of actual beliefs or attitudes. As single studies cannot give indications of systematic variation on their own, this finding cannot be used to infer a pattern.

With regard to the underlying process of persuasion, about a quarter of the studies included measures related to engagement with the narrative, such as transportation or identification. Most of these studies found an effect of the narrative on at least one of the measures. These studies that found effects on engagement-related variables included different content, form and contexts. Only two studies did not find differences between the narrative and the control condition, which also differed on most of the dimensions. Therefore, there was not enough systematic variation to identify a pattern in these results.

In sum, narratives can produce effects on several persuasive outcomes. The characteristics that seem promising for health-related persuasive effects are a first-person perspective and the presentation of healthy behavior. In addition, an overtly persuasive context does not seem to inhibit persuasive potential. Other characteristics, such as the matching of characters to the target group and the presentation medium of the narrative, appear to be unre-

lated to persuasive impact. However, the results also uncovered a wide variety of effects found using different narrative materials, making it hard to come to conclusions only on the basis of the analysis of studies comparing narrative to control groups. Another factor that may have influenced these results is the type of control group that was used. Some studies included a no message control group, in which participants were not exposed to any message, whereas other studies exposed participants in the control group to a non-narrative message. However, the non-narrative message may have had a persuasive effect as well (compared to no message), thus obscuring effects of the narrative and making it harder to identify which narrative characteristics are responsible for effects. Therefore, this analysis is complemented by a review of studies that manipulated narrative characteristics to provide more evidence for promising narrative characteristics.

Comparing Different Versions of Narratives: Content

Similarity.

Several studies compared versions of a narrative that differed on content characteristics like characters, events and setting. With regard to the characters, some studies tested the effects of similarity between character and recipient (see [Table 3](#)). Only two of the studies reported a higher persuasiveness for the condition with a similar participant (De Graaf, 2014; Knobloch, Zillmann, Gibson, & Karrh, 2002). Four studies found no differences between the similar and dissimilar conditions. With respect to the type of similarity that was manipulated, the studies that found effects seem to have focused more on the surroundings of the characters. De Graaf (2014) manipulated whether participants were similar in their living situation (i.e. whether they lived in student housing or not), and Knobloch et al. (2002) manipulated whether the location that characters lived in was similar to participants' living location. This tentatively suggests that similarity of the place where characters live may be most effective in increasing persuasion, whereas other aspects, such as similarity in pre-existing health beliefs between characters and recipients (Dillard & Main, 2013), seem less effective.

In contrast, two studies reported higher persuasiveness

for the condition with a dissimilar participant (Lee & Bichard, 2006; McKinley, 2010). Both these studies manipulated similarity by varying events that happened to the character. For instance, McKinley gave a description of the protagonist either as a college student who has typical college experiences or as an orphan who was raised by his older brother. This type of manipulation varied more than only character similarity, like the orphan character being more of an 'underdog', which could evoke more empathy. These additional differences may explain the findings. In sum, similarity of a character to recipients does not seem to be a very promising characteristic to increase persuasiveness of narratives. Only a character with a similar living location was found to lead to persuasive effects. This type of similarity is related to the setting of a story, suggesting that perhaps familiarity of the setting is a more promising characteristic to make a narrative more persuasive than similarity of the characters.

Framing.

Another content characteristic that was tested in several studies combined variations of the character and the sequence of events. A character was either shown carrying out the healthy behavior that was promoted by the narrative, or a character was shown carrying out the unhealthy behavior that was discouraged, thus constituting either a positive or a negative role model (Bandura, 2001). Showing the recommended or discouraged behavior was often combined with the outcomes of these actions in that positive role models experienced positive consequences of their healthy behavior, whereas negative role models experienced negative consequences of their unhealthy behavior. These variations were contrasted in studies that used a manipulation of gain vs. loss framing. This type of manipulation has been used extensively in studies about non-narrative health messages, in which a gain frame focuses on the benefits of engaging in a recommended behavior, whereas a loss frame focuses on the disadvantages of not engaging in this behavior (Updegraff & Rothman, 2013). Several studies have now also investigated gain and loss frames in narratives (see [Table 4](#)).

The results of the studies that compared a narrative that showed healthy behavior to a narrative that showed unhealthy behavior, were mixed. On one hand, Cox and Cox (2001) compared a narrative in which the protagonist

lived to see her grandchild grow up because she had an annual mammogram, to a narrative in which the protagonist may die because she did not have an annual mammogram. They found that the loss frame led to more positive attitudes towards the recommended behavior (mammography) than the gain frame. On the other hand, Gray and Harrington (2011) compared a story in which exercising regularly led to positive consequences, to a story in which not exercising regularly led to negative consequences. Their results showed that the gain-framed narrative produced a more positive intention to exercise. Even studies with similar topics showed opposite results, as Wirtz and Kulpavaropas (2014) also used narratives to promote physical activity, but found that the loss frame was more persuasive than the gain frame, in contrast to the results of Gray and Harrington (2011) who addressed the similar topic of exercising.

The lack of evidence for an advantage of either the gain or loss framed narratives contrasts to the results of the studies that compared narrative to control conditions, which suggested that showing the healthy behavior had a higher chance to produce effects. However, this result was specifically found for effects on intention. In the studies comparing gain and loss frames, intentions also seem to be influenced by gain frames more often. Perhaps showing the healthy behavior is a promising characteristic to increase intentions towards the behavior, but not to increase effectiveness on other outcome measures, such as beliefs and attitudes.

Emotional outcomes.

With regard to the sequence of events, the type of outcomes that were presented in the narrative could also play a role in narrative persuasion. Different studies tested the effects of different outcomes, but they had in common that they were related to the level of emotion that was expressed by the narrative. For instance, two studies compared actual outcomes to imagined outcomes (Appel & Richter, 2010; So & Nabi, 2013), with actual outcomes assumed to be more emotional than imagined outcomes. Therefore, they were termed high vs. low emotional (see Table 5). Results showed that in three studies, high emotional stories were more effective. The narrative materials in these studies expressed emotions by describing emotional outcomes of health behaviors by characters.

For instance, Keer et al. (2013) found that including affective outcomes in a narrative increased persuasiveness compared to including instrumental outcomes in the narrative. On the other hand, the strategy of describing actual outcomes versus imagined outcomes did not affect narrative engagement or persuasive effects. Thus, it seems that descriptions of emotional experiences may be a promising characteristic to increase persuasiveness, whereas it matters less whether outcomes are described as actual or imagined.

Final observations on content.

A final content characteristic that was manipulated in multiple studies was the level of responsibility the character had for their own health. The character could either be presented as being highly responsible for their own health status by deliberate actions, or as having low responsibility by having been influenced by factors out of their control, like government policies (see Table 6). Some studies found that the cause presented in the story had an effect on the belief about the cause of the health issue in general. For instance, Boiarsky, Rouner, and Long (2013) found that a protagonist who took personal responsibility for her illness led to higher individual cause beliefs for the illness in general. Niederdeppe, Kim, Lundell, Fazili, and Frazier (2012) showed that a narrative with a protagonist who held the community responsible for her health produced higher societal cause beliefs. However, several other studies found no effects on causal beliefs of a responsibility manipulation, or further attitudes and intentions. Only Jansen, Croonen, and de Stadler (2005) found an effect of an exemplar who had low responsibility for contracting HIV on the attitude towards supporting people with HIV. This finding could be related to the fact that Jansen et al.'s narrative was focused on the unhealthy behavior of contracting HIV, whereas for instance Niederdeppe, Shapiro, Kim, Bartolo, and Porticella (2014)'s narrative was focused on the healthy behavior of losing weight. In sum, the narrative characteristic of the level of character responsibility does not seem to have a consistent association to persuasiveness.

Several other studies manipulated characteristics of the content, but these differed too much to review them systematically and find patterns in results. For instance, Chung and Slater (2013) varied whether a character was

a member of a highly stigmatized group or not, whereas Hoeken and Sinkeldam (2014, Study 1) manipulated the likability of a character. Even though both are characteristics of the narrative characters, they cannot be meaningfully compared (see the references for a full list of the reports that were included in the review, marked with *). In addition, several studies addressed the effect of different distributions of multiple narratives. For instance, Ubel, Jepson, and Baron (2001) varied the number of testimonials from patients who had benefitted from a treatment versus those who had not. However, since this is not a characteristic of a narrative but of a combination of narratives, these manipulations are beyond the scope of this review. We will next turn to the effects of form characteristics of narratives.

Comparing Different Versions of Narratives: Form

Medium.

An important aspect of the form of a narrative is the medium through which it is presented. Some studies compared different media within an experiment (see Table 7). Braverman (2008) compared printed narrative texts to audio versions of the same texts in three studies and found no differences between these media. Other studies found no differences between video and printed versions of narratives either on persuasive outcomes or on engagement variables. These studies included both videos that presented the same text as the printed version spoken by actors (e.g., Winterbottom, Bekker, Conner, & Mooney, 2012) and videos that used drama formats in which the narrative events were acted out (e.g., Luna Nevarez, 2013). These results indicate that medium is not likely to be a narrative characteristic that consistently influences persuasive effects.

Perspective.

A form characteristic that could be important for narrative persuasion by print narratives is the perspective through which the narrative is told. Only four studies compared narratives in different perspectives in a health-related context (see Table 8). One of the studies found

increased persuasiveness of a first-person narrative compared to a third-person version (Nan, Dahlstrom, Richards, & Rangarajan, 2015) and another of a second-person narrative compared to a third-person version (Houska, 2010). These results suggest that a third-person perspective has a lower chance to produce effects. However, there were no differences between the first- and third-person perspectives in another study (Meadows III, 2012), indicating that a first-person perspective does not always increase persuasive effects. This conclusion is in line with findings on the comparison between narrative to control conditions, in which first-person narratives were associated with significant effects more often, even though it did not guarantee effectiveness.

Message embedding.

The way a message was embedded in a narrative was only investigated in three studies. Quintero Johnson, Harrison, and Quick (2013) used stories about avian flu and chlamydia in which there either was a high degree of integration between the narrative and the educational content or in which there was a high degree of distance between the narrative and educational content. In the high integration conditions, the story was about a character that was afraid to be infected and went to the doctor to get checked for the disease, whereas in the low integration conditions, the story was about a character that was running late for work while hearing information about the disease. Results showed that participants in the high integration conditions recalled more health information from the story than participants in the low integration conditions. However, further persuasive outcomes were not reported. Cohen (2012) varied message implication by either adding a conclusion scene in which four characters persuaded another character to become an organ donor or not to an episode of a crime drama in which organ donation was advocated by showing the black market for organs that was fueled by the shortage of organ donors. There were no direct effects of the conclusion scene on beliefs or intentions towards organ donation. However, Moyer-Gusé, Jain, and Chung (2012) used a similar manipulation of adding an explicit persuasive appeal by an actor to the end of an episode discouraging drinking and driving and found an effect on the attitude towards this behavior. Thus, there are no consistent

indications on how a message should be embedded in a narrative.

Final observations on form.

Another form characteristic that was manipulated in a few health-related narrative persuasion studies is the use of humor. The use of humor in a narrative can be distinguished from emotional outcomes because the outcomes are part of the narrative world in that they are emotional for characters, whereas humor is mainly apparent to the recipient. Weber, Martin, and Corrigan (2006) compared a public service announcement (PSA) about organ donation that used humor to advocate signing of an organ donor card to a PSA that used a sad story to convey the same message. They found that the humorous PSA was more effective at getting recipients to sign an organ donor card than the sad PSA. However, Moyer-Gusé, Mahood, and Brookes (2011) tested the effect of a situation comedy about an unplanned pregnancy compared to the same episode with the pregnancy-related humor edited out. Results showed that intentions to engage in unprotected sex were higher when the original episode with pregnancy-related humor was viewed. Their results indicate that humor resulted in boomerang effects, since the health message implied by an unplanned pregnancy is to use protection. Thus, humor can be a risky narrative characteristic to use in conveying a health message.

Other form characteristics like the presence of music (Costabile & Terman, 2013) or of freedom threatening language (Quick, Scott & Ledbetter, 2011) were only addressed in single studies, making it impossible to review the results systematically. The final characteristic we focus on is the context in which the narrative is presented.

Comparing Different Versions of Narratives: Context

No studies consistently varied the format in which a narrative was presented between for instance an advertising context with explicit persuasive intent and an entertainment context with implicit persuasive intent. The only characteristic of the context that has been manipulated in multiple studies is the presence of an efficacy message (see Table 9). One study found that an efficacy message

in which information was given on how to perform the self-exam that was promoted by the narrative resulted in higher intentions to perform this exam (Morman, 2000). However, two other studies did not find effects of efficacy information (Kim, Bigman, Leader, Lerman, & Cappella, 2012; Knobloch-Westerwick & Sarge, 2015). Therefore, an efficacy message does not seem to be a promising way to increase persuasiveness of the narrative.

Finally, a few studies manipulated other factors in the context of a health-related narrative. For instance, some studies tested the effect of labeling the story as fictional or factual, without finding indications of persuasive effects (Caputo & Rouner, 2011; Green & Donahue, 2011). Other studies compared instructions that either encouraged participants to become engaged in the story or not, and found inconsistent effects of these manipulations (Batson, Chang, Orr, & Rowland, 2002; Carpenter, 2013). In sum, there are no systematic indications of factors in the narrative context that are associated with persuasiveness.

Conclusion and Discussion

This paper set out to review studies on health-related narrative persuasion research with a focus on the narrative stimuli to provide an overview of the different characteristics of narratives in health effects research and of the persuasive effects that were found. We looked at narrative characteristics on three levels: the content, the form and the context of the narrative. With regard to the content, the analysis of studies comparing narrative to non-narrative materials suggested that narratives that presented the healthy behavior were more often associated with effects on the intention to carry out the healthy behavior than narratives that showed the unhealthy behavior. The studies that compared narratives with a gain-frame in which the healthy behavior is presented to narratives with a loss-frame in which the unhealthy behavior is presented, also suggested that an effect on intention occurred more often for the gain frame. However, it is important to note that this pattern of results was not found for other persuasive outcomes, like beliefs and attitudes. Therefore, the suggestion that presenting the healthy behavior seems to be a promising characteristic is only given for effects on intention.

Content characteristics related to the characters, such as the number of characters and the similarity of characters to the target group, were not found to have consistent effects. The only studies that showed effects of similarity addressed similarity in the surroundings of the characters, suggesting that familiarity of the setting may be more promising than other types of similarity. However, this was based on only two studies, which makes it necessary to explore this possibility more fully in future research. Another content characteristic that seemed promising in narrative persuasion is the expression of emotions in the narrative, by emotional adjectives and descriptions. This type of content increased persuasive effects in several studies. For a final content characteristic that was manipulated in several studies, the level of responsibility of the character, the results were too inconsistent to draw clear conclusions.

With regard to the form of the narrative, a first-person perspective came across as a promising characteristic in the studies comparing narratives to non-narratives. All print narratives that produced effects on story-consistent beliefs and attitudes used a first-person perspective. Even though not all studies that compared different perspectives found an advantage of the first-person perspective, none of these studies showed an advantage of the third-person perspective. Thus, a first-person perspective seems to be a promising characteristic of print narratives with regard to persuasiveness. The form characteristic of medium did not show promise as an influential factor in whether narratives have persuasive effects or not. There were consistently no differences between narratives presented through different media, regardless of whether audiovisual narratives featured a character talking about their experiences or showed characters carrying out actions and experiencing consequences. For other form characteristics like the integration of the health message in the narrative and the use of humor, not enough evidence was yet available to identify a pattern.

Finally, with regard to the context, a notable pattern occurred. About half of the studies that found effects of a narrative compared to a non-narrative, used narratives in a clearly persuasive context like persuasive advertising or a session with a health educator. It is likely that recipients were aware of the persuasive intent of narratives in these contexts. Thus, even though it is sometimes assumed that narratives persuade because they mask per-

suasive intent (Dal Cin et al., 2004; Green & Brock, 2002), such covertness of persuasive intent does not seem to be necessary in studies on narrative health communication effects. There were also several narratives in an entertainment context that produced effects, showing that in the absence of clear persuasive intent, narratives can also be persuasive. However, when the context is overtly persuasive, narratives can also produce effects.

It is important to note that the review shows large variation in the results of health-related narrative persuasion studies. Therefore, the suggestions about promising narrative characteristics are relative rather than absolute. The characteristics of narratives, like first-person perspective and showing the healthy behavior, seem to be associated with effects more often, but they do not guarantee effectiveness. That is why this review can best be seen as a starting point for further research on this topic. More research is necessary to identify when certain characteristics are effective (e.g., in relation to the target group or the health topic of the narrative). In other words, future research should identify moderators of effects of characteristics. For instance, in research on gain and loss frames in non-narrative health messages, it has been suggested that for recipients who perceive a health behavior as risky, loss frames are more effective, whereas for recipients who perceive a health behavior as less risky, gain frames are more effective (Updegraff & Rothman, 2013). It is warranted to study this in a narrative context as well, by varying the riskiness of the promoted behavior (e.g., HIV testing as risky for people who have had unprotected sex vs. less risky for people who have not) and testing whether for people who perceive the behavior as risky, presenting the unhealthy behavior with negative consequences is more effective, and for the people who perceive the behavior as less risky, presenting the healthy behavior with positive consequences is more effective.

In addition, the results of this review show several gaps in the literature regarding health effects of narratives that should be filled with further research. With regard to the content, very few studies have investigated characteristics related to the setting of the narrative. Because the studies that found an effect of similarity of the protagonist to the recipient seemed to be related to familiarity of the setting of the narrative, this is an important characteristic to conduct further research on. With regard to the form, no studies on health-related narrative persua-

sion have compared different orders of events (chronological vs. non-chronological), even though this can influence the emotions readers feel (Brewer & Liechtenstein, 1982) and thus may be hypothesized to produce effects. The lack of research on the effects of chronological vs. non-chronological presentation is a research gap that presents an interesting avenue for further research. In addition, only some studies have been conducted that address the way a health message is embedded in a narrative. In research on non-health-related narrative persuasion, it has been shown that it is important whether the persuasive message is integrated in the causal structure of the narrative or not (Dahlstrom, 2010; 2012), showing that it is relevant to study this for health narratives as well. With regard to the context, a presentation format with different levels of persuasive intent has not been addressed in health-related narrative persuasion studies. It is important to directly compare different contexts, for instance between a narrative in an advertising context and an entertainment context, so that it can be tested whether a perception of persuasive intent has effects on engagement, resistance, and ultimately persuasive effects.

The results regarding the frame of the narrative also provide interesting avenues for further research. In analyzing the narrative materials used, it became apparent that some of the versions did not present a pure gain or loss frame, but rather showed a transition of the character from unhealthy to healthy behavior. Such a combination of frames may be especially beneficial (see Bandura, 2001). To study this possibility, research should compare a pure gain frame only showing the healthy behavior and a pure loss frame only showing the unhealthy behavior to a transitional frame in which the character shows both types of behavior. In addition, analyzing the narratives used in the studies comparing narrative to control conditions showed that some narratives presented the healthy behavior without a focus on consequences. For instance, Dillard et al. (2010) used a testimonial about a person deciding to have a colonoscopy, but did not include information on the health outcome of whether colon cancer was detected early or not. Narratives that showed the unhealthy behavior did consistently focus on negative health outcomes of this behavior. These observed differences make it interesting to study whether showing the behavior or presenting consequences is more important for narrative persuasion. With regard to the form characteristic per-

spective, the results indicate that a third-person perspective seems less likely to produce effects than both a first and a second-person perspective. It would also be interesting to compare a first-person to a second-person perspective to test which of these forms is more promising. In addition, there is limited research on the role of perspective in narratives with multiple main characters. Prior research has shown that varying the perspective in a narrative in which there are two opposing main characters has an impact on narrative persuasion in the context of social issues (De Graaf, Hoeken, Sanders, & Beentjes, 2012).

The review that has been carried out in this study has several limitations. First, several factors that may have played a role were not analyzed. For instance, we did not address whether a study was published in a peer-reviewed journal or unpublished and found in outlets like a dissertation or conference paper. We made this choice to deal with the *file drawer problem* as well as we could, which means that studies that did not find an effect are less likely to be published. By including unpublished studies, we avoid drawing too positive conclusions (i.e., publication bias), but rather give a nuanced picture of effects. In addition, factors like whether the design of the study was experimental or quasi-experimental, or whether the measures were validated were not included. Even though these factors may be an indication of quality, they also limit the evidence base, which is why we chose to provide an overview of a wide range of studies. Another limitation is that moderated effects were not included in the review. Several studies found effects of a narrative for a particular group of participants, but not for another group. However, the moderators that were tested differed too much to provide a clarifying overview. This observation is in line with the choice to not include recipient and situation factors as explanatory factors in narrative effects in this review. For instance, the exclusion of studies with children of primary or secondary school age limits our conclusions to the college-aged and older groups that we have included. On the other hand, research with college samples may have limited generalizability to adult samples as well. Therefore, future research should test interactions between narrative characteristics and other factors, like the age of the participants to gain further insight into narrative effects.

A clear limitation is the fact that effect sizes were not

statistically compared as in a meta-analysis. The aim of this review was to give a complete overview of different types of studies on health-related narrative persuasion. Studies that compared narratives to control conditions cannot be combined with studies that compared different versions of a narrative in one meta-analysis. In addition, a considerable amount of studies did not include enough information for effect size calculation, which would have severely limited the number of studies we could include in our review. However, now that promising narrative characteristics have been identified on the basis of a large base of studies, an interesting next step is to carry out a meta-analysis testing the effects of these narrative characteristics. Finally, a review largely depends on the studies it includes. Another limitation that we encountered was that a considerable amount of studies did not include the results relevant for this review. Quite some studies compared different versions of a narrative and measured persuasive outcomes, but did not include tests of the direct effects on these variables, because indirect effects were the focus of the report. The lack of information on direct effects limited the usefulness of the studies for the review

that analyzed direct effects to ensure comparability between studies. Therefore, it would be good practice to report direct effects of manipulations in an experiment in addition to indirect effects.

In conclusion, this review has shown a large amount of variation in the narratives that were used to convey a health message and the effects that were found in narrative persuasion research. Narratives as diverse as episodes of entertainment programs as well as print testimonials and stories told by a health educator in a face-to-face setting produced effects on beliefs, attitudes, intentions and even behavior of recipients. Within this diversity, certain patterns could be identified, suggesting that showing the healthy behavior and using a first-person perspective are promising narrative characteristics. In addition, the familiarity of the setting and the presentation format of the narrative are characteristics that should be investigated further. In this way, the diversity in characteristics and effects invites future research on health-related narrative persuasion. Hopefully, the present review supports a continued research effort on the role of narrative characteristics in health effects.

References

References marked with * were included in the review.

- *Aldrich, R.S. (2009). *Message strategies for suicide prevention*. Unpublished dissertation, University of Kentucky, Lexington, KY.
- *Andsager, J. L., Bemker, V., Choi, H. L., & Torwel, V. (2006). Perceived similarity of exemplar traits and behavior effects on message evaluation. *Communication Research*, 33(1), 3-18. doi: 10.1177/0093650205283099
- *Appel, M., & Richter, T. (2010). Transportation and need for affect in narrative persuasion: A mediated moderation model. *Media Psychology*, 13(2), 101-135. doi: 10.1080/15213261003799847
- *Asbeek Brusse, E., Smit, E. G., & Neijens, P. C. (2010, June). *Understanding the process of narrative persuasion in entertainment-education*. Paper presented at the annual meeting of the International Communication Association, Singapore.
- *Bagdasarov (2009). *Developing and validating a measure of cognitive complexity: The role of cognitive complexity in processing of health messages*. Unpublished dissertation, The State University of New Jersey, New Brunswick, NJ.
- *Bahk, C. M. (2001). Drench effects of media portrayal of fatal virus disease on health locus of control beliefs. *Health Communication*, 13(2), 187-204. doi: 10.1207/s15327027hc1302_4

- Bal, M. (1997). *Narratology: Introduction to the theory of narrative* (2nd ed.). Toronto: University of Toronto Press.
- Bandura, A. (2001). Social cognitive theory of mass communication. *Media Psychology, 3*(3), 265-299. doi: 10.1207/S1532785XMEP0303_03
- *Banerjee, S. C., & Greene, K. (2012a). 'I quit' versus 'I'm sorry I used': A preliminary investigation of variations in narrative ending and transportation. *Psychology & Health, 27*(11), 1308-1322. doi: 10.1080/08870446.2012.675063
- *Banerjee, S. C., & Greene, K. (2012b). Role of transportation in the persuasion process: Cognitive and affective responses to antidrug narratives. *Journal of Health Communication, 17*(5), 564-581. doi: 10.1080/10810730.2011.635779
- *Banerjee, S. C., & Greene, K. (2013). Examining narrative transportation to anti-alcohol narratives. *Journal of Substance Use, 18*(3), 196-210. doi: 10.3109/14659891.2012.661020
- *Barry, C. L., Brescoll, V. L., & Gollust, S. E. (2013). Framing childhood obesity: How individualizing the problem affects public support for prevention. *Political Psychology, 34*(3), 327-349. doi: 10.3109/14659891.2012.661020
- *Batson, C. D., Chang, J., Orr, R., & Rowland, J. (2002). Empathy, attitudes, and action: Can feeling for a member of a stigmatized group motivate one to help the group. *Personality and Social Psychology Bulletin, 28*(12), 1656-1666. doi: 10.1177/014616702237647
- Berkley-Patton, J., Goggin, K., Liston, R., Bradley-Ewing, A., & Neville, S. (2009). Adapting effective narrative-based HIV-prevention interventions to increase minorities' engagement in HIV/AIDS services. *Health Communication, 24*(3), 199-209. doi: 10.1080/10410230902804091
- *Betsch, C., Renkewitz, F., & Haase, N. (2013). Effect of narrative reports about vaccine adverse events and bias-awareness disclaimers on vaccine decisions: A simulation of an online patient social network. *Medical Decision Making, 33*(1), 14-25. doi: 10.1177/0272989x12452342
- *Betsch, C., Ulshöfer, C., Renkewitz, F., & Betsch, T. (2011). The influence of narrative v. statistical information on perceiving vaccination risks. *Medical Decision Making, 31*(5), 742-753. doi: 10.1177/0272989x11400419
- Bilandzic, H., & Busselle, R. (2013). Narrative persuasion. In J. P. Dillard & L. Shen (Eds.), *The Sage handbook of persuasion: Developments in theory and practice* (2nd ed.) (pp. 200-219). Thousand Oaks, CA: Sage.
- *Boiarsky, G., Rouner, D., & Long, M. (2013). Effects of responsibility attribution and message source on young adults' health attitudes and behaviors. *Journal of Health Communication, 18*(7), 881-894. doi: 10.1080/10810730.2012.757389
- *Boyson, A. R., Zimmerman, R. S., & Shoemaker, S. (2015). Exemplification of HAART and HIV/AIDS: A news experiment. *Health Communication, 30*(9), 901-910. doi: 10.1080/10410236.2014.903222
- Braddock, K. H., & Dillard, J. P. (in press). Meta-analytic evidence for the persuasive effect of narratives on beliefs, attitudes, intentions, and behaviors. *Communication Monographs*.
- *Braverman, J. (2008). Testimonials versus informational persuasive messages: The moderating effect of delivery mode and personal involvement. *Communication Research, 35*(5), 666-694. doi: 10.1177/0093650208321785
- *Brechman, J. (2010). *Narrative "flow": A model of narrative processing and its impact on information processing, knowledge acquisition and persuasion*. Unpublished dissertation, University of Pennsylvania, Philadelphia, PA.
- Brewer, W. F., & Lichtenstein, E. H. (1982). Stories are to entertain: A structural-affect theory of stories. *Journal of Pragmatics, 6*(5), 473-486. doi: 10.1016/0378-2166(82)90021-2
- Bruner, J. S. (1986). *Actual minds, possible worlds*. Cambridge, MA: Harvard University Press.
- *Busselle, R. W., Quintero Johnson, J. M., Yang, C., & Bilandzic, H. (2012, may). *Perceived realism and engagement as predictors of enjoyment and persuasion: The case of a medical drama program about mental illness*. Paper presented at the annual meeting of the International Communication Association, Phoenix, AZ.
- *Caputo, N. M., & Rouner, D. (2011). Narrative processing of entertainment media and mental illness stigma. *Health Communication, 26*(7), 595-604. doi: 10.1080/10410236.2011.560787
- *Carpenter, J. (2013). *Forewarning, defensive strategies and narrative persuasion*. Unpublished dissertation, University of North Carolina, Chapel Hill, NC.
- *Chang, C. (2008). Increasing mental health literacy via narrative advertising. *Journal of Health Communication, 13*(1), 37-55. doi:10.1080/10810730701807027

- *Chung, A. H., & Slater, M. D. (2013). Reducing stigma and out-group distinctions through perspective-taking in narratives. *Journal of Communication*, *63*(5), 894-911. doi: 10.1111/jcom.12050
- *Cohen, E. L. (2010). The role of message frame, perceived risk, and ambivalence in individuals' decisions to become organ donors. *Health Communication*, *25*(8), 758-769. doi: 10.1080/10410236.2010.521923
- *Cohen, E. L. (2012). *Exploring subtext processing in narrative persuasion: The role of eudaimonic entertainment use motivation and a supplemental conclusion scene*. Unpublished dissertation, Georgia State University, Atlanta, GA.
- *Coleman, R., Thorson, E., & Wilkins, L. (2011). Testing the effect of framing and sourcing in health news stories. *Journal of Health Communication*, *16*(9), 941-954. doi: 10.1080/10810730.2011.561918
- *Costabile, K. A., & Terman, A. W. (2013). Effects of film music on psychological transportation and narrative persuasion. *Basic and Applied Social Psychology*, *35*(3), 316-324. doi: 10.1080/01973533.2013.785398
- *Cox, D., & Cox, A. D. (2001). Communicating the consequences of early detection: the role of evidence and framing. *Journal of Marketing*, *65*, 91-103. doi: /10.1509/jmkg.65.3.91.18336
- Dahlstrom, M. F. (2010). The role of causality in information acceptance in narratives: An example from science communication. *Communication Research*, *37*(6), 857-875. doi: 10.1177/0093650210362683
- Dahlstrom, M. F. (2012). The persuasive influence of narrative causality: Psychological mechanism, strength in overcoming resistance, and persistence over time. *Media Psychology*, *15*(3), 303-326. doi: 10.1080/15213269.2012.702604
- *Dal Cin, S., Gibson, B., Zanna, M. P., Shumate, R., & Fong, G. T. (2007). Smoking in movies, implicit associations of smoking with the self, and intentions to smoke. *Psychological Science*, *18*(7), 559-563. doi: 10.1111/j.1467-9280.2007.01939.x
- Dal Cin, S., Zanna, M. P., & Fong, G. T. (2004). Narrative persuasion and overcoming resistance. In E. S. Knowles (Ed.), *Resistance and persuasion* (pp. 175-191). Mahwah, NJ: Erlbaum.
- *De Graaf, A. (2014). The effectiveness of adaptation of the protagonist in narrative impact: Similarity influences health beliefs through self-referencing. *Human Communication Research*, *40*(1), 73-90. doi: 10.1111/hcre.12015
- De Graaf, A., Hoeken, H., Sanders, J., & Beentjes, H. (2009). The role of dimensions of narrative engagement in narrative persuasion. *Communications*, *34*(4), 385-405. doi: 10.1515/comm.2009.024
- De Graaf, A., Hoeken, H., Sanders, J., & Beentjes, J. W. (2012). Identification as a mechanism of narrative persuasion. *Communication Research*, *39*(6), 802-823. doi: 10.1177/0093650211408594
- *De Wit, J. B., Das, E., & Vet, R. (2008). What works best: objective statistics or a personal testimonial? An assessment of the persuasive effects of different types of message evidence on risk perception. *Health Psychology*, *27*(1), 110-115. doi: 10.1037/0278-6133.27.1.110
- *Diekman, A. B., McDonald, M., & Gardner, W. L. (2000). Love means never having to be careful: The relationship between reading romance novels and safe sex behavior. *Psychology of Women Quarterly*, *24*, 179-188. doi: 10.1111/j.1471-6402.2000.tb00199.x
- *Dillard, A. J., & Main, J. L. (2013). Using a health message with a testimonial to motivate colon cancer screening associations with perceived identification and vividness. *Health Education & Behavior*, *40*(6), 673-682. doi: 10.1177/1090198112473111
- *Dillard, A. J., Fagerlin, A., Dal Cin, S., Zikmund-Fisher, B. J., & Ubel, P. A. (2010). Narratives that address affective forecasting errors reduce perceived barriers to colorectal cancer screening. *Social Science & Medicine*, *71*(1), 45-52. doi: 10.1016/j.socscimed.2010.02.038
- Downs, J. S., Murray, P. J., de Bruin, W., Penrose, J., Palmgren, C., & Fischhoff, B. (2004). Interactive video behavioral intervention to reduce adolescent females' STD risk: A randomized controlled trial. *Social Science & Medicine*, *59*(8), 1561-1572. doi: 10.1016/j.socscimed.2004.01.032
- *Dunlop, S. M., Kashima, Y., & Wakefield, M. (2010). Predictors and consequences of conversations about health promoting media messages. *Communication Monographs*, *77*(4), 518-539. doi: 10.1080/03637751.2010.502537
- *Dunlop, S. M., Wakefield, M., & Kashima, Y. (2010). Pathways to persuasion: Cognitive and experiential responses to health-promoting mass media messages. *Communication Research*, *37*(1), 133-164. doi: 10.1177/0093650209351912

- *Fagerlin, A., Wang, C., & Ubel, P. A. (2005). Reducing the influence of anecdotal reasoning on people's health care decisions: Is a picture worth a thousand statistics? *Medical Decision Making*, 25(4), 398-405. doi: 10.1177/0272989x05278931
- *Falzon, C., Radel, R., Cantor, A., & d'Arripe-Longueville, F. (2015). Understanding narrative effects in physical activity promotion: The influence of breast cancer survivor testimony on exercise beliefs, self-efficacy, and intention in breast cancer patients. *Supportive Care in Cancer*, 23(3), 761-768. doi: 10.1007/s00520-014-2422-x
- *Farrar, K. M. (2006). Sexual intercourse on television: Do safe sex messages matter? *Journal of Broadcasting & Electronic Media*, 50(4), 635-650. doi: 10.1207/s15506878jobem5004_4
- *Feeley, T. H., Marshall, H. M., & Reinhart, A. M. (2006). Reactions to narrative and statistical written messages promoting organ donation. *Communication Reports*, 19(2), 89-100. doi: 10.1080/08934210600918758
- Frank, L. B., Murphy, S. T., Chatterjee, J. S., Moran, M. B., & Baezconde-Garbanati, L. (2015). Telling stories, saving lives: Creating narrative health messages. *Health Communication*, 30(2), 154-163. doi: 10.1080/10410236.2014.974126
- *Frisby, C. M. (2006). A matter of life and death: Effects of emotional message strategies on African American women's attitudes about preventative breast cancer screenings. *Journal of Black Studies*, 37(1), 103-126. doi: 10.1177/0021934705277499
- *Gardner, E. (2010). *Ease the resistance: The role of narrative and other-referencing in attenuating psychological reactance to persuasive diabetes messages*. Unpublished dissertation, University of Missouri-Columbia, Columbia, MO.
- *Gray, J. B., & Harrington, N. G. (2011). Narrative and framing: A test of an integrated message strategy in the exercise context. *Journal of Health Communication*, 16(3), 264-281. doi: 10.1080/10810730.2010.529490
- Green, M. C. (2004). Transportation into narrative worlds: The role of prior knowledge and perceived realism. *Discourse Processes*, 38(2), 247-266. doi: 10.1207/s15326950dp3802_5
- Green, M. C. (2006). Narratives and cancer communication. *Journal of Communication*, 56(s1), S163-183. doi: 10.1111/j.1460-2466.2006.00288.x
- Green, M. C. (2008). Research challenges in narrative persuasion. *Information Design Journal*, 16(1), 47-52. doi: 10.1075/idj.16.1.07gre
- Green, M. C., & Brock, T. C. (2000). The role of transportation in the persuasiveness of public narratives. *Journal of Personality and Social Psychology*, 79(5), 701-721. doi: 10.1037//0022-3514.79.5.701
- Green, M. C., & Brock, T. C. (2002). In the mind's eye: Transportation-imagery model of narrative persuasion. In T. C. Brock, J. J. Strange & M. C. Green (Eds.), *Narrative impact: Social and cognitive foundations* (pp. 315-341). Mahwah, NJ: Erlbaum.
- *Green, M. C., & Donahue, J. K. (2011). Persistence of belief change in the face of deception: The effect of factual stories revealed to be false. *Media Psychology*, 14(3), 312-331. doi: 10.1080/15213269.2011.598050
- *Greene, K., & Brinn, L. S. (2003). Messages influencing college women's tanning bed use: statistical versus narrative evidence format and a self-assessment to increase perceived susceptibility. *Journal of Health Communication*, 8(5), 443-461. doi: 10.1080/713852118
- *Greene, K., Campo, S. & Banerjee, S. C. (2010). Comparing normative, anecdotal, and statistical risk evidence to discourage tanning bed use. *Communication Quarterly*, 58(2), 111-132. doi: 10.1080/01463371003773366
- *Hammond, D., Thrasher, J., Reid, J. L., Driezen, P., Boudreau, C., & Santillán, E. A. (2012). Perceived effectiveness of pictorial health warnings among Mexican youth and adults: A population-level intervention with potential to reduce tobacco-related inequities. *Cancer Causes & Control*, 23(1), 57-67. doi: 10.1007/s10552-012-9902-4
- *Hecht, M. L., Graham, J. W., & Elek, E. (2006). The drug resistance strategies intervention: Program effects on substance use. *Health Communication*, 20(3), 267-276. doi: 10.1207/s15327027hc2003_6
- Herman, D. (2009). *Basic elements of narrative*. Chichester, UK: Wiley.
- *Hernandez, M. Y., & Organista, K. C. (2013). Entertainment-education? A fotonovela? A new strategy to improve depression literacy and help-seeking behaviors in at-risk immigrant Latinas. *American Journal of Community Psychology*, 52(3-4), 224-235. doi: 10.1007/s10464-013-9587-1

- *Hoeken, H., & Geurts, D. (2005). The influence of exemplars in fear appeals on the perception of self-efficacy and message acceptance. *Information Design Journal+ Document Design*, 13(3), 238-248. doi: 10.1075/idjdd.13.3.09hoe
- *Hoeken, H., & Sinkeldam, J. (2014). The role of identification and perception of just outcome in evoking emotions in narrative persuasion. *Journal of Communication*, 64(5), 935-955. doi: org/10.1111/jcom.12114
- *Hopfer, S. (2009). *Culture-centric narratives as health message design strategy: Developing an HPV vaccine intervention for college-aged women*. Unpublished dissertation, The Pennsylvania State University, State College, PA.
- *Houska, J. A. (2010). *The influence of perspective and gender on the processing of narratives*. Unpublished dissertation, University of Nevada, Las Vegas, NV.
- Houston, T. K., Cherrington, A., Coley, H. L., Robinson, K. M., Trobaugh, J. A., Williams, J. H., ... & Allison, J. J. (2011). The art and science of patient storytelling—harnessing narrative communication for behavioral interventions: The ACCE project. *Journal of Health Communication*, 16(7), 686-697. doi: 10.1080/10810730.2011.551997
- *Hull, S. J. (2010). *Risky business: An examination of the relationship between message frame, risk perceptions and intentions to seek HIV-antibody testing*. Unpublished dissertation, University of Pennsylvania, Philadelphia, PA.
- *Igartua, J. J., Cheng, L., & Lopes, O. (2003). To think or not to think: Two pathways towards persuasion by short films on AIDS prevention. *Journal of Health Communication*, 8(6), 513-528. doi: 10.1080/716100420
- *Igartua, J. J., & Vega, J. (2014). Processes and mechanisms of narrative persuasion in entertainment-education interventions through audiovisual fiction: the role of identification with characters. In *Proceedings of the Second International Conference on Technological Ecosystems for Enhancing Multiculturality* (pp. 311-316).
- *Janicke, S., & Raney, A. (2012, may). *Exploring transportation, narrative persuasion, and enjoyment: effects on global attitudes and story-specific beliefs about organ donation*. Paper presented at the annual meeting of the International Communication Association, Phoenix, AZ.
- *Jansen, C., Croonen, M., & de Stadler, L. (2005). 'Take John, for instance': Effects of exemplars in public information documents on HIV/AIDS in South Africa. *Information Design Journal+ Document Design*, 13(3), 194-210. doi: 10.1075/idjdd.13.3.04jan
- *Janssen, E., van Osch, L., de Vries, H., & Lechner, L. (2013). The influence of narrative risk communication on feelings of cancer risk. *British Journal of Health Psychology*, 18(2), 407-419. doi: 10.1111/j.2044-8287.2012.02098.x
- *Jensen, J. D., Bernat, J. K., Wilson, K. M., & Goonewardene, J. (2011). The delay hypothesis: The manifestation of media effects over time. *Human Communication Research*, 37(4), 509-528. doi: 10.1111/j.1468-2958.2011.01415.x
- *Jones, R., Hoover, D. R., & Lacroix, L. J. (2013). A randomized controlled trial of soap opera videos streamed to smartphones to reduce risk of sexually transmitted human immunodeficiency virus (HIV) in young urban African American women. *Nursing Outlook*, 61(4), 205-215. doi: 10.1016/j.outlook.2013.03.006
- *Jung Oh, H., & LaRose, R. (2015). Tell me a story about healthy snacking and I will follow: Comparing the effectiveness of self-generated versus message-aided implementation intentions on promoting healthy snacking habits among college students. *Health Communication*, 30(10), 962-974. doi: 10.1080/10410236.2014.910289
- *Keer, M., van den Putte, B., de Wit, J. & Neijens, P. (2013). The effects of integrating instrumental and affective arguments in rhetorical and testimonial health messages. *Journal of Health Communication*, 18(9), 1148-1161. doi: 10.1080/10810730.2013.768730
- *Kim, H. K., Bartolo, D., & Niederdeppe, J. (2011). Exploring attributions and emotional reactions in processing narratives about obesity. *Journal of Health & Mass Communication*, 3(1-4), 170-178.
- *Kim, H. S., Bigman, C. A., Leader, A. E., Lerman, C. & Cappella, J. N. (2012). Narrative health communication and behavior change: The influence of exemplars in the news on intention to quit smoking. *Journal of Communication*, 62(3), 473-492. doi: 10.1111/j.1460-2466.2012.01644.x
- *Kim, K., Lee, M., & Macias, W. (2014). An alcohol message beneath the surface of ER: How implicit memory influences viewers' health attitudes and intentions using Entertainment-Education. *Journal of Health Communication*, 19(8), 876-892. doi: 10.1080/10810730.2013.837556

- * Knobloch-Westerwick, S., & Sarge, M. A. (2015). Impacts of exemplification and efficacy as characteristics of an online weight-loss message on selective exposure and subsequent weight-loss behavior. *Communication Research*, 42(4), 547-568. doi: 10.1177/0093650213478440
- *Knobloch, S., Zillmann, D., Gibson, R., & Karrh, J. A. (2002). Effects of salient news items on information acquisition and issue perception. *Zeitschrift für Medienpsychologie*, 14(1), 14-22. doi: 10.1026//1617-6383.14.1.14
- *Koordeman, R., Anschutz, D. J., van Baaren, R. B., & Engels, R. C. (2011). Effects of alcohol portrayals in movies on actual alcohol consumption: An observational experimental study. *Addiction*, 106(3), 547-554. doi: 10.1111/j.1360-0443.2010.03224.x
- *Kreuter, M. W., Buskirk, T. D., Holmes, K., Clark, E. M., Robinson, L., Si, X., ... & Mathews, K. (2008). What makes cancer survivor stories work? An empirical study among African American women. *Journal of Cancer Survivorship*, 2(1), 33-44.
- Kreuter, M. W., Green, M. C., Cappella, J. N., Slater, M. D., Wise, M. E., Storey, D., ... & Woolley, S. (2007). Narrative communication in cancer prevention and control: A framework to guide research and application. *Annals of Behavioral Medicine*, 33(3), 221-235. doi: 10.1007/BF02879904
- *Lapinski, M. K., & Nwulu, P. (2008). Can a short film impact HIV-related risk and stigma perceptions? Results from an experiment in Abuja, Nigeria. *Health Communication*, 23, 403-412. doi: 10.1080/10410230802342093
- *Larkey, L. K., & Gonzalez, J. (2007). Storytelling for promoting colorectal cancer prevention and early detection among Latinos. *Patient Education and Counseling*, 67, 272-278. doi:10.1016/j.pec.2007.04.003
- *Larkey, L. K., Lopez, A. M., Minnal, A., & Gonzalez, J. (2009). Storytelling for promoting colorectal cancer screening among underserved Latina women: A randomized pilot study. *Cancer Control*, 16(1), 79-87.
- *Lee, M. J., & Bichard, S. L. (2006). Effective message design targeting college students for the prevention of binge-drinking: Basing design on rebellious risk-taking tendency. *Health Communication*, 20(3), 299-308. doi: 10.1207/s15327027hc2003_9
- *Lemal, M., & Van den Bulck, J. (2010). Testing the effectiveness of a skin cancer narrative in promoting positive health behavior: A pilot study. *Preventive Medicine*, 51(2), 178-181. doi: 10.1016/j.ypmed.2010.04.019
- *Limon, M. S., & Kazoleas, D. C. (2004). A comparison of exemplar and statistical evidence in reducing counter-arguments and responses to a message. *Communication Research Reports*, 21(3), 291-298. doi: 10.1080/08824090409359991
- *Lochbuehler, K., Kleinjan, M., & Engels, R. C. (2013). Does the exposure to smoking cues in movies affect adolescents' immediate smoking behavior? *Addictive Behaviors*, 38(5), 2203-2206. doi: 10.1016/j.addbeh.2013.01.022
- *Lochbuehler, K., Peters, M., Scholte, R. H., & Engels, R. C. (2010). Effects of smoking cues in movies on immediate smoking behavior. *Nicotine & Tobacco Research*, 12(9), 913-918. doi: 10.1093/ntr/ntq115
- *Love, G. D., Mouttapa, M., & Tanjasiri, S. P. (2009). Everybody's talking: using entertainment-education video to reduce barriers to discussion of cervical cancer screening among Thai women. *Health Education Research*, 24(5), 829-838. doi: 10.1093/her/cyp019
- *Love, G.D., & Tanjasiri, S.P. (2012). Using entertainment-education to promote cervical cancer screening in Thai women. *Journal of Cancer Education*, 27, 585-590. doi: 10.1007/s13187-012-0369-5
- *Lu, A. S. (2013). An experimental test of the persuasive effect of source similarity in narrative and nonnarrative health blogs. *Journal of Medical Internet Research*, 15(7). doi: 10.2196/jmir.2386
- *Luna Nevarez, C. (2013). *Toward an understanding of multimodal narratives in marketing: A comparative analysis of videonarratives, graphic narratives and text-only narratives*. Unpublished dissertation, New Mexico State University, Las Cruces, NM.
- *Massi Lindsay, L. L., & Ah Yun, K. (2005). The relationship between narrative content variation, affective and cognitive reactions and a person's willingness to sign an organ donor card. *Communication Research Reports*, 22(4), 253-263. doi: 10.1080/00036810500317441

- *Mazor, K. M., Baril, J., Dugan, E., Spencer, F., Burgwinkle, P., & Gurwitz, J. H. (2007). Patient education about anticoagulant medication: Is narrative evidence or statistical evidence more effective? *Patient Education and Counseling*, 69(1), 145-157. doi: 10.1016/j.pec.2007.08.010
- *McCaul, K. D., Johnson, R. J., & Rothman, A. J. (2002). The effects of framing and action instructions on whether older adults obtain flu shots. *Health Psychology*, 21(6), 624. doi: /10.1037//0278-6133.21.6.624
- McDonald, D. G. (2014). Narrative research in communication: Key principles and issues. *Review of Communication Research*, 2(1), 115-132. doi: 10.12840/issn.2255-4165.2014.02.01.005
- *McKeever, R. (2015). Vicarious experience: Experimentally testing the effects of empathy for media characters with severe depression and the intervening role of perceived similarity, *Health Communication*, 30(11), 1122-1134. doi: 10.1080/10410236.2014.921969
- *McKinley, C. (2010). *Examining dimensions of character involvement as contributing factors in television viewers' binge drinking perceptions*. Unpublished dissertation, University of Arizona, Tuscon, AZ.
- *McQueen, A., Kreuter, M. W., Kalesan, B., & Alcaraz, K. I. (2011). Understanding narrative effects: The impact of breast cancer survivor stories on message processing, attitudes, and beliefs among African American women. *Health Psychology*, 30(6), 674-682. doi: 10.1037/a0025395
- *Meadows III, C.W. (2012). *The effects of narrative elements and individual attributes on transportation in health communications*. Unpublished dissertation, The University of Alabama, Tuscaloosa, AL.
- *Moran, M. B., Murphy, S. T., Frank, L., & Baezconde-Garbanati, L. (2013). The ability of narrative communication to address health-related social norms. *International Review of Social Research*, 3(2), 131-149. doi: irsr-2013-0014
- *Morgan, S. E., King, A. J., Smith, J. R., & Ivic, R. (2010). A kernel of truth? The impact of television storylines exploiting myths about organ donation on the public's willingness to donate. *Journal of Communication*, 60(4), 778-796. doi: 10.1111/j.1460-2466.2010.01523.x
- *Morman, M. T. (2000). The influence of fear appeals, message design and masculinity on men's motivation to perform the testicular self examination. *Journal of Applied Communication Research*, 28(2), 91-116. doi: 10.1080/00909880009365558
- *Moyer-Gusé, E., & Nabi, R. L. (2010). Explaining the effects of narrative in an entertainment television program: Overcoming resistance to persuasion. *Human Communication Research*, 36(1), 26-52. doi: 10.1111/j.1468-2958.2009.01367.x
- *Moyer-Gusé, E., & Nabi, R. L. (2011). Comparing the effects of entertainment and educational television programming on risky sexual behavior. *Health Communication*, 26(5), 416-426. doi: 10.1080/10410236.2011.552481
- *Moyer-Gusé, E., Chung, A. H., & Jain, P. (2011). Identification with characters and discussion of taboo topics after exposure to an entertainment narrative about sexual health. *Journal of Communication*, 61(3), 387-406. doi: 10.1111/j.1460-2466.2011.01551.x
- *Moyer-Gusé, E., Jain, P., & Chung, A. H. (2012). Reinforcement or reactance? Examining the effect of an explicit persuasive appeal following an entertainment-education narrative. *Journal of Communication*, 62(6), 1010-1027. doi: 10.1111/j.1460-2466.2012.01680.x
- *Moyer-Gusé, E., Mahood, C., & Brookes, S. (2011). Entertainment-education in the context of humor: Effects on safer sex intentions and risk perceptions. *Health Communication*, 26(8), 765-774. doi: 10.1080/10410236.2011.566832
- *Murphy, S., Frank, L.B., Chatterjee, J.S., & Baezconde-Garbanati, L. (2013). Narrative versus nonnarrative: The role of identification, transportation, and emotion in reducing health disparities. *Journal of Communication*, 63(1), 116-137. doi: 10.1111/jcom.12007
- *Nan, X., & Madden, K. (2012). HPV vaccine information in the blogosphere: How positive and negative blogs influence vaccine-related risk perceptions, attitudes, and behavioral intentions. *Journal of Health Communication*, 27(8), 829-836. doi: 10.1080/10410236.2012.661348
- *Nan, X., Dahlstrom, M. F., Richards, A., & Rangarajan, S. (2015). Influence of evidence type and narrative type on HPV risk perception and intention to obtain the HPV vaccine. *Health Communication*, 30(3), 301-308. doi: 10.1080/10410236.2014.888629

- *Neubaum, G., & Krämer, N. C. (2015). Let's blog about health! Exploring the persuasiveness of a personal HIV blog compared to an institutional HIV website. *Health Communication, 30*(9), 872-883. doi: 10.1080/10410236.2013.856742
- *Niederdeppe, J., Kim, H. K., Lundell, H., Fazili, F., & Frazier, B. (2012). Beyond counterarguing: Simple elaboration, complex integration, and counterelaboration in response to variations in narrative focus and sidedness. *Journal of Communication, 62*(5), 758-777. doi: 10.1111/j.1460-2466.2012.01671.x
- *Niederdeppe, J., Shapiro, M. A., & Porticella, N. (2011). Attributions of responsibility for obesity: Narrative communication reduces reactive counterarguing among liberals. *Human Communication Research, 37*(3), 295-323. doi: 10.1111/j.1468-2958.2011.01409
- *Niederdeppe, J., Shapiro, M. A., Kim, H. K., Bartolo, D., & Porticella, N. (2014). Narrative persuasion, causality, complex integration, and support for obesity policy. *Health Communication, 29*(5), 431-444. doi: 10.1080/10410236.2012.761805
- *Nyhan, B., Reifler, J., Richey, S., & Freed, G.L. (2014). Effective messages in vaccine promotion: A randomized trial. *Pediatrics, 133*(4), e835-842. doi: 10.1542/peds.2013-2365
- *O'Mally, A. K., & Worrell, T. R. (2014). Statistics or stories, black or white? Examining influences of African American organ donation. *Howard Journal of Communications, 25*(1), 98-114. doi: 10.1080/10646175.2014.864209
- *Peter, C., Rossmann, C., & Keyling, T. (2014). Exemplification 2.0. *Journal of Media Psychology: Theories, Methods, and Applications, 26*(1), 19-28. doi: 10.1027/1864-1105/a000103
- *Prati, G., Pietrantoni, L., & Zani, B. (2012). Influenza vaccination: The persuasiveness of messages among people aged 65 years and older. *Health Communication, 27*(5), 413-420. doi: 10.1080/10410236.2011.606523
- *Quick, B. L., Scott, A. M., & Ledbetter, A. M. (2011). A close examination of trait reactance and issue involvement as moderators of psychological reactance theory. *Journal of Health Communication, 16*(6), 660-679. doi: 10.1080/10810730.2011.551989
- *Quick, B., & Quintero Johnson, J. (2009). *An examination of character similarity and message elaboration on psychological reactance within an entertainment education (EE) context*. Paper presented at the annual meeting of the National Communication Association, Chicago, IL.
- *Quintero Johnson, J., Harrison, J.M., Quick, K., & Brian, L. (2013). Understanding the effectiveness of the entertainment-education strategy: An investigation of how audience involvement, message processing, and message design influence health information recall. *Journal of Health Communication, 18*, 160-178. doi: 10.1080/10810730.2012.688244
- *Quintiliani, L. M., & Carbone, E. T. (2005). Impact of diet-related cancer prevention messages written with cognitive and affective arguments on message characteristics, stage of change, and self-efficacy. *Journal of Nutrition Education and Behavior, 37*(1), 12-19. doi: 10.1016/s1499-4046(06)60254-6
- *Reinhart, A. M., & Anker, A. E. (2012). An exploration of transportation and psychological reactance in organ donation PSAs. *Communication Research Reports, 29*(4), 274-284. doi: 10.1080/08824096.2012.704601
- Rimmon-Kenan, S. (2002). *Narrative fiction: Contemporary poetics* (2nd ed.). New York, NY: Routledge.
- *Ritterfeld, U., & Jin, S. A. (2006). Addressing media stigma for people experiencing mental illness using an entertainment-education strategy. *Journal of Health Psychology, 11*(2), 247-267. doi: 10.1177/1359105306061185
- *Sarge, M. A., & Knobloch-Westerwick, S. (2013). Impacts of efficacy and exemplification in an online message about weight loss on weight management self-efficacy, satisfaction, and personal importance. *Journal of Health Communication, 18*(7), 827-844. doi: 10.1080/10810730.2012.757392
- *Shafer, A. (2011). *"16 and pregnant": Examining the role of transportation and persuasive intent in the effects of an entertainment-education narrative*. Unpublished dissertation, University of North Carolina, Chapel Hill, NC.
- Shaffer, V. A., & Zikmund-Fisher, B. J. (2013). All stories are not alike: A purpose-, content-, and valence-based taxonomy of patient narratives in decision aids. *Medical Decision Making, 33*(1), 4-13. doi: 10.1177/0272989X12463266
- *Shaffer, V. A., Hulsey, L., & Zikmund-Fisher, B. J. (2013a). The effects of process-focused versus experience-focused narratives in a breast cancer treatment decision task. *Patient Education and Counseling, 93*(2), 255-264. doi: 10.1016/j.pec.2013.07.013

- *Shaffer, V. A., Owens, J., & Zikmund-Fisher, B. J. (2013b). The effect of patient narratives on information search in a web-based breast cancer decision aid: An eye-tracking study. *Journal of Medical Internet Research*, *15*(12), 273-285. doi: 10.2196/jmir.2784
- *Shaffer, V. A., Templin, S., & Hulsey, L. (2013c). The effect of narrative information in a publicly available patient decision aid for early stage breast cancer. *Health Communication*, *29*(1), 64-73. doi: 10.1080/10410236.2012.717341
- Shen, F., & Han, J. (2014). Effectiveness of entertainment education in communicating health information: a systematic review. *Asian Journal of Communication*, *24*(6), 605-616. doi: 10.1080/01292986.2014.927895
- Shen, F., Sheer, V. C., & Li, R. (2015). Impact of narratives on persuasion in health communication: A meta-analysis. *Journal of Advertising*, *44*(2), 105-113.
- *Simons, J. P., & Green, M. C. (2013). Distracted by details: Narrative influence following conflicting stories. *Media Psychology*, *16*(2), 221-243. doi: 10.1080/15213269.2013.784694
- *Slater, M. D., Buller, D. B., Waters, E., Archibeque, M., & LeBlanc, M. (2003). A test of conversational and testimonial messages versus didactic presentations of nutrition information. *Journal of Nutrition Education and Behavior*, *35*(5), 255-259. doi: 10.1016/s1499-4046(06)60056-0
- Slater, M. D., & Rouner, D. (2002). Entertainment—Education and elaboration likelihood: Understanding the processing of narrative persuasion. *Communication Theory*, *12*(2), 173-191. doi: 10.1093/ct/12.2.173
- *So, J., & Nabi, R. (2013). Reduction of perceived social distance as an explanation for media's influence on personal risk perceptions: A test of the risk convergence model. *Human Communication Research*, *39*(3), 317-338. doi: 10.1111/hcre.12005
- *Stavrositu, C. D., & Kim, J. (2015). All blogs are not created equal: The role of narrative formats and user-generated comments in health prevention. *Health Communication*, *30*(5), 485-495. doi: 10.1080/10410236.2013.867296
- *Stitt, C. R. (2008). *Differences in theoretical constructs of processing health information in narrative entertainment television messages*. Unpublished dissertation, University of Arizona, Tucson, AZ.
- * Stitt, C. R., & Nabi, R. (2005, may). *The persuasive impact of narratives: A comparison across message types and modalities*. Paper presented at the annual meeting of the International Communication Association, New York, NY.
- Strasburger, V. C., Wilson, B. J., & Jordan, A. B. (2014). *Children, adolescents, and the media* (3rd ed.). Newbury Park, CA: Sage.
- *Thompson, R., & Haddock, G. (2012). Sometimes stories sell: When are narrative appeals most likely to work? *European Journal of Social Psychology*, *42*(1), 92-102. doi: 10.1002/ejsp.850
- Thompson, T., & Kreuter, M. W. (2014). Using written narratives in public health practice: A creative writing perspective. *Preventing Chronic Disease*, *11*, 1-7. doi: 10.5888/pcd11.130402
- *Thrasher, J. F., Arillo-Santillán, E., Villalobos, V., Pérez-Hernández, R., Hammond, D., Carter, J., ... & Regalado-Piñeda, J. (2012). Can pictorial warning labels on cigarette packages address smoking-related health disparities? Field experiments in Mexico to assess pictorial warning label content. *Cancer Causes & Control*, *23*(1), 69-80. doi: 10.1007/s10552-012-9899-8
- Tukachinsky, R., & Tokunaga, R. S. (2013). The effects of engagement with entertainment. *Communication Yearbook*, *37*, 287- 322.
- *Ubel, P. A., Jepson, C., & Baron, J. (2001). The inclusion of patient testimonials in decision aids effects on treatment choices. *Medical Decision Making*, *21*(1), 60-68. doi: 10.1177/0272989x0102100108
- Updegraff, J. A., & Rothman, A. J. (2013). Health message framing: Moderators, mediators, and mysteries. *Social and Personality Psychology Compass*, *7*(9), 668-679. doi: 10.1111/spc3.12056
- Van Laer, T., De Ruyter, K., Visconti, L. M., & Wetzels, M. (2014). The extended transportation-imagery model: A meta-analysis of the antecedents and consequences of consumers' narrative transportation. *Journal of Consumer Research*, *40*(5), 797-817. doi: 10.1086/673383
- *Volkman, J. E., & Parrott, R. L. (2012). Expressing emotions as evidence in osteoporosis narratives: effects on message processing and intentions. *Human Communication Research*, *38*(4), 429-458. doi: 10.1111/j.1468-2958.2012.01433.x

- *Wang, W. (2010). *An investigation of online health support groups: Effects of narrative exposure and social support on the experience of sympathy, self-disclosure and cognitive changes*. Unpublished dissertation, Pennsylvania State University, State College, PA.
- *Wang, Z., Walther, J. B., Pingree, S., & Hawkins, R. P. (2008). Health information, credibility, homophily, and influence via the Internet: Web sites versus discussion groups. *Health Communication, 23*(4), 358-368. doi: 10.1080/10410230802229738
- *Weber, K., Dillow, M. R., & Rocca, K. A. (2011). Developing and testing the anti-drinking and driving PSA. *Communication Quarterly, 59*(4), 415-427. doi: 10.1080/01463373.2011.597285
- *Weber, K., Martin, M. M., & Corrigan, M. (2006). Creating persuasive messages advocating organ donation. *Communication Quarterly, 54*(1), 67-87. doi: 10.1080/01463370500270413
- *Westerman, D., Spence, P. R., & Lin, X. (2015). Telepresence and exemplification in health messages: The relationships among spatial and social presence and exemplars and exemplification effects. *Communication Reports, 28*(2), 92-102. doi: 10.1080/08934215.2014.971838
- *Williams, J. H., Green, M. C., Kohler, C., Allison, J. J., & Houston, T. K. (2011). Stories to communicate risks about tobacco: Development of a brief scale to measure transportation into a video story—The ACCE Project. *Health Education Journal, 70*(2), 184-191. doi: 10.1177/0017896910373171
- *Wilson, K., Mills, E. J., Norman, G., & Tomlinson, G. (2005). Changing attitudes towards polio vaccination: A randomized trial of an evidence-based presentation versus a presentation from a polio survivor. *Vaccine, 23*, 3010-3015. doi: 10.1016/j.vaccine.2004.12.002
- *Winterbottom, A. E., Bekker, H. L., Conner, M., & Mooney, A. F. (2012). Patient stories about their dialysis experience biases others' choices regardless of doctor's advice: An experimental study. *Nephrology Dialysis Transplantation, 27*(1), 325-331. doi: 10.1093/ndt/gfr266
- *Wirtz, J. G., & Kulpavaropas, S. (2014). The effects of narrative and message framing on engagement and eating intention among a sample of adult Hispanics. *Journal of Nutrition Education and Behavior, 46*(5), 396-400. doi: 10.1016/j.jneb.2013.12.005
- *Wise, M., Han, J. Y., Shaw, B., McTavish, F., & Gustafson, D. H. (2008). Effects of using online narrative and didactic information on healthcare participation for breast cancer patients. *Patient Education and Counseling, 70*(3), 348-356. doi: 10.1016/j.pec.2007.11.009
- *Yoo, J. H., Kreuter, M. W., Lai, C., & Fu, Q. (2014). Understanding narrative effects: The role of discrete negative emotions on message processing and attitudes among low-income African American women. *Health Communication, 29*(5), 494-504. doi: 10.1080/1
- *Yu, N., Ahern, L. A., Connolly-Ahern, C. & Shen, F. (2010). Communicating the risks of fetal alcohol spectrum disorder: Effects of message framing and exemplification. *Health Communication, 25*(8), 692-699. doi: 10.1080/10410236.2010.521910
- Zebregs, S., van den Putte, B., Neijens, P., & de Graaf, A. (2015). The differential impact of statistical and narrative evidence on beliefs, attitude, and intention: A meta-analysis. *Health communication, 30*(3), 282-289. doi: 10.1080/10410236.2013.842528
- *Zhao, D. (2014). *Examining the Impact of Exposure to a Bipolar Disorder Storyline Using the Entertainment Overcoming Resistance Model*. Unpublished dissertation, Florida State University, Tallahassee, FL.
- Zwarun, L., & Hall, A. (2012). Narrative persuasion, transportation, and the role of need for cognition in online viewing of fantastical films. *Media Psychology, 15*(3), 327-355. doi: 10.1080/15213269.2012.700592

Tables

Table 1. Levels of narrative characteristics with examples (back to text)

	Narrative-specific	Non-specific
Content	Character similarity Familiarity of setting	Valence
Form	Perspective Order of events	Medium
Context		Presentation format

Table 2. Overview of studies that have compared a narrative to a control condition (without additional manipulations) by topic, sample, conditions that are compared, and direct effects on persuasion and engagement. (back to text)

	Topic	Sample	Conditions	Effects persuasion	Effects engagement
Asbeek Brusse, Smit, & Neijens, 2010	Hearing damage by loud music	179 undergraduate students in the Netherlands	Narrative: Internet soap in which protagonist has hearing damage from loud music Control: No message	Attitude tow. protection: Narrative > Control Intention tow. protection: Narrative > Control	
Bagdasarov, 2009	Alcohol use and lack of sleep	562 undergraduate students in US	Narrative: Texts in which protagonist gets injured from alcohol use or lack of sleep Control: Statistical text	Attitude change: Narrative = Control Intention change: Narrative = Control	
Bahk, 2001	Deadly virus	132 undergraduate students in US	Narrative: Edited version of film ‘Outbreak’ in which deadly virus spreads Control: No message	Story-consistent beliefs: Narrative > Control	
Chang, 2008	Depression	264 undergraduate students in Taiwan	Narrative: Print advertisement with a story about a day in the life of a student with depression Control: Print advertisement with arguments	Willingness to seek help: Narrative > Control	Immersion: Narrative > Control Sympathy : Narrative > Control

De Wit, Das, & Vet, 2008	Vaccination for hepatitis B	118 men who have sex with men in the Netherlands	Narrative: Health warning with narrative evidence about a man who does not get vaccinated and contracts hepatitis B Control: Health warning without evidence	Risk perception: Narrative > Control Intention: Narrative = Control	
Dillard et al., 2010	Colon cancer screening	1533 people aged 49-60 in US	Narrative: Testimonial of a person who decides to have a colonoscopy, which was embedded in an information booklet on colon cancer Control: Information booklet without testimonial	Risk perception: Narrative > Control Interest in colonoscopy: Narrative > Control	
Dunlop, Kashima, & Wakefield, 2010	Vaccination for HPV	104 female students in Australia	Narrative: Radio ad in which a woman tells about her experience with cervical cancer Control: Radio ad with advocacy	Attitude tow. vaccine: Narrative = Control Intention to vaccinate: Narrative = Control	
Dunlop, Wakefield, & Kashima, 2010, Study 1	Smoking cessation	121 adult smokers in Australia	Narrative: Video stills with voice-over telling about a woman who fails to quit smoking and suffers severe consequences Control: Voice-over presents advocacy	Intention to quit: Narrative = Control	Transportation: Narrative = Control Emotional responding: Narrative = Control
Dunlop, Wakefield, & Kashima, 2010, Study 2	Skin cancer prevention	110 undergraduate students in Australia	Narrative: Print ad copy about a woman who had a melanoma removed and the consequences Control: Print ad copy presenting advocacy	Perceived risk: Narrative = Control Intention to protect: Narrative = Control	Transportation: Narrative > Control Emotional responding: Narrative = Control
Falzon et al., 2015	Exercise	158 women with breast cancer in France	Narrative: Testimonial of a breast cancer survivor who feels better because of exercise Control: No message	Self-efficacy: Narrative > Control Exercise intention: Narrative > Control	

Feeley, Marshall, & Reinhart, 2006	Organ donation	412 undergraduate students in US	Narrative: Text in which persons who have signed an organ donor card die and save several others Control: Statistical text	Attitude towards organ donation: Narrative = Control	
Greene & Brinn, 2003	Use of tanning beds and skin cancer	141 undergraduate students in US	Narrative: Text in which protagonist regularly tans and develops skin cancer Control: No message	Less intention to tan: Narrative > Control Less tanning behavior: Narrative = Control	
Greene, Campo, & Banerjee, 2010	Use of tanning beds and skin cancer	744 undergraduate students in US	Narrative: Text in which protagonist regularly tans and develops skin cancer Control: No message	Story-consistent beliefs: Narrative = Control Less intention to tan: Narrative = Control	
Hernandez & Organista, 2013	Depression	142 Latina women in US	Narrative: Fotonovela in which a middle aged Latina mother shows symptoms and seeks treatment Control: Discussion of family communication and intergenerational relationships	Efficacy to identify: Narrative > Control Intent to seek treatment: Narrative > Control	
Jones, Hoover, & Lacroix, 2013	HIV risk reduction	238 high-risk young women in US	Narrative: Internet soap streamed to smartphones in which characters model smart choices Control: Text messages sent to smartphones	Safe sex behavior: Narrative = Control	
Jung Oh & La Rose, 2015	Healthy snacking	128 undergraduate students in US	Narrative: Print testimonials in which college students describe how they snack healthily preceded by instruction to form implementation intention Control: instruction to form implementation intention	More healthy snacking: Narrative = Control Less unhealthy snacking: Narrative > Control	Mental imagery: Narrative > Control

Lapinsky & Nwulu, 2008	HIV testing	100 people in Nigeria	Narrative: Film in which protagonist contracts HIV and suffers social consequences Control: No Message	Risk perception: Narrative = Control Intention to get HIV test: Narrative = Control	
Larkey & Gonzales, 2007	Colorectal cancer prevention and screening	64 Latinos in US	Narrative: Script told to participant by a health educator about a woman whose father gets tested Control: Participant fills out numeric risk tool	Intention to eat healthy: Narrative > Control Intention to screen: Narrative = Control	
Larkey, Lopez, Minnal, & Gonzales, 2009	Colorectal cancer prevention and screening	78 Latina women in US	Narrative: Script told to participant by a health educator about a woman whose father gets tested Control: Participant fills out numeric risk tool	Perceived risk: Narrative = Control Intention to screen: Narrative > Control	
Lemal & Van den Bulck, 2010	Skin cancer	230 undergraduate students in Belgium	Narrative: Text about a 21 year old student who had been diagnosed with skin cancer Control: No Message	Skin checking behavior: Narrative > Control	
Limon & Kazoleas, 2004	Tanning	141 undergraduate students in US	Narrative: Public service announcement (television advertisement) in which woman tells how she is dying of skin cancer Control: No message	Story-consistent attitude: Narrative > Control	
Love, Mouttapa, & Tanjasiri, 2009	Pap testing	498 Thai women in US	Narrative: Film in which a woman is urged to get a pap test after experiencing abdominal pain Control: informational handout on pap tests	Attitude tow. communicating about pap tests: Narrative > Control	
Love & Tanjasiri, 2012	Pap testing	498 Thai women in US	Narrative: Film in which a woman is urged to get a pap test after experiencing abdominal pain Control: informational handout on pap tests	Attitude towards pap testing: Narrative = Control	

Mazor et al., 2007	Anticoagulant medication adherence	317 patients receiving anti-coagulant medication in US	Narrative: Video of doctor-patient conversation in which doctor uses examples of other patients' experiences Control: No message	Story-consistent beliefs: Narrative > Control Mediation adherence: Narrative = control	
McQueen et al., 2011	Breast cancer screening	489 African American women of 40 and older in US	Narrative: Video of multiple breast cancer survivors telling about their experiences Control: Informational video	Perceived risk: Narrative = Control	Narrative engagement: Narrative > Control Identification: Narrative > Control
Moran, Murphy, Frank, & Baezconde-Garbanati, 2013	Pap testing	843 women in US	Narrative: Film of several women in a family who discuss pap testing and get tested Control: Informational video	Intention to get pap test: Narrative = Control	Identification: Narrative > Control
Moyer-Gusé & Nabi, 2010	Unplanned teen pregnancy	367 undergraduate students in US	Narrative: Edited episode of The OC in which teens struggle with unplanned pregnancy Control: Non-narrative news feature	Safe sex intention: Narrative = Control	Transportation: Narrative = Control Identification: Narrative > Control
Murphy et al., 2013	Pap testing	758 women in US	Narrative: Film of several women in a family who discuss pap testing and get tested Control: Informational video	Attitude tow. pap test: Narrative > Control Intention to get pap test: Narrative = Control	Transportation: Not reported Identification: Not reported
Neubaum & Krämer, 2015	HIV prevention	261 people in Germany	Narrative: Blog of person living with HIV Control: Informational website	Attitude tow condom use: Narrative > Control Intention to use condoms: Narrative = Control	Attention: Narrative > Control
Niederdeppe, Shapiro, & Porticella, 2011	Obesity	500 adults in shopping mall in US	Narrative: Text about young adult who faces challenges in losing weight and does not succeed Control: Summary of evidence	Societal cause beliefs: Narrative = Control Intention to exercise: Narrative = Control	

Nyhan et al., 2014	Measles vaccination	1759 parents of children no older than 17 in US	Narrative: Text about infant who almost dies because of measles Control: No message	Story-consistent beliefs: Narrative < Control Intent to vaccinate: Narrative = Control	
Prati, Pietrantoni, & Zani, 2012	Influenza vaccination	311 people of 65 and older in Italy	Narrative: Print testimonials of four persons aged 65+ about their experience with influenza Control: No message	Risk perception: Narrative > Control Vaccination intent: Narrative = Control	
Shaffer, Templin, & Hulse, 2013c	Breast cancer treatment decisions	200 women not diagnosed with breast cancer in US	Narrative: Video decision aid that included stories of 12 breast cancer survivors Control: Video decision aid without the stories	Treatment preference: Narrative = Control	
Slater, Buller, Waters, Archibeque, & LeBlanc, 2003	Healthy eating	31 adults in US	Narrative: Text in which a couple starts eating more healthily Control: Didactic message	Efficacy beliefs: Narrative = Control	
Stavrositu & Kim, 2015	Skin cancer prevention	181 people in US	Narrative: Blog in which person shares story of having been diagnosed with skin cancer (symptoms, treatment) Control: Non-narrative blog, mostly factual	Risk perception: Not reported Intention to protect: Not reported	Transportation: Narrative > Control
Thompson & Haddock, 2012, study 1	Cervical cancer	94 undergraduate students in UK	Narrative: Magazine article about a girl who dies from cervical cancer Control: Rhetorical appeal, factual information	Attitude tow. screening: Not reported	
Thompson & Haddock, 2012, study 2	Organ donation	60 undergraduate students in UK	Narrative: Text about woman who needs and then gets a lung transplant because of cystic fibrosis Control: Rhetorical appeal, factual information	Attitude tow. organ donation: Not reported	

Thrasher et al., 2012	Smoking cessation	500 adults in Mexico	Narrative: Cigarette label warning with testimonial of person suffering from adverse health effect Control: Cigarette label warning with didactic information	Perceived effectiveness: Narrative < Control	
Wang, 2010	Stress reduction	254 undergraduate students in UK	Narrative: Webpage with personal story of student who is stressed gets sick Control: Webpage with arguments about benefits of sleep	Attitude towards sleep: Narrative = Control Intention to sleep: Narrative = Control	Transportation: Narrative = Control Identification: Narrative = Control
Westerman, Spence, & Lin, 2015	Bed bugs	654 people who speak English	Narrative: News article with a first-person account of a bed-bug outbreak Control: Same news article without the first-person account	Story-consistent beliefs: Not reported Intention to protect: Not reported	Spatial presence: Narrative > Control
Williams, Green, Kohler, Allison, & Houston, 2011	Smoking cessation	163 African American smokers in a hospital in US	Narrative: Video in which African American smokers tell about their experience with quitting Control: Video with non-narrative mini-lectures about non-tobacco-related health issues	Intention to quit: Not reported	Engagement: Narrative > Control Attention: Narrative = Control
Wilson, Mills, Norman, & Tomlinson, 2005	Polio vaccination	71 medical students in US	Narrative: Oral presentation of polio survivor talking about living with the disease Control: Didactic presentation about polio	Story-consistent beliefs: Narrative = Control Intention to recommend: Narrative = Control	

Note: Only direct effects are included. When a result is 'not reported', the variable was measured in the study, but the difference between the conditions on this variable was not included in the report, nor the significance test given. (Table 2. Back to text)

Table 3. Overview of studies that have compared a narrative with a similar character to a narrative with a dissimilar character by topic, sample, conditions that are compared, and direct effects on persuasion and engagement (back to text)

	Topic	Sample	Manipulation	Effects persuasion	Effects engagement
Andsager et al., 2006	Sun exposure	196 undergraduate students in US	Similar: protagonist is on the beach with friends and drinks alcohol Dissimilar: protagonist is on the beach alone and does not drink alcohol	Perceived message effectiveness: Not reported	
Banerjee & Greene, 2012a	Cocaine use	500 undergraduate students in UK	Similar: protagonist gender matches participant gender Dissimilar: protagonist gender does not match participant gender	Expectancies of cocaine: Not reported Cocaine use intention: Not reported	Transportation: Similar = Dissimilar
De Graaf, 2014	Colon cancer	220 undergraduate students in the Netherlands	Similar: protagonist's living situation matches participant's living situation Dissimilar: protagonist's living situation does not match participant's living situation	Perceived risk: Similar > Dissimilar Perceived severity: Similar = Dissimilar	Transportation: Similar = Dissimilar Identification: Similar = Dissimilar
Dillard & Main, 2013	Colonoscopy	1297 individuals of 49-60 who had not been screened before in US	Similar: protagonist's risk perceptions and health locus of control match those of participant Dissimilar: protagonist's risk perceptions and health locus of control do not match those of participant	Intention to get colonoscopy: Similar = Dissimilar	Identification: Similar = Dissimilar
Knobloch et al., 2002	Fictitious skin disease	240 undergraduate students in US	Similar: location in which characters live matches participants' location Dissimilar: location in which characters live does not match participants' location	Personal threat (risk): Similar > Dissimilar	
Lee & Bichard, 2006	Binge drinking	82 undergraduate students in US	Similar: content of story is matched to gender of participant (gender-consistent) Dissimilar: content of story is not matched to gender of participant (gender inconsistent)	Intention to change drinking behavior: Similar < Dissimilar	

Lu , 2013	Exercise by running	150 undergraduate students in US	Similar related to health: protagonist matched to participant on factors related to running (HSsim) Similar unrelated to health: protagonist matched to participant on factors unrelated to running (NSim) Dissimilar: protagonist not matched to participant	Intention to run: HSim = NSim = Dissim	Transportation: HSim = NSim = Dissim Identification: Not reported
McKeever, 2015	Depression	80 undergraduate students in US	Similar: protagonist is identified as a student from the same university as the participants Dissimilar: protagonist is not identified as a student from the same university as the participants	Intention to help: Not reported	Empathic concern: Similar > Dissimilar
McKinley, 2010	Binge drinking	314 undergraduate students in US	Similar: protagonist is described as a college student Dissimilar: protagonist is described as an orphan	Perceived personal risk: Similar < Dissimilar Binge drinking attitude: Similar = Dissimilar	Identification: Similar = Dissimilar
O'Mally & Worrell, 2014	Organ donation	140 African Americans	Similar: narrator of story is African American Dissimilar: narrator of story is Caucasian	Intention to sign organ donation card: Similar = Dissimilar	Identification: Similar = Dissimilar
Quick & Quintero-Johnson, 2009	HPV (unprotected sex) and binge drinking	314 undergraduate students in US	Similar: protagonist is recent graduate from the same university as participants and refers to campus events Dissimilar: protagonist is working professional	Motivation to perform recommended behavior: Similar = Dissimilar	

Note: Only direct effects are included. When a result is 'not reported', the variable was measured in the study, but the difference between the conditions on this variable was not included in the report, nor the significance test given.

Table 4. Overview of studies that have compared a narrative with a gain frame to a narrative with a loss frame by topic, sample, conditions that are compared, and direct effects on persuasion and engagement (back to text)

	Topic	Sample	Manipulation	Effects persuasion	Effects engagement
Aldrich, 2009	Suicide	367 undergraduate students in US	Gain: protagonist intervenes when friends shows signs of suicide and friend lives Loss: protagonist does not intervene and friend commits suicide	Intention to intervene: Gain = Loss	Transportation: Gain = Loss Identification: Gain = Loss
Banerjee & Greene, 2012a	Cocaine use	500 undergraduate students in UK	Gain: protagonist uses cocaine, but stops and reaps benefits Loss: protagonist uses cocaine and experiences negative consequences	Cocaine use intention: Not reported Expectancies: Not reported	Transportation: Gain > Loss
Cohen, 2010	Organ donation	181 undergraduate students in US	Gain: if patient receives new lungs, he will live Loss: if patient does not receive new lungs, he will die	Intention to sign an organ donor card: Gain = Loss	
Cox & Cox, 2001	Mammography	174 women over 50 in US	Gain: tumor is detected early by having annual mammogram and protagonist lives Loss: tumor is detected late by not having an annual mammogram and protagonist may die	Attitude towards mammography: Gain < Loss	
Gray & Harrington, 2011	Exercise	345 undergraduate students in US	Gain: protagonists started working out regularly and felt great Loss: protagonists failed to work out regularly and felt bad	Attitude tow. exercise: Gain = Loss Intention to exercise: Gain > Loss	

Hoeken & Geurts, 2005	Internet addiction	149 undergraduate students in the Netherlands	Gain: protagonist uses internet too much, but succeeds in reducing and stays in college Loss: protagonist uses internet too much, but fails in reducing and drops out of college	Perceived susceptibility: Gain > Loss Intention to reduce: Gain > Loss	
Hull, 2010	HIV testing	1052 women between 18-25 in US	Gain: protagonist finds out early she has HIV by test and can thus stay healthy longer Loss: protagonist finds out late she has HIV by test and wishes she would have found out sooner to stay healthier longer	Intention to get HIV-test: Gain = Loss	
McCaul, Johnson, & Rothman, 2002	Flu vaccination	6522 inhabitants of counties in North Dakota, US	Gain: protagonist got a flu shot last year and stayed healthy, so gets one this year again Loss: protagonist did not get a flu shot last year and caught the flu, so gets one this year	Vaccination rate: Gain = Loss	
Wirtz & Kulpavaropas, 2014	Healthy eating and physical activity	72 Hispanic adults in US	Gain: protagonist thinks about the good things associated with a normal weight Loss: protagonist thinks about the bad things associated with obesity	Intention to eat healthy: Gain < Loss Intention to be active: Gain < Loss	
Yu, Ahern, Connolly-Ahern, & Shen, 2010	Fetal alcohol spectrum disorder (FASD)	213 female undergraduate students	Gain: child is born without FASD because mother stopped drinking alcohol while pregnant Loss: child is born with FASD because mother drank alcohol while pregnant	Perceived severity: Gain < Loss Intention to prevent: Gain = Loss	

Note: Only direct effects are included. When a result is ‘not reported’, the variable was measured in the study, but the difference between the conditions on this variable was not included in the report, nor the significance test given.

Table 5. Overview of studies that have compared a narrative with high emotional content to a narrative with low emotional content by topic, sample, conditions that are compared, and direct effects on persuasion and engagement (back to text)

	Topic	Sample	Manipulation	Effects persuasion	Effects engagement
Appel & Richter, 2010	Organ donation	133 adults recruited online in Austria	High emotional: Protagonist gets hit by a car and dies right after having decided to become organ donor Low emotional: Protagonist thinks about getting hit by a car and decides to become organ donor	Organ donation beliefs: High = Low	Transportation: Not reported
Banerjee & Greene, 2013	Alcohol	501 undergraduate student in UK	High emotional: Protagonist experiences emotional consequences of alcohol use Low emotional: Protagonist experiences physical consequences of alcohol use	Attitude: Not reported Intention: Not reported	Transportation: High = Low
Betsch, Ulshöfer, Renkewitz, & Betsch 2011	Vaccination for child	313 undergraduate students in Germany	High emotional: Narratives with high expressed emotions by features such as emotional adjectives, emoticons, emotional experience descriptions Low emotional: Narratives with low expressed emotions	Perceived risk: High > Low Intention to vaccinate: Not reported	
Frisby, 2006	Breast cancer screening	59 African American women in US	High emotional: Narratives that describe the emotional benefits of screening (longer) Low emotional: Narratives that describe more general benefits (shorter)	Willingness to screen: High > Low	

Keer et al., 2013	Binge drinking	81 undergraduate students in the Netherlands	High emotional: Narrative that describe the positive affective consequences of drinking moderate alcohol Low emotional: Narrative that describe the positive physical consequences of drinking moderate alcohol	Intention to drink moderately: High > Low	Transportation: High > Low
So & Nabi, 2013	Sexually transmitted disease (STD)	500 undergraduate students in US	High emotional: Storylines in which characters get STD (actual risk) Low emotional: Storylines in which characters think they have STD but do not (threatened risk)	Perceived risk for STD: High = Low Intention to test for STD: Not reported	Transportation: High = Low Identification: High = Low
Volkman & Parrott, 2012	Osteoporosis	307 undergraduate students in US	Positive emotional: Narratives that express positive emotions by adjectives, descriptions Negative emotional: Narratives that express negative emotions by adjectives, descriptions Low emotional: Narratives that express no emotions by adjectives, descriptions	Behavioral intention: Positive=Negative=Low	Transportation: Not reported Hope: Low = Pos > Neg Fear: Pos < Neg = Low
Wang, Walther, Pingree, & Hawkins, 2008	Cancer	97 adults recruited online in US	High emotional: Narrative about coping with feelings of inadequacy when family member had late stage cancer Low emotional: Narrative about dealing with nausea from chemotherapy	Intention to act on advice: Not reported	

Note: Only direct effects are included. When a result is ‘not reported’, the variable was measured in the study, but the difference between the conditions on this variable was not included in the report, nor the significance test given

Table 6. Overview of studies that have compared a narrative with high character responsibility to a narrative with low character responsibility by topic, sample, conditions that are compared, and direct effects on persuasion and engagement (back to text)

	Topic	Sample	Manipulation	Effects persuasion	Effects engagement
Barry, Brescoll, & Gollust, 2013	Childhood obesity	500 non-student adults in US	High responsibility: the exemplar in a news article is obese because of poor eating and exercise habits Low responsibility: the exemplar in a news article is obese because of marketing by food industry	Attitude tow. childhood obesity policies: High = Low	
Boiarsky, Rouner, & Long, 2013	Skin cancer and HPV	207 undergraduate students in US	High responsibility: the protagonist in a personal health story blamed herself Low responsibility: the protagonist in a personal story blamed social institutions like the government	Individual cause belief: High > Low Societal cause belief: High = Low Intention to act: High = Low	
Hoeken & Sinkeldam, 2014, study 2	Organ donation	115 adults in the Netherlands	High responsibility: Character that needs a donor heart got heart disease by excessive drinking Low responsibility: Character that needs a donor heart got heart disease by genetic defect	Attitude towards donor registration: High = Low	Identification: High < Low Attentional focus: High < Low
Jansen, Croonen, & De Stadler, 2005	HIV/AIDS	212 undergraduate students in South-Africa	High responsibility: Exemplar in information brochure got HIV because he slept around Low responsibility: Exemplar in information brochure got HIV because his wife had an affair	Individual cause belief: High = Low Attitude towards support: High < Low	Evoked pity: High < Low
Kim, Bartolo, & Niederdeppe, 2011	Obesity	113 undergraduate students in US	High responsibility: Protagonist has lost weight because of her own efforts at eating healthy Low responsibility: Protagonist has lost weight without any effort or behavior change	Individual cause belief: High = Low Societal cause belief: High = Low	

Niederdeppe et al., 2012	Obesity	245 mostly students in US	<p>High responsibility: Protagonist holds herself responsible for her health and is helped by community changes (2-sided)</p> <p>Low responsibility: Protagonist holds community responsible for her health and neighbourhood changes have made her more healthy (1-sided)</p>	<p>Individual cause belief: High = Low</p> <p>Societal cause belief: High < Low</p> <p>Obesity policy support: High = Low</p>	Empathy: High = Low
Niederdeppe et al., 2014	Obesity	485 adults in US	<p>High responsibility: Protagonist has strong sense of personal responsibility for losing weight but also describes challenges in environment</p> <p>Low responsibility: Protagonist does not have sense of personal responsibility but focuses on challenges in environment</p>	<p>Individual cause belief: High = Low</p> <p>Societal cause belief: High = Low</p> <p>Obesity policy support: High = Low</p>	Empathy: High > Low

Note: Only direct effects are included. When a result is ‘not reported’, the variable was measured in the study, but the difference between the conditions on this variable was not included in the report, nor the significance test given.

Table 7. Overview of studies that have compared a narrative presented through different media by topic, sample, conditions that are compared, and direct effects on persuasion and engagement (back to text)

	Topic	Sample	Manipulation	Effects persuasion	Effects engagement
Braverman, 2008, study 1	Weight loss by drinking water	240 adults recruited online in US	Print: Text in which the protagonist loses weight by drinking more water Audio: Audio-recorded version of above text	Perceived persuasiveness: Print = Audio	
Braverman, 2008, study 2	Binge drinking	118 undergraduate students recruited online in US	Print: Text in which the protagonist starts drinking less and feels better Audio: Audio-recorded version of above text	Perceived persuasiveness: Print = Audio	Transportation: Print = audio
Braverman, 2008, study 3	Weight loss by drinking water	158 adults recruited online in US	Print: Text in which the protagonist loses weight by drinking more water Audio: Audio-recorded version of above text	Perceived persuasiveness: Print = Audio	Transportation: Not reported
Luna Nevarez, 2013	Diabetes	236 undergraduate students in US	Video: Film in which a teen is diagnosed with type 2 diabetes and decides to adopt healthier lifestyle Print: Text-only version of above narrative	Risk perception: Video = Print Intention: Video = Print	Transportation: Video = Print
Shaffer, Owens, & Zikmund-Fisher, 2013b	Breast cancer	56 women who were not diagnosed with breast cancer	Video: Videotaped interviews with breast cancer patients about their experiences Print: Transcribed versions of above narratives	Treatment preference: Not reported	
Stitt & Nabi, 2005	Drinking and driving	197 adults around college campus in US	Video: Film in which a survivor looks back at a fatal car accident because of drunk driving Print: Text based on a transcription of the video	Story-consistent beliefs: Video = Print	Transportation: Video = Print
Winterbottom et al., 2012	Kidney dialysis	784 students and staff of universities in UK	Video: Videotaped scripts of patients who are on dialysis Print: Text versions of above narrative	Treatment choice: Video = Print	

Note: Only direct effects are included. When a result is ‘not reported’, the variable was measured in the study, but the difference between the conditions on this variable was not included in the report, nor the significance test given.

Table 8. Overview of studies that have compared a narrative presented through different perspectives by topic, sample, conditions that are compared, and direct effects on persuasion and engagement (back to text)

	Topic	Sample	Manipulation	Effects persuasion	Effects engagement
Banerjee & Greene, 2012b	Cocaine	500 undergraduate students in UK	First: In four stories, protagonists who are addicted to drugs are referred to with I Third: In four stories protagonists who are addicted to drugs are referred to with he/she	Cocaine expectancies: Not reported Intention to use cocaine: Not reported	Transportation: First = Third
Houska, 2010	Skin cancer	60 adults recruited on campus in US	Second: Protagonist who is approached by a stranger to have a mole checked is referred to with you Third: Protagonist who is approached by a stranger to have a mole checked is referred to with he/she	Intent to use sunscreen: Second = Third Take sunscreen coupons: Second > Third	Transportation: Not reported
Meadows III, 2012	Binge drinking, smoking, HIV	80 undergraduate students in US	First: Audio public service announcements in which protagonists are referred to with I Third: Audio public service announcements in which protagonists are referred to with he/she	Story-consistent intention: First = Third	Transportation: First = Third
Nan et al., 2015	HPV	174 undergraduate students in US	First: Quoted students in news article were referred to with I (within quotation marks) Third: Quoted students in news article were referred to with he/she (without quotation marks)	Risk perception: First > Third Vaccination intention: Not reported	

Note: Only direct effects are included. When a result is ‘not reported’, the variable was measured in the study, but the difference between the conditions on this variable was not included in the report, nor the significance test given.

Table 9. Overview of studies that have compared a narrative with high efficacy information in context or low efficacy by topic, sample, conditions that are compared, and direct effects on persuasion and engagement (back to text)

	Topic	Sample	Manipulation	Effects persuasion	Effects engagement
Kim et al., 2012	Smoking	1219 adult smokers in US	High efficacy: Information about quitting with quit aids (e.g., nicotine) in news article with exemplar. Low efficacy: Information about unaided quitting (“cold turkey”) in news article with exemplar.	Cessation intention: High = Low	Transportation: High = Low
Morman, 2000	Testicular cancer	80 male undergraduate students in US	High efficacy: Information about how to perform testicular self exam (TSE) to check for cancer. Low efficacy: No information about how to perform testicular self exam to check for cancer.	Intention to perform TSE: High > Low	
Knobloch-Westerwick & Sarge, 2015	Weight loss	251 undergraduate students in US	High efficacy: Slimming down is presented as simple in headline of news article with exemplar. Low efficacy: Slimming down is presented as tough in headline of news article with exemplar.	Promoted behavior : High = Low	

Note: Only direct effects are included. When a result is ‘not reported’, the variable was measured in the study, but the difference between the conditions on this variable was not included in the report, nor the significance test given.

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