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Narrative engagement with direct-to-consumer advertising: a qualitative assessment of attention to narrative and non-narrative content

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ABSTRACT

Direct-to-consumer (DTC) prescription drug advertising has been debated regarding the depiction and consumer perception of a 'fair balance' between drug benefits and risks. One possible source of inequity between benefit and risk information overlooked is narrative communication. Through qualitative semi-structured interviews ($n = 30$) with three consumer groups, this research assesses relative attention to and evaluation of narrative versus non-narrative elements in broadcast DTC advertising. Findings revealed greater attentional focus on narrative elements, with viewers positively evaluating narratives associated with benefits and health information. Risk information delivered through non-narrative channels was salient but negatively evaluated for disrupting the narrative experience, interfering with comprehension, and increasing cognitive load. Health status (relevance) influenced these patterns, with varying levels of engagement across consumer groups. Results suggest the need for improved DTC ad formats that better integrate narrative and non-narrative content, ensuring balanced representation of benefits and risks to meet FDA regulatory compliance while enhancing consumer comprehension.

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Direct-to-consumer advertising; narrative advertising; narrative engagement; pharmaceutical advertising; risk communication; side effects

One of the most controversial and prevalent forms of promotional health communication is direct-to-consumer prescription drug advertising (DTCA). The focal point of scholarship and debate over this matter has been the relative balance between the portrayal and comprehension of drug risks (e.g. side effects) and drug benefits (e.g. effectiveness in curing the health condition or alleviating symptoms) (Applequist 2016; Applequist et al. 2021; Applequist and Ball 2018). Although regulations stipulate a 'fair balance' in the communication of risk and benefit information in the ads, individuals exposed to prescription drug ads exhibit an inferior recollection and understanding of the drug's risks compared to its benefits (Kaphingst et al. 2005). Importantly, in November 2023, the Food and Drug Administration (FDA) amended its DTCA regulations specifically for broadcast and radio formats (Food and Drug

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Administration 2023), requiring the presentation of risk information in a more 'clear, conspicuous, and neutral manner,' signaling the challenges consumers experience in understanding drug information (particularly important safety information) as communicated by drug manufacturers.

The broader literature on disclosures in advertising asserts the timing, placement, language level and clarity, and pace are key message design factors that impact the extent to which audiences effectively attend to disclosures (Argo and Main 2004; Kolbe and Muehling 1995; Stewart and Martin 2004; Wojdynski and Evans 2016). Work on risk information presentation similarly suggests providing such information in a salient and simplified manner, free of competing information to focus attention while emphasizing absolute rather than relative risks to enhance accurate interpretations (Conzola and Wogalter 2001; Freeman 2019; Stone, Yates, and Parker 1994). Research on DTCA has touched on similar and novel themes, identifying emotional cues (Biegler and Vargas 2016; Kiernicki and Helme 2017; Russell et al. 2017), visual-verbal congruency (Russell et al. 2017), and the presence of distractors, such as quick scene changes and upbeat music (Sullivan et al. 2017) among the message-based factors that bias attention and processing in favor of drug benefits over risks. Across these bodies of literature, one possible source of inequity between the drug benefits and risk information communication that scholars have largely overlooked is the use of narrative communication.

Narratives have become a critical focus area in advertising research as their applications in practice and capacity to evoke theoretical intrigue have flourished. Investigators have expanded the scope of narrative advertising research to include online product reviews (Valenzuela and Galli 2024), consumer commentary about advertising on social media (Diwanji et al. 2025), and influencer marketing (Feng, Chen, and Kong 2021; Kim 2022). Furthermore, advertising serves as a prime context for theoretical advancements by comparing and integrating diffuse mechanisms of narrative effectiveness, such as transportation and processing fluency (e.g. Lau 2025) and identifying moderating factors like medium and narrative perspective (Lau 2025; Zheng et al. 2025).

To be clear, narrative messages provide information through the format of a story that is dramatized or retold as a past experience. In contrast, expository communication presents information through a lecture or endorsement style that provides direct arguments and explanations. While each message style has its merits, narrative messages tend to be more engaging and reduce critical analysis compared to non-narratives (Adaval and Wyer 1998; Escalas 2004; Kim, Ratneshwar, and Thorson 2017).

The relative advantage of narrative formats is potentially problematic in the context of DTCA. Recent content analyses of televised DTCA found that most ads incorporated narrative and expository styles, but narratives were often used to communicate drug benefits while drug risks were primarily communicated using an expository style (Ball and Applequist 2019; Liu et al. 2022). The discrepancy in information delivery styles could lead consumers to pay greater attention to the drug benefits and reduce consideration of drug risks during ad exposure. However, consumer response research is needed to assess this possibility. Existing work comparing the effects of narrative and expository content does not sufficiently account for hybrid messages like DTCA that

contain a complex mix of narrative and expository styles conveying conflicting types of information (i.e. risks and benefits).

To gain initial insights into consumers' processing of the narrative and expository content of prescription drug commercials, this manuscript reports the results of in-depth interviews conducted with participants who watched and commented on a set of diabetes DTCA. The key objective for this analysis was focused on comparing participants' relative attention to narrative and non-narrative elements along with their evaluation of those elements. The findings lay the foundation for further theoretical development on the factors impacting narrative engagement with hybrid advertisements and identify implications for regulatory adherence relevant to pharmaceutical advertising practitioners. To preface this analysis, the next section offers a brief review of the literature on information processing of narrative and expository content within persuasive communication.

Literature review, theoretical framework, and research questions

Narrative engagement: components, factors, and consequences

The question of whether message recipients are more likely to pay attention to narrative or non-narrative content within a single hybrid message that contains both delivery styles has not been directly addressed to our knowledge. However, there is evidence that the presence of a narrative enhances recall of, and presumably attention to, information that is central to the narrative while suppressing recall of information that is tangential to the story (Brechman and Purvis 2015; Lang et al. 1995; Quintero Johnson, Harrison, and Quick 2013). In DTCA, this could suggest that drug benefits and any other information central to the narrative would benefit from narrative processing while expository information presented alongside but tangential to the narrative, such as drug risks, would be overlooked or selectively omitted from memory. As a further consideration, during the drug risk disclosure segment of televised DTCA, it is typical for the narrative to predominate the video channel while the expository format comprises the audio channel. According to past research, a visual narrative would likely dominate the processing of concurrent verbal content (Adaval and Wyer 1998; Zillmann 2006). However, while this implies the role narrative processing may play in attention to unrelated expository content, this fails to account for the role unrelated expository content may play in impacting the processing of a narrative.

A relevant theoretical framework that speaks to the impact expository content may have on the processing of the narrative content in hybrid messages is Busselle and Bilandzic's model of narrative engagement (2009). According to their model, narrative engagement is signified by easily understanding the story logic and characters' motivations (narrative understanding), maintaining focus on the narrative (attentional focus), experiencing a sense of being in the story world through the perspective of key characters (narrative presence), and feeling emotionally connected to the story events and characters (emotional engagement). Model testing found these components to have some overlap with other notable concepts of narrative processing. Transportation, defined as immersion into a narrative (Green and Brock 2000), was found to be moderately correlated with attentional focus, presence, and emotional

engagement. The emotional engagement component, which involves a strong empathic response, was also related to identification, the adoption of a character's perspective (Cohen 2001), given that both involve emotional connection with characters. Notably, narrative understanding had a significant but weaker relationship with transportation and identification, signaling its relatively unique contribution to the depiction of narrative processing.

The incorporation of narrative understanding is central to Busselle and Bilandzic (2008, 2009) conception of narrative engagement as an active process of extracting meaning by creating and applying mental models that represent the story's characters, settings, and events. This is why the cohesiveness of the plot, setting, character traits, and character motivations is linked to increased self-reported and physiological indicators of narrative engagement (Sukalla et al. 2016). Busselle and Bilandzic (2008) explain that the ability to construct mental models fluently invokes a sense of flow in which the individual is completely focused on the activity, feels in control, and perceives the activity as rewarding and effortless. This flow state accompanies full narrative engagement. Other research similarly supports the link between greater processing fluency and cognitive engagement involved in narrative processing (Chang 2013; Escalas 2004; Green and Brock 2000). Thus, from a mental models approach, execution factors that facilitate narrative understanding and a sense of flow will enhance narrative engagement. In turn, this level of absorption reduces the cognitive resources available to process other stimuli.

Conversely, several factors can interfere with or threaten narrative engagement. Such factors include inconsistency within the narrative, external environment distractions, and other contextual characteristics that disrupt the narrative flow (Busselle and Bilandzic 2008). These factors compete with the cognitive and emotional resources needed for narrative engagement. Therefore, any distraction that introduces 'thoughts that are unrelated to the narrative' (Busselle and Bilandzic 2009, 326) shifts attention away from the story, reduces overall involvement in the story, and elevates the likelihood of counterarguing. This proposition is supported by research showing that sources of disfluency, such as language errors (de Graaf et al. 2009), visual distortions (Walter et al. 2021), and story inconsistencies (Busselle and Vierrether 2022), as well as sources of cognitive overload, such as a secondary task (de Graaf et al. 2009; Green and Brock 2000; Hamby, Brinberg, and Daniloski 2017), interfere with transportation and narrative engagement elements.

The level of narrative engagement is consequential for enjoyment and adoption of story-consistent attitudes and beliefs (Busselle and Bilandzic 2009). This is consistent with the findings of research showing narrative processing associated with greater positive affect (Brechman and Purvis 2015; Deighton, Romer, and McQueen 1989; Escalas 2007; Escalas, Chapman Moore, and Edell Britton 2004; Kim, Ratneshwar, and Thorson 2017) and reduced counterarguing that counteracts message resistance (Deighton, Romer, and McQueen 1989; Moyer-Gusé 2008). In advertising, fluent narrative processing should be associated with positive evaluations of both the ad and brand. Lower narrative engagement reduces this halo of positive affect so that disfluent and distracted processing of narrative content yields less enjoyment, more negative evaluations, and lower persuasion levels (Bilandzic and Busselle 2011; Hamby, Brinberg, and Daniloski 2017). In lieu of narrative engagement, expository content is more

prone to the critical evaluation associated with analytical processing, the valence of which depends on a critical assessment of message arguments (Escalas 2007; Escalas, Chapman Moore, and Edell Britton 2004).

The foregoing discussion offers several possible implications for attention to the narrative relative to the non-narrative content of television DTCA. One is that attention to the narrative will depend on the degree to which consumers consider the arc of the patient journey to be cohesive, and emotionally engage with the events and characters. Importantly, while previously cited research suggested attention to the narrative would overshadow attention to expository content, Busselle and Bilandzic's work highlights the role expository content may play in detracting from attention to the narrative by introducing narrative-irrelevant thoughts and cognitive load. This could reduce the disparity in how attention is distributed between narrative and non-narrative content. Given the typical pattern of DTCA, attention to the narrative should facilitate learning and adopting promoted beliefs about the drug benefits and health condition. However, this is likely to be tempered by attention to the non-narrative portions, especially in association with the risk disclosure. To the extent that side effects may counter the overall effects on well-being promised by drug benefits, it is also possible that the risk information could reduce the perceived cohesiveness (and therefore engagement with) the benefits-focused narrative. If so, that could cause some negative evaluations of the narrative. However, it is otherwise expected that engagement with the narrative portions of the ad will be enjoyed and transfer positivity to the benefits and health information delivered through the narrative while the non-narrative will foster negative evaluations to the extent they are seen as interrupting and interfering with consumers' narrative flow.

In summary, we draw upon Busselle and Bilandzic's depiction of narrative engagement, its factors, and its consequences to address the following research questions:

RQ1: To what extent do participants reportedly pay attention to narrative versus non-narrative elements in DTCA?

RQ1a: To what extent do participants mention drug benefits in relation to narrative versus non-narrative elements?

RQ1b: To what extent do participants mention drug risks concerning narrative versus non-narrative elements?

RQ2: How do participants evaluate the narrative and non-narrative elements in DTCA?

RQ3: In what ways does attention to the narrative and non-narrative content in DTCA contribute to learning information about the health condition and treatment?

The role of relevance

An additional key factor that may influence the relative degree of engagement with the narrative and non-narrative content of DTCA is involvement—defined broadly as increased relevance of the topic. Involvement alters the goals for message processing, and one's processing goals determine how narrative and non-narrative messages are processed and evaluated (Slater 1997). Additionally, enduring involvement with a subject means an individual will have greater knowledge and familiarity with the context.

Research shows the emotional response and perceived goal facilitation of narrative advertising is more prevalent and impactful for individuals with a higher rather than a lower level of involvement (Kim, Ratneshwar, and Thorson 2017). From a mental models perspective, the prior experience and existing knowledge viewers bring to storytelling helps them construct story-world models and connect emotionally with characters to deepen their engagement with narratives (Busselle and Bilandzic 2008, 2009). When content is personally relevant or aligns with existing schemas and realities, viewers can experience greater narrative processing fluency and emotional engagement with characters that enhances overall narrative engagement, enjoyment, and persuasion (Busselle and Bilandzic 2008; Bilandzic and Busselle 2011). Green (2004) referred to this as 'matching,' finding that readers of a story were more transported when the setting, character, or events of the story matched the reader's experience.

A congruent line of work demonstrates narratives can trigger relevant autobiographical memories in the form of self-referencing and real world-referencing (McDonald et al. 2015; Tchernev, Collier, and Wang 2023). In turn, referencing these memories elevates attention to and comprehension of the narrative. This concept was extended by Dill-Shackleford, Vinney, and Hopper-Losenicky (2016) to propose a dual empathy response in which audience members empathize with characters' experiences in combination with the emotions felt from the autobiographical memories of one's own experiences. While these authors did not explicitly test the role of relevance, it is logical to assume a deeper level of relevant experience would moderate these processes by providing a richer and more accessible pool of memories to reference.

Altogether, in the context of DTCA, this suggests attention to the narrative will be greater among those who are more involved with the indicated health condition and have more familiarity with prescription drug ads. Interestingly, there are two possibilities for the impact on relative attention to expository content. On the one hand, those with greater topic involvement may pay less attention to competing non-narrative information because they are so absorbed in the narrative. Alternatively, the fact that experience affords greater narrative fluency may mean those with more involvement are better equipped to process expository information while still immersed in the narrative. Supporting this possibility, Bhatnagar and Wan (2011) found that similarity with a narrative's character reduced the cognitive load of narrative engagement, allowing for sufficient cognitive resources to be available to the brand information embedded within the story.

A further possibility is that involvement will have a neutral or reverse effect on attention to the narrative. Several notable scholars assert that topic involvement is not necessary for narrative engagement, transportation, or identification (Bilandzic and Busselle 2017; Green and Brock 2000; Slater and Rouner 2002). Empirically, some studies have failed to show any benefit of similarity between the audience and the character or setting on identification, transportation, and narrative self-referencing (Cohen, Weimann-Saks, and Mazor-Tregerman 2018; Hamby, Brinberg, and Daniloski 2017). Consistent with dual processing theories, greater involvement may instead direct more elaboration of the expository content while those with less involvement may be more likely to attend to the narrative. One study of an entertainment-education health message found personal relevance focused attention on the health information

but not engagement with the story (Quintero Johnson, Harrison, and Quick 2013). A study on prescription drug advertising also found that individuals who had never been prompted to discuss an advertised medication with a doctor (considered by the study authors to have lower involvement) were more likely to recall elaborate details of a drug ad's storyline while the story details were never mentioned in the ad recall of individuals who had approached a doctor about a specific medication (Krezmien et al. 2011).

We pose a research question to assess whether and how involvement in the form of health condition relevance influences relative attention to the narrative and non-narrative components of DTCA and subsequent impacts on evaluations and learning:

> RQ4: In what ways do responses to the narrative and non-narrative content differ by involvement in the form of health condition diagnosis?

Materials and methods

Qualitative interviews

The intent of this study was to conduct an analysis of the presence and range of patterns in viewers' attentional focus and evaluations as self-reported following exposure to a set of three existing broadcast DTCA. While quantitative approaches have traditionally been used to explore the effects of narrative formats in isolation, our research questions require a qualitative approach to capture the complexity of how consumers navigate the hybridity of the DTCA format (narrative and non-narrative content). To do this, online, semi-structured interviewing was chosen as the primary research method in an effort to gather rich data that would allow for emic perspectives and the observation of nuanced patterns of attention and evaluation unique to the context of viewing television DTCA (Creswell 1998). A qualitative approach is particularly valuable for the exploration of how different consumer groups interpret and evaluate advertising without predetermined response categories, allowing for an in-depth, full-range exploration of this conceptually complex topic.

Data collection procedures

Type 2 diabetes was chosen as the condition of focus due to its significance. Approximately one in 10 Americans have diabetes, with 90–95% of cases being classified as type 2 (Centers for Disease Control and Prevention 2021). More than $412 billion in healthcare costs were attributed to the diagnosis in 2022, with spending on insulin tripling in the past decade (American Diabetes Association 2023).

A commercial research firm was used to identify participants. Variance was sought in consumer categories (type 2 diabetic patients, patients with a chronic condition, and patients considered 'generally healthy') to account for the role that relevance may play. Thirty total interviews were conducted, satisfying research recommendations for interview study sample sizes (Creswell 1998). Adults of varying ages, races, and ethnicities across the United States were interviewed to ensure adequate

representation in the sample. Theoretical saturation (where each thematic category was operationalized with no new information presented in subsequent interviews) was achieved (Morse 1995). Participants are described in Table 1.

Table 1. Demographic description of interview participants.

Segment	ID	Sex	Age	Hispanic	Ethnicity	Location	Education	Health description	Rx MED USE	SEES Rx ADS
Diabetic	2	Female	62	No	Caucasian	Southeast	College grad.	Good	Regularly	Few x/ week
Diabetic	5	Female	39	No	African Am.	Northeast	College grad.	Good	As needed	Few x/ week
Diabetic	10	Male	66	No	Caucasian	Midwest	Highschool	Good	Regularly	Daily
Diabetic	11	Male	37	No	African Am.	Southeast	College grad.	Good	Regularly	Few x/ month
Diabetic	16	Male	68	No	African Am.	Midwest	Master's degree	Good	Regularly	Daily
Diabetic	19	Male	37	No	Caucasian	Southeast	College grad.	Good	Regularly	Few x/ week
Diabetic	24	Male	50	No	African Am.	West	Some college	Good	Regularly	Few x/ week
Diabetic	25	Male	47	No	Asian	Northeast	Master's	Fair	Regularly	Few x/ week
Diabetic	35	Female	42	No	Caucasian	West	Vo-tech	Good	Regularly	Few x/ week
Diabetic	36	Female	73	No	Asian; Cauc.	West	College grad.	Good	Regularly	Few x/ week
Chronic Condition	3	Male	65	No	Caucasian	West	College grad.	Good	Regularly	Few x/ week
Chronic Condition	6	Male	29	No	Caucasian	Northeast	Master's	Good	Regularly	Daily
Chronic Condition	7	Female	67	No	Caucasian	Northeast	College grad.	Good	Regularly	Daily
Chronic Condition	8	Female	62	No	African Am.	Northeast	College grad.	Good	Regularly	Few x/ month
Chronic Condition	18	Male	38	No	African Am.	Southeast	Some college	Good	Regularly	Daily
Chronic Condition	23	Male	56	No	African Am.	Midwest	Some college	Very good	Regularly	Daily
Chronic Condition	27	Female	42	Yes	Cauc.; Other	Southwest	Highschool	Fair	Regularly	Daily
Chronic Condition	28	Male	38	Yes	Cauc.; Other	Southwest	Vo-tech	Good	Regularly	Daily
Chronic Condition	29	Female	29	No	Caucasian	Northeast	Highschool	Good	Regularly	Few x/ week
Chronic Condition	32	Female	55	No	Caucasian	Southeast	Vo-tech	Good	Regularly	Daily
Healthy	4	Male	29	No	Asian	West	Master's	Excellent	As needed	Daily
Healthy	9	Female	61	No	African Am.	Northeast	College grad.	Good	As needed	Few x/ week
Healthy	12	Female	61	No	Caucasian	West	Vo-tech	Excellent	As needed	Few x/ month
Healthy	13	Female	28	No	African Am.	Southwest	College grad.	Excellent	As needed	Once/ couple months
Healthy	14	Male	62	No	African Am.	Midwest	Master's	Very good	As needed	Daily
Healthy	15	Female	36	No	Caucasian	West	Some college	Very good	As needed	Daily
Healthy	17	Female	49	Yes	Af. Am.; Other	Southwest	Vo-tech	Very good	As needed	Daily
Healthy	20	Male	74	No	Caucasian	Southwest	College grad.	Very good	As needed	Daily
Healthy	26	Male	25	No	Caucasian	Southeast	Vo-tech	Very good	As needed	Daily
Healthy	33	Male	40	No	African Am.	Midwest	Vo-tech	Excellent	As needed	Daily

Three ads for type 2 diabetes medications (Jardiance, Invokana, and Trulicity) that aired across four major nationally broadcast networks in 2016 (ABC, CBS, NBC, and FOX) were chosen for inclusion in this study. The U.S. pharmaceutical industry has continued to invest the majority of their ad budgets toward television, as continuing challenges surrounding third-party cookies and digital data collection measures have resulted in decreased digital ad spend, signifying the importance of scholarship continuing to address broadcast DTCA (Adams 2023; Phillips 2022). The broadcast ads chosen also serve to maintain continuity as they were used as part of the data set in the first step of a content analysis phase for this project (Ball and Applequist 2019). The three ads were chosen because they utilized graphics and featured varying amounts of audio-visual consistency *versus* inconsistency. Key differences represented a range of narrative styles and a mix of narrative and non-narrative content, while also portraying variation in emotional tone. See Supplementary File 1 for stimulus maps which incorporate scene-by-scene summaries for each ad.

Upon obtaining IRB approval and receiving consent, all interviews were conducted online by the first author, who has extensive training in qualitative research. Each interview lasted approximately 60–90 min. For the first half of the interview (the focus of this study), participants watched each of the three ads in their entirety. After watching each ad, the participant was asked to reflect on everything they could recall seeing, hearing, or reading in the ad, how the ad made them feel, and what they found themself thinking about or paying attention to as they consumed the ad. While using an interview format to collect the data, minimal probing was used in an effort to obtain participants' feedback without priming for ascertaining attentional focus during the ad. Participants were, however, encouraged to continue reflecting on what they could remember seeing, hearing, or reading in the ad. This approach was intentionally designed to capture participants' unprompted, naturalistic reactions to the ads rather than soliciting feedback on ad improvements. Finally, the first author captured memos for each participant immediately following the interview to document emerging thoughts and potential connections to assist with the initial data immersion phase.

Data analysis

Each interview was recorded and auto-transcribed using online video conferencing software. Transcripts were hand-cleaned by the first author as compared to the recordings. NVivo, a qualitative data analysis software, was used for data analysis. This study relied upon the constant comparative method, where data was iteratively coded and re-coded as new themes emerged inductively (Creswell 1998). Thus, a phronetic iterative approach to data analysis was used, whereby codes were derived from the data while vacillating between existing literature and theory (Tracy 2018). A research audit trail, a long-form record compiled by the first author to confirm 'how the study was carried out and how conclusions were arrived at,' was used throughout the study to increase transparency (Carcary 2020, 167). This ongoing log documented key decision points, emerging patterns, and theoretical connections throughout the coding process (Lincoln and Guba 1985). For example, this audit trail captured: (1) ongoing refinements to the unit of analysis, ultimately defining it as a point in the transcript which could be directly traced back to a specific, identifiable point in the ad to ensure

accurate coding comparisons, (2) the decision to focus only on what participants explicitly referenced *versus* inferences made was documented after reviewing multiple transcripts and video recordings where these distinctions became critical for answering the research questions, and (3) documentation of theoretical connections as they emerged, such as linking participants' 'work' required in processing competing information streams to Busselle and Bilandzic (2008) discussion of cognitive load disrupting narrative engagement.

Intercoder agreement and codebook development

We relied upon Campbell et al. (2013) approach toward establishing intercoder agreement when working with semi-structured interviews. This approach requires that two or more coders reconcile any disagreements about coding through discussion. The first and second authors began by establishing the unit of analysis as a point in the transcript which could be directly traced back to a specific, identifiable point in the ad (rather than a generalized statement). This assisted in making accurate comparisons between coding of the first and second author (Campbell et al. 2013). The first and second authors performed open coding of all 30 transcripts, where a close, line-by-line reading of the data occurred. At this stage, each transcript was broken down to identify data into meaningful units according to words, processes, and contexts related to specific repetitive instances (Bogdan and Taylor 1975), allowing for initial examination of prominent concepts within the data. For example, when Participant 9 referenced the visual storyline of the father and son playing together in the Jardiance ad, we assigned short words or phrases (*chronology of events*, *characters*, *relationships between characters*, *storyline*, and *character development*) to identify initial thoughts while remaining open to emerging patterns. Conversely, Participant 13's comment about 'infographics showing how the drug works in your system' was coded as *how the drug works, infographic*, *non-narrative*, and *education*.

Next, axial coding occurred, where open coding categories were condensed into 'buckets,' or broader themes, according to meaningful relationships. This stage involved the identification of abstract concepts with relevant attributes explored until all data were exhausted (Parker, Ang, and Koslow 2018). Analysis of how initial categories interacted with one another took place at this stage. Here, we grouped initial open codes like *chronology of events, characters, relationships between characters, storyline,* and *character development* into the broader category of *narrative elements.* Open codes, such as *infographics, voiceover narration, side effects,* and *drug name* were consolidated into *non-narrative elements*. The first and second authors discussed findings and discrepancies for the axial coding stage, allowing for the explication of coding categories as they developed. This allowed for the creation of the first draft of the codebook. Themes emerged *via* the notation of recurrent patterns, data saturation, and the existing theoretical knowledge described above (the phronetic iterative approach).

The authors independently coded 10% of the entire sample of transcripts in an attempt to reach intercoder agreement, consistent with the recommended amount used in interview research (Miles and Huberman 1994). A basic percentage of agreement calculation was used, resulting in 78.6% agreement for the overall sample after the first round of coding, which is considered acceptable in qualitative research (Fahy 2001; Kurasaki 2000).

The authors discussed coding discrepancies in detail in order to come to an agreement for the final coding categories. Upon reviewing all coding decisions and finalizing the codebook, the first author coded all remaining transcripts, consistent with Campbell et al. (2013) approach. In the final step of selective coding, the axial categories were woven together to explain the overall narrative of the study's findings.

Coding categories

To refer to our intended focus for the study, codebook development through the open and axial phases sought to define narrative *versus* non-narrative elements of the ads. Singular mentions of *narrative* elements for each ad were classified according to previous literature as portions of the ad that focused on characters, character development, relationships between characters, setting, or chronology of events. Narrative referred to personalized experience, whereby characters may be 'showing' a scene to dramatize events or where dialogue was used to 'tell' a story by speaking directly to the audience or from a varying perspective (see literature review; Adaval and Wyer 1998; Dahlstrom, Niederdeppe, and Gao 2017; Escalas 1998; Wells 1989). Examples of 'showing' elements that encapsulated narrative elements included the visual depiction of the father and son playing and exercising together in the Jardiance ad, as well as the use of first-person experience in the Trulicity ad, where the main character describes how 'I may even lose a little weight' (with the drug).

Singular mentions of *non-narrative* elements were classified as abstract, non-personalized information, often expository in nature, encompassing elements, such as the name of the drug, information (about the disease or product or the form the medication takes), infographics, music, slogans, drug warnings, drug benefits, side effects, financing information, on-screen text, logos, or voiceover narration (Barnes 2017; Deighton, Romer, and McQueen 1989). Non-narrative content typically lacks the presence of a character.

Importantly, participant focus on narrative *versus* non-narrative elements were coded in relation to specific elements of the ad. If a participant referenced a portion of an ad that could be not attributed to narrative or non-narrative categories, the data was not coded. Repeat mentions of specific elements were captured as separate codes but ultimately combined with final themes in order to assess the most prominent focal points for participants.

Benefits captured specific elements of an ad related to positive effects of the drug (e.g. lowering your A1C), clinical evidence or research, how the drug may help consumers, and additional physical or social benefits (e.g. increasing social interactions or physical activity).

Risks encompassed important safety information (ISI) associated with DTCA, including side effects, adverse effects, side effects seen in special populations (e.g. children, pregnant women, older patients), contraindications, drug warnings (e.g. who should not take this drug), and when the drug should not be used.

A *health/condition information* coding category was created to capture instances where participants showed they had learned information about type 2 diabetes from an ad. Examples included symptoms of type 2 diabetes, consequences (physical, lifestyle, social/relational, psychological, biological) of the condition, or additional factual

information risk factors. Conversely, the *drug information* category served to highlight instances where participants showed they had learned information from the ad about the drug, including the form the medication takes (e.g. not insulin), basic information about the drug not related to benefits or risks (e.g. how it works, dosage or usage, insurance/eligibility, or how the drug should be used along with diet and exercise).

Finally, coding categories were generated for positive and negative evaluative judgements related to participants' responses to the ads. While initially informed by previous research on the dichotomous classification of emotions (positive or negative) (Plutchik 1980; Russell 1980), our analysis revealed three distinct types of evaluative responses that required distinct categorization based on message type. Evaluative judgements were categorized as positive/negative for the drug, risks, and the ad/viewing experience. Evaluations of the drug emphasized the product's effectiveness, value, or appropriateness, focusing on judgements about the medication itself. Evaluations of risks captured participants' comments on the ISI or side effects, for example, appreciation or concern for specific side effect information presented. Evaluations of the ad/viewing experience involved one's feelings associated with watching the ad, including narrative flow, attention or disruption, and overall presentation of the ad. These comments ranged from positive engagement with the narrative to negative feelings associated with the length of side effects presented and how this disrupted the viewing experience (which differs from a more explicit mention of a side effect and how this would prevent one from taking the medication).

Co-occurrence matrix

While the initial open and axial coding phases in NVivo served to provide initial themes, it was important to extend this initial qualitative coding phase to facilitate an examination of participants' documentation of attentional focus on *more than one* area (overlapping of codes), as DTCA represents a complex mix of narrative and expository styles of information delivery. The hybrid nature of DTCA creates a viewing experience where consumers' attention is rarely focused on isolated elements, but rather facilitates engagement with multiple types of information (e.g. benefits, risks, health information) delivered through various overlapping presentation styles. A co-occurrence matrix was created to document instances where participants demonstrated simultaneous attention to multiple elements, revealing patterns of attentional distribution that may not have been explicitly verbalized by participants themselves. This approach also helps assess the degree to which attention to narrative and non-narrative elements were associated with different types of information and evaluations to address the research questions. To implement this approach, instances where two codes had been simultaneously attached to the same response, indicating a dual-focus, were entered into the matrix (Pokorny et al. 2018). The first author used NVivo's coding stripe feature (see Figure 1) as a visualization tool to identify where manual coding categories had overlapped for each participant file, establishing the number of times each coding category appeared alongside another for entry into the co-occurrence matrix (see Table 2). This process was then repeated separately for each consumer category subsample (type 2 diabetics, chronic condition patients, and healthy consumers), allowing for comparative analysis across these distinct groups to identify patterns that might otherwise be obscured (see Tables 3–5). During this phase,

a close, qualitative, line-by-line reading of each transcript alongside existing thematic coding allowed for development of the matrix. This additional step of creating a co-occurrence matrix served as a critical component to our analysis of participants' own connections, providing a rigorous approach to analyzing how consumers process the layered information present in DTCA. The visual depiction highlighted the importance of each code's relationships to one another, particularly in the case of DTCA, where multiple formats (narrative and non-narrative) and information types (e.g. benefits, risks, etc.) are often simultaneously intermingling (Pokorny et al. 2018). Open, axial, and selective coding were then permitted for in-depth analysis to be performed. Open coding revealed narrative (*characters, setting, chronology*) *versus* non-narrative *(side effects, drug warnings, drug information)* elements, with frequent mentions of narrative disruption during risk disclosure segments. Axial coding further identified relationships between narrative elements and positive evaluations, while showing a connection between non-narrative elements and both negative evaluations and challenges with attention management. Selective coding revealed how participants experience DTCA as a negotiated viewing process, with detailed results provided next.

Results

To increase accessibility and clarity, Table 6 provides an overview of key findings for each research question, with detailed qualitative analysis and supporting participant quotes presented below.

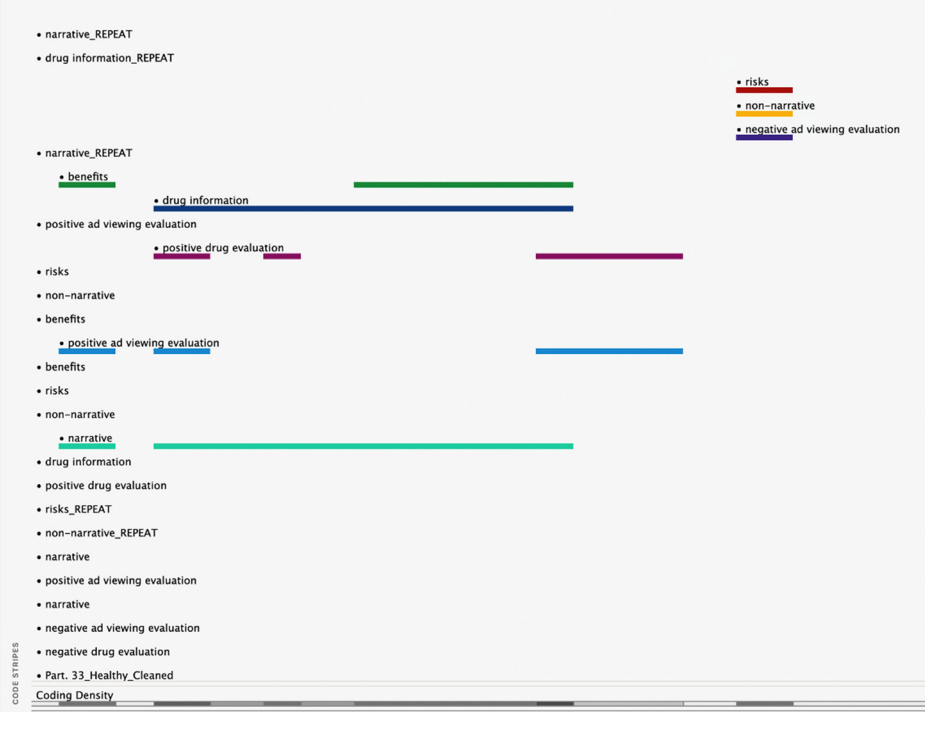


Figure 1. NVivo coding stripes.

Table 2. Qualitative coding co-occurrence matrix representing all consumer groups.

	Narrative	Non-narrative	Benefits	Risks	Drug information	Health/ condition information	Positive ad/ viewing evaluation	Positive drug evaluation	Negative ad/ viewing evaluation	Negative drug evaluation
Narrative										
Non-narrative	33									
Benefits	101	44								
Risks	1	116	–							
Drug information	50	28	–	–						
Health/condition information	30	1	–	–	–					
Positive ad/viewing evaluation	124	33	22	4	25	12				
Positive drug evaluation	55	10	10	–	2	–	–			
Negative ad/viewing evaluation	13	45	–	33	6	–	–	–		
Negative drug evaluation	4	41	1	34	4	–	–	–	–	
Totals	361	241	124	116	95	32	129	67	58	73

Note: The number in respective cells represents the count of coding co-occurrences for all consumers represented in the interview sample. The 'total' row represents the total number of times respective individual columns (codes) were captured across the entire interview dataset. Dashes (–) indicate either logical impossibilities of co-occurrence or instances where no co-occurrences were observed in the data. Narrative and non-narrative elements served as the primary anchors for all evaluative coding.

Table 3. Qualitative coding co-occurrence matrix for type 2 diabetic consumer group.

	Narrative	Non-narrative	Benefits	Risks	Drug information	Health/ condition information	Positive ad/ viewing evaluation	Positive drug evaluation	Negative ad/ viewing evaluation	Negative drug evaluation
Narrative										
Non-narrative	11									
Benefits	36	21								
Risks	–	36	–							
Drug information	19	5	–	–						
Health/condition information	4	–	–	–	–					
Positive ad/viewing evaluation	41	16	9	2	1	–				
Positive drug evaluation	21	7	9	–	7	–	–			
Negative ad/viewing evaluation	1	12	–	10	2	–	–	–		
Negative drug evaluation	–	15	1	15	3	–	–	–	–	
Totals	121	82	49	39	35	4	51	36	19	44

Note: The number in respective cells represents the count of coding co-occurrences for the type 2 diabetic consumer interview subsample. The 'total' row represents the total number of times respective individual columns (codes) were captured across the interview subsample. Dashes (–) indicate either logical impossibilities of co-occurrence or instances where no co-occurrences were observed in the data. Narrative and non-narrative elements served as the primary anchors for all evaluative coding.

Table 4. Qualitative coding co-occurrence matrix for chronic condition consumer group.

	Narrative	Non-narrative	Benefits	Risks	Drug information	Health/ condition information	Positive ad/ viewing evaluation	Positive drug evaluation	Negative ad/ viewing evaluation	Negative drug evaluation
Narrative										
Non-narrative	6									
Benefits	29	11								
Risks	1	42	–							
Drug information	22	11	–	–						
Health/condition information	11	1	–	–	–					
Positive ad/viewing evaluation	33	8	1	1	7	8				
Positive drug evaluation	16	–	1	–	–	–	–			
Negative ad/viewing evaluation	6	13	–	10	–	–	–	–		
Negative drug evaluation	1	12	–	10	–	–	–	–	–	
Totals	94	75	34	35	32	11	34	12	15	12

Note: The number in respective cells represents the count of coding co-occurrences for the chronic condition consumer interview subsample. The 'total' row represents the total number of times respective individual columns (codes) were captured across the interview subsample. Dashes (–) indicate either logical impossibilities of co-occurrence or instances where no co-occurrences were observed in the data. Narrative and non-narrative elements served as the primary anchors for all evaluative coding.

Table 5. Qualitative coding co-occurrence matrix for healthy consumer group.

	Narrative	Non-narrative	Benefits	Risks	Drug information	Health/ condition information	Positive ad/ viewing evaluation	Positive drug evaluation	Negative ad/ viewing evaluation	Negative drug evaluation
Narrative										
Non-narrative	16									
Benefits	36	12								
Risks	–	38	–							
Drug information	9	12	–	–						
Health/condition information	15	–	–	–	–					
Positive ad/viewing evaluation	50	9	12	1	17	4				
Positive drug evaluation	18	3	–	–	–	–	–			
Negative ad/viewing evaluation	6	20	–	13	4	–	–	–		
Negative drug evaluation	3	14	–	9	1	–	–	–	–	
Totals	146	84	41	42	28	17	44	19	24	17

Note: The number in respective cells represents the count of coding co-occurrences for the healthy consumer interview subsample. The 'total' row represents the total number of times respective individual columns (codes) were captured across the interview subsample. Dashes (–) indicate either logical impossibilities of co-occurrence or instances where no co-occurrences were observed in the data. Narrative and non-narrative elements served as the primary anchors for all evaluative coding.

Co-occurrence matrix results

To address the first research question, the matrix indicates mentions about the narrative outnumbered non-narrative mentions. Benefits (RQ1a) and risks (RQ1b) were mentioned fairly equally overall, but benefits were more likely to be mentioned in relation to the narrative, while risks almost exclusively corresponded to non-narrative. Pertaining to RQ2, narrative elements were primarily associated with positive ad/viewing experiences and, to a lesser extent, positive drug evaluations. Non-narrative elements were associated with both negative ad/viewing experiences and negative evaluations of the drug. Regarding RQ3, recollections of additional information about the drug and health condition were more likely to overlap with mentions of the narrative than non-narrative. Lastly, for RQ4, while all groups pay more attention to narrative elements, those without type 2 diabetes or a chronic condition (the healthy subsample) show the strongest overall engagement with narratives, particularly when focusing on benefits and health or condition information. All groups interviewed associate benefits with narrative and risks (almost exclusively) with non-narrative. Qualitative insights reveal that the healthy subsample primarily engages with narratives as both educational and entertaining, often expressing enjoyment while most heavily absorbing storylines and characters that present drug benefits and health/condition information. In contrast, those in the target market (type 2 diabetics) or closely tied to it (chronic condition patients) demonstrate more of an 'information processing' of the narratives, extracting specific drug benefits and drug information from the narrative format. Their lived experience with diagnosis and/or medication management appears to direct their attention toward these practical elements presented *via* the narrative format, even as they remain attentive to important product information.

Focus via delivery mechanism (narrative versus non-narrative) and attitudes

Participants' attention was directed primarily toward narrative elements of the ads, with roughly more than one third of their focus attributed to experiential components of DTCA. Evidenced by robust participant feedback, RQ1 found that individuals were more drawn to the visualized, narrative portions of the ads. Responses highlighted how elements from each ad's narrative allowed for making positive, deeper connections with the story.

> *…you can complete your job. You can complete what you started. The man was a renovator and just to see that he was able to finish his work. That was beautiful. I love… I'm partial to restoring homes. I mean I really noticed the restoring of the home because I'm a little partial to that but you're able to finish what you start. And your sickness doesn't have to stop you.* (Participant 9, Healthy Subsample, Trulicity ad)

When recalling the narrative, it was common for participants to identify with the ad, showing their relatability with the characters, story, or events. These reflections, in addition to the ways in which the storytelling format drew viewers in, resulted in more positive evaluative judgments overall for narrative elements when compared to non-narrative elements (RQ2).

Table 6. Summary of research questions and key findings.

Research question	Key findings	Primary themes
RQ1: To what extent do participants reportedly pay attention to narrative *versus* non-narrative elements in DTCA?	• Participants demonstrated significantly greater attention to narrative elements compared to non-narrative elements • Narrative content generated more extensive commentary and recall across all participant groups	**Narrative dominance** • Characters, storylines, and visual storytelling captured primary attention **Limited non-narrative focus** • Expository content received less detailed attention except during risk segments
RQ1a: To what extent do participants mention drug benefits in relation to narrative *versus* non-narrative elements?	• Drug benefits were more frequently associated with narrative elements • Participants identified both direct drug benefits and 'tangential' social/lifestyle benefits through narrative content	**Narrative-benefit connection** • Benefits communicated through storytelling and character experiences **Tangential benefits** • Social and lifestyle improvements conveyed *via* narrative format
RQ1b: To what extent do participants mention drug risks concerning narrative *versus* non-narrative elements?	• Risk information was almost exclusively associated with non-narrative elements • Participants readily recalled risk information despite reporting disruption to their viewing experience	**Non-narrative risk delivery** • Side effects and warnings presented through expository format **Narrative-risk disconnect** • Minimal integration of risk information within storylines
RQ2: How do participants evaluate the narrative and non-narrative elements in DTCA?	• Narrative elements received predominantly positive evaluations focused on viewing experience • Non-narrative elements generated mixed evaluations, with negative responses primarily conveyed toward risk content	**Positive narrative reception** • Enjoyment, relatability, and engagement with storylines **Mixed non-narrative evaluation** • Appreciation for drug information, but frustration with risk presentation
RQ3: In what ways does attention to the narrative and non-narrative content in DTCA contribute to learning information about the health condition and treatment?	• Narrative content served as primary vehicle for health condition education • Participants learned drug information through both formats, with first-person narrative being particularly effective	**Narrative as education** • Health condition information predominantly delivered through storytelling format **Dual-format drug learning** • Drug information accessible through both narrative and expository presentations
RQ4: In what ways do responses to the narrative and non-narrative content differ by involvement in the form of health condition diagnosis?	• Type 2 diabetics showed most sophisticated engagement, processing both formats comprehensively • Healthy participants demonstrated strongest narrative affinity with entertainment-education focus • Chronic condition patients showed most critical, analytical responses across formats	**More sophisticated processing for target audience** • Diabetics (target audience) engaged analytically with both narrative and risk information **Entertainment-education responses** • Healthy participants treated narrative as informational-entertainment **Greater critical processing for non-target audience** • Chronic condition patients demonstrated skeptical, analytical mindset

> *I definitely remember…fun. He was having fun with his family and it reminded me of Sunday afternoons when I was growing up in my Italian family. It was uplifting.* (Participant 36, Type 2 Diabetic Subsample, Jardiance ad)

Participant comments reflected how narratives generated more positive evaluations of the ad viewing experience (e.g. enjoying the characters, maintaining attention, appreciating the presentation) rather than directly creating positive perceptions of the drug itself. Nevertheless, the narrative format still proved more effective than non-narrative at eliciting positive drug evaluations, as participants connected with characters seemingly prescribed the product, thereby forming greater associations with the medication.

Positive associations with non-narrative elements of the ads were present (although to a lesser degree when compared with narrative elements), but distinctly isolated from the non-narrative risk category (RQ2). Participants reflected positively on non-narrative elements like voiceover narration that provided drug benefits or drug information. Infographics were positively received by participants as a way to depict how a drug works in the body.

> *And then, they also had an infographic of, like, taking the drug, and then what the drug was doing in your system, and how it's releasing, I guess, it's reducing the blood sugar by, like, removing it through your urine. So, that was a good visual for me to understand, like, how the drug was actually working, because I don't know how that works.* (Participant 13, Healthy Subsample, Jardiance ad)

Differences across consumer categories (RQ4)

Each participant group had an ability to pay attention to both narrative and non-narrative content, with responses indicating a strong preference for the narrative, story-like format. While all groups responded positively to the narrative format, healthy consumers demonstrated the strongest positive reactions to this content, often expressing the greatest emotional investment in the ad storylines with minimal direct evaluation of the drug itself.

> *It appears that the gentleman that was, I guess, the main character, seems to be enjoying himself. And that is because, you know, maybe this medication - it was very helpful to him. I'm very happy for him that he's able to do the things that he loves to do, all these activities with friends and family.* (Participant 14, Healthy Subsample, Jardiance ad)

Chronic condition participants presented the most balanced attention between narrative and non-narrative elements, demonstrating a more comprehensive processing of hybrid content. They often evaluated narratives positively in terms of their viewing experience, while their responses to non-narrative content included negative evaluations of their ad/viewing experience (disruption of the flow), the drug, and its side effects.

> *It felt like this [ad] was missing something in the middle. I felt like in the beginning they made it sound like, "oh, it's light, this is not harmful, it's easier to take." Because it seemed like they were saying, "oh, it's not a drug." Well, then at the end, when you talk about the side effects. Well, yeah, it must be - it must be a drug, because in the beginning it seemed like they were saying, "it's not like the insulin drug that we give you, it's lighter, it's better," but when they started talking about the side effects, I'm thinking, "no, you've got some drugs in there!" So I just felt like, not deceptive, but maybe something else needs to be in there or something is missing. Maybe even though they said "you use it in conjunction with exercise" and stuff like that, maybe they should say "you need it with water" or something. Something is missing between "it helps you naturally" and "these are the side effects."* (Participant 8, Chronic Condition Subsample, Trulicity ad)

Greater benefits derived via narrative delivery

While overall results indicated relatively equal attention toward benefits and risks, responses indicated participants attributed greater benefits with narrative elements (RQ1a). Importantly, some of these benefits were associated with what could be defined as 'tangential benefits,' such as increased levels of physical activity or the

social benefits of increased interaction or improved relationships rather than more direct benefits of the drug.

> *The ad actually puts you in a mindset of like, joy and pleasure. I guess when you feel like your health is in a good position, you can do more things with your family, with your grandchildren, because you don't have to worry about being ill because you're not taking your medication properly or the medicine that you're taking is not helpful. So it kind of put me in that aspect of being, you know, joyful that you're feeling good. And you can do the things that you weren't able to do before.* (Participant 5, Type 2 Diabetic subsample, Jardiance ad)

More 'direct drug benefits' were only associated with narrative elements delivered *via* first-person narration seen in the Trulicity ad, as the Jardiance and Invokana ads did not utilize this format. Trulicity's narrative gained the trust of many participants, and the use of first-person language by the main character (e.g. 'Trulicity responds when my blood sugar rises' to indicate lowering A1C, 'and I may even lose a little weight' to indicate weight loss) also served as an opportunity for educating about the benefits of the drug.

> *It was very clear because there's one individual, and he's speaking - I feel like he's speaking directly to me. And he's explaining very clearly, that this will happen, or this is what happened for me. So I thought that was good.* (Participant 36, Type 2 Diabetic Subsample, Trulicity ad)

Benefits derived *via* non-narrative elements (e.g. voiceover narration, on-screen text), while recalled to a lesser extent, were associated with the drug's direct health benefits (e.g. lowering A1C, losing weight).

> *I thought it was really good that they bring out actual numbers. So telling you that, you know, it should get you under seven [A1C], or it can get you under seven. When you're talking to people who are dealing with that number. It was good to point out where you can go.* (Participant 35, Type 2 Diabetic Subsample, Invokana ad)

Differences across consumer categories (RQ4)

All interview groups most frequently associated benefits ('tangential' and 'direct drug benefits') with narrative content, with the target market (type 2 diabetics) and healthy consumers recalling these elements to a slightly higher extent. Healthy consumers primarily expressed positive ad/viewing evaluations when engaging with drug benefit information *via* the narrative, suggesting a greater focus on their experience of watching the ad than on evaluating the drug itself.

> *You've got credibility here. Here's your professional. You're seeing him in his element, right at the beginning as a professional…but I guess there is this subliminal message in parallel between the fixing of the house and fixing his body. He has taken this old, beat up, whatever, white and gray, you know, unattractive piece from the fireplace. And in the end it's all been redone and you got it done here, interestingly enough, with the help of another professional who brought it to him - now all stained and properly finished. So, he went to somebody who did that for him. So you can figure that a doctor gave him this other thing. You know, you get the parallel. Again, I really related to him. Obviously, it's just an actor.* (Participant 20, Healthy Subsample, Trulicity ad)

The type 2 diabetic subsample displayed a different pattern of evaluative attention, demonstrating both positive and negative evaluations of the ad/viewing experience and positive evaluations of the drug when encountering benefit information.

This greater balance of attentional focus across both delivery formats and evaluation types appeared to be connected to the target audience's lived experience with type 2 diabetes.

> *So I remember like there was these little 'down arrow' buttons. They were really trying to drive home the point that your numbers will hopefully, potentially go down if you take this. It helped with a little bit of bodyweight loss, too. That's something I would look into more.* (Participant 19, Type 2 Diabetic Subsample, Invokana ad)

Narrative depictions of health or condition information

Participant comments showcased how the ads served to educate viewers on type 2 diabetes. Narrative elements of the ads were often tied to participants' affinity for getting invested in the story and cheering characters on. This often translated to having a level of relatability with characters in the ad, which helped participants become more engaged with the narrative. Narrative elements, such as the button used in each vignette of the Invokana ad, served as a reminder of the importance of making healthy lifestyle choices while being prescribed a medication for type 2 diabetes. The ad opens with the first vignette's character pushing a red button in her car. The button has a downward arrow and represents lowering one's A1C. During each vignette, the symbol on the button changes to represent a positive choice that a character is making associated with their health (e.g. taking the stairs instead of elevator, eating healthy). Participants often keyed in on this element of the ad, noting the importance of diet and exercise for individuals with type 2 diabetes.

> *…I just found it intriguing. She was at the vending machine and she was looking at all the juice and then, you know, put her special little coin* [button] *in, and then she's only getting the water now. So, I guess it's showing that she's making a healthier choice. So that was good – kind of bringing it home a little bit.* (Participant 19, Type 2 Diabetic Subsample, Invokana ad)

Non-narrative depictions of health information related to type 2 diabetes were minimally discussed by participants, often only in reference to voiceover narration's mention of the medication being used 'along with diet and exercise.' Participants overwhelmingly focused on the visual portrayals they could most identify with, such as the father shown struggling to maintain an exercise routine with his young child at home in the Jardiance ad. Many appreciated the realistic portrayals of working out and trying to avoid certain foods.

> *Ok, so one of the things that resounded and hit home with me was when he was at the party, and they were having all the food, and they're offering him the food. He's like, 'oh, I gotta eat my chicken skewer.' And that totally related to me! It's like, no, you gotta watch what you eat. And it's like, I want to eat junk food, but I can't – I've got to be cautious. Especially when it comes to trying to lose weight and trying to stay healthy. You can't just can't take a pill and the weight drops off. You've got to actually do work. So, I like how they implemented that as well.* (Participant 18, Chronic Condition Subsample, Jardiance ad)

Differences across consumer categories (RQ4)

Across all consumer categories, the narrative format served as the primary, dominant vehicle for capturing participants' attention while educating about type 2 diabetes.

Results revealed a nearly exclusive mention of health information *via* the narrative, with only one mention from a chronic condition participant *via* the non-narrative. Qualitative analyses revealed distinct consumer patterns. Healthy consumers engaged with health information in narratives while primarily expressing positive ad/viewing evaluations. In contrast, type 2 diabetics and those with chronic conditions demonstrated more thorough evaluations that connected the narrative health information to their own lived experiences. For healthy consumers, the narratives generated a positive viewing experience while providing a basic level of education about the condition. For diagnosed individuals and those with chronic conditions, the narrative allowed for greater connections and, therefore, greater consideration of treatment options.

> *I paid more attention to the story, and this one got my interest because I love old Victorian homes and I love architecture. I couldn't tell…was it Texas? Or the South? Because he didn't necessarily have an accent, but it definitely did seem maybe a little bit of a more rural area that he was in. You know, I didn't really identify with that, but I did identify with wanting to do something for the community and re-doing this house and this historic home, turning it into a landmark. So I think I just identify with it more. I was curious, you know, about the magic green particles that were coming out of the injection, the way they kind of showed how it lasts for a week and it's not insulin. So yeah, it caught my interest. I was thinking about, you know, because I was recently, well about six months ago, diagnosed with diabetes. Well, you know I'm lucky that I don't have to take insulin. It's not something I ever want to have to do. But this, you know, made me think, "okay, well maybe, you know, there's a once a week thing I can get to help with my blood sugar," so it definitely made me feel hopeful about that.* (Participant 24, Type 2 Diabetic Subsample, Trulicity ad)

Delivery mechanisms (narrative versus non-narrative) for drug information

While data indicated that non-narrative elements (e.g. voiceover narration, infographics, text) provided a gateway for participants to learn specific information about each drug, it was clear that participants learned more drug information from narrative elements (RQ3) in the Trulicity ad, which was the only ad format that relied upon a first-person narrative approach to deliver information related to the drug's delivery mechanism/form and frequency of use. Participants spoke very highly of the use of the first-person experience used here, where the main character used the opening seconds to describe his experience as a way to introduce the drug and its features. Qualitative comments support that audiences react much more positively about the drug learning when about its attributes through a story-like (e.g. first-person) format as opposed to voiceover narration, graphics, or on-screen text.

> *And I also remember him saying it's not insulin. And that it's just once a week. Just once a week. So that might alleviate some concerns that people may have when you think of insulin because normally it's shots two or three times a day, and you know, this and that and the other, but that might alleviate some fear of having it.* (Participant 9, Healthy Subsample, Trulicity ad)

Participants identified most with the ad's story of a home restoration used as a positive representation of how the drug can act to repair one's body. Data indicated that the narrative served as an effective format for capturing the attention of participants, resulting in individuals that were entertained while becoming educated on the product being advertised.

> *Throughout the ad, watching the gentleman go through the rebuilding of this house as he's using this drug to rebuild his body, is the impression I come across, and that's why these images work together. I can see how the ad was put together as far as balance. This is an ad that interacted within itself very well, as opposed to an ad that you got two different messages in your delivery of two different styles.* (Participant 3, Chronic Condition Subsample, Trulicity ad)

Conversely, drug information was still learned *via* non-narrative formats (voiceover narration, often presented in conjunction with on-screen text). While this learning was still referenced by participants, and their recall of the information was apparent, the positive evaluations were not as apparent as those in the narrative category.

Differences across consumer categories (RQ4)

Type 2 diabetic and chronic condition participants were more likely to associate drug information with narrative elements. Results indicate these groups also formed more positive drug evaluations from this content. In contrast, healthy consumers displayed a slight preference for the non-narrative format for drug information, yet their evaluations of the content were predominantly focused on the ad/viewing experience rather than forming drug assessments. Healthy consumers focused more on positively evaluating how drug information was delivered rather than evaluating the treatment option itself.

> *Oh! And then I remember the graphics. They showed these little sugar cubes. I thought that was a good idea. Because they're talking about [blood] sugar.* (Participant 26, Healthy Subsample, Jardiance ad)

Negative impact of non-narrative risk information (disruption to narrative flow)

Our data show a clear point at which participants shift their evaluative judgments negatively toward non-narrative information. The presentation of the important safety information (ISI/risk) encompasses risks and side effects that represent a shift in the tone of the ad for participants. Findings indicate that during the presentation of risk information, participants were engaged in a highly variable experience of consistent negotiation as they vacillated between narrative and non-narrative elements drawing their focus. Participants often reflected on the labor required to watch DTCA, which was particularly reflected during the presentation of risk information. It was not uncommon for interviewees to reflect on the 'work' necessary to consume these ads, where they must switch from one focal point to another. Many participants reported 'tuning out' during the presentation of side effects for two reasons: feeling distracted by the visual storyline or speculation that all pharmaceutical companies must legally disclose a long list of risks, highlighting the formulaic nature of these ads and ways in which consumers may be becoming desensitized to the ISI presented within them.

> *Ok, I thought it was distracting because then I tried, I was getting more involved with what they were doing in the repairs that they were doing, where was this historical building?* [referring to the narrative] *That seemed to want to take away from the focus of the medication.* (Participant 36, Type 2 Diabetic Subsample, Trulicity ad)

> *When they get to too wordy and too cliché with what the possible side effects may include, I'm just like, ughhh, I don't, I don't really know if by law you have to have this disclaimer saying all these things, but I feel like all these commercials, they are all the same, not a lot of them differentiate from each other…But, um, content wise they all are pretty much saying the same thing. Um…you can get a little tuned out after hearing too many wordy type things.* (Participant 19, Type 2 Diabetic Subsample, Trulicity ad)

Analysis revealed two distinct types of negative evaluations in response to risk information. Participants were critical of the presentation format and how this disrupted their narrative flow, and negatively evaluated the drug itself, which included substantive concerns about the product based on the risks themselves.

Importantly, data confirmed that while some participants reflected on 'tuning out' during the presentation of ISI, many were still able to recall specific information—albeit in a negative way. The sheer number of side effects and warnings, duration of their presentation, and jarring impact of their arrival amidst a previously smooth narrative flow resulted in critical views.

> *I remember just talking about the side effects, and the seriousness of it and I'm like 'uh-oh,' because, like, you hear the commercials for medicines, and the sound effects sound so bad that I'd rather deal with the issue than take the medicine and deal with the side effects.* (Participant 8, Chronic Condition Subsample, Invokana ad)

Additionally, the presence of two contrasting formats (voiceover presentation of side effects that did not coordinate with the narrative story being shown) created greater frustrations. Only one instance provided an example of an ad aligning a side effect being narrated (dehydration) with the narrative (a woman getting water from a vending machine) to reinforce the information being conveyed. All other ISI provided *via* voiceover did not coordinate with the visuals being presented on-screen, which left some participants feeling frustrated by the amount of information to be absorbed.

> *I was actually thinking, 'this is a lot of data. There's a lot of data for me to absorb right now.' So, and it was more, it was a lot of work as I was trying to read all the words that were coming up about it, and it just, it just seemed like a lot of side effects.* (Participant 17, Healthy Subsample, Invokana ad)

Differences across consumer categories (RQ4)

Qualitative analysis of data revealed distinct patterns in how consumer groups evaluated risk information. Type 2 diabetic participants displayed a stronger tendency toward negative drug evaluations than negative ad/viewing evaluations once the ISI was introduced. Their comments indicated the greatest alarm about risk content, often reflecting skepticism and questioning whether side effects were presented primarily for legal compliance rather than consumer education. Chronic condition patients demonstrated the strongest negative evaluations of the risk information, with a slightly higher tendency toward negative drug evaluations than negative ad/viewing evaluations. Their attention toward risk information created viewing disruptions and substantive concerns about the product.

> *With older people, I think, it's very scary. For me, it's like, in however many seconds a commercial is - it's just a lot of information to absorb. I think that [the side effects] takes away from the type of medicine, or what it is today because all of a sudden they're explaining, "if you have severe stomachaches from front to back…" I feel like that's just going to make you look*

> *the other way and blank out - the whole reason why they were watching for that particular medicine.* (Participant 32, Chronic Condition Subsample, Trulicity ad)

Healthy consumers demonstrated a different pattern, with negative ad/viewing evaluations dominating negative drug evaluations. These reflections tended to focus on the length of the ISI and its disruptive nature to their viewing experience, resulting in a strategic shift of their attention back toward the narrative content.

Discussion

A key motivation for this study was to assess the concerns raised by previous content analyses documenting the relative presence of narrative and non-narrative content in DTCA (Ball and Applequist 2019; Liu et al. 2022). In particular, the research questions queried whether narrative content would attract more attention and garner more positive reactions than the non-narrative content and what implications this may have for consumers' learning and evaluation of drug benefits, risks, and other key information. Overall, the feedback received from participants suggests some concerns are well-founded, but the dominance of the narrative on consumer attention is not absolute.

Key findings

In many ways, when assessing findings for the overall sample, the results conform to expectations. Participants were more likely to focus on narrative elements compared to non-narrative elements. Recollections of the ad narrative were more likely to coincide with drug benefits and positive evaluations that were more focused on the ad/viewing experience than on the drug itself. Conversely, non-narrative content was primarily associated with risk information and linked to negative evaluations with a more balanced distribution between the ad/viewing experience and the drug. This pattern reflects the relative distribution of ad content reported by Ball and Applequist (2019) and is generally consistent with the literature on narrative persuasion (Escalas, Chapman Moore, and Edell Britton 2004; Kim, Ratneshwar, and Thorson 2017; Lane et al. 2013).

That said, the results do not confirm the concern that the heavy presence of narratives overshadows awareness of important health and risk information in the ads. Participants were highly cognizant of the risks. Furthermore, there was no evidence to support the contention that positive affect toward the narrative translates to a favorable evaluation of the risks. Instead, negative evaluations of risk information manifested in two meaningful ways. One was negative evaluations toward the ad/viewing experience associated with risk content that either reflected a message-induced disruption, where the ISI significantly interrupted narrative flow, or the struggle to focus on the risk information as desired because the continuing narrative lured their attention away. The other negative evaluation was directed toward drug risks as viewers questioned the disparity between the positive, hopeful tone conveyed *via* the narrative and the voiceover describing a long list of serious risks. This created a contrast effect for some, leading to the conclusion that the risks of the medication

would outweigh its benefits. While this latter reaction is counterproductive to the promotional objectives of pharmaceutical advertisers, it represents successful risk communication (Fischhoff et al. 1981) and fulfillment of the FDA's regulatory goals since participants were openly reflecting on side effect information and incorporating this information into their risk-benefit calculus.

Participants also appeared to engage in different types of counterarguing based on shifting assumptions about message intent across message elements. Narrative content received little scrutiny, whereas participants approached risk information with variable persuasive schemas, aligning with the persuasion knowledge model (Friestad and Wright 1994). This suggests that consumers develop cognitive mechanisms to recognize and respond to persuasive attempts in DTCA dependent on message components. For narrative elements, participants appeared to suspend their persuasion knowledge. However, once the risk information appeared, many made explicit note of their awareness of the regulatory information with their comments accompanying counterarguing.

Finally, our results revealed how relevance in the form of health status emerged to create distinct patterns. Type 2 diabetics, for whom relevance would be greatest, demonstrated the most sophisticated pattern of engaging with the ads. They paid close attention to the narrative and identified with the characters, providing positive evaluations of both the ad experience and the drug in relation to the narrative. They were also uniquely attentive and positive about the non-narrative portions delivering information about drug benefits, demonstrating an ability to comprehensively process information and extract value from storytelling and expository formats. This contributed to more mentions of benefits than risks overall. When viewing the risk information, this group showed the greatest ability to contextualize the information within the context of their diagnosis to analytically process it. This meant the type 2 diabetic group was less negative about the presence of the ISI than the nature of the risks themselves, resulting in twice as many negative evaluations of the drug compared to negative evaluations about the ad. These results suggest that consumers with a direct stake in the advertised drug engage in a multifaceted risk-benefit analysis, with their lived experience serving as a foundation for evaluating claims regardless of presentation format.

Healthy consumers, for whom relevance would be lowest, showed the strongest affinity for narrative content, providing the most comments and positive ad/viewing experience evaluations about the narrative. While readily engaged in the storylines, these participants were more likely to extract information about the health condition than the drug, indicating their engagement with DTCA was a form of entertainment-education (EE). Comments made about the drug's benefits showcased within the narrative suggested acceptance without further questioning or critique, likely due to their distance from the diagnosis experience. This is also consistent with previous literature on EE, where health information embedded within an entertaining story (Singhal and Rogers 2004) may limit one's ability to critique health claims (Slater 2002). Given their high engagement with the narrative as entertainment and limited interest in the drug, this group was the most likely to consider the risk information disruptive, contributing to more negative evaluations of the ad/viewing experience associated with non-narrative and risk content compared to other groups. The

presumably moderate relevance group was chronic condition patients. This group showed the least engagement with the narrative, the fewest positive comments about the ad/viewing experience and the drug, and demonstrated more qualitatively negative reactions toward non-narrative content. This response is likely due to existing health experiences that have developed the general knowledge to analyze drug information, but the lack of connection with diabetes meant that content did not resonate. Their negative evaluations spanned both ad/viewing experiences and drug evaluations, demonstrating a relatively more critical form of attentiveness across multiple dimensions.

Theoretical implications

While theory testing was not the primary objective of this research, our findings nonetheless provide an extension of Busselle and Bilandzic (2009) narrative engagement model beyond entertainment media to advertising and beyond pure drama narratives to hybrid messages. Key aspects of this model pertinent to our research purpose are the role of cohesiveness to foster narrative understanding and the role of distractors in reducing attentional focus. These dimensions each contribute to overall narrative engagement. Respondent comments in our study suggest that the risk information reduced narrative engagement by impacting both of these dimensions. The coherence of the story that arced from the tribulations of the health condition to the relief and joy accompanying drug treatment is sabotaged by the list of side effects. This reaction indicates consumers consider the negative experience of side effects to contradict the overall positive experiences depicted in connection with the drug benefits, reducing narrative engagement through the understanding mechanism. Additionally, as a distractor, the introduction of the risk disclosure was seen as an unwelcome intrusion disrupting the narrative flow that had been established up to this point. This reveals participants had experienced attentional focus if not also a sense of presence—perhaps only recognizable once the spell had been broken. From there, attentional focus continued to be challenged as participants reported the tension between concentration and distraction in coping with the conflicting demands between the simultaneous narrative and non-narrative formats of the risk disclosure portion.

The positive evaluations linked to narrative content demonstrated enjoyment stemming from narrative engagement, consistent with Busselle and Bilandzic (2009) and others (e.g. Deighton, Romer, and McQueen 1989; Escalas, Chapman Moore, and Edell Britton 2004; Green, Brock, and Kaufman 2004). Narratives functioned as the gateway for positive ad viewing experiences, potentially transferring to more positive perceptions of the drug. However, the diminished narrative engagement brought on by the risk disclosure replaced enjoyment with frustration, confusion, and counterarguing as predicted by prior theorizing and research (Busselle and Bilandzic 2008; Durkin and Wakefield 2008; Escalas, Chapman Moore, and Edell Britton 2004). The disruption triggered different types of counterarguing based on shifting assumptions about message intent across message elements as participants approached risk information with variable persuasive schemas.

Interestingly, not all non-narrative content was considered disruptive. Expository information in the form of animated graphics depicting drug mechanisms drew favorable attention. Although these segments interrupted the narrative visually, no participants found them to be disruptive, likely because the information supplied served to reinforce the narrative information and facilitate their understanding. Even though this content diverted from the character, setting, and plot of the narrative, this information contributed to viewer's mental model creation, maintaining thoughts related to the narrative. This finding is also consistent with other research on the integration of narrative and non-narrative elements (Adaval and Wyer 1998; Lane et al. 2013; Quintero Johnson, Harrison, and Quick 2013). That said, these segments were relatively brief, and additional research would need to probe the impact on other dimensions, such as presence and emotional engagement to assess the full impact on narrative engagement.

This research also speaks to the debate of how relevance influences narrative engagement. Interestingly, those assumed to be at the high (diabetes patients) and low (healthy individuals) ends of relevance appeared to be more engaged with the narrative than those in the moderate relevance group (chronic condition patients). The chronic condition patients seemed to maintain a relatively more analytical mindset associated with skepticism which has been shown to reduce narrative transportation (Escalas 2007). Regarding the similar overall level of attention to the narrative between the high and low relevance groups, on the surface, this seems to support those who have found or contended that involvement with a topic does not impact narrative engagement (Cohen, Weimann-Saks, and Mazor-Tregerman 2018; Hamby, Brinberg, and Daniloski 2017). However, such a conclusion misses the nuance of how these two groups engaged with the narrative.

One key difference in how diabetic patients and healthy consumers engaged with the stories in DTCA is the degree to which drug information was processed. Diabetic patients were more likely to recall and positively evaluate drug information in the context of the narrative compared to healthy consumers who were more likely to provide positive evaluations of the story itself and recall aspects of the health condition in the context of the narrative. This is similar to research indicating consumers have more available cognitive resources to focus on both the story and embedded brand information when character-consumer similarity is high rather than low (Bhatnagar and Wan 2011). Another connection is with research demonstrating greater relevance did not impact transportation but did increase the likelihood that transportation led to retrospective reflection on how the story related to oneself due to the greater availability of relevant self-related memories (Hamby, Brinberg, and Daniloski 2017). While these sources lean on ability as an explanation for these differences, others suggest consumer goals can play a role (Slater and Rouner 2002). Further research could tease out the relative influence of ability and motivation in driving differences in how target and non-target populations engage with the narratives of DTCA.

Beyond overall engagement, the likelihood to identify with story characters—related to Busselle and Bilandzic (2009) emotional engagement dimension—is often connected with relevance. While our study was not designed to probe for this particular aspect

of narrative processing, the findings hint at the possibility that diabetic patients and healthy consumers identified with the characters of the DTCA narratives, but again, in different ways. Diabetic patients appeared to identify with the characters in terms of their treatment experiences, wondering if the medication would work the same way for them. Healthy consumers identified with the character's general experiences regarding weight loss and diet along with the emotional impact of those struggles. Scholars have similarly distinguished between exemplars that function to illustrate and influence judgments about a particular concept *versus* protagonists that drive narrative development and generate emotional engagement with the story (Cohen 2001; Hoeken and Sinkeldam 2014; Moyer-Gusé 2008; Slater and Rouner 2002; Strange and Leung 1999; Zillmann 2006). It seems diabetics identified with the DTCA narrative characters as exemplars while healthy consumers identified with characters as protagonists, a difference that would align with the greater entertainment orientation of healthy consumers compared to the more instrumental orientation of diabetic patients. That said, this contention and its implications need to be put to more rigorous testing.

Regarding the implications for how the risk information was regarded, the results support the findings of Quintero Johnson, Harrison, and Quick (2013) and Krezmien et al. (2011) who found greater relevance produced more attention and critique of expository health information external to the story compared to those with lower relevance. Both diabetics patients and healthy consumers both reported the risk disclosure as disruptive to their engagement with the story. However, this translated into critical analysis of the drug risks that manifested in more negative evaluations of the drug for diabetics patients, signaling a shift to analytical elaboration of message arguments as described in dual processing theories (Petty and Cacioppo 1984). For healthy consumers, their negative reaction was directed at the ad/viewing experience and the degree to which the risk information inhibited their ability to focus on the narrative as desired.

Practical implications

Our findings provide several opportunities for effective approaches to pharmaceutical advertising. Results indicated that those in the target market demonstrated a more comprehensive approach in their attention toward benefits, indicating value extraction from *both* storytelling and expository presentations. Therefore, advertisers should explore more tailored information delivery given differential attention patterns across health status rather than concentrating key benefit information primarily in the formulaic nature of one format (non-narrative). The target market (type 2 diabetics) was the most skeptical of the risk information, evaluating side effects within the context of their own diagnosis and treatment experiences rather than viewing them as isolated concerns. This integrated risk-benefit assessment differed from other consumer groups, who tended to evaluate side effects more as standalone statements. We therefore suggest that when presenting ISI to target audiences, pharmaceutical advertisers frame the information in ways that acknowledge patients' existing diagnosis and experience with the condition, rather than presenting side effects as generic, standalone warnings.

Finally, findings suggest that narrative content effectively promotes broader learning about the health condition and medication usage. Participants readily extracted important health information (e.g. the importance of lowering A1C and the role of diet and exercise in managing type 2 diabetes). Consistent with literature on EE, participants demonstrated learning of the health information integrated within the storyline (Quintero Johnson, Harrison, and Quick 2013; Singhal and Rogers 2004). Much like the assertion of Busselle and Bilandzic (2008), engagement in the story strengthened story-consistent knowledge and perspectives. Participants also inferred various social and lifestyle benefits of the medication, such as time with family and friends, as well as increased energy for physical activity. While such benefits can be motivating, they have also been critiqued as off-label and misleading (Aikin et al. 2024; Applequist et al. 2021; Applequist and Ball 2018; Frosch et al. 2007). The most effective approach appears to be integrating factual information within engaging narratives using the first-person format.

Regulatory implications

According to the final rule of the 'major statement' in television and radio DTCA issued by the FDA in 2023, ads must not include distractions while risk information is delivered (Food and Drug Administration 2023). However, this does not explicate the type of distracting elements that may impact audience understanding or comprehension. While our results suggest narrative elements do not completely distract from the risk information, they can nonetheless undermine the interpretation and ease of processing the risk information. Participant experiences of message-induced disruption during the ISI speaks to the FDA's concern regarding distractions, suggesting that continuing narrative visuals during important risk disclosure information constitutes the very type of distraction the 2023 guidelines aim to minimize. Therefore, our research provides support for the regulatory direction the FDA has taken while suggesting that current guidelines may need greater specificity about narrative and non-narrative elements. Further investigation is needed to examine the extent of this issue.

Pending the outcome of further research, one practical recommendation could be the prohibition of story elements displayed during the risk disclosure. This would be similar to the recommendation to eliminate positively-valanced imagery that stems from a parallel body of research on visual-verbal congruence (Biegler and Vargas 2016; Kiernicki and Helme 2017; King et al. 2022; Russell et al. 2017; Sullivan et al. 2017). Granted, this approach may still be considered disruptive to the narrative engagement established at the start of the ad. While this may raise negative affect, such disfluency could be advantageous as a mechanism to elevate a deeper level of critical analysis, as found by Walter et al. (2021). Further research would need to assess if a strategic use of disfluency in this way triggers more negative reactions than warranted.

An alternative solution is to integrate the risk information within the narrative. A prime example of this appeared in the Invokana ad when one of the characters was shown choosing water rather than soda in correspondence with the statement that dehydration was a side effect of the drug. This type of integration addresses the FDA's concern regarding distractions and avoids separating the ISI from the narrative entirely, which may create a jarring transition for consumers. Careful integration of risks with

the narrative flow may satisfy regulatory requirements while enhancing consumer comprehension.

Other possibilities could portray a doctor discussing risks with a patient or a caregiver sharing their consideration of the possible drug side effects for a loved one. While conclusive evidence is needed to assess this tactic, it could leverage the advantages of narrative engagement, avoid the negative emotional and cognitive consequences of disrupting narrative flow, and implement the learnings of existing research that shows information is best learned when it is integrated rather than adjacent to a narrative (Brechman and Purvis 2015; Hamby and Escalas 2024; Lang et al. 1995; Quintero Johnson, Harrison, and Quick 2013). Additionally, given that our methodological approach relied on a think-aloud interviewing style where participants reflected on the ads with minimal interviewer probing, future research would benefit from a greater qualitative understanding of what consumers say would make the disclosures of DTCA risks more salient to them.

Limitations and future research directions

While extensive theorizing and research depict the processing that arises from narrative and non-narrative message formats, this work is not sufficient to account for messages that use a hybrid of narrative and non-narrative content as found in broadcast DTCA. Therefore, a qualitative approach is appropriate to explore consumers' attention to and evaluation of the narrative and non-narrative content of these ads.

A limitation of our method is that it does not permit us to fully disentangle the effects of message format (narrative *versus* non-narrative) from message content (e.g. risks *versus* rewards). In DTCA broadly, and in the ads included in this study, reward content appeared in both narrative and non-narrative formats, while risk information predominantly appeared in non-narrative formats. Only one example in the Invokana ad featured risk information (dehydration, with the solution being to drink water) presented *via* the narrative. This imbalance makes it difficult to determine whether the processing differences observed are attributable to the narrative structure itself or to the type of content being communicated. An experimental design that could independently manipulate these variables, isolating respective effects on consumer attention and information processing, would benefit future research. Further, eye-tracking studies could help to provide more objective measures of visual attention allocation between narrative and non-narrative elements. Yet, our findings offer an exploratory foundation for further quantitative research to systematically investigate the degree to which narrative delivery captures the attention of consumers, thereby influencing their processing of non-narrative information concerning a drug's benefits and risks.

Future research using think-aloud protocols rather than recall-based methods would permit further, real-time exploration of how consumers' persuasion knowledge is activated differently across DTCA message components (Sethi 2020; Slater, Ewoldsen, and Woods 2018; Ulusoy et al. 2022). This would be especially useful for a deeper examination of the degree to which different dimensions of narrative engagement (understanding, presence, attentional focus, and emotional engagement) play a role

throughout ad exposure. In addition, participants' post-exposure comments likely included retrospective reflections on the ad content (Hamby, Brinberg, and Daniloski 2017; Sethi 2020; Slater, Ewoldsen, and Woods 2018; Ulusoy et al. 2022) that did not necessarily take place during exposure. While such reflections are relevant to understanding audience perceptions, they are distinctive from ad responses that take place in-the-moment. Future studies could combine real-time, think-aloud protocols with post-exposure interviewing to help distinguish between immediate responses and reflective responses.

A further limitation of this study is that the ads used predate the latest 2023 FDA updates to the 'major statement,' requiring ads not to include distractions during the presentation of risk information. However, the focus of the current study was on the overall narrative *versus* non-narrative focus of participants rather than the 'major statement.' Future research should examine participant responses to DTCA that comply with the updated 2023 guidelines, specifically investigating whether eliminating distractions during the presentation of risk information affects the narrative/non-narrative attention patterns observed in this study. Such research could also be valuable in observing whether regulatory changes successfully address the attention management challenges participants described in this study, with comparative studies examining pre- and post-2023 ad formats to provide insights into the effectiveness of FDA regulatory intervention.

Finally, while our qualitative method allows for engagement with narrative and expository content, there may be potential biases introduced that could influence findings. Interviewer presence may affect participant responses through subtle body language or social cues. The use of online interviews, while necessary to reach a more geographically diverse sample, may negatively impact participants' comfort in being expressive during the talk-aloud process, meaning that future research may benefit from refinement of procedures. Future research may benefit from the comparison of findings across different interview modalities (e.g. in-person, online, automated) to assess the impact of interviewer presence.

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Data availability statement

The participants of this study did not give written consent for their data to be shared publicly, so due to the sensitive nature of the qualitative data and health information shared, supporting data is not available.

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