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ORIGINAL ARTICLE

Media Prescriptions: Exploring the Therapeutic Effects of Entertainment Media on Stress Relief, Illness Symptoms, and Goal Attainment

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Rooted in theories of positive emotions, this research asks the question: Can media be prescribed to help mitigate the negative effects of stress on well-being? Over the course of 5 days, participants were assigned 5-minute YouTube videos pilot tested to evoke hope, amusement, or calmness. Compared to a no-message control, each media group reported reduced stress during the intervention. All groups also reported reduced stress and fewer illness symptoms a few days after the intervention's conclusion. Although all media conditions calmed stress experiences, only the videos designed to evoke hope via underdog narratives generated increases in approach motivation and goal attainment, explained primarily by felt hope (vs. self-efficacy). This research demonstrates that positive emotions induced by media exposure can generate both psychological and physical benefits, and that discrete emotions can exert unique patterns of influence. Implications for the application of media prescriptions are considered.

Keywords: Emotion, Hope, Media Intervention, Stress, Well-Being, Prescription

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Stress is a seemingly indelible aspect of modern life. Recent American Psychological Association surveys have shown Americans report, on average, moderate and unhealthy stress levels, with younger generations being especially prone to greater degrees of stress (e.g., American Psychological Association, 2015). Although stress may motivate preparatory behavior, excessive stress is cognitively and physiologically taxing and its chronic activation has been linked to a host of infectious and non-infectious disease (e.g., Carver, 2007; Sapolsky, 1998). When further considering the

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implications of both acute and chronic illness for loss of productivity, financial strain, and burden on the healthcare system, the need for identifying effective and practical strategies for stress mitigation is of pressing concern.

As such, this research integrates two emerging trends in the stress and coping literatures that have rarely intersected in meaningful ways: positive emotional experiences and media use. The coping literature suggests that positive emotions can counteract the effects of stress and promote psychological and physical wellness (e.g., Fredrickson, 1998, 2001; Pressman & Cohen, 2005). Concurrently, there is emerging evidence that people use media extensively to manage stress (see Nabi, Perez Torres, & Prestin, 2017). According to the American Psychological Association (2015), of the five coping strategies most frequently selected to deal with stress, four are media-focused: listening to music, watching TV/movies, surfing the Internet, and reading. Yet, the media effects literature has only recently begun to consider how media is used to reduce stress and enhance well-being (see Nabi, So, & Prestin, 2010 and Reinecke & Eden, 2017 for relevant reviews; see also Reinecke & Oliver, 2017).

Although researchers have designed wellness interventions to facilitate positive emotions (Fredrickson, 2000; Sin & Lyubomirsky, 2009), media use is largely absent from these programs. Further, despite theorizing that different positive emotions are associated with unique thought patterns and action tendencies (Lazarus, 1991), extant research rarely considers how unique positive states might be more or less effective at mitigating stress. Given the wealth of emotionally evocative media content and the digital technologies and platforms that enable convenient, inexpensive program delivery, we assert that media options may be nicely leveraged to evoke discrete positive emotions, effectively "prescribing" media to enhance wellness.

This research develops and evaluates a theoretically grounded, online media-based intervention aimed at generating discrete positive emotions (i.e., hope, amusement, and calmness) to determine their relative influence on psychological, physical, and behavioral outcomes. As such, this study aims to enhance our theoretical understanding of how discrete positive emotions aroused in the context of different media offerings create a buffer from the damages of stress. We begin by reviewing the literature on positive emotions and stress followed by the work on media use, positive emotions, and strain recovery.

Stress relief and positive emotions

Stress is conceptualized as the mental or somatic consequences that emerge when internal or external conditions disrupt the equilibrium between the demands one experiences and one's resources to manage those demands (Lazarus, 1966; Selye, 1982). Although stress is beneficial for mobilizing resources and motivating preparatory behavior, excessive stress creates cognitive and physiological disruptions, which undermine both subjective and physical well-being (Carver, 2007; Cohen & Herbert, 1993). Further, given stress is broadly immunosuppressive, its chronic activation contributes to immune system-mediated illness, such as infectious and inflam-

matory diseases, heart disease, immune disorders, and cancer (e.g., Carver, 2007; Sapolsky, 1998).

In light of the significant health and social consequences of chronic stress, stress coping strategies have been of tremendous interest (see Cooper & Quick, 2017). Among the many approaches identified, the value of evoking positive emotions has emerged as somewhat of a unifying theme. Positive emotions are elicited by diffuse, globally focused opportunities (Fredrickson, 1998, 2001), and unlike negative emotions, their motivational tendencies are typically vague and unspecified (Fredrickson & Levenson, 1998). And yet, there is growing evidence that positive emotional experiences can facilitate psychological and physical wellness (Pressman & Cohen, 2005), ranging from increased resistance to the common cold (Cohen, Doyle, Turner, Alper, & Skoner, 2003) to lower risk for breast cancer (Peled, Carmil, Siboni-Samocha, & Shoham-Vardi, 2008).

Although the mechanisms by which positive affect may deliver health benefits are not fully specified, several key processes include: (1) enhancing regulation of emotion-sensitive physiological systems (e.g., Fredrickson & Levenson, 1998); (2) encouraging healthy behaviors (e.g., Watson, 1988); (3) facilitating cognitive and behavioral coping efforts (e.g., Folkman & Moskowitz, 2000); and (4) broadening cognitive mindsets and building personal resources (Fredrickson, 1998, 2001). The broaden-and-build theory of positive emotions in particular (Fredrickson, 1998, 2001) has been instrumental in generating research demonstrating that positive emotions can momentarily expand one's mindset and facilitate the development of personal resources (i.e., cognitive, social, and physical) that can ultimately enhance well-being, boosting optimism (Fredrickson, Tugade, Waugh, & Larkin, 2003), life satisfaction, and health (Fredrickson, Coffey, Pek, Cohn, & Finkel, 2008). Indeed, a meta-analysis of 74 positive psychology interventions supports their value in improving well-being and reducing depressive symptoms (Sin & Lyubomirsky, 2009).

Media, positive emotional arousal, and well-being

The deliberate consumption of media content is arguably a potent way to evoke positive emotions to, in turn, generate beneficial downstream outcomes. Yet, research on the link between media exposure, positive emotions, and well-being is relatively sparse. Zillmann's (1988) mood management theory was the first theoretical perspective to specifically assert that people use media to adjust and regulate their moods and arousal levels in the service of hedonic goals. Although much supportive evidence accrued, countervailing evidence led to the introduction of selection motivations linked to eudaimonia, or happiness rooted in greater connection and insight to the human experience (Oliver, 2008). In the past 10 years, this research has evolved to focus on the different emotional experiences associated with hedonic versus eudaimonic media consumption. Specifically, hedonic media (e.g., comedy, light-hearted fare) is associated with enjoyment and pleasure. However, eudaimonic media (e.g., dramatic, heart-wrenching, or inspiring fare) is associated more with appreciation

and linked to what have been labeled self-transcendent emotions, an umbrella term for multiple positive affects (e.g., elevation, gratitude, admiration, inspiration, awe), which tend to reorient people to something larger than their own goals and concerns (Haidt & Morris, 2009; Oliver et al., 2018).

A second line of research that speaks to the link between media use and well-being, though not initially related to positive emotional experience per se, focuses on media use (e.g., video game use, film viewing) to stimulate the recovery process through the replenishment of depleted physical, cognitive, and emotional resources (Reinecke & Oliver, 2017). Quickly merging with the work on eudaimonic and hedonic media, this research focuses on four psychological experiences that underlie recovery. Hedonic media experiences are argued to relate to relaxation and psychological detachment, and eudaimonic media to mastery experiences and control (e.g., Rieger, Reinecke, Frischlich, & Bente, 2014). Integrating positive emotional experience into the mix, two recent papers from an experiment examining eudaimonic versus hedonic YouTube videos found that eudaimonic (inspiring) videos, compared to hedonic videos (funny videos or nature scenes) increased meaningful affect which in turn, associated with greater focus, vitality, and meaning at work (Janicke-Bowles, Rieger, & Connor, 2019). Further, the meaningful affect from the eudaimonic videos predicted vitality, as mediated by mastery recovery experiences (Janicke-Bowles, Rieger, Reinecke, & Connor, 2018).

In essence, the existing literature is moving in the direction of considering how media can influence important, stress-related outcomes through the emotions they evoke, and some evidence supports the benefits of different media-based entertainment experiences on key factors underlying psychological well-being, at least in the short run. However, there are important ways in which this literature can advance. First, the effects of media exposure on perceived stress and related health consequences have thus far been unexamined. Second, the published experiments focus on immediate influence, leaving the question of enduring influence unanswered. Third, the conceptualization of positive or meaningful affect combine multiple discrete emotional states into general indices. Yet, like negative emotions, discrete positive emotions are unique experiences that differ in their behavioral motivations (e.g., Lazarus, 1991). By combining them, we lose the opportunity to assess their unique influences on key outcomes of interest. Hence, there is a need to examine whether discrete positive emotions are differentially effective in motivating and sustaining coping and the circumstances under which they exert their influence (Folkman & Moskowitz, 2000).

In this research, we focus on the discrete emotions of hope, amusement, and calmness for multiple reasons. First, hope is arguably linked to eudaimonic media whereas amusement and calmness are linked to hedonic media (Janicke-Bowles et al., 2019; Janicke-Bowles et al., 2018; Zillmann, 1988). Second, all three emotions are linked to positive psychological and physical health outcomes (Giuliani, McRae, & Gross, 2008; Gross & Levenson, 1997). Yet third, based on emotion theory (e.g., Frijda, 1986; Lazarus, 1991), they should generate different cognitive, physiological,

and behavioral responses, which may have implications for how successful each emotion (and the media that generate them) is at reducing stress and motivating productive action. We review each emotion in turn.

Hope

Hope is the feeling of "yearning for relief from a negative situation, or for the realization of a positive outcome when the odds do not greatly favor it" (Lazarus, 1991, p. 282). Hope is both goal-incongruent and future-oriented, as it arises when one's present circumstance is not as favorable as a desired future situation (Ellsworth & Smith, 1988; Lazarus, 1999; Stotland, 1969). As such, despite its unfavorable context, hope provides a sense that one can improve one's situation (Ellsworth & Smith, 1988). Thus, it has earned a reputation as an emotional coping mechanism useful in circumstances that are harmful, threatening, stressful, or unsatisfactory (Lazarus, 1991, 1999; Roseman, Spindle, & Jose, 1990).

Although hope is a positively experienced emotion, it is unique relative to positive emotions in that it motivates goal-oriented behavior – encouraging and sustaining action, commitment toward goals, and coping efforts (Averill, Catlin, & Chon, 1990; Lazarus, 1991, 1999; Snyder, 2000; Snyder et al., 1991; Stotland, 1969). Indeed, the specific action tendency of hope is remaining "vigilant, mobilized, and committed" to a desired outcome (Lazarus, 1991, p. 285). Importantly, there is much evidence associating both trait- and state-based hope with beneficial physical and psychological health outcomes, including reduced frequency and severity of illness (Scioli et al., 1997), decreased likelihood of developing a disease (Richman et al., 2005), increased quality of life (Rustoen & Wiklund, 2000), and mental wellness (Brackney & Westman, 1992). Although research on how to evoke hope specifically via media content is not well-articulated, we suggest that stories of those overcoming adversity (i.e., underdogs) are likely to embody the core theme of hope and thus generate its arousal in audiences (see Prestin, 2013, for an elaboration on this argument).

Amusement

Amusement, or the experience of finding something funny, is associated with a sense of well-being, pleasure, and security (Lazarus, 1991; Roseman et al., 1990). Lower in intensity than happiness or joy, amusement carries the added sense of slight detachment (Lazarus, 1991). Amusement has no high-intensity action tendency (Fredrickson, 1998). Rather, it provides a respite from goal-driven activity and promotes playfulness and creativity (Frijda, 1986; Izard & Ackerman, 2000), which broaden one's mindset and build personal resources (Fredrickson, 1998, 2001).

There is an impressive literature developing around the effects of humor on a range of positive health outcomes, and positive emotions have emerged as one of several theoretical mechanisms posited to explain these effects (e.g., Martin, 2001). Given humorous media generate positive affect, amusement in particular (see Herring, Burleson, Roberts, & Devine, 2011; Martin, 2001), it is perhaps unsurprising

that many of the findings linking humor to positive health outcomes are drawn from studies using comedy videos as stimuli (e.g., Dillon, Minchoff, & Baker, 1985; Zillmann, Rockwell, Schweitzer, & Sundar, 1993). In fact, extended interventions with humorous media have demonstrated therapeutic benefits for outcomes ranging from schizophrenics' mental health status (Gelkopf, Gonen, Kurs, Melamed, & Bleich, 2006) to diabetics' cardiac health (Tan, Tan, Lukman, & Berk, 2008). In sum, comedy videos are a reliable means of promoting humorous experiences, which can benefit psychological and physical health.

Calmness

Calmness is a pleasant, low-intensity positive emotion state similar to contentment or serenity (e.g., Feldman Barrett & Russell, 1998; Fredrickson, 2000). Calmness is not directly associated with an action tendency, but rather, produces "deactivation," relaxation, and a reflective broadening of one's self and worldviews (Fredrickson, 2000; Robinson & Clore, 2001). Calmness prompts individuals to savor the moment, feel oneness with their environment, and integrate recent experiences into their overall self-concept and worldview (Izard, 1977). Further, calmness is linked to the relaxation response or parasympathetic dominance, which is marked by reduced heart rate, blood pressure, and muscle tension, as well as improved mood (Kerr, 2000). Indeed, a meta-analysis has shown relaxation therapies designed to induce calmness are effective in reducing stress for healthy populations (Chiesa & Serretti, 2009).

Media research rarely refers to calmness as a unique emotional response to media per se, though the notion that we use media to regulate our arousal (Zillmann, 1988) strongly suggests people use media to create feelings of calm when desired. Given extensive evidence supports the benefits of exposure to nature on both positive emotions and stress (e.g., Berto, 2014), nature videos may be a likely source of generating calmness. In fact, Nadkarni et al. (2017) found that inmates exposed to nature videos over the course of a year reported feeling more calm and less irritable, and were less likely to commit violent infractions. Thus, nature videos are a potentially valuable tool to promote calmness and, in turn, reduce stress and enhance well-being.

Hypotheses

The goal of this research is to determine how exposure to an intervention involving multiple media messages over time that induce different positive emotions influence psychological and physical health as well as goal pursuit and achievement. Unlike previous research that has focused on the cognitive mechanisms associated with recovery and vitality, we focus on how different media content evokes specific emotions and how those emotions link to perceived stress. As such, this research identifies media conditions (underdog, comedy, and nature) associated with unique positive emotional states (hope, amusement, and calm; see Prestin, 2013, for greater

detail on these conditions). As noted earlier, underdog narratives, which focus on a protagonist overcoming adversity to achieve a goal, capture the essence of hope. Comedic media content is expected to generate amusement, and media content depicting scenes from nature should evoke feelings of calmness. Given all three are positive emotional states, we expect that exposure to each of these types of media messages should dampen stress by virtue of generating elevated levels of the target emotion. Thus, we predict:

> H1: During the intervention, the Underdog, Comedy, and Nature media groups will report less stress relative to the Control group.
>
> H2: Reduced stress resulting from media exposure is associated with the arousal of hope, amusement, and calmness.

If support is found for H1, we will then examine the specific emotions responsible within each conditions and the persistence of the stress reduction over time.

Next, given the documented relationship between stress and illness, we expect that if media consumption reduces stress, those in the media conditions will report less illness symptomology relative to the control group after the intervention. Thus, we predict,

> H3: Relative to the Control group, the Underdog, Comedy, and Nature media groups will report fewer symptoms of physical illness after the intervention.
>
> H4: The relationship between exposure to positively valenced media and reduced illness symptoms is mediated by perceived stress.

Goal pursuit motivation and achievement

Above, we argue that media content that captures the themes associated with hope, amusement, and calmness will reduce stress and illness symptoms. As psychological stress and physical discomfort diminish, it then becomes interesting to ask whether additional benefits to media consumers might ensue in light of those liberated cognitive and physiological resources. Specifically, we consider whether discrete positive emotions not only alleviate stress but also set individuals up to be more motivated and able to engage in goal-oriented behaviors. Given those who are more successful in meeting their goals will likely experience greater stress mitigation over time and consistent failure to meet life's demands increases chronic stress burden, understanding the effect of positive emotions on active goal pursuit is of great interest.

The approach-oriented action tendencies of positive emotions encourage individuals to engage with their environments, create, explore, and open themselves to new experiences. Yet, among positive emotions, hope is unique as a "motivational fuel" that inspires goal-oriented action and commitment. Conversely, amusement and calmness promote deactivation and disengagement. Further, underdog videos, in which overcoming adversity is modeled by the featured characters, are expected not only to evoke hope as the dominant emotion but also, in light of the inspiring

content, to motivate and direct participants to similarly pursue their goals during the intervention more so than the other videos, in which hope arousal is less clearly harnessed. This motivation should, in turn, predict effort toward achieving goals as well as degree of goal attainment following the intervention. Thus, we predict:

> H5: Relative to the Comedy, Nature, and Control groups, the Underdog group will report (a) greater approach motivation, (b) more effort expended toward goals, and (c) greater goal achievement post intervention.
>
> H6: Hope mediates the influence of exposure to underdog videos on (a) approach motivation, (b) goal effort, and (c) goal achievement.

Given those in the other conditions may also experience some hope, it is important to see whether this hope, though more modest in degree and relative to other emotions, has a similar effect or whether hope evoked in non-underdog narrative contexts loses some of its potentiation.

As such, path modeling of the relationships for both the Underdog group and the other conditions will be presented.

Methods

Participants

From an initial recruited sample of 295 students, 248 undergraduates (84% female, 62% Caucasian, age $M = 19.54$, $SD = 1.45$) completed a four-wave panel experiment designed to assess the effects of different positive emotional media interventions on psychological stress and well-being (see Supporting Information for details on attrition). In keeping with national survey findings that more than half of undergraduates are highly stressed (Hudd et al., 2000), participants scored high on three stress measures and around the midpoint on depression and anxiety scales, indicating they were a good fit for this intervention. Further, though the sample was predominantly women, there is strong evidence that women not only experience more stressors and consider stressors more threatening but, importantly, suffer more negative health consequences due to stress (see Mayor, 2015).

Procedures

After completing a pretest assessing psychological states, coping strategies, physical and psychological well-being, and goals, participants were randomly assigned to one of three media treatments (Underdog, $n = 66$; Comedy, $n = 62$; Nature, $n = 60$) or a no-media Control condition ($n = 60$). Beginning on the Monday following the pretest, each weekday for five consecutive days, they were e-mailed a link to a secure website hosting a different daily YouTube clip appropriate to their condition. The Comedy treatment, intended to evoke amusement, featured humorous content involving incongruities or events that appeared inappropriate given their context (e.g., cat hijinks). The Underdog treatment, designed to elicit hope, featured stories of disadvantaged characters facing challenges who, through hard work and

determination, overcame unfavorable odds to reach their goals (e.g., a dog born with no front legs walking upright). The Nature condition included clips of natural landscapes to induce a state of calmness (e.g., time-lapse footage of flowers blooming; see Supporting Information for clip descriptions). Each clip was about 5 minutes (for a total program dose of 25 minutes), and all were pilot tested to ensure that the treatments evoked strong levels of their target emotion and relatively weaker levels of any other emotion (see Supporting Information for details on pilot testing).

After each clip, participants completed a brief assessment of their emotional state, stress level, motivational state, and perceptions of the video. The Control group answered the questionnaire without viewing any media clip. One to three days following the intervention (T2), participants completed a posttest questionnaire assessing the same variables as the pretest with additional measures of progress toward goals, and 10 to 12 days later (T3) they completed a second posttest to assess any enduring influence of the intervention.

A posthoc power analysis with alpha of .05 indicates sufficient power to detect a large effect size of .50 (power = 1.00) and a medium effect size of .30 (power = .98), but more limited power to detect a small effect size of .10 (power = .23).

Measures

Two sets of measures were used in this study: those in the pre- and post-test surveys that bookended the intervention, and those in response to each video clip. For the sake of parsimony, time points are abbreviated as: (T1) pretest; (I) intervention; (T2) initial posttest (1-3 days after the intervention); (T3) delayed posttest (10-12 days after the intervention). As this was part of a larger data collection, only those measures relevant to the analyses reported here are presented.

T1, T2, and T3 measures

Each set of measures below was completed at T1, T2, and T3 and assessed with Likert scales unless otherwise noted. Alphas reported are from T1.

Perceived stress. Participants rated their general stress in the past week from 1 (none at all) to 10 (extreme stress), M = 5.25, SD = 2.05.[1]

Illness symptoms. An illness symptoms scale based on Elliot and Sheldon (1998) assessed the average frequency of 10 common illness symptoms (headaches, coughing or sore throat, shortness of breath, stiff or sore muscles, chest or heart pain, faintness or dizziness, acne or pimples, stomach ache or pain, runny or congested nose, and tiredness or exhaustion) during the previous week from 1 (not at all) to 7 (very frequently), $M = 2.49$, $SD = .58$.

Trait hope. Participants completed the 8-item Trait Hope Scale (Snyder et al., 1991) to assess their general ability to generate plans to achieve goals (e.g., "I energetically pursue my goals"), assessed on 1 (definitely false) to 7 (definitely true) scales ($M = 5.12$, $SD = .89$; $\alpha = .88$).

Initial goal pursuit assessments. At T1, participants identified up to three important goals they wanted to accomplish in the next 3 to 4 weeks. For each goal, they rated how likely they were to accomplish it (1 = unlikely to 10 = extremely likely), how difficult this goal would be to accomplish (1 = extremely easy to 10 = extremely difficult), and their self-efficacy to achieve it (1 = not at all confident to 10 = extremely confident).

Goal effort and achievement. At T2 and T3, they rated how much effort they put toward accomplishing each goal (1 = no effort to 10 = extreme effort) and how successful they were at accomplishing each goal (1 = not at all successful to 10 = completely successful). They completed these items for each individual goal. Given participants had difficulty remembering all but their primary goal at the posttests, analyses focus on the primary goal only.

Demographics. Gender, age, ethnicity, and year in school were assessed at T1.

Intervention viewing measures

Each of the measures below was completed immediately after viewing each video. Measures were averaged across the five days to create composite indices representing the influence of the 5-day intervention. Those in the Control condition completed all daily measures except for the media-oriented items.

Emotional state. After watching each video, participants were presented with a list of 14 emotions (adapted from the mDES scale; Fredrickson et al., 2003) and asked to rate how much of each (1 = not at all to 7 = very much) they felt in the moment. The items of hopeful, amused, and calm (each averaged across the five intervention days) were used for both manipulation checks and as potential mediators of hypothesized effects.

Momentary perceived stress. Participants completed a single-item measure of momentary stress which asked how stressed they felt in the moment from 1 (not at all stressed) to 10 (extremely stressed), which were averaged across the 5 days ($M = 4.73$ $SD = 1.72$).

Goal-oriented approach motivation. Twelve items developed for this study assessed participants' goal-oriented motivation (both approach and avoidance) after watching each clip. Factor analysis revealed a clear, approach-oriented motivation based on seven items (e.g., "I want to take action to make progress toward my goal" and "I think about steps I need to take to reach a goal I have"). After confirming reliability of the approach motivation scale for each Day 1 through Day 5, the daily measures were averaged over the five-day measurement period ($M = 5.13$, $SD = .1.24$; $\alpha = .91$).

Media characteristics. Participants rated from 1 (not at all) to 7 (very) how emotional, realistic, predictable, unexpected, funny, inspiring, calming, relaxing, motivational, and amusing they found each clip to be along with some assessments of the characters portrayed. These data were used primarily to assess that the clips were perceived as expected and for exploratory purposes in the stress analyses. As such, they are not discussed further.

Goal directed self-efficacy. Respondents were then asked to think about their own challenges and goals and to indicate from 1 (not at all) to 7 (very much) how confident they were that they could reach their own goals as a measure of self-efficacy.

Results

Emotional arousal manipulation checks

As expected, the Comedy clips generated significantly more amusement ($M = 5.24$, $SD = 1.09$) than the other groups (Underdog: $M = 4.39$, $SD = 1.14$; Nature: $M = 4.31$, $SD = 1.12$: Control: $M = 3.50$, $SD = 1.28$; $ps < .001$); $F(3, 244) = 22.93$, $p < .001$, $\eta^2 = 22$. The Underdog videos evoked significantly more hope ($M = 5.56$, $SD = .87$) than the other groups (Nature $M = 4.43$, $SD = 1.11$; Control $M = 4.34$, $SD = 1.33$; Comedy: $M = 3.68$, $SD = 1.31$; $ps < .001$); $F(3, 244) = 28.93$, $p < .001$, $\eta^2 = 26$. Finally, the Nature clips generated greater calmness ($M = 4.93$, $SD = 1.06$) than the Underdog videos ($M = 4.56$, $SD = .86$, $p = .04$) and the no-video condition ($M = 4.50$, $SD = 1.16$, $p = .02$). Although exhibiting greater calmness than the Comedy group, the difference was not significant ($M = 4.64$, $SD = 1.03$, $p = .12$), $F(3, 244) = 2.10$, $p = .10$, $\eta^2 = 03$. Importantly, each media group evoked greater positive affect specific to their message theme than the Control group. Also of critical importance to assess the effects of different message themes, the Underdog group experienced significantly greater hope than either amusement or calm ($ps < .001$). The Comedy group experienced greater amusement than either hope or calm ($ps < .001$), and the Nature group experienced significantly more calm than hope or amusement ($ps < .001$). Thus, these data are consistent with the pilot test findings and support successful manipulations.[2]

Intervention effects on immediate and delayed stress level

In light of the anticipated elevated arousal of hope, amusement, and calmness from media exposure (referred to hereafter as "positive emotional arousal"), H1 predicted that the Underdog, Comedy, and Nature media groups would report less stress relative to the Control group during the intervention. To assess H1, the averaged intervention stress variable served as the dependent measure in an ANCOVA with condition as the independent variable and baseline perceived stress scores as the covariate. A main effect for condition emerged, $F(3, 243) = 6.13$, $p = .007$, $\eta_p{}^2 = .07$ (see Table 1). In support of H1, each media condition (Comedy: $M = 4.70$, $SD = 1.61$, $p = .007$; Underdog $M = 4.55$, $SD = 1.66$, $p = .002$; Nature $M = 4.34$, $SD = 1.62$, $p < .001$) reported lower average stress over the course of the intervention compared to the Control group ($M = 5.36$, $SD = 1.85$). A repeated measures ANCOVA did not reveal any notable differences day to day and thus that did not suggest evidence of cumulative stress reduction (see Supporting Figure).

To examine the persistence of the stress reduction, an ANCOVA with the stress rating at T2 found that this effect persisted for a few days after the study's conclusion,

Table 1 Media Condition by Stress, Goal Effort, and Goal Achievement

		Media Conditions				
Variable		Underdog $n = 66$	Comedy $n = 62$	Nature $n = 60$	Control $n = 60$	p
I Stress	Baseline	5.23_a (2.17)	5.29_a (2.00)	5.36_a (1.97)	5.10_a (2.08)	.88
	Intervention	4.55_a (1.66)	4.70_a (1.61)	4.34_a (1.62)	5.36_b (1.85)	.007
	Posttest 1	4.95_a (2.12)	5.19_a (2.03)	5.03_a (2.21)	5.98_b (1.92)	.004
	Posttest 2	6.12_{ab} (2.23)	6.12_{ab} (2.23)	5.87_{ab} (2.07)	6.35_b (2.33)	.096
Ill symptoms	Posttest 1	2.32_a (.56)	2.33_a (.55)	2.41_a (.50)	2.52_a (.65)	.008
Goal effort	Posttest 1	7.53_a (2.01)	7.27_a (2.00)	7.06_a (2.27)	6.95_a (2.45)	.61
Goal achieve	Posttest 2	7.16_a (2.27)	6.71_{ab} (2.27)	6.31_b (2.54)	6.36_b (2.55)	.14

Note: Controls on baseline levels of each variable from T1 are included in each analysis. Means within rows that do not share a subscript letter differ at $p < .05$.

$F(3, 242) = 4.63$, $p = .004$, $\eta_p^2 = .054$ (see Table 1), with the three treatment groups (Underdog: $M = 4.95$, $SD = 2.12$; Nature $M = 5.03$, $SD = 2.21$; Comedy $M = 5.19$, $SD = 2.03$) continuing to report lower stress than the Control group ($M = 5.98$, $SD = 1.92$), $ps < .05$. Results 10 days post intervention revealed suggestive differences among conditions $F(3, 243) = 2.14$, $p = .096$, $\eta_p^2 = .026$, with the Comedy group reporting lower stress ($M = 5.55$, $SD = 2.29$) than the Control group ($M = 6.35$, $SD = 2.33$), $p = .018$. The Underdog and Nature groups did not differ significantly from the Control group. Thus, in clear support of H1, the set of evidence indicates that exposure to positively valenced media can generate momentary as well as more enduring stress relief.

Emotional mechanisms of stress reduction

H2 predicted that stress reduction resulting from media exposure would be a function of positive emotional arousal. We first examined how each of the three target emotions – hope, amused, and calm – associated with Intervention stress and T2 stress, controlling for initial stress. Results demonstrated that for each condition, each emotion demonstrated different relational patterns with stress (see Table 2). Given the lower power to detect small effect sizes, results approaching significance ($p < .10$) are reported.

Table 2 Partial Correlations of Stress with Positive Emotions by Condition

	Media Conditions			
	Control	Comedy	Underdog	Nature
Intervention stress				
Calm	−.51***	−.09	−.41**	−.14
Hope	.12	.30*	−.23+	.06
Amused	−.22+	−.25+	−.14	−.19
T2 stress				
Calm	−.14	−.30*	−.19	.03
Hope	.15	.07	−.23+	.19
Amused	−.06	.02	−.08	.00

Note. Partial correlations control on T1 stress. *** $p < .001$, ** $p < .01$, * $p < .05$, + $p < .10$.

For the Control group, only feeling calm during the intervention week associated with less immediate stress, $r(57) = -.51, p < .001$, suggesting the baseline predictor of lower stress is calmness. None of the three positive emotions during the intervention associated with T2 stress (ps $> .20$). For the Underdog group, feeing more calm, $r(63) = -.41, p = .001$, associated with reduced immediate stress as did feeling more hope, $r(63) = -.23, p = .067$. Although this latter effect was marginally significant, it also emerged for T2 stress. For the Comedy group, feeling more amused associated meaningfully with reduced immediate stress, $r(59) = -.25, p = .055$. Importantly, counter to the Underdog group, hope in response to the Comedy videos associated with *increased* immediate stress, $r(59) = .30, p = .017$. Only Intervention calm associated with T2 stress, $r(59) = -.31, p = .02$. Finally, for the Nature group, none of the three positive emotions associated with either Intervention or T2 stress (ps $> .10$).

These different patterns across the three media message types suggest that the effects of particular emotional experiences differ based on the contexts in which they are aroused. This is particularly true of hope, which minimized stress when evoked in the context of inspiring stories of underdogs beating the odds but enhanced stress in the context of comedy. As such, the evidence suggests that, consistent with the frame of this research, looking at individual emotions rather than composite indices is a more appropriate data analytic strategy.

In light of the above, to assess the role of discrete positive emotions in reducing stress in each condition, we ran two hierarchical regressions, with the dependent variables as Intervention stress and T2 stress respectively. In both regressions, T1 stress was entered in Block 1, the three media conditions (dummy coded) were entered in Block 2, the intervention emotions of hope, amusement, and calm were entered in Block 3, the interactions of each media condition with each emotion were

entered Stepwise in Block 4, and for the second regression, Intervention stress was entered in Block 5. Both models were significant, $F(8, 239) = 17.53$, $p < .001$, and $F(9, 237) = 23.31$, $p < .001$, respectively (see Table 3).

The results demonstrate first, that as noted above, all 3 media conditions reduced Intervention stress level (see column 4). Further, all three positive emotions related to Intervention stress – amusement and calm reduced it ($\beta = -.14$ and $\beta = -.28$ respectively), but hope increased it ($\beta = .26$; see col 5). However, this latter finding is qualified by a significant condition/hope interaction ($\beta = -.95$), indicating that those in the Underdog group who felt stronger hope felt less stress during the Intervention (see col 6). Speaking to the potential mediating role of the positive emotions, once hope, amusement, and calmness were entered into the model, the direct relationships between comedy exposure and stress disappeared. However, a direct association between exposure to the Underdog and Nature conditions and stress reduction persisted. Examination of message assessments, including inspiring media characters, realism, and predictability, did not explain additional variance in stress reduction.

The results of the second regression echoed that of the first (see Table 3), however, once average Intervention stress was added to the model, all other effects were reduced to non-significance (see col 11), indicating that all effects of condition exposure and positive emotional arousal on enduring stress relief are mediated by the more proximal variable of Intervention stress level.

In sum, the evidence supports the role of media-induced positive emotional arousal in mitigating stress in both the immediate and short run. Importantly, the discrete emotions evoked had different influences depending on the media context in which they were evoked, and the effects of the three positive emotions assessed, partially, but not fully, explained how media exposure results in stress reduction.

Positive media and physical well-being

H3 predicted that the Intervention participants would report fewer symptoms of physical illness relative to the Control participants shortly after the intervention. An ANCOVA with first post-test illness symptoms, controlling for baseline illness scores, revealed a significant main effect for condition, $F(3, 243) = 4.06$, $p = .008$, $\eta_p^2 = .048$ (see Table 1). Specifically, the Comedy ($M = 2.33$, $SD = .55$, $p = .003$), Underdog ($M = 2.32$, $SD = .56$, $p = .002$), and Nature groups ($M = 2.41$, $SD = .50$, $p = .03$) all reported fewer illness symptoms than the Control group ($M = 2.52$, $SD = .65$). The three experimental groups did not significantly differ from each other. Thus, H2 was supported with all three intervention groups reporting better physical health after the intervention's conclusion. Of note, given the range of factors that influence health, we would not expect these benefits to endure, and indeed, they did not persist at the 10 day mark ($p = .16$).

To test H4, that the media intervention relationship with illness symptoms is mediated by stress, we used Hayes' PROCESS model 4 (with 5,000 bootstrap samples)

Table 3 Predicting Intervention and Posttest (T2) Stress

		Intervention Stress				T2 Stress				
		β	β	β	β	β	β	β	β	β
Block 1	T1 stress	.42***	.43***	.41***	.39***	.42***	.43***	.42***	.40***	.18**
Block 2	Underdog	–	−.22**	−.27***	.63***	–	−.23**	−.28***	.57***	.22
	Comedy	–	−.19**	−.03	−.02	–	−.18+	−.16+	−.14+	−.13+
	Nature	–	−.28***	−.20**	−.20**	–	−.22**	−.20**	−.20**	−.08
Block 3	Hope	–	–	.26***	.34***	–	–	.12+	.20*	.01
	Amuse	–	–	−.14*	−.14*	–	–	.02	.02	.10
	Calm	–	–	−.28***	−.29***	–	–	−.16*	−.17**	−.01
Block 4	Underdog x Hope	–	–	–	−.95**	–	–	–	−.90**	−.36
Block 5	Intervention stress	–	–	–	–	–	–	–	–	.57***
	Δ R2	.18***	.06***	.11***	.024***	.18***	.045**	.025*	.02**	.20***

Notes. *** $p < .001$, ** $p < .01$, * $p < .05$, + $p < .10$.

with T2 health symptoms as the outcome variable, media condition (media exposure = 1; no media control = 0) as the predictor, and stress during the intervention as the mediator (with initial health symptoms as a covariate). Results revealed both a significant indirect effect of media exposure on illness symptoms through intervention stress (effect = -.03, *SE* = .017; LLCI = -.0684, ULCI = -.002) as well as a direct effect of media exposure (effect = -.17, *SE* = .06, $p = .005$; LLCI = -.2909, ULCI = -.0525) (see Figure in supplemental materials). Thus, in partial support of H4, reduced stress as a function of media exposure only partially explained reduced illness symptoms post-intervention. Of note, when emotions were added as potential mediators, none proved significant.

Underdog media and perseverance toward goals

H5 posited that the Underdog group would experience (a) stronger approach motivation during the intervention, (b) more effort expended toward goals, and (c) greater goal achievement after the intervention relative to the other three groups. An ANOVA revealed a main effect for condition for approach motivation, $F(3, 244) = 5.82$, $p < .001$, $\eta_p^2 = .067$. In support of H5a, the Underdog group ($M = 5.54$, $SD = .83$) reported significantly greater approach-oriented motivation during the exposure week than the Comedy ($M = 4.83$, $SD = 1.22$, $p < .001$), Nature ($M = 5.06$, $SD = .89$, $p = .008$), and Control groups ($M = 5.04$, $SD = 1.02$, $p = .006$). To test if hope arousal mediated this relationship (H6a), a PROCESS model 4 was run with Intervention approach motivation as the outcome, Underdog condition (1 = Underdog, 0 = other conditions) as the predictor and Intervention hope as the mediator. Results revealed that hope fully mediated the effect of exposure to underdog videos on approach motivation (effect = .61, *SE* .09; LLCI = .4274, ULCI = .8173) (see Supporting Figure). Of note, when substituted for hope, calmness and amusement showed no evidence of mediation.

To test H5b-c, ANCOVAs were run with three dependent measures: goal effort at T2 and goal achievement at both T2 and T3. Baseline ratings of self-efficacy toward goal achievement and likelihood of goal achievement were covariates respectively. Although the Underdog group evidenced the strongest goal effort and goal progress at T2, they did not differ significantly from other groups (*p*s > .20). However, at T3, the Underdog group ($M = 7.16$, $SD = 2.27$) reported significantly greater goal achievement compared to the Control group ($M = 6.36$, $SD = 2.55$, $p = .04$) and the Nature group $M = 6.31$, $SD = 2.54$, $p = .05$). Although elevated compared to the Comedy group ($M = 6.65$, $SD = 2.21$), the difference was not significant, $p = .18$. Importantly, the Underdog group was the only media group to differ significantly from the no-media Control group ($p = .04$ vs. *p*s = .50 −.97). Thus, the data do not support H5b, but offer some support for H5c. That is, the Underdog videos generated greater approach motivation during the intervention and greater goal achievement after 10 days.

To determine if elevated hope links Underdog video exposure to greater goal effort and goal achievement (H6b-c), hierarchical regressions were conducted with T2 goal effort and T3 goal achievement as the outcome variables, baseline goal self-efficacy and achievement likelihood entered respectively in Block 1; Underdog condition (1 = Underdog, 0 = other conditions) entered in Block 2; and Intervention hope entered in Block 3. Consistent with the ANCOVA results, Underdog condition did not significantly impact T2 goal effort ($p = .28$). However, Intervention hope, which was elevated in the Underdog group, did ($\beta = .16$, $p = .04$). Also consistent with expectations, the Underdog group evidenced greater T3 goal achievement ($\beta = .14$, $p = .028$), and when Intervention hope was added to the model, it was significant ($\beta = .19$, $p = .01$), and the condition effect disappeared ($\beta = .05$, $p = .48$; see supplemental materials for full regression tables). Thus, exposure to underdog-themed videos resulted in goal achievement because of the hope it generated. This was confirmed with a PROCESS model 4 in which Intervention hope emerged as a significant mediator between video exposure and goal achievement (effect = .48, $SE = .21$, LLCI = .0680 to ULCI = .9036).

Modeling the emotional-motivational processes of underdog videos

The above analyses paint a picture of exposure to the underdog videos over the course of the week resulting in greater hope and, in turn, greater approach motivation, goal pursuit, and goal achievement. To assess this process of influence, a path model was constructed in AMOS 24 focused first on the Underdog only condition and then on the other conditions to determine if hope serves a similar function outside the underdog-themed context, which contained inspiring role models. The goodness of fit criteria used were: (1) a χ^2/df ratio of 5 or less; (2) a comparative fit index (CFI) of .90 or greater, as close to 1 as possible; and (3) a root mean square error (RMSEA) less than or equal to .06. Given trait hope predicted (as expected) degree of hope arousal and goal effort, it was included in the model. A significant association between approach motivation and T3 goal achievement suggested this path be added as well. The resulting model for the Underdog group demonstrated an excellent fit to the data, $\chi^2/df = .77$, $p = .55$, CFI = 1.00, RMSEA = .000.

As shown in Figure 1, for the Underdog group, Intervention hope predicted Intervention approach motivation, which in turn predicted goal effort at T2 and goal achievement at T3. This model supports the claim that hope ultimately generates goal pursuit and attainment via approach tendencies. Given the powerful relationship between self-efficacy and behavior (Bandura, 1997), we then considered whether the cognition of self-efficacy, rather than the emotion of hope, might explain away these findings. When adding self-efficacy, it significantly associated with approach motivation ($\beta = .32$), though with no other variable, and importantly, the hope-approach motivation relationship was unchanged ($\beta = .50$). Of interest, when baseline and intervention stress were added to the model, the key reported relationships also did not change.

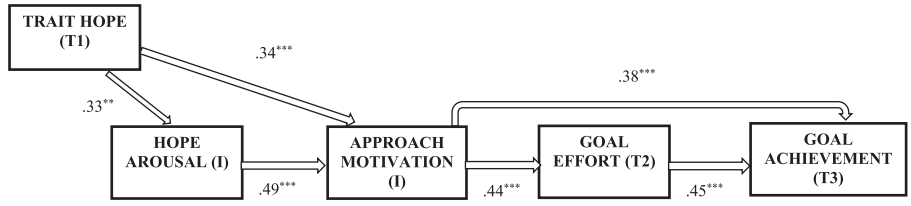

Figure 1 Path model of hope's effects on goal achievement: Underdog group only. *Notes*. *** $p < .001$, * $p < .05$

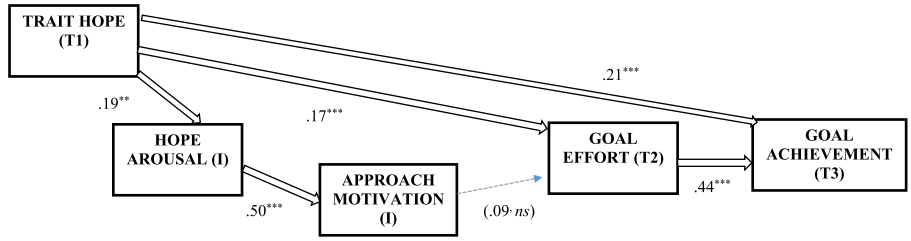

Figure 2 Path model of hope's effects on goal achievement: Comedy, Nature, and Control groups only. *Notes*. *** $p < .001$, * $p < .05$

The same model did not evidence a good fit for the other three conditions, $\chi^2/df = 3.64$, $p = .006$, CFI = .894, RMSEA = .121. By adjusting the model to include significant associations and delete non-significant ones, an excellent model fit was achieved, $\chi^2/df = 1.04$, $p = .39$, CFI = .998, RMSEA = .014, though it did not demonstrate the same role for hope. As shown in Figure 2, though hope associated with approach motivation, there was no significant association between either hope or approach motivation on goal pursuit or goal achievement. Rather, trait hope predicted both goal-related outcomes. Of note, when the trait hope-goal pursuit and achievement relationships were included in the Underdog model, they were not significant ($p = .50$ and $p = .14$ respectively), and none of the reported relationships were meaningfully altered. Thus, the evidence suggests that not only does message-induced hope play a pivotal role in generating goal pursuit and achievement, but this process is unique to the Underdog context, in which inspiring models are depicted.

Discussion

This research sought to determine whether media content might be harnessed to benefit psychological and physical well-being and motivate goal pursuit while also testing unique effects of different positive emotional states within this process. In essence, our findings support the notion that media can be prescribed to benefit media consumers. All three media treatments enhanced some form of positive emotional arousal and diminished psychological stress. Importantly, stress reduction

endured for a few days beyond the final exposure. Further, while media participants reported decreased stress from baseline both during and after the intervention, the Control group's stress levels steadily increased. Only at the 10-day posttest were stress levels largely equivalent for all groups, indicating that the media treatments suppressed a natural rise in stress over the progression of the term, especially for the Comedy group.

The media groups also reported reduced illness symptoms post-intervention, explained in part, but not fully, by stress mitigation. Given the illness symptom inventory asked about symptoms in the past week, which overlapped with the intervention days, it is reasonable to imagine a process whereby the media-generated positive emotions tempered stress in ways that buffered against psychosomatic symptoms (e.g., headaches, chest pain, tiredness, faintness). Although we have no evidence regarding the participants' immune system functioning during the study, it is possible, and indeed consistent with past research (e.g., Carver, 2007; Cohen & Herbert, 1993) that the unexplained relationship between media intervention and symptoms could be a function of physiological processes that warrant future study.

Although all three media conditions ameliorated stress, they did so through different emotional pathways. Calmness, which is virtually the antonym for stress, emerged as a significant predictor of reduced stress for both the Control and Underdog groups. Further, and consistent with expectations, amusement evidenced a meaningful association with reduced stress for the Comedy group as did hope for the Underdog group. Somewhat surprisingly, calmness did not significantly associate with stress for the Nature group, suggesting either another emotion, such as awe, might be responsible for reduced stress, or the test was simply underpowered to detect a meaningful emotion-stress relationship in this context.

Of particular interest, whereas felt hope negatively associated with stress for the Underdog group, it associated with *more* stress for the other two media groups. This finding is likely explained by the source of hope for each group. For the Underdog group, feelings of hope likely reflected the inspiring nature of the clips that, in turn, motivated goal pursuit. However, for the other groups, who did not see inspiring characters, measured hope may have instead tapped into the hopes participants had in light of their current stressors. Recalling that hope involves fearing the worst (Lazarus, 1991), hope can associate with anxiety (e.g., Nabi & Myrick, 2019) and, thus, stress. In essence, the Underdog group's assessment of hope likely reflected the lens of the possibility of a better future whereas the other groups' hope likely reflected the lens of the existing negative circumstances. As such, the context of hope arousal, and not just the feeling of hope itself, is likely a critical predictor of hope's influence.

Taken together, these results indicate that this study's 5-day intervention was successful in providing a countervailing emotional experience to dampen stress. Traditionally, research on so-called escapist media use has taken the stance that people use media to avoid, rather than solve, their problems (Kubey & Csikszentmihalyi, 1990). This study provides a more optimistic view on media use and fits with contemporary work on hedonic and eudaimonic media's role in promoting depletion

recovery (see Reinecke & Eden, 2017). In essence, these data suggest that under certain circumstances, media consumption can be good for you.

Further, though all media conditions mitigated stress experiences (albeit through different emotional pathways), only the Underdog video group evidenced increases in approach motivation and goal attainment. Additional analyses demonstrated that felt hope from the Underdog videos strongly linked to approach motivation that, in turn, motivated goal effort and achievement. This result persisted despite controlling for self-efficacy. Moreover, the approach motivation-goal pursuit pathway was not significant for the other conditions ($\beta = .09$, ns). Thus, the hope that emerges from exposure to inspiring underdog narratives harnesses a motivational quality not seen in other media contexts or with other positive emotions. In sum, we found strong evidence for the unique benefits of hope in pursuit of self-stated goals.

Overall, this study demonstrates the efficacy of a media-based intervention to deliver beneficial psychological, physical, and behavioral outcomes. However, would such an intervention work in practice? There are reasons to believe it would. First, though tested experimentally, the intervention was delivered in a more naturalistic setting. Participants received each day's video in the morning, and could watch it at any point during the day on the internet-enabled device most convenient for them. Thus, they had freedom over when, where, and how they engaged in the intervention, and the range of consequential outcomes that the program produced without the control of a laboratory setting speaks to its potency.

Second, this intervention consisted of pre-existing content that was delivered via links embedded into daily e-mails, making it low-cost, efficient, and convenient. The ease and convenience of any such program is paramount, as requiring any effort from overstressed individuals may lead them to view the program as yet another hassle. Third, though usability and satisfaction measures were not assessed, the Comedy and Underdog conditions lost the fewest participants to attrition, which suggests that these conditions were the most palatable. On a pessimistic note, study dropouts reported more stress than those who remained in the study. That is, those most in need of stress reduction were the hardest to retain.

Despite the study's strengths, this research was limited in its application to college students, who though experiencing significant stress, have different stressors from adults outside the often resource-rich campus environment. Also, in light of the predominantly female sample, we cannot claim these results to generalize to males as readily. For example, given women experience more health complications as a consequence of stress (Mayor, 2015), our findings regarding illness may not hold as strongly for men. Clearly, it would be of great value to test these hypotheses with larger and more diverse samples to assess the replicability and generalizability of our findings.

In addition, future research would be well-served by understanding the health effects of current media diets as well as best practices for the structure and delivery of media prescriptions. Specifically, it would be useful to track the typical media diets of target populations and ask them to record their stress and emotion levels

after media exposures to capture a broader pattern of usage and their relationship to psychological and physiological outcomes. As well, considering more specifically how media exposure influences immune system functioning would also serve to better unpack the relationships among discrete positive emotions, stress, and illness.

Of central concern, if media are to be prescribed to audiences, it is incumbent upon researchers to consider issues of type and dosage. What types of media are best for what audiences, how often, and for how long? This study tested and found benefit of media treatments lasting 25 minutes total over five days. Would more intensive intervention yield stronger outcomes? Or might participants become desensitized to the intervention? Future work must test the relative efficacy of interventions that vary in dose.

This research also raises a series of conceptual and theoretical issues. First, though all media conditions mitigated stress, the effect was not fully explained by positive emotional arousal. As such, there is clearly something else about the media experience that reduces stress. Perhaps replenishment of cognitive resources (i.e., cognitive recovery) plays a unique role, though extant related research suggests emotional arousal drives cognitive recovery efforts (Janicke-Bowles et al., 2019; Janicke-Bowles et al., 2018). Alternatively, perhaps just the experience of taking a media break is beneficial, as long as one finds it enjoyable, and enjoyment allows for a reframing of stressors as less overwhelming. There are clearly gaps in our understanding of the process whereby exposure to media results in stress mitigation that remain open to future investigation.

Second, the present findings raise concerns about the use of composite positive emotional indices such as been used in media research recently (e.g., self-transcendent and meaningful emotion indices). Although useful in distinguishing the emotional effects of hedonic versus eudaimonic media experience, such measures may lead us to lose nuances in the different effects that more particular themes in media content may have. For example, such indices typically group the items of "hope" and "inspiring" with "touched" and "tender." Although hope may motivate action, feelings of tenderness are unlikely associated with any motivational drive. As such, it would behoove researchers to determine the conditions under which composite, positive emotion indices are of value and when more specific positive emotional states should be considered. As well, though the hedonic and eudaimonic motivations have become established as key predictors of media selection, a third motivation—that related to coping (Nabi et al., 2010) —has received less attention. Whether coping with particular stressors or general feelings of stress, the need to understand how media is selected based on desire for coping is a pressing, timely, and social-relevant concern.

To conclude, this research demonstrates that positive emotions induced by media exposure can generate a range of benefits for psychological and physical wellness, and that discrete emotions can exert *unique patterns* of influence that can be harnessed to meet particular goals. Further, these findings have important implications for communication message design in that underdog narratives could be especially

valuable in encouraging goal pursuit and behavior change. The new media landscape provides many exciting opportunities for program development and delivery that have the potential to reduce attrition and barriers to effectiveness. As such, this study offers a template that can be refined for the design of future interventions to enhance well-being.

Supporting Information

Additional Supporting Information may be found in the online version of this article.

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Notes

1 The 14-item Global Measure of Perceived Stress scale (GMPS, Cohen, Kamarck, & Mermelstein, 1983; $M = 2.81$, $SD = .47$ on a 5-point scale; $\alpha = .82$) was also included to assess stress over the past month. Given the GMPS's time frame, it was not well-suited to assess the more short-term changes in stress of interest to this intervention. However, it does validate the single item measure as the two strongly correlated, $r = .44$, $p < .001$.

2 These results vary slightly from Prestin (2013), in which she presented an index of 2 emotions for each target affect (hope/inspired, amused/happy, calm/neutral). However, given happy and amused are different affects, neutral is not an affect itself but absence of affect, and hope and inspired represent different phenomenological experiences with inspired being more tightly linked to action motivation, it was determined that relying on the multiple assessments of the individual emotions would offer more appropriate measures of the target emotions. The results of the current manipulation check show no appreciable difference to those reported in Prestin (2013).

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