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Journal of Psychology & Clinical Psychiatry

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Humor research: a narrative review

Abstract

This narrative review includes current research on the effects of humor, interventions to enhance humor and potential underlying biological mechanisms for humor. Humor is noted to have several positive effects in this current literature including reducing anxiety, burnout and stress, chronic pain, cyberbullying, and victimization, as well as increasing brisk walking and creativity. Several interventions have been noted to enhance humor including the use of positive emotions, funny episodes, multiple types of humor, and public health interventions. Humor has activated brain regions associated with emotional processes, including the bilateral amygdala and the inferior frontal gyrus. Methodological limitations noted for this literature include the variety of different types of humor studied by different researchers, making comparisons across studies impossible. Several different types of samples were recruited, but most frequently clinical samples of patients or staff, limiting the generalizability to other types of samples. Most of the data were based on self-report surveys, questionnaires or interviews that have questionable reliability. Despite these limitations, the data will help inform future research on humor.

Volume 17 Issue 6 - 2026

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Received: October 31, 2026 | **Published:** November 17, 2026

Introduction

Humor research: a narrative review

Humor has been defined as the quality of experiences, actions or communication that provokes laughter, smiles and amusement (Wikipedia). It is a fundamental trait shared across all cultures. Common types of humor include slapstick, dry /deadpan, satire and irony, dark/ black humor and observational humor. Humor is said to be a tension reliever, to foster social bonding, and things are said to be funniest when they break an expectation or norm but turn out to be harmless.

This narrative review includes current research on the effects of humor, interventions to enhance humor and potential underlying biological mechanisms for humor. This research was found on PubMed and PsycINFO by entering the term humor and the years 2020-2026. Exclusion criteria were protocols, case studies, and non-English language papers. The 17 papers in this current literature review can be categorized as types of humor (4 papers), effects of humor (7 papers), interventions to enhance humor (5 papers), and potential underlying biological mechanisms for humor (1 paper). These sections are followed by a discussion on methodological limitations of this current literature.

Types of humor

Many of the humor studies in this current literature are based on the Humor Competence Scale.[1] This 32-item scale includes four domains called fluency, awareness, composure, and discretion. **Other types of humor** were identified in a study on family and friends' dinners (N= 424).[2] These types were categorized as entertainment humor, gallows, tension – relieving, confused/awkward laughter, humor/narrative chaining and self – deprecating (Table 1).

Table 1 Types of humor (and first authors)

Types	First authors
Humor Competence Scale	Rosenberg
Other types of humor	South
Gender differences	Evans
Leaders	Cooper

Gender differences have been noted for humor.[3] Males in this study used all types of humor styles more frequently than females and they tended to use aggressive humor most frequently. According to these authors, humor that violates expectations in a negative way is punished. **Leaders** are also said to use humor of all types.[4] These authors focused on the need for leaders to be extremely careful about using their humor in appropriate ways so as not to lose their leadership positions.

Effects of humor

Humor is noted to have several **positive effects** in this current literature. These include reducing anxiety, burnout and stress, chronic pain, cyberbullying, and victimization, and increasing brisk walking and creativity.

In a survey of patients undergoing radiotherapy (N= 199 patients, mean age= 68), 79% reported that humor **reduced their anxiety**.[5] 86% reported that humor was important for their healthcare, 61% suggested that humor was important in dealing with their cancer and 86% noted the importance of laughter. It's surprising that significantly more radiotherapy patients reported the importance of humor for healthcare than for dealing with their cancer. Fortunately, most noted the importance of laughter, as it is a form of physical stimulation that would increase vagal activity and the release of natural killer cells that kill cancer cells.[6]

In a study on humor in the workplace, medical staff were surveyed for their views on humor (N= 189).[7] The medical staff reported that self -enhancing and affiliative humor related to **a decrease in their burnout and stress**. Self- enhancing and affiliative humor were selected responses from Martin's classification, but spontaneous or original to the medical staff members.

In a paper entitled "Beyond pain intensity and catastrophizing: the association between self – enhancing humorous style and the adaptation of individuals' chronic pain ", adults with different pain conditions were included (N= 427 patients).[8] As the title suggests, humor helped these patients to **adapt to their chronic pain**. Self-enhancing type humor was, not surprisingly, more helpful for adapting to chronic pain than self -defeating type humor

Decreased cyberbullying has been the focus of a couple studies in this humor literature. In one study entitled "Aggressive humor

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style and cyberbullying perpetration: normative tolerance and moral disengagement perspective", the authors reported that less online tolerance led to less aggressive humor.[9] **Less aggressive humor** in this sample, in turn, led to less cyberbullying.

The reduction of victimization was the focus of a study entitled "Humor styles, bullying victimization and school adjustment".[10] In this sample of emerging adults (N= 172), the adaptive – high humor group experienced less victimization and greater school adjustment. This study introduced still another type of humor called adaptive humor

In a paper entitled "Boosts for walking: how humorous messages increase **brisk walking** among cognitively fatigued individuals", the results are in the title.[11] In this sample (N=250), cognitively fatigued individuals were able to walk faster when receiving humorous messages. Self-control was a mediator of the relationship between humorous messages and brisk walking. It's not surprising that humorous messages would enhance walking, but it's not clear how self-control would be a mediator except perhaps to remind the participants of the importance of brisk walking.

In a study entitled "Funny date, creative mate? Unpacking the effect of humor on **romantic attraction**", six experiments manipulated humor.[12] The experiments included a hypothetical date, an online dating profile or a video profile. Humor was associated with creative ingenuity and creative problem-solving. The association of humor with creative ingenuity and problem-solving Is not reflected in the title on romantic attraction, highlighting the importance of giving results in titles of studies (Table 2).

Table 2 Effects of humor (and first authors)

Effects	First authors
Reducing anxiety	Samantat
Decreasing burnout and stress	Timofeiov-Tudose
Adapting to chronic pain	Ramirez-Maestre
Decreasing cyberbullying	Zhu
Decreasing victimization	Burger
Increasing brisk walking	Symons
Creative ingenuity	Langley

Interventions for enhancing humor

Several interventions have been conducted to enhance humor in this current literature. They include the use of positive emotions, funny episodes, multiple types of humor, and public health interventions.

In a study on the influence of **emotional states** on nonsense humor processing, a positive and a negative group were formed (N = 96).[13] The positive group was asked to elicit positive emotions by autobiographical recall while the negative group was similarly asked to elicit negative emotions. The positive group perceived nonsense jokes as funnier than the negative group. That the positive group perceived the jokes as funnier than the negative group highlights the effectiveness of mood induction and the persistence of mood.

In humor interventions for patients in palliative care, patients (N=55) were assigned to a randomized controlled trial.[14] The patients were assisted to remember **funny episodes** from their past, to recognize humorous aspects of the present and to produce humor. The patients reported a decrease in seriousness, bad mood, and stress and an increase in cheerfulness. Unfortunately, the authors did not determine the relative significance of episodes from the past and the presence and the production of humor. Presumably the production of humor would be the most effective in decreasing bad mood and stress. Structural equation modeling could have determined the relative significance of both the multiple predictor variables and the multiple effects in this study. For determining the relative contributions of humor in the past, the present and the production of humor to the decrease in bad mood and stress, ratings of those predictor variables (humor in the past, the present, and the production of humor) and ratings of the outcome variables (bad mood and stress) could be entered into a structural equation analysis.

In a study entitled "The use of humor in self-help groups: a qualitative study", the authors conducted Interviews with adults attending self-help groups.[15] The authors expected the data to be consistent with Martin's classification of humor as affiliative, self-enhancing, aggressive, or self – defeating. Instead, the participants suggested that humor serves the function of **cohesion, cognitive restructuring, and emotional management**. The participants also reported that they experienced a decrease in anxiety and sadness related to the use of humour in their self-help groups. The participants' responses suggest that they were initially focused on function which may have been suggested by the interviewer's questions. Then they reported that their feelings of anxiety and sadness were reduced in the self-help groups.

In an integrative review of research literature on the use of humor in nursing education, 10 qualitative studies were included.[16] The themes that emerged from this review included **building relationships, increased learning/critical thinking, decreased stress, increased attention, and negative use of humor**. Structural equation modeling could have determined the relative contribution of the predictor variable humor to the outcome variables building relationships, increased learning/critical thinking, decreased stress, increased attention, and negative use of humor.

In a systematic review of humor – based strategies for addressing **public health priorities**, 13 studies were included.[17] The health priorities included mental health, breast cancer, skin cancer, and safe sex. The authors of this systematic review on humor could have indicated the number of studies that focused on each of these health priorities and the effectiveness of the particular humor-based strategies for each of these health conditions (Table 3).

Table 3 Interventions to enhance humor (and first authors)

Interventions	First authors
Positive emotions	Soh
Funny episodes	Linge-Dahl
Cohesion, cognitive restructuring & emotional management	Amici
Building relationships	Hayden
Addressing public health priorities	Miller

Potential underlying biological mechanism

Surprisingly, despite the multiple positive effects of humor, only one paper on a potential underlying biological mechanism could be found in this current literature. In this review entitled "Humor and emotion: quantitative meta-analysis of functional neuroimaging studies", 57 fMRI studies were included (N= 1248).[18] The overall conclusion of this review suggested that humor activates **brain regions associated with emotional processes,** including the bilateral amygdala and the inferior frontal gyrus. Humor and emotions are both theoretically and empirically connected/related.

Methodological limitations of this literature

Several methodological limitations can be noted for this literature on humor. Surprisingly, a limited number of humor studies appeared in this literature. Several different types of humor were studied by different researchers, making comparisons across studies impossible. Several different types of samples were recruited, but most frequently clinical samples of patients or staff, limiting the generalizability to other types of samples. Most of the data were based on self-report surveys, questionnaires or interviews, but no observation studies could be found. These types of data collection can be confounded by socially desirable, "faking good" responses. Typically, responses to humor rather than production of humor were the focus of research. Most of the studies were focused on the effects of humor and interventions to facilitate humor. No predictor studies and only one potential underlying biological mechanism study appeared in this literature. As mentioned for many of the studies, regression analysis or structural equation modeling would have been appropriate for determining the relative significance of the effects. Despite these methodological limitations, the current literature on humor has been informative and will help guide future research on humor.

Acknowledgments

None.

Funding

None.

Conflicts of interest

The author declares there is no conflicts of interest.

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