

LETTER

Use of exaggerated language in news stories to describe drugs for treatment of Alzheimer's disease

1 | INTRODUCTION

When news media emphasize the sensationalism and novelty of medical therapies, readers may be misled in their expectations of treatment outcomes. The use of superlatives—"an exaggerated or hyperbolic expression of praise"¹—is particularly consequential. Superlatives used to describe health information in online news articles may contribute to a widespread misunderstanding about the effectiveness of a treatment. As there is no cure for Alzheimer's disease (AD), readers of articles that perpetuate such hype may be deceived and given false hopes. For example, alternative therapies are touted as cures for AD. "Coral" calcium supplements are one such example. The Federal Trade Commission and the Food and Drug Administration (FDA) filed complaints against the company promoting this supplement stating these claims were unlawful due to unreliable evidence.² Furthermore, some "promising" therapies for AD may generate similar unnecessary excitement. Clinical trials of aducanumab, a drug targeting amyloid plaques, were halted due to failed futility analysis; recently, it was reintroduced in phase III trials based on new analysis.³ These early difficulties in clinical trials raise the question if aducanumab should be revered as a "breakthrough" in the news media before clinical trials are completed. These illustrations suggest the need for research exploring the use of exaggerated language regarding AD therapies. Here, we evaluate the use of superlatives exaggerating AD treatments and other characteristics of news articles.

2 | METHODS

Our methodology was based upon previous works.⁴ Two of us (BH and AK) searched Google News, one of the most widely used news aggregators, for articles published between August 29, 2019 and March 16, 2020. We searched 10 prespecified superlatives (Table 1) in combination with the search term "Alzheimer's drug." Articles were screened and data were extracted in a masked, duplicate fashion using a pilot-tested Google form. Articles were excluded if they were not about AD treatment or the article did not use superlatives to describe the treatment. We extracted the following data: the superlative term and frequency of use, whether the website was HONcode (Health on the Net

Code of Conduct)-certified, the name and FDA status of the treatment, whether the article provided clinical data, and the author's credentials.

3 | RESULTS

We identified 203 news articles related to AD treatment between the dates of August 29, 2019, and March 16, 2020. Of the 203 articles, 46 (46/203, 26.7%) contained superlatives exaggerating the effectiveness of 14 different AD therapies. Several articles contained >1 superlative, thus 95 superlative occurrences were identified (Table 1). Aducanumab, most frequently described by superlatives (59/95, 62.1%), appeared in the most news articles (26/46, 56.5%). Few of the articles provided supporting data (5/95, 5.3%). Most articles were written by journalists (40/44, 90.9%). Zero websites were HONcode certified (0/51, 0.0%).

4 | DISCUSSION

Our study found that superlative use in AD-related news articles was common. The majority of AD-related articles were authored by journalists who may not understand the implications of using superlatives to describe such treatments. For example, aducanumab was described by the most superlatives, often being described as "life-changing" or curative; yet, only three news articles focused on aducanumab provided supporting data. Furthermore, aducanumab was recently resumed in phase-III clinical trials in March 2020; thus, it is arguably premature to call the treatment "life changing" as it has not reached FDA approval.³ The use of superlatives is not limited to AD articles, as studies have shown that superlatives are common in news articles pertaining to oncology,⁴ dermatology,⁵ cardiovascular,⁶ and cystic fibrosis therapies.⁷ Thus, this study contributes to existing literature surrounding superlative use in news articles exaggerating the beneficial effect of medical therapies.

News media has long been an essential source of health information for the public.⁸ Its coverage of novel research and drug development allows its readers to stay educated in the world's most recent scientific advancements. Therefore, we agree that news coverage is valuable

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TABLE 1 Superlative frequencies and characteristics of news articles focused on the treatment Alzheimer's disease

Drug/treatment	No. (%) of news articles(s) (n = 46)	No. (%) of superlative(s) describing drug/treatment (n = 95)	Total (n) superlatives ^a	Drug class	FDA-approval status	No. of news articles providing supporting data
Aducanumab	26 (49.1)	59 (62.1)	Life-changing (22), breakthrough (17), groundbreaking (11), transformative (4), cure (4), game changing (1)	Immunotherapy	In clinical trial	3
Oligomannate	4 (7.5)	8 (8.4)	Breakthrough (6), cure (1), life-Changing (1)	Polysaccharide	In clinical trial	0
AADvac1	3 (5.7)	5 (5.3)	Life-changing (4), breakthrough (1)	Immunotherapy	In clinical trial	1
Xanamem	1 (1.9)	3 (3.2)	Breakthrough (3)	Cortisol inhibitor	In clinical trial	0
XPro1595	1 (1.9)	1 (1.1)	Breakthrough (1)	TNF inhibitor	In Clinical trial	0
Lysergic acid diethylamide	1 (1.9)	2 (2.1)	Game-changing (2), breakthrough (1)	Ergot alkaloid	No	0
Rasagiline	1 (1.9)	2 (2.1)	Breakthrough (1), cure (1)	Monoamine oxidase Inhibitor	In clinical trial	0
Ibuprofen	1 (1.9)	1 (1.1)	Game-changing (1)	Non-steroidal anti-inflammatory drug	Yes	0
Nilvadipine	1 (1.9)	1 (1.1)	Breakthrough (1)	Calcium-channel blocker	In clinical trial	0
Metformin	1 (1.9)	1 (1.1)	Groundbreaking (1)	Biguanide	Yes	0
Untitled drug	1 (1.9)	3 (3.2)	Revolutionary (2), breakthrough (1)	Not mentioned	Not mentioned	0
GENUS	1 (1.9)	1 (1.1)	Breakthrough (1)	Audio-visual treatment	No	0
MemorEM	3 (5.7)	6 (6.3)	Breakthrough (6)	EM stimulator	No	1
Hyperbaric treatment	1 (1.9)	2 (2.1)	Miracle (2)	n/a	No	0

^aTen prespecified superlative terms: "breakthrough," "cure," "game changer," "groundbreaking," "home run," "life-changing," "marvel," "miracle," "revolutionary," and "transformative."

to medical advances; however, in this discussion, we advocate for improvement in reporting over topics such as AD therapies. For example, journalists who report on health-related information are not required to have a scientific background, which may be necessary to consider a potential treatment as beneficial.⁹ One potential way health-related articles focused on AD—as well as all health-related topics—could improve their reporting is by adhering to the principles set forth by the Association of Health Care Journalists, which is committed to improving health-care journalism.¹⁰ Additionally, readers can limit their exposure to untrustworthy information and misleading claims by only using HONcode-certified websites—a leading indicator of accurate health-related information. (<https://www.hon.ch/en/>).

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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