Media Coverage of Macular Degeneration in Countries of Different Developmental Stages

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ABSTRACT

Macular Degeneration (AMD) is a chronic degenerative eye disorder that may not be well reported to the public. Current literature regarding media coverage of eye conditions tends to examine general visual impairment (ex. Tillery, 2017) instead of specific disorders such as AMD. The current research aims to examine how news media cover and frame information regarding AMD. Therefore, the researcher conducted an inductive content analysis on newspaper articles with the keyword AMD in the most circulated newspaper in three countries: The United States, Singapore, and Bangladesh. The three countries were chosen based on their varying socioeconomic status as the are categorized as developed, developing, and underdeveloped countries respectively. Results showed that the developed country reported more on treatments while the developing and developed countries reported mostly on the prevention of AMD. Writing strategies examined from all three news sites indicate episodic framing as the most prominent among all news sites and there is no difference in that aspect. Results are further analyzed, discussed, and implications were made as well.

Introduction

Age-related macular degeneration (AMD) is the most prominent cause of blindness for those over 50 (Boyd, 2022). Affecting the eye's central vision, the macula is part of the retina (*Age-related*). The National Eye Institute states that there are two types of Macular Degeneration that have been identified in patients. Dry AMD occurs as the macula gradually thins with age and Wet AMD occurs where "abnormal blood vessels grow in the back of the eye and damage the macula" (Boyd, 2022). While medical researchers are still looking for treatments for dry AMD, wet AMD can be treated through injections and laser treatments. Researchers have found seven different genetic loci associated with the development of AMD. Furthermore, a study conducted on 17,100 people with severe AMD and 60,000 without revealed that age, diet, smoking, and genetics play a role in developing AMD. It is also prevalent in specific ethnicities such as Asians and Europeans (*The Genetics of*, 2020).

Since macular degeneration is projected to affect 288 million people globally by 2040 (Wong et al., 2014), it is essential that people are properly made aware of this issue. The information portrayed in mass media can play a key factor in communicating symptoms of AMD to the general public. Naveena (2015) states that

"The basic function of mass communication media is to provide information, education, instruction, and entertainment to the people. Media also motivate people directly or indirectly to discharge these functions as well as interactive user feedback, and creative participation in a meaningful and purposeful manner" (p. 36).

By directly shaping how information is presented to the public, mass media thus conveys these messages. Media development also plays a role in the types of information delivered to the audience. It is stated to "...have an important role in advancing a pro-poor development agenda, as well as supporting economic growth by stimulating consumer markets" (Mcloughlin & Scott, p. 23).

Furthermore, having progressive media outlets "can improve governance by raising citizen awareness of social issues…It can also amplify the voice of marginalized and excluded groups" (*Media Development*). Therefore, media plays a crucial role in influencing public perception and opinion of social issues.

Overall, framing theory provides a useful framework for understanding the formation of public perception based on how issues are delivered to them (Gitlin, 2003; Iyengar & Scheufele,). It allows us to analyze the structures of news content in order to understand how information is presented to the audiences regarding this age-related public health issue.

In summary, this study aims to investigate the news coverage of AMD from countries of different developmental levels due to the differences in the comprehensiveness of their respective healthcare systems (Peters et al., 2007), as socioeconomic status (SES) is closely associated with the public's burden of AMD (Xu, Wu, Yu, Tang, Tang, & Shentu, 2020). The three countries chosen for this study were the United States, Singapore, and Bangladesh, representing represent high, medium, and low socioeconomic status respectively.

Literature Review

In mass media, the way stories are presented is often carefully framed. The framing theory is said to have a definition of "principles of selection, emphasis, and presentation composed of little tacit theories about what exists, what happens, and what matters" (Gitlin, 2003). Although a broad generalization could be used to define "frame", Matthes (2009) states this definition lacks "clear guidelines for operationalization." With the increasing depth of this definition, framing is thus named as journalists informing readers of "relevant" details (Devereux & Kitzinger, 2011). Further, as Scheufele and Iyengar (2014) stated that framing is "a dynamic, circumstantially bound process of opinion formation" (p. 619), and the effects on audiences' attitudinal changes are not "due to differences in *what* is being communicated, but rather…*how* a given piece of information is being presented (or framed) in public discourse" (Scheufele & Iyengar, 2014).

With regards to the effects of framing on the general public, framing may alter how the general public views issues, as Entman (1993) argues,

> "[t]o frame is to select some aspects of perceived reality and make them more salient in the communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation and/or treatment recommendation".

Salience is a factor that needs to be closely examined as communicators may choose to make parts of information more salient than others. Hallahan highlights *inclusion, exclusion,* and *emphasis* which also connect to framing as crucial keywords for comprehension.

With this methodology, framing bias should also be discussed as media outlets use certain frames to amplify certain information they want to relay (Morstatter et al. 2018). For general audiences to pertain a comprehensive view of the information they receive from potentially biased communicators, the identification of frames used in news pieces can help us examine the effects of published writing on the general public.

Scholars have identified two main paradigms of frames: episodic and thematic framing. episodic frames are stories that focus on stand-alone events, while thematic stories cover issues in a broader, more general context (Boukes, 2021). Iyengar (1991) defines episodic frames as "the form of a case study or event-oriented report and depicts public issues in terms of concrete instances." For instance, economic news may often contain elements of drama and be more personalized. The concepts are, overall, too abstract for the general audience. Hence, this news often falls into the category of episodic framing (Boukes, 2021).

On the other hand, thematic framing is defined as stories that cover "public issues in some more general or abstract context…directed at general outcomes or directions" (Iyengar, 1991). It has been demonstrated that thematic framing is stronger than episodic framing when issues elicit less intense emotional reactions in the audience (see Aarøe 2011).

As mentioned previously, macular degeneration is an age-related vision disability. However, the current body of literature mainly focuses on how disabilities in general are framed in mass media. A Malaysian study (Teng and Joo, 2020) looked at misrepresentation in news media and its consequences. Researchers found that when news outlets frame the disabled communities as victims "who need extra effort than others to achieve things that abled-person can

do," (p. 28) the public tends to focus on how to sympathetically treat the disability community rather than the conditions themselves. It is this misrepresentation of the charity approach that causes the disability community to be marginalized. Another study (Devotta, Wilton, and Yiannakoulias, 2013) found that the media has increased "progressive" articles such as disability awareness and inclusion. Holton and Farrell (2014) looked at the stigmatization of the autism community in mass media and found that media portrayal of disabilities has been generally negative as the contents are often "dehumanizing and devaluing" toward the disabled. They argued that journalists might be strengthening these stigmas as they hint at these stigmatic mindsets instead of defying them.

With regards to visual impairment, a content analysis of the *New York Times* conducted by Tillery (2017) revealed that thematic framing is the most common frame when talking about the visual impairment community as a whole. The same study also concluded most information regarding the visual impairment community was informative. Tillery also pointed out that "images of disabled individuals as pitiable and pathetic are the most common in advertisements by charities" (Winter 1991, as cited in Tillery 2017).

In summary, the majority of the research in this arena focuses on how the disabled and visual impairment communities are portrayed in the media, instead of how specific ailments are discussed. Hence, the current study will be examining how AMD is presented to the public by newspaper outlets under the framework of framing theory. Additionally, the researcher will also be looking into the availability of news articles and the variations of AMD mentioned.

Early detection of Age-Related Macular Degeneration (AMD) may help prevent the advancement to severe vision loss. Maintaining a particular lifestyle is claimed to also be helpful in the prevention of severe AMD. Mass media outlets are large information hubs for ordinary citizens to keep up with information prevalent in their daily lives. Thus, when the media provide vital public health information, ordinary people can better understand and learn the preventative measures for serious long-term ailments such as AMD. The current study aims to examine this particular mechanism of media-audience dynamics via the analysis of the portrayal of a serious medical condition.

In addition, since socioeconomic status plays a key role in regarding access to healthcare (McMaughan, Oloruntoba, and Smith, 2020) and information on AMD (Xu et. al, 2020), the researcher will also look into countries of different developmental stages and how media coverage strategies differ in these societies. This study hopes to shed light on how health information can be communicated to the general public more efficiently with enough knowledge to raise awareness of an age-related disability that could progress into blindness.

Research Question

As aforementioned, this study aims to examine media coverage of macular degeneration in countries with different SES, the following research questions are imposed:

RQ 1: What topics are prevalent in newspaper coverage regarding macular degeneration?

RQ 2: Do newspapers in underdeveloped, developing, and developed countries utilize different strategies to cover macular degeneration?

Method

In the current study, the researcher conducted a content analysis of news articles containing information on macular degeneration under the framework of framing theory. Berelson et al. defines content analysis as "a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding" (as cited in Stemler, 2000). With application to this research, inductive content analysis allows inferences to be made about the selected texts as well as aid in the identification of patterns that emerged from the texts (Stemler, 2000).

In closer examination of the texts, framing analysis allows us to methodically analyze how the information on macular degeneration is presented to the general public. Since no previous studies were conducted in the same manner

as this one, the codebook used in this study was created based on criteria that were deemed possible to be present in the articles (Elo and Kyngäs, 2008). This approach can help us look at the content of different news sources comparatively and systematically. The prevalence of informative articles on macular degeneration will provide insight into the potential outcomes of varying media coverage strategies.

Framing

Framing analysis is "a constructivist approach to examine news discourse with the primary focus on conceptualizing news texts into empirically operationalizable dimensions—syntactical, script, thematic, and rhetorical structures—so that evidence of the news media's framing of issues in news texts may be gathered" (Pan and Kosicki, 1993). One of the primary objectives of this study is to examine, when covering Macular Degeneration, how the articles are written, as that may impact viewers' understanding of the disorder. With an understanding of how general texts about macular degeneration are framed, adjustments may be suggested in both future research and practice on how macular degeneration may be covered in the news. For our investigative purposes, the articles chosen for examination will be coded into episodic framing, thematic framing, or neither. The frames noted for coding follow the episodic and thematic frames model by Iyengar (1991). The 'neither' category includes articles that are interviews, consultation advertisements, hyperlink pages, etc.

Other Variables

Besides framing, General Health Information, Medical Doctor Information (MD), Category on the News page, Types of Macular Degeneration mentioned, and Article accessibility will also be examined.

General health information
Articles are also coded when healthcare policies or systems are mentioned. This category excludes expert opinions or medical reports. Instead, we looked at more general health-related information.

Medical (MD) information
When specific medical information or knowledge is included in the texts, they are also coded into this category. These contents include treatments, surgeries, general information, alternative medicine, definitions (regarding macular degeneration), causes, medicine, and prevention. It is important to note that, distinctive from the previous category, general information here means a general and broad description of medical information.

Newspage Categories
By looking at in which part or columns of the newspapers the articles are printed, we can evaluate how the articles are treated at the institutional level. Examples include articles about Health, Opinion, Life, World, Asia, Consults, Science, none, etc.

Types of Macular Degeneration
As aforementioned, there are two types of Macular Degeneration. We are interested in which is more prevalent and commonly reported. We are also able to get more insights into other forms of disease that need attention.

Article Accessibility
Whether the article is free, archived, or requires a subscription to read lies under the category of article accessibility, therefore determining whether the information is and how accessible it is to the public.

Data Collection

In order to draw sufficient data for analysis, the following three newspapers were selected: *The New York Times, The Strait Times,* and *The Daily Star.* They represent countries with different developmental levels. *The New York Times* is one of the largest newspapers in circulation in the United States (*Circulation of selected,* 2021). Meanwhile, both *The Strait Times* and *The Daily Star* are highly circulated English news publications in Singapore (Tandoc, 2020) and Bangladesh (Genilo, Asuizzaman, and Haque, 2016) respectively.

This research was conducted with two coders reading and coding 30-50 articles from each of the three selected news sources. The coded articles from the content analysis will further be organized quantitatively into tables with descriptors. The table will contain counts of certain topics that have been recorded amongst the 30-50 articles per news site. After the organized data is tidied, inferences can be made from the data. These categories that have been selected for coding examine the articles for their content, the organization within the newspaper, as well as how the article has been written, making it helpful for the determination of the relevance and validity of the reports.

Overall, using the keywords "macular degeneration," the total sample consists of 136 articles with 51 articles from the *New York Times*, 50 from *The Strait Times*, and 33 from *The Daily Star.*

Results

Coder Agreement

A total of twenty percent of all articles were randomly selected to check for coder agreement. Using Twenty percent of the article population for a reliability check follows the guidelines set for social science research (Wimmer & Domnick, 1997). Using Cohen's *kappa* (1968), coder agreement rates between .82 and .89, meeting the requirements for high reliability (Fleiss, 1981; Popping, 1988).

Topics

The following tables have organized all the data gathered from the coded articles into the 6 aforementioned categories in the Methods section. It is essential to note that count does not necessarily indicate the number of articles with a certain topic mentioned, but rather the number of times a certain topic is mentioned amongst the total number of articles. The following data was extracted from 50 articles by The Strait Times, 51 articles from The New York Times, and 33 from The Daily Star.

Types of Frames

As shown in Table 1, all three news publications deployed predominantly episodic framing when reporting information on macular degeneration. The frequency distributions, however, vary among the three outlets. The *New York Times* contained 78% episodically framed articles, while the *Strait Times* and the *Daily Star* posted 67.3% and 57.5% respectively. It is also worth noting that none of the publications showed an obvious second strategy as they are similarly distributed between thematic frames and neither. The largest discrepancy between the three topics can be observed in the *New York Times*, with more than three-fourths of the articles episodically framed.

Table 1. *Types of Framing present in selected news articles*

Topic	Newspaper					
	NYTimes		The Strait Times		The Daily Star	
	n	%	n	%	n	%
Thematic	4	8	10	20.4	6	18.1
Episodic	39	78	33	67.3	19	57.5
Neither	7	14	6	12.2	8	24.2
Total counts	*50*		*49*		*33*	

General Health Information

Most of the general healthcare information presented in the articles was "other" (Table 2), as they did not fall under the designated categories in the codebook. However, from the articles that were able to be coded into one of the categories, the *New York Times* consisted of 17.5% articles regarding "supplements," *The Strait Times* consisted of 26% "healthcare recommendations," while *The Daily Star* did not show any meaningful theme.

Table 2. *General Health Information present in selected news articles*

Topic	Newspaper					
	NYTimes		The Strait Times		The Daily Star	
	n	%	n	%	n	%
Supplements	10	17.5	0	-	2	8.6
Healthcare System	2	3.5	4	8	1	4.3
Healthcare Policy	1	1.75	3	6	0	-
None	6	10.5	6	12	0	-
Healthcare recommendations	0	-	13	26	2	8.6
Others	38	66.6	24	48	18	78.2
Total counts	*57*		*50*		*23*	

Medical Doctor (MD) Information

The most prevalent topics for the three news sites are all distinct (see Table 3). *The Daily Star* at most articles under the topic "Prevention" at 38.3%, followed by "Other" (21.6%), and "General" (18.3%). *The New York Times* articles were mostly "general" information (23.8%), while *The Strait Times* articles were mostly "others" (37.2%). Upon close examination, aside from general information and others, the three news outlets showed differences in specific content. *The New York Times* contained 20.6% articles on "treatment" information, while both *The Strait Times* and *The Daily Star* reported mostly on prevention measures with 18.6% and 38.3% respectively.

Table 3. *Medical Doctor (MD) Information present in selected news articles*

Topic	Newspaper					
	NYTimes		The Strait Times		The Daily Star	
	n	%	n	%	n	%
General	30	23.8	9	15.2	11	18.3
Definitions regarding Macular Degeneration	29	23	4	6.7	5	8.3
Causes of Macular Degeneration	0	-	1	1.6	0	-
Surgery	1	0.7	2	3.3	2	3.3
Medicine	5	3.9	0	-	1	1.6
Alternative Medicine	0	-	0	-	0	-
Prevention	9	7.1	11	18.6	23	38.3
None	0	-	4	6.7	0	-
Treatments	26	20.6	6	10.1	5	8.3
Other	26	20.6	22	37.2	13	21.6
Total counts	*126*		*59*		*60*	

Newspage Category

Except for *The Daily Star*, the two other news publications have "Other" as the majority of the categories of their articles. *The Daily Star* has "None" as the majority of their articles (48.4%), followed by "Other" (24.2%). *The Strait Times* has 43.7% of articles categorized as "Other" and 27% of articles as "Life". These percentages make up the

majority of the articles from The Strait Times (70.7%). As for *The New York Times,* aside from "Other" (54%), the majority of the articles are in the "Health" section of the newspaper (22%).

Table 4. *Newspage category as written on news sites.*

Topic	Newspaper					
	NYTimes		The Strait Times		The Daily Star	
	n	%	n	%	n	%
Opinion	2	4	9	18.7	0	-
Life	0	-	13	27	3	9
Health	11	22	0	-	6	18.1
World	0	-	3	6.2	0	-
Asia	0	-	2	4.1	0	-
None	0	-	0	-	16	48.4
Consults	6	12	0	-	0	-
Science	4	8	0	-	0	-
Other	27	54	21	43.7	8	24.2
Total counts	*50*		*48*		*33*	

Types of Macular Degeneration

The majority of topics mentioned in all three news sites is the "General Term", with 90% and 94.4% of articles from *The Strait Times* and *The Daily Star* articles mentioning just the general term itself. The most diversity in the types of Macular Degeneration can be found in The *New York Times*, with 64.4% of articles counted as "General Term", followed by 17.8% of reports being "Both".

Table 5. *Types of Macular Degeneration mentioned in selected news articles.*

Topic	Newspaper					
	NYTimes		The Strait Times		The Daily Star	
	n	%	n	%	n	%
Wet	9	12.3	3	6	1	2.7
Dry	1	1.3	0	-	1	2.7
Both "Wet" and "Dry"	13	17.8	2	4	0	-
General Term "Macular De-generation"	47	64.4	45	90	34	94.4
None	0	-	0	-	0	-
Other	3	4.1	0	-	0	-
Total counts	*73*		*50*		*36*	

Article Accessibility

The Strait Times makes up the most extreme percentages, with 98% of articles being "Free", while 2% were "Paid". The majority of articles from *The New York Times* were "Paid" (68.4%). The rest is made up of "Archives" (21.05%) and "Other" (10.5%). *The Daily Star* has a little more than half of articles being "Free" (58.8%). The other significant percentage point is the "Archives" (38.2%), while only 2.9% of articles are "Paid". *The Strait Times* and *The Daily Star* have most of their articles "Free" to everyone, while *The New York Times* has mostly "Paid" articles.

Table 6. *Article accessibility from the news sites.*

Topic	Newspaper					
	NYTimes		The Strait Times		The Daily Star	
	n	%	n	%	n	%
Archives	12	21.05	0	-	13	38.2
Paid	39	68.4	1	2	1	2.9
Free	0	-	49	98	20	58.8
Other	6	10.5	0	-	0	-
Total counts	*57*		*50*		*34*	

Discussion

The results mentioned above can help us answer the two initial research questions posited. To answer the first research question, the five large categories that contain the topics to be coded are *General Health Information*, *MD Information*, *Category on the news page*, *Type of Macular Degeneration mentioned*, and *Article Accessibility*.

Upon examination of the categories within all of the articles, across all three platforms, episodic framing was the most used coverage strategy. Episodic framing discusses specific cases as opposed to comprehensive concepts. Episodic framing is more often used in instances where the issue may impact individuals. In our study, Macular Degeneration is a disorder that does not spread rapidly to masses of people. As a strategy utilized in mass media portrayal, a main method of measuring different media coverage strategies is framing. For framing, all three news sites have "Episodic" framing as the most frequently used strategy, as these reports on Macular Degeneration were specific stories or case studies that depict the disorder either in detail or as a singular event. This demonstrates no discrepancies between how stories about Macular Degeneration are written in countries that are developmentally different. This could be attributed to the fact that AMD is a degenerative disorder that occurs in individuals, where episodic framing is more useful, as Iyengar (1991) suggested that thematic framing is preferable to more widespread societal issues. Although each country presents different types of information to its audience, such as general information for *The New York Times* versus Preventative Information (i.e. having periodic free checkups) for *The Daily Star*, the way AMD is portrayed stays consistent from the shared frames utilized.

As for the other categories, it is evident that the newspaper deployed noticeably different strategies in other categories, suggesting regional and societal differences could be a factor in how media outlets portray issues regarding macular degeneration disorder.

In the category of *General Health Information*, the contents vary greatly. This does not refer to no general health information being present. When examing closer into the texts, the articles coded as "others" mentioned overall general health issues such as lifestyle changes. For instance, in a *New York Times* article,

"However, diets rich in green leafy vegetables have been shown to lower the risk of developing A.M.D."

A noticeable proportion of articles included contents of "healthcare recommendations" from the *Strait Times* and "supplements" from *The New York Times*. These healthcare recommendations include regular physical checkups,

"The public should include eye health checks whenever they update their spectacles and contact lenses.,"

as well as everyday health maintenance,

> "Children should not be exposed to second-hand smoking as this exposure can lead to vascular diseases earlier in life, potentially age-related macular degeneration, cataract, glaucoma, and others."

Furthermore, when looking deeper into the data, a noticeable trend emerged as *The New York Times* reported more on supplement recommendations, *The Strait Times* reported more on healthcare recommendations, while *The Daily Star* presented no significant trend in any of the major categories of interest. It is unsurprising that people from countries with higher socioeconomic status can afford regular supplementary regimens, such as the U.S., while countries with universal healthcare systems visit hospitals more frequently, such as Singapore, perhaps due to the public's affordability and accessibility to these supports.

MD Information also varies greatly among the three news sites. *The Strait Times* has "Other," *The New York Times* has "General," and *The Daily Star* has "Prevention" as the common topics in their articles. *The Strait Time*'s articles were primarily information unrelated to macular degeneration, such as how diabetes could cause damage to retinal blood vessels which may lead to vision loss. *The New York Times*, on the other hand, provided general health information like basic introductions to AMD as one article reports,

> "Macular degeneration, a disease that destroys the central area of the retina, is the leading cause of severe vision loss in people over 50."

An example of preventative information provided by *The Daily Star* in an article about the benefits of various food items as one of the reports states,

> "Egg yolks are rich in lutein and zeaxanthin, which help prevent macular degeneration and keep your eyes more vigilant of actions against gender parity!"

These examples indicate a strong connection between different societal structures and the MD information provided by the media. *The New York Times* provides broad information with the assumption that if people in the United States start showing signs of AMD, they would be able to receive treatments, as the country has a higher socioeconomic status in general. Contrarily, *The Daily Star* gave people ways to prevent the disorder as a whole.

The majority of *Newspage Categories* for *The Strait Times* and *The New York Times* are "Other", while for The Daily Star, the topic is "None". Some of the sections where the articles were presented in *The New York Times* include "Ask Well," "U.S.," and "Personal Health." In *The Strait Times* articles were printed in the "Singapore", "Tech", and "Forum" sections. The articles in *The Daily Star,* however, were not reported with any commonality regarding news page sections. This points out that the articles were not listed under any centralized or themed categories. With more specific mentions of named categories, *The New York Times* lists the AMD articles under health and consulting as they may presume treatment is available for the general public, while the other two news sites do not print their articles in health-related categories, placing the articles in categories such as "Life" or "Tech".

The *Type of Macular Degeneration Mentioned* most in all three news sites was the "General Term", meaning the keyword Macular Degeneration was in the articles instead of specific branches of the disorder. When examined closely, *The New York Times* has a less extreme percentage point on articles mentioning only the general term "Macular Degeneration" (64.4%). 31.4% of the articles went into detail regarding specific variations of AMD, Wet AMD, and Dry AMD. For instance, an article wrote,

> "Macular degeneration comes in two forms: dry and wet. The dry form is milder…, but it can degenerate into the wet form, which is characterized by the growth of abnormal blood vessels in the back of the eye, potentially causing blurriness or vision loss in the center of the field of vision."

The New York Times dives deeper into the different types of the disease also as a way to better inform the public about the initial symptoms. The other two news sites barely mention the specific information at all.

Lastly, when examining the accessibility of the articles, *The Strait Times'* articles were primarily free (90%), while *The Daily Star* only had 58.8%, despite it being the most prevalent topic for the news site. *The New York Times'* articles were mostly accessed through its paid services (68.4%), meaning that only paid subscribers would be able to read their content. This may have to do with *The New York Times'* business model. One can assume that with a higher socioeconomic status, the target audience of *The New York Times* is able to afford the subscription to gain access.

The findings of this study act as an addition to the current body of literature when examining the content regarding AMD. The topics that were discovered to be more prevalent than others give insight as to what information journalists are keen to report on in the three developmentally different countries. The writing strategy that was examined, framing, is used in a fresh perspective on AMD, while still using similar frames as other studies have done.

Conclusion

From our results, the content coded from the three news sites indicates the country with higher socioeconomic status tends to cover information with the assumption that treatment is accessible and affordable, while the country with lower socioeconomic status focuses heavily on prevention and detection. Although general patterns were scattered and a strong pattern was not discovered, the socioeconomic status of a country can affect the amount of information its audience receives. The mass media industry thus can include different types of information such as preventative information from The New York Times. The lack of articles to code from Bangladesh and Singapore also shows that they aren't information articles on AMD in general. For further research, mass media professionals who wish to cover visual impairment disorders should consider AMD as a subject, as it is one of the leading causes of blindness in countries such as the United States.

Lastly, from our results for multiple categories, some findings can be concluded. The country with the highest socioeconomic status in our study (The United States) had more information with assumptions of access to treatments and supplements, while the other two country representative news sites focus more on prevention. The United States reported macular degeneration mostly under health categories while the other two sites did neither. All three news sites used episodic framing as a portrayal strategy as Macular Degeneration is a disorder that occurs individually. We can infer that a country's socioeconomic status does affect what types of content are reported on whether medical or categorized from our conclusions. The findings on the different topics help show certain prevalence in larger categories that were split based on content to the placement of the article on the news page. The examination of framing is the path taken to see if different news outlets had specific ways of reporting AMD, and framing was the most appropriate way selected when dissecting the contents of each article. The article is also presented in a mass media setting, making framing useful as journalists often use it.

Macular Degeneration is projected to affect 300 million people by 2040 (Wong et al., 2014), making this disability in need of more representation and attention from the public, journalists, health physicians, and researchers. Although topics reported in each country vary from prevention to treatment, there are many underrepresented topics with regard to AMD that can be included in future studies. The media is a critical factor in awareness ranging from AMD to other disorders. The increase in public knowledge of this disorder could provide added awareness of treatments, preventions, and all topics that were examined in this study. When the awareness of AMD increases, people can be more knowledgeable about symptoms, treatments, and consequences of AMD to seek treatment earlier.

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