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“Those People Count”: Naloxone Media Coverage in Mississippi

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Abstract

There is a movement to promote naloxone adoption by law enforcement and other stakeholders in the state of Mississippi. The purpose of this study is to understand how local media are framing the conversation about naloxone products, and to better understand how it might affect naloxone adoption among law enforcement. We searched for news articles published in Mississippi from January 2012 to July 2018 mentioning the words Narcan® and/or naloxone. Four main themes emerged from 25 articles: (a) positive and informative discussion of naloxone, (b) full articles persuading readers to use and/or advocate the use of naloxone, (c) government or organizational effort to increase the availability and use of naloxone products, and (d) negative or misleading information about naloxone. Better efforts to disseminate correct and persuasive information about the drug will have a profound and positive effect on the opioid epidemic in Mississippi and in the United States.

Keywords

Narcan; diffusion of innovations; media; qualitative; content analysis; Mississippi

Introduction

It was estimated that in 2017, an American died of an opioid overdose every 24 min (Berger, 2017), surpassing the number of deaths via motor vehicle accidents (Gusovsky, 2016). In 2016, more than 214 million opioid prescriptions were given to patients in the United States (Centers for Disease Control and Prevention [CDC], 2017a). This epidemic has been especially critical in the state of Mississippi, the state with the fourth highest prescribing rate at 105.6 prescriptions per 100 people (CDC, 2017b). In addition to prescriptions, there is an increase in the availability of, use of, and overdosing from fentanyl and fentanyl analogs in the state as of 2017 (National Institute on Drug Abuse, 2019). To fight the opioid crisis, several innovations and strategies have been pushed by various people and agencies (Morse, 2018). One such innovation is naloxone, the opioid reversal drug. Numerous studies have documented the benefits and effectiveness of the drug, which is designed to prevent fatal

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outcomes from opioid overdoses. McDonald and Strang (2016), for instance, conducted a narrative synthesis of naloxone programs and found that fatal outcome was reported in 0.8% of potentially fatal opioid overdose cases (1 in 123 cases).

In 1971, the Food and Drug Administration (FDA) approved naloxone as an injection for reversing opioid overdose (Gupta et al., 2016). In 2014, the FDA approved a single-dose nasal-spray formulation (marketed as Narcan® or Evzio®) which allowed for the administration of the reversal drug by individuals without medical training. In response to the current opioid epidemic across the United States, numerous U.S. federal and state agencies have campaigned for the wider use of naloxone for prescription opioid intoxication and overdose. It has been historically illegal for physicians to prescribe naloxone to anyone other than their patients; that is, they could not prescribe to third parties such as friends and family of patients that have been prescribed opioids or have a known addiction. Recent efforts, however, such as the 2016 Comprehensive Addiction and Recovery Act, have sought to expand both use and access by removing these barriers (Gupta et al., 2016). Although there are potentially mild effects or risks to administering naloxone,¹ McDonald and Strang (2016) report that naloxone has a high rate of effectiveness and a low rate of adverse events. In addition, most states, including Mississippi, have adopted laws (Good Samaritan Law, for example) that provide both criminal and civil immunity to anyone administering naloxone, including law enforcement and health professionals. Moreover, Mississippi law now allows anyone to purchase Naloxone from a pharmacy without a prescription (House Bill 996 passed Mississippi's 2017 legislative session). This decision is supported by extant literature that documents the benefits of naloxone down-scheduling for take-home use through community pharmacies, as well as other community organizations (McDonald & Strang, 2016; Pricolo & Nielsen, 2018).

Despite widespread efforts to promote naloxone usage, prescriptions of the opioid reversal drug only increased from 2.8 million in 2009 to 3.2 million in 2015, which is largely attributed to Emergency Medical Service adoption, which increased from 14% to 29% in this time frame (FDA, 2015). The resistance to naloxone adoption more broadly is attributed to stigmatization (Beletsky et al., 2012), as well as a lack of familiarity and cost. Like many drugs, as the opioid crisis has escalated, so has the cost of naloxone (Berger, 2017; Gupta et al., 2016). Despite these challenges, there are currently strong efforts to promote naloxone adoption by law enforcement. As the front line of the battle against the crisis in Mississippi, the state's law enforcement has been increasingly encouraged to adopt naloxone for all first responders. Although the Mississippi State Department of Health has a standing order that allows pharmacists to dispense naloxone by request without prescription (Mississippi Board of Pharmacy, 2019), there is no law enforcement policy requiring agencies to adopt naloxone. Such a policy would result in equality of access to the drug across communities.

¹ Although some reports, including one new article presented within this article, report that there are no adverse risks to administering naloxone, it is important to note that the Alcohol and Drug Foundation (2019) reports that while naloxone has no potential for misuse, that it does have mild side effects—for an opioid dependent individual that is administered a high dosage, they may experience withdrawal symptoms, including nausea and vomiting, sweating, trembling, nervousness, and fast pulse. Furthermore, “[i]n rare cases, even a person who not opioid-dependent might experience: an allergic reaction with symptoms such as swelling of the face, lips, tongue and throat, wheezy breathing, chest tightness, intense rash with itching; high blood pressure; irregular heartbeat; and seizures” (Alcohol and Drug Foundation, 2019, n.p.)

Law enforcement everywhere plays a vital role in responding to opioid overdoses, and the administration of naloxone is timely and aligns with their vow to serve the community. In August 2017, Mississippi Governor Phil Bryant announced that every sworn officer in the Mississippi Department of Public Safety will be trained on and provided with naloxone (Apel, 2017). Funded by the State Targeted Response to the Opioid Crisis Grant under the 21st Century Cures Act, a partnership between the Mississippi Bureau of Narcotics and the Mississippi Department of Mental Health seeks to promote the adoption of naloxone by law enforcement.

Despite these critical efforts, there is a noted resistance to adopt the life-saving drug. Herein, we frame naloxone adoption through a diffusion of innovations framework and present articles collected from print media outlets in Mississippi. It is important to understand how local media are approaching the conversation around naloxone as communication channels, and the media specifically, affect the rate of adoption of innovations (Rogers, 2010). The purpose of this study is to understand how local media in Mississippi are framing the conversation about naloxone products, and to better understand how it might affect the adoption of these products among law enforcement.

Literature Review

It is well established in the extant literature that mass media determine which issues are given social priority and that this is particularly true in political issues, such as perceptions of policies (Bright & Bagley, 2017; Golan, 2006; McCombs, 1972; Sweetser et al., 2008). According to McCombs and Shaw's agenda-setting theory, media do not tell people what to think, but they do tell people what to think about (Cohen, 1963; Reeves & de Vries, 2016). In this sense, media sets the agenda for public policy debates. More specifically, a journalist's decision to cover or not to cover an issue, as well as how it is framed, influences the salience of the issue profile and how both the public and policymakers consider problems and potential solutions (Sekir et al., 2016). As public audiences are often dependent on media for political information, media are influential in how policy debates are "packaged" (Terkildsen & Schnell, 1997).

In addition to the media's agenda setting and priming abilities focusing on the salience of issues in the media and public eye, the theory of media framing specifies that media portrayals of issues influence citizens' subsequent issue consideration and their level of support for related policies (Terkildsen & Schnell, 1997). It follows that the language through which, and the way that, an issue is framed by the media impacts policy support and potentially adoption thereof (Gamson & Modigliani, 1987). In regard to media framing, Terkildsen and Schnell (1997) add, "Framing is important whenever an issue can be presented in multiple ways which may potentially influence how people think about an issue" (p. 881). A growing body of research attests to the influence that frames exert in shifting the criteria individuals use to make decisions. Media framing impacts public knowledge (Terkildsen & Schnell, 1997), but public knowledge and perceptions of just policing is also driven by the media (Dowler, 2003). Thus, following the theory of procedural justice—the theory that the police legitimacy is dependent on perception that the police are performing in a procedurally just manner and with trustworthy motives

(Quattlebaum et al., 2018)—the media play an important role in perceptions of police effectiveness as the media are constantly shaping, even renegotiating, public perceptions of what is considered “just policing” and what legitimately looks like just police response to different social issues. These perceptions can then lead the public to put pressure on decision-makers to find solutions (Dowler, 2003).

Diffusion of Innovations Approach

Following these projections, the adoption of naloxone is theorized to follow the diffusion of innovations model (Bowles & Lankenau, 2018). Although in Rogers’ (1962) original innovation of diffusion theory, he was speaking of diffusion at the individual level, there is a long precedent in the literature to applying the theory at the organizational level (cf. de Vries et al., 2016; Dibra, 2015; Mustonen-Ollila & Lyytinen, 2003; Waterman et al., 2007). The robustness of theory has allowed for its application across many disciplines, including social and public health interventions (Dearing, 2009). Waterman et al. (2007) further highlight that the theory is particularly well coupled with action research and whole systems research.

Diffusion of innovation theories seek to explain the factors influencing how, why, and at what rate ideas spread (Rogers, 1962). The idea is communicated over time to participants of a social system. The innovation–decision process is a series of five stages which individuals go through before deciding to adopt or not adopt an innovation (Rogers, 2010). The first stage is knowledge, which Rogers (2010) defines as the time when “the individual is exposed to the innovation’s existence and gains an understanding of how it functions” (p. 5). The media plays a particularly important role in this stage as they are often the primary source of information for many individuals. Considering naloxone, many people may only hear about it when connected to a story about the opioid crisis, either positively or negatively.

The second stage is persuasion. This stage occurs “when the individual forms a favorable or unfavorable attitude toward the innovation” (Rogers, 2010, p. 5). Similar to the knowledge stage, the media once again play a prominent role in persuasion. As mentioned above, media members do not tell people what to think, but they do tell people what to think about (Cohen, 1963; Reeves & de Vries, 2016). However, what the media decides to emphasize can have a major impact on how people think about a particular innovation. For example, if a journalist mentions that someone was arrested with heroin and naloxone, consumers may misinterpret naloxone to be an illegal substance.

The third stage of the model is the decision stage, which happens when “the individual engages in activities that lead to a choice to adopt or reject the innovation” (Rogers, 2010, p. 5). The fourth stage, implementation, occurs when the innovation is put to use. The fifth and final stage, confirmation, occurs “when the individual seeks reinforcement for an innovation–decision already made but may reverse the decision if exposed to conflicting messages about it” (Rogers, 2010, p. 5). Some individuals have longer innovation–decision periods than others, and are often late adopters (Rogers, 2010).

Method

In this study, we assess naloxone perceptions both through (a) a survey of law enforcement adoption in Mississippi and (b) a content analysis of media framing of naloxone in the state. It was determined that a mixed methods research approach was most appropriate for this study because of the complex nature of the research questions and the pragmatic advantages of the mixed method approach (McCusker & Gunaydin, 2015). Aligning with Morgan (1998), we used a Priority-Sequence Model to highlight the complementarity of the two sources of data in which we used survey data as our preliminary method and then qualitative media content data as our follow-up principal method.

We present that the diffusion of innovation theory can be applied to examine how law enforcement decision makers are adopting naloxone. In considering the characteristics of the innovation (naloxone), the characteristics of the individual adopters (law enforcement organizations) and the characteristics of organizations (social systems), we posit that naloxone adoption occurs along the same five stages as other technological innovations: knowledge, persuasion, decision, implementation, and confirmation. The stages of this theory, specifically knowledge and persuasion, helped define the first guiding research question: *How has the media framed the discussion about naloxone products in the state of Mississippi?*

The concept of relative advantage—the degree to which an innovation is perceived to be beneficial or advantageous relative to other existing options (Rogers, 2002)—is herein hypothesized to (a) be influenced by the media and (b) impact the support for adoption of policies. Specific to naloxone, we hypothesize that the media portrayal of the drug affects the public's perception of its relative advantage, which then affects their support for its adoption by law enforcement. Although we are limited in making any statements of causality, we are able to triangulate the survey and media content data to answer our second guiding research question: *How is the media framing of naloxone reflected in the law enforcement adoption of the drug?* By linking the two sources of data through processes of convergent triangulation, we are able to speak to implications for the theories we have introduced and the generality of the theories in their application to naloxone adoption in Mississippi (see Turner et al., 2017).

Survey Data Collection and Analysis Methods

First, we sought to understand if law enforcement adoption was indeed lagging, even after recent efforts by the state to provide naloxone and associated trainings to law enforcement across the state. Although there were efforts to promote adoption, each law enforcement department sets their own policies. More specifically, we wanted to better understand naloxone adoption rates in the state of Mississippi among law enforcement to see if there was actually a lag in adoption, or if perhaps our assumption that there was a lag in adoption was incorrect. If law enforcement agencies in Mississippi are already past the persuasion and decision stage and into the implementation stage, then the implications of how the media portray the drug may not be as salient. At the time of data collection, there were no data available on the state of naloxone adoption across the law enforcement departments in the state. With this in mind, part one of this study was conducted with law enforcement agencies

in the state of Mississippi, specifically a telephone survey with sheriff and police departments. The purpose of these surveys was to identify naloxone adoption rates among this population. These data, as well as reasons related to perception of naloxone discussed by the interviewees, demonstrate the need to better understand how the media are framing naloxone, and how it might be affecting its adoption as a tool for battling the current opioid crisis.

With input from the Mississippi Bureau of Narcotics and the Mississippi Department of Mental Health, the National Institutes of Health (NIH)–funded Gulf States Health Policy Center’s Hattiesburg Area Health Coalition developed a short phone survey (institutional review board [IRB] approved at the University of Mississippi) to capture adoption decisions as baseline data for current and ongoing naloxone promotion efforts, and gain more information on adoption decisions. Because our population was law enforcement in Mississippi, we collected contact information for all 261 Mississippi police chiefs and sheriffs. A team of four researchers, two authors on this article and two IRB training students working with the authors, conducted structured phone surveys with the police chief, sheriff, or designated representative after reading a verbal informed consent document. Responses were systematically recorded in a shared spreadsheet, not audio recorded. Data were stored on a hard drive, only accessible by the four researchers.

To align with the diffusion of innovation stages of adoption, the first item asked,

Of the following choices, which best describes your department?: 1) Currently carrying Narcan®, 2) Committed to carry, but not yet carrying, 3) Considering carrying Narcan®, 4) Not actively considering or have decided against carrying Narcan®, or 5) Don’t know what it is or haven’t thought about it.

For each of the five categories, we followed up with one or two related items to better understand how they made their decision. If they responded that they have adopted naloxone, they were asked, (a) In what month and year did you adopt the use of Narcan®? (b) Do you have a record of the number of lives it has saved? (c) Do have a system or policy for documenting usage? If they responded that they were committed to adopt naloxone, they were asked, (a) When do you anticipate the adoption of Narcan®? (b) How will you fund the purchase? If they responded that they were considering adoption, they were asked, (a) What might be holding you back from committing to carry Narcan®? If they responded they were not considering adoption, they were asked, (a) What is keeping you from considering adding Narcan® to your department? Finally, if they responded that they were not familiar with naloxone, they were asked, (a) Would you be willing to discuss adding Narcan® to your department if you were provided with an easy to develop Narcan® adoption plan? If Yes, (b) To whom should we speak?

Data were recorded and analyzed in an Excel spreadsheet. Descriptive statistics were used to determine the frequency and percentage of law enforcement agencies at each of the levels of adoption. For the follow-up categories/close-ended questions, frequencies and percentages were used for analysis. Finally, for the follow-up survey questions that were open-ended, we used a qualitative to quantitative coding framework to assess how often responses occurred.

Content Analysis Data Collection and Analysis Methods

ProQuest Newsstream was used to collect news articles for this project. ProQuest claims to be the most comprehensive research resource for seeking news information (ProQuest, n.d.). We searched for articles in the database published in Mississippi from January 2012 to July 2018 mentioning the words Narcan® and/or naloxone. January 2012 was used as the beginning date to capture all articles before and during the third wave of the opioid epidemic which resulted because of a spike in deaths from fentanyl (Liu et al., 2018). The search resulted in 120 articles total. Of these, many of the articles were not published by Mississippi news sources. We also only included articles that spoke specifically about naloxone or Narcan® and were not simply mentioning the drug in a footnote, for example. In short, the article, or a section of the article, needed to be about naloxone or Narcan®.

To begin analyzing the data, primary-cycle coding was used, assigning words or phrases to the data to capture their essence (Tracy, 2012). The coding cycles were cognizant of the impact that framing might have on naloxone perceptions and how this might advance our understanding of the diffusion of naloxone as an innovation. During this phase of coding, three general themes emerged including government, positive association, and negative association. Once this phase of coding was complete, and all quotes about naloxone and Narcan® were assigned one or more of these primary codes, secondary-cycle coding was used to critically examine and categorize the existing quotes. Both phases of the coding process were completed independently by two researchers to ensure inter-rater reliability. The researchers reconciled codes after each of the two phases. Moreover, both researchers engaged in the process of bracketing as recommended by Ahern (1999) to account for or capture reflexivity. This process resulted in the following four themes that address the research questions and are discussed below in the analysis: (a) positive and informative discussion of naloxone, (b) full articles persuading readers to use and/or advocate the use of naloxone, (c) government or organizational effort to increase the availability and use of naloxone products, and (d) negative or misleading information about naloxone.

Results

Survey Results

Contact was made with over half ($n = 139$) of the Mississippi law enforcement agencies. Of these, we received responses from 40: Of these, 24% were considering carrying, 22% were not familiar with naloxone, 22% were not actively considering or have decided against, 17% were currently carrying, and 15% had committed to carry. As the majority of representatives did not consent to participate, either directly by explicitly refusing participation or indirectly after not returning calls after three contacts, many departments were either reluctant or indifferent toward participation. Of the 17% who have adopted naloxone, all adopted after August 2017 and have a tracking system for recording usage and related successes. For the 15% of potential early adopters (those that have committed to adopt), they have knowledge of naloxone and its benefits, and most are anticipating that they will receive naloxone through the State Targeted Response to the Opioid Crisis Grant. The 24% potential late majority (those who are considering adopting) provided reasons for noncommitment to adopt as: no connection to providers, not enough information, or no available funds. Despite

answers falling into these three categories, we would place all answers into a lack of information category. Both “no connection to providers” and “no available funds” show an absence of information given that naloxone does not require connection to providers and can be funded by the grant. Finally, for those who have decided not to adopt, reasons provided included that they did not have a need for it, they do not feel it is necessary, or medical professionals already have it.

Content Analysis Results

After the systematic review of the articles was complete, there were 25 articles remaining which were included in the sample. The articles came from the *The Clarion-Ledger* (18), *Hattiesburg American* (6), and *Mississippi Business Journal* (1). The Clarion Ledger and Mississippi Business Journal are both state newspapers, and the Hattiesburg American is a local paper serving the Hattiesburg Mississippi area. One potential reason for the higher attention to the issue in Hattiesburg could be because of James Moore, a local resident who has conducted an awareness campaign (Beveridge, 2018). The articles were published between December 4, 2016, and June 3, 2018 (Figure 1).

The content analysis is divided into four sections corresponding with each emerging theme that resulted in the secondary-coding phase. Notable exemplars were selected and used to better explain each theme.

Positive and informative discussion of naloxone.—The first theme, as implied by the name, includes positive and informative mentions and discussion of naloxone products. Several mentions were simple reporting of statistics related to the effectiveness of naloxone. For example, one article reported, “So far, four people have been revived during opioid overdoses in Mississippi since law enforcement officers began using Narcan®, a nasal spray that reverses overdoses, in early August” (Wolfe, 2017c, para. 29). Another article released just 3 months later stated, “Narcan® has likely saved 17 lives since law enforcement officers in Mississippi began using it this year amid an opioid epidemic killing nearly 100 Americans each day” (Wolfe, 2017b, para. 22).

Other articles were not reporting statistics but were emphasizing the usefulness of naloxone. For example, one author stated, “A few drug treatments can counteract at least some of the power of opioid addiction, like naltrexone and buprenorphine. Naloxone or Narcan® can counteract an overdose and literally bring people back from death” (Evans, 2017, para. 5). A different article briefly described Narcan® then added commentary from the state’s Department of Public Safety Commissioner. This excerpt said, “Since Mississippi law enforcement officers began using Narcan®, they have reversed 17 overdoses, likely saving those lives. ‘Those people count. I like to say everybody matters or nobody matters’” (Wolfe, 2017a, para. 13). These short, but positive endorsements of naloxone were often found in articles discussing the opioid crisis, or public health as a whole. However, the articles in which these quotes were found were not specifically about naloxone, which leads to the second theme.

Full articles persuading readers to use and/or advocate the use of naloxone.—In the second theme, we found articles completely dedicated to endorsing and encouraging

the use of naloxone as a tool to combat the opioid crisis. Altogether, there were six articles that fit this description. The first, released in December of 2016, was about the Oxford House of Mississippi² on a “quest to equip its numerous houses across the state with two kits of Narcan®, an opioid overdose treatment, to keep on hand in case of an emergency” (Beveridge, 2017, para. 3). The article goes into further detail about Narcan® and the Oxford House, along with a short narrative about how it began:

Realizing that addicts relapse—it does happen, and the likelihood at some point that Oxford House will intercept with someone that’s suffering from an opiate overdose and would need Narcan® is pretty high, Brand said. James Moore, who lost his son Jeffrey to an opioid overdose when he was just 24, bought the first Narcan® kit for Oxford House of Mississippi. Jeffrey was a recovering addict who relapsed but did not have Narcan® available. Moore discovered the antidote not long after his son’s death. Narcan®, also known as naloxone hydrochloride, is a nasal spray used to treat known or suspected opioid overdoses. Along with Moore’s Narcan® donation, a recent contribution from the William Carey University’s College of Osteopathic Medicine will now assure each of the state’s Oxford House locations will have one Narcan® kit on hand.

(Beveridge, 2017, para. 7)

About half a year later, in May of 2017, another article was released about the initiative to make naloxone more accessible. The article states that “In response to the exploding opioid epidemic plaguing Mississippi and the nation, grocery retailer Kroger and the state’s top drug enforcement officials teamed Thursday to announce eased accessibility to the overdose antidote Naloxone” (Maxey, 2017, para. 1). A year later, in May of 2018, two articles were published in Mississippi after U.S. Surgeon General Jerome Adams traveled to Mississippi to push the use of naloxone. He, personally, had saved a life with Naloxone while on an airplane. One of the articles gives the following advice from Adams, along with a quote,

Adams wants naloxone available to all families and first responders in the U.S. so that the drug can be used to help reverse opioid overdoses. “Any one of you can save a life,” he said. “Just like everyone knows about CPR, every one of you should know about naloxone.”

(Mitchell, 2018, para. 2)

Finally, just a month later, another article emphasized the impact the visit from Adams had on the state, “Two weeks after U.S. Surgeon General Jerome Adams traveled to Mississippi to urge the state to increase access to naloxone, the drug is now available at any pharmacy without a prescription” (Mitchell & Wolfe, 2018, para. 1).

2. “Oxford House is a concept in recovery from drug and alcohol addiction. In its simplest form, an Oxford House describes a democratically run, self-supporting and drug free home. Parallel to this concept lies the organizational structure of Oxford House, Inc. This publicly supported, nonprofit 501(c)3 corporation is the umbrella organization which provides the network connecting all Oxford Houses and allocates resources to duplicate the Oxford House concept where needs arise. The number of residents in a House may range from six to fifteen; there are houses for men, houses for women, and houses which accept women with children” (Oxford House, n.d., para. 1–2).

Government or organizational effort to increase availability and use of

naloxone.—The third theme that emerged from the articles highlights both public and private organizations pushing, and often donating money, to advance the availability and use of naloxone. Some quotes from the articles talked about goals and campaigns for advocacy. One quote showed the Department of Health and Human Services including Narcan® emphasis as one of its goals, “The federal agency has five goals: improve access to treatment, emphasize the use of overdose-reversing drugs like Narcan®, increase tracking of trends, support research on pain and addiction and encourage better pain management practices” (Wolfe, 2017d, para. 4). A second article discussed a campaign aimed directly at first responders: “This includes the media campaign, education for first responders, distribution of naloxone or Narcan® to law enforcement and town hall meetings, of which there have been 19 so far this year” (Wolfe, 2017e, para. 12).

Some articles had direct quotes from government leaders talking about naloxone, including Governor Phil Bryant, Former Mississippi Attorney General Mike Moore, and Mississippi Bureau of Narcotics Director John Dowdy. Bryant says in one article,

[Narcan®] has been proven to save the lives of those that are dying in the very moment they could lose their lives. We must also realize that treatment of this epidemic is our first responsibility, and this is part of that treatment.

(Apel, 2017, para. 2)

Dowdy was asked how many lives had been saved. Although he did not know the exact number, he replied that it was “staggering.” Moore said that the country needed to make sure that first responders were stocked with the product. Finally, one article discussed Bryant’s executive order encouraging the training of first responders on the use of naloxone (Apel, 2017).

Several articles mentioned financial efforts to advocate for naloxone. Two articles reported that 15% (US\$537,705) of a Substance Abuse and Mental Health Services Administration grant was going to be used for providing expanded access to naloxone. Another article reported that President Trump had pledged US\$100,000 of his salary to the opioid epidemic, which the author calculated could cover 735 doses of naloxone.

Finally, one article highlighted the efforts of Mississippi pharmacies to make naloxone available:

Walgreens, CVS and Kroger pharmacies have enacted standing orders for naloxone, officials said. The medication is sold under several brand names, most notably Narcan®, which is the brand distributed by Mental Health to DPS. There are no adverse effects to administering naloxone to someone in distress, but it is important to note that its use is not a substitute for emergency medical care, which should be administered as soon as possible after a suspected overdose or use of naloxone.

(Apel, 2017, para. 17)

Negative or misleading information about naloxone.—The final theme only included three quotes from the articles. However, these quotes were important and strikingly

different from the other quotes, warranting its own theme. Two of the three quotes were pulled out of articles covering the arrest of a person for drug charges. The person was found with a variety of paraphernalia as well as Narcan®. The way Narcan® was framed in the articles could mislead uneducated readers to think that it is drug paraphernalia itself. One quote said,

[suspect] was arrested on Feb. 1 after MBN executed a search warrant at his house. Director John Dowdy said at the time that the search uncovered approximately 40 grams of suspected methamphetamine, approximately 4 grams of suspected heroin, two firearms, dozens of syringes and other paraphernalia commonly associated with drug distribution, as well as a dosage unit of Narcan®.

(Apel, 2018a, para. 2)

The second article similarly includes Narcan® in the list of drugs and also uses the phrase “distributing Narcan®,” which could have negative connotations:

“We have pretty good evidence that he is connected to multiple drug overdoses including heroin and fentanyl overdose deaths,” Dowdy said. A dosage unit of Narcan® was found in the home, Dowdy said. It’s unclear why Thompson had it. “We have no indication that he had it for self-protection,” Dowdy said. “We also do not have any evidence at this point that he was distributing Narcan® with the heroin.”

(Apel, 2018a, para. 3)

Finally, the last article compared the future of Mississippi to another state dealing with the opioid crisis, Ohio. The article highlighted the fact that the state of Ohio has considered capping the amount of Narcan® that addicts are allowed, which could lead to their death. “In Ohio, officers and first responders have used enough Narcan® in some counties that some lawmakers have proposed allowing each patient only two doses of the drug” (Apel, 2018b, para. 27).

Discussion

How Has the Media Framed the Discussion About Naloxone Products in the State of Mississippi?

The news coverage of naloxone in Mississippi, as elsewhere in the country, provides researchers with the opportunity to advance our understanding of how the public and our policymakers perceive the critical adoption of naloxone in the state. Our law enforcement adoption data revealed the need to further understand the perceptions that might be purported in Mississippi relative to naloxone. Specifically, less than half of the law enforcement agencies who were surveyed have adopted or were in the process of adopting. For those who have not adopted, many cited negative perceptions of naloxone or the lack of need of adopting. To better understand these perceptions, we then conducted a content analysis to assess how Naloxone is framed in Mississippi media. Our preliminary news media content analysis of Mississippi news outlets between 2012 and 2018 revealed four, mostly positive themes.

How Is the Media Framing of Naloxone Reflected in the Law Enforcement Adoption of the Drug?

Despite the drastic increase in opioid overdose deaths in the United States, as well as higher than average impact in the state of Mississippi, the survey of law enforcement revealed considerable hesitation to the adoption of naloxone. Moreover, despite this hesitation and resistance, the adoption of naloxone is a necessary and effective public health response to the opioid epidemic. From an action research standpoint, the content analysis reveals that the majority of articles are not stigmatizing opioid users or naloxone. In fact, the majority of articles were promoting a framework that would lead one to support the adoption of naloxone by law enforcement. However, some that were negative did involve first responders. Two of the three negative articles were about a criminal who had been arrested for possession of heroin. The rest, which were positive, were more focused on policy-makers and pharmacies. Perhaps this lack of positive coverage related to naloxone and first responders had an impact on the adoption rates of Mississippi law enforcement agencies. Future research could seek to shed more light on this finding.

In the five stages of the diffusion of innovation process, we were particularly interested in the decision stage for the first study. The results highlight a need to better understand the preceding stages (knowledge and persuasion) as the data show that the majority of our participants, as of August 2017, were not committed to adopting naloxone products. The practical implications of the first study highlight an urgent need to better inform law enforcement about naloxone, its benefits, access to it, and the laws surrounding it. As the knowledge and persuasion stages precede the decision stage, it is important to understand how these law enforcement agencies and their representatives were being informed and persuaded, as it did not lead to immediate adoption. Because of the mass media's strong impact on the rate of adoption (Rogers, 2010), the media's framing of naloxone may have impacted law enforcement during the innovation–decision process (Figure 2).

Although this research has previously introduced the media's agenda setting role, we also want to highlight the priming role of the media. The relative lack of media coverage on naloxone is also an important finding (Figure 2). Future research is recommended to quantify the amount of emphasis placed on naloxone relative to other social and policy issues in the same time period. According the media priming theories, the media have the ability to elevate certain issues over others (Krosnick & Brannon, 1993). This project also shows how important events (such as the governor beginning a campaign or the surgeon general visiting the state) impact the media's agenda.

Theoretical implications.—Naloxone adoption by law enforcement, among other forms of adoption (i.e., take-home programs through pharmacies and other community reaching organizations), is an important step to preventing deaths in the midst of the opioid epidemic. Although numerous studies have documented both the effectiveness of the drug and the low adverse effect rate (McDonald & Strang, 2016; Pricolo & Nielsen, 2018), we concluded that from a diffusion of innovation framework that Mississippi law enforcement agencies often lack the knowledge or appropriate perceptions of naloxone to adopt and carry the drug. Although efforts such as the 2016 Comprehensive Addiction and Recovery Act, the Good

Samaritan Law, and Mississippi House Bill 996 have sought to increase availability of naloxone to anyone in Mississippi and remove barriers to access (c.f., Gupta et al., 2016), we find that among law enforcement in Mississippi, naloxone adoption is not prevalent. As the literature purports that much of the lack of adoption of naloxone is related to stigmatization and lack of familiarity (Beletsky et al., 2012), we sought to understand the framing of naloxone in Mississippi through a media content analysis. Given the media's role in framing issues and impacting the adoption of innovations (Rogers, 2010), the Mississippi media's framing of naloxone is overall positive, implying that the public may increasingly be informed through media about what naloxone is and does, thus decreasing issues of lack of familiarization. However, we also find that while the news articles on naloxone are generally informative and would support adoption, there remains a limited number of such articles. This implies that media may not be giving naloxone social priority (Bright & Bagley, 2017; Golan, 2006; McCombs, 1972; Sweetser et al., 2008), which according to agenda setting theory would imply that the media could be doing more to support the positive framing and thereby adoption of naloxone. Based on these results, we encourage the media to do more in regard to placing salience on the opioid epidemic and applying public pressure to the importance of naloxone adoption by law enforcement. More specifically, as law enforcement is subject to perceptions of just policing, the media play an important role in both informing the public on naloxone and on informing the public on the role of law enforcement as first responders in the opioid epidemic (Figure 2).

Applications of results.—These findings have practical implications for public health in Mississippi, and on naloxone adoption more broadly. Translating results into action should be the goal of any research project. Community-based research has contributed to or evaluated programs such as naloxone take-home (McDonald & Strang, 2016; Straus et al., 2013) and naloxone distribution programs (McAuley et al., 2012). To enhance the ability of these results to translate into action in the state, we conveyed all data back to the Gulf States Health Policy Center to serve as the basis for action-based community and policy research and communicated it to the partnership between the Mississippi Bureau of Narcotics and the Mississippi Department of Mental Health that was seeking to promote the adoption of naloxone by law enforcement at the same time this study was being conducted. Representatives of this partnership, for instance, were able to reach out to police chiefs and sheriffs who expressed financial barriers or expressed the desire to receive additional training or information. By disseminating our results to these organizations, we are adhering to the Healthcare Information Management and Systems Society's recommendations for addressing the opioid crisis by securely sharing information across disciplines (Morse, 2018). Our research also highlights the need for public health organizations to distribute relevant information to the media. Communication specialists working for organizations such as health departments, nonprofits, or research centers have the onus of disseminating relevant public health information to media entities, who in turn have the responsibility of agenda setting.

Limitations.—Although this research is important for its exploratory value in identifying current adoption and possibly related framing issues around naloxone in Mississippi, it is not without limitations. First, the research is limited by the small sample size, both in response

to the survey and in the number of articles that mentioned naloxone or related terms. Second, although the methods employed herein, as well as theories applied, could be replicated in another state or in the same state at another time, the findings presented here lack generalizability as they are specific to Mississippi. Third, through the process of bracketing, the researchers acknowledged that we are inherently biased toward the subjective awareness that all law enforcement should adopt naloxone and that the media plays an important role in facilitating this outcome. Finally, as (a) the results presented herein are specific to Mississippi in 2017 for adoption and 2012–2018 for news coverage and framing and (b) naloxone usage and availability are a rapidly changing issue, it is recommended that this study is updated by future studies to better understand change and adoption over time.

Conclusion

More than 72,000 people died from drug overdoses in 2017 (CDC, 2018). Naloxone is one part of the public health solution to combatting these deaths, and as first responders, the adoption of naloxone among law enforcement is critical in this response. However, the alternative efforts, such as the provision of naloxone by pharmacists for use by friends and family members of opioid users, are positive efforts occurring alongside law enforcement adoption. From a diffusion of innovation perspective, for naloxone to be an effective response, it must successfully diffuse among all potential actors who will likely interact with individuals at risk for opioid overdose. Our contributions here highlight the different ways naloxone has been discussed in local Mississippi media, and how it might affect successful diffusion among actors in the state.

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Figure 1.
Timeline of Narcan/naloxone articles published in Mississippi.

	Agenda Setting Theory →	Theory of Procedural Justice →	Innovation of Diffusion Theory
Theory	Media salience on social issues gives them greater consideration among audiences	Police legitimacy is dependent on perceptions that the police are performing in a procedurally just manner and with trustworthy motives	Innovation adoption occurs along five phases: knowledge, attitude formation, decision, and confirmation. The media play different roles in each of these stages
Applied Mechanism	The amount of coverage of naloxone impacts the emphasis that public puts on its adoption	Perceptions of naloxone and the role that law enforcement should play will impact pressure on law enforcement adoption of naloxone	Law enforcement and pressure on law enforcement follow this process to adopt naloxone. It is influenced by media framing and by public perception of procedural justice.
Finding	From 2012-2016, there was minimal emphasis on naloxone in Mississippi media	From 2012-2016, there was a predominately positive portrayal of naloxone, but also some misinformation	Lack of knowledge and stigmatization prevent Mississippi law enforcement from adopting naloxone.
Implication	<p>Improving media salience could better inform law enforcement and the public regarding the benefits of naloxone adoption. Improved knowledge and framing impacts attitude formation, which increases likelihood of the decision by law enforcement to adopt naloxone and public confirmation of this decision.</p>		

Figure 2.
Map of findings and implication.