Individual Depictions, Causes, and Consequences: Effects of Media Frames on Perceptions Toward the Rural Opioid Epidemic

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Abstract

Rural America faces challenges unique from other parts of the United States with vulnerabilities leaving its potential resilience at risk. In particular, issues associated with public health leave many in rural communities in lack of needed care and resources to maintain a healthy lifestyle. The rural opioid epidemic has added greater challenges to an already fragile rural health system. The mass media has for many decades served as a vessel for health promotion and health campaigns have been successful at changing levels of knowledge. Given that acceptance or action on an issue can be a result of how the message is framed, the purpose of this study was to determine the effects of media frames on attitudes toward the rural opioid epidemic. A framing treatment featuring a story of person in recovery significantly affected perceptions of stigma beliefs. However, while previous studies found describing certain causes associated with addiction to be effective in changing stigma perceptions, that was not the case in this study which suggested not all causal frames are created equally. Additionally, while participants expressed a variety of blame perceptions for the rural opioid epidemic, there were no significant differences based upon the frame that was presented. Finally, policy support was not influenced by participant community types, but there were significant differences in support based upon political party affiliation indicating the rural opioid epidemic represents another example of a social issue with political influence.

Keywords

framing, rural opioid, rural health

Cover Page Footnote/Acknowledgements

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Introduction

The majority of media coverage in the early 2000s described rural America in a positive manner, with praise for good values, strong work ethic, and picturesque landscapes (Lichter et al., 2004). Currently, about one in five people, or nearly 60 million Americans live in rural areas (United States Census Bureau, 2017), which have experienced significant changes socially and politically since the time of the Lichter et al. 2004 study. While rural communities have experienced slow job and population growth (Kassel, 2019), the agriculture industry prevalent in these areas remains strong with inputs from farming alone contributing approximately 1% of the $21 trillion gross domestic product in the United States (American Farm Bureau Federation, 2019). In addition to economic contributions, rural populations and regions also provide historic, cultural, and recreational experiences for both residents and visitors (Bolin et al., 2015). Rural America is also critical from a political standpoint, as voting decisions have a strong influence on state and national elections (McKee, 2008). The culmination of rural America's role in national elections can be observed in the results from the 2016 Presidential election, which brought about new and different publicity for rural America (Goetz et al., 2018).

Despite its contributions to the U.S. overall, rural America experiences some challenges to a greater degree than its urban counterparts. While all parts of the United States face challenges, there has been a divide and stark differences between rural and urban communities. For the most part, rural communities have lagged behind urban locales. Factors contributing to the disconnect between life in rural areas and life in urban areas point to higher rates of poverty, a lack of new job opportunities, and a higher prevalence of disability (Thiede et al., 2017).

Poverty is a particularly poignant issue for rural America given its connection to factors associated with a lesser quality of life. Likely contributing to poverty rates in rural areas is the lack of and concern for employment opportunities. Employment growth is slower in rural areas than urban (Cromartie, 2018) as low-skill employment opportunities associated with mining, agriculture, fishing, and forestry continue to decline as a result of changing demographics and technological advancements (Hart et al., 2005; Laughlin, 2016). Coupled with these issues is the fact that rural Americans experience lower levels of educational attainment, with more rural residents failing to complete high school and less attending or completing college compared urban residents (Erwin et al., 2010). On top of these issues, many rural communities face the outward migration of many young individuals and families to cities for better employment, education, and stability (Berkey, 2018). The difficulties have made creating conditions to encourage prosperity and resiliency difficult to implement (Dickes & Robinson, 2010).

Community resilience is a measure of a community's ability to utilize resources to respond to, withstand, and recover from situations of adversity (Rand, n.d.). Within a community, resilience is typically associated with hazards and disaster of varying types, including environmental, natural, economic, social, and health (Cutter et al., 2008). When facing hazards or disasters, communities must contend with building social resilience as well. According to Adger (2000), "Social resilience is the ability of groups or communities to cope with external stresses and disturbances as a result of social, political, and environmental change," (p. 347) or "ability of communities to withstand external shocks to their social infrastructure" (p. 361). Resilience is influenced by a community's vulnerabilities, or "inherent characteristics or

qualities of systems that create the potential for harm or differential ability to recover" (Cutter et al., 2008, p. 2). Many of the hazards and disasters listed above and the community's resilience potential for managing those events have implications for community health as well.

While rates of poverty impact many aspects of a community's vibrancy, poverty is a significant risk factor for poor health conditions (Blumenthal & Kagen, 2002; Braveman et al., 2010). Therefore, it is logical to assume that due in part to its tradition of high poverty rates, rural America has long faced issues of public health different from other areas (Blumenthal & Kagen, 2002; Gamm et al., 2002). A multitude of factors, in addition to poverty, influence the health of a community, and although access to healthcare in rural areas consistently ranks as a major issue for rural health, scarcity of jobs, poverty, and the environment are also contributors and predictors of physical and mental health (Bolin et al., 2015).

Rural communities can be prone to vulnerabilities associated with public health. Given the number of individuals living in rural areas, the health of rural America is key to the overall health of the United States (Bellamy et al., 2011). Although a national survey of rural health policymakers, community leaders, and other stakeholders indicated access to quality health services was a leading priority, complications associated with geographic isolation, cultural conditions, lower incomes, and dwindling numbers and an undersupply of available health professionals have made high-quality health services difficult to ensure (Gamm et al., 2002).

Although access to healthcare can be a challenge for some who live in urban environments, nearly all who live in rural communities face issues of accessibility and care continuity (Artnak et al., 2011). As rural America experiences a wave of local hospital closures due in part to an evolving healthcare system, millions of rural residents are left at increased risk of poor health (Kaufman et al, 2015). Little change in rural health priorities have taken place within the last decade, and many of the same objectives have been carried forward from the Office of Disease Prevention and Health Promotion's Healthy People 2010 (Davis, 2000) initiative to the Healthy People 2020 (Centers for Disease Control National Center for Health Statistics, 2019) initiative.

Compounded by these challenges associated with healthcare and public health in general, some communities in rural American have been confronted with a new health issue that affects not only public health, but families, infrastructure, the economy, law enforcement, the court system, and nearly every aspect of small-town life (Hazlett, 2018). All of the obstacles already identified as barriers to achieving and maintaining a healthy rural America now likely contribute to and are affected by the influx and growth of opioid drug abuse. Many of these communities, such as those in rural Appalachia, also experience high rates of poverty (Hotez, 2008) and some of the highest opioid-related mortality rates (Rigg et al., 2018). Further, the stigmas associated with opioid addiction can present unique obstacles to addressing this problem.

Critical to a resilient community, education aids in knowledge increases, improving practices, and changing behaviors (Graham et al., 2016). The mass media has for many decades served as a vessel for health promotion (Flay & Sobel, 1983) and health campaigns have been successful at changing levels of knowledge (Atkin, 1979). In addition, many Americans rely upon the media to attain health information (Brodie et al., 2003).

Specific to issues of opioid abuse, previous studies have indicated a general lack of education concerning opioid use in rural areas (Dunn et al., 2016). In fact, the lack of education about risks and dependency potential associated with opioid drugs (Zhang et al., 2008) was a likely influence in the resulting epidemic that exists today. Education about opioid addiction is a potential solution to resolving the opioid epidemic in rural America (Hahn, 2011). Considering that many rely upon the media for most of their health information (Schwitzer et al., 2005), the media may assist in advancing and promoting change in health behaviors (Fishman & Casarett, 2006). Therefore, it is important to understand how certain communication messages influence perceptions of the issue (Kennedy-Hendricks et al., 2016).

Considering the grave nature of the rural opioid epidemic and its impacts on rural communities, and the role of frames in shaping attitudes, opinions, and actions, a study of framing effects on perceptions of the rural opioid epidemic is justified. Steede (2020) called upon those in agricultural communications to test messages associated with controversial topics in agriculture to better understand public perceptions about the issues. This study seeks to fulfill this need by investigating an issue affecting many involved in agriculture and natural resources. Agricultural communicators must understand the framing impacts of agricultural health issues considering they may be relied upon to frame and position the issue on the industry's behalf as the issue unfolds and expands (Lundy et al., 2018).

Theoretical Framework

Complicated issues are often associated with a variety of factors and details that can be difficult not only for the media to communicate, but also for the public to interpret. Framing encompasses the idea that placing emphasis on certain elements of an issue over others holds the potential to impact how the public views the issue (Chong & Druckman, 2007; Scheufele & Tewksbury, 2007). As issues unfold and the media seek to share details with their readers or viewers, frames are used to simplify information and make complex issues easier to understand (Scheufele & Tewksbury, 2007). A frame is "a central organizing idea … for making sense of relevant events, suggesting what is at issue" (Gamson & Modigliani, 1989, p. 3).

Given the limitations associated with both the news media, in regard to time available to select and produce reports (Gans, 2004), and news consumers, who have limited capacity or energy for consuming news (Chaffee & Schleuder, 1985), frames are helpful for presenting simple, interpretive packages to reduce the overall level of issue complexity (Kim & Willis, 2007). Frames can be invaluable tools for efficiently presenting complex issues to the lay public by connecting the frame to an existing cognitive schema (Scheufele & Tewksbury, 2007). In addition, Shoemaker and Reese (1996) suggested framing is simply a mode of presentation to aid the audience in connecting new information with existing understandings.

However, framing can ultimately result in incomplete presentations of information. Frames are specific and are created when the media select and promote certain aspects of an issue, while overshadowing or omitting other aspects of the issue (Entman, 1993). In other words, a frame is a unique lens through which a selected element of an issue is communicated. Creating specific frames allow the media to succinctly define a problem, suggest its causes, encourage moral evaluation, and/or recommend a solution (Entman, 1993), often from the

standpoint of one angle of the issue. As a result, frames provide media consumers with a basis for making judgements about the issue based upon the frames presented (Kim et al., 2002).

Frames have the flexibility to take on a number of qualities or categories. As Scheufele (1999) suggested, framing occurs continuously as process outcomes also contribute as inputs for future processes. Of note, many frames tend to be communicated with a theme or episode at the core of the message. Thematic frames often focus upon the issue as one of society as a whole, while episodic frames are more focused on communicating the issue as the problem of an individual or small group of individuals (Willis & Painter, 2008). Thematic frames are abstract, impersonal, and tend to focus on a general trend or public policy matter (Iyengar, 1990). On the other hand, episodic frames involve coverage with personal experiences and particular occurrences of certain individuals or families (Iyengar, 1990). Issues of public health have been communicated with both thematic and episodic frames. Kim and Willis (2007) found news frames tended to focus on the motives and behaviors of one individual when suggesting responsibility for solving societal problems. Others have found the media attributes public health problems to both societal and individual determinants, suggesting remedies from a policy standpoint and standpoint of individual action (Coleman et al., 2011).

Some scholars have investigated the use of frames when communicating about stigmatized health issues. McGinty et al. (2019) suggested three types of frames were applicable to addiction stigma: Causal, consequence, and individual depiction. Each of these frames have been shown to impact public attitudes about social issues (McGinty et al., 2016). A causal frame involves assigning responsibility for some outcome (Iyengar, 1990) and consists of a media message with direct implications to a problem's cause (McGinty et al., 2019). When the media frames addiction as a cause related to an individual's control, such as an individual choice, stigma is likely to increase (Corrigan et al., 2003). On the other hand, when the cause is assigned to a factor outside of the individual's control, stigma is decreased (Weiner, 1993). Lastly, a consequence frame occurs when a message places emphasis on a certain consequence of the issue over others (McGinty et al., 2019). A message that indicates a generation of children were left without parents due to the opioid epidemic is an example of a consequence frame.

Individual depiction frames involve the story or description of a specific individual who is experiencing a social or health issue (McGinty et al., 2019). Examples of individual depictions in the media involve people experiencing addiction from the point of view of a criminal, racial or ethnic minority, violent, or engaging in recovery or treatment (McGinty et al., 2019). Some studies have shown social stigma is decreased when individuals treated successfully for drug addiction are depicted in the media (McGinty et al., 2015).

When the media depict an individual with a health issue, changes in audience perceptions of stigma toward individuals with those health issues can be significant (McGinty et al., 2019). However, while emotional responses and audience engagement can increase as a result of experiencing individual depictions, stigma can increase as well when audience members assign blame to the affected individuals (McGinty et al., 2019). The affected individual depicted can have varying effects on the audience. For example, the audience is prone to assign the specific individual's traits to all experiencing the issue because these limited experiences provide a basis for judging additional situations that are similar (Zillman & Brosius, 2000).

Framing assumes the way in which an issue is characterized can affect how an audience understands it (Scheufele & Tewksbury, 2007). Differing frames on the same issue can lead to different perceptions about the issue (Iyengar, 1990). From a perspective of measuring effects, frames can serve as independent variables to measure impacts of framing (Scheufele, 1999). Framing is an applicability effect, as in order for framing effects to occur, the individual must make connections between concepts (Price & Tewksbury, 1997). Acceptance or action on an issue can be a result of how the message is framed. Mass media outlets are powerful mechanisms for framing effects given their roles in defining issues and the audiences who consume their reports (Iyengar, 1990). Framing effects occur when "'frames' embodied by a stimulus subtly direct attention to particular reference points or considerations" (Iyengar, 1990, p. 20).

The strength of framing effects is dependent upon the fit between the constructs implied by the frame and the recognition of frames in the audience's existing knowledge of the message content (Scheufele & Tewksbury, 2007). In order for framing effects to occur, the frame must be evaluated by the individual, who may or may not be affected by the message frame based upon certain elements within the message. While any number of factors may influence a frame's effectiveness, Entman (1991) suggested certain traits within a message hold the potential to set an individual frame of reference, thereby influencing how the message is processed and evaluated. These traits are: 1) importance judgements about the event, 2) the answer to what caused the newsworthy event, 3) identification with victims, 4) choice of labels and categorization of incidents, and 5) broader generalizations to a national context (Entman, 1991).

Nelson et al. (1997) agreed that while a frame's effectiveness is reliant upon its perceived importance, they also added that "frames influence opinions by stressing specific values, facts, and other considerations, endowing them with greater apparent relevance to the issue than they might appear to have under an alternate frame" (p. 569). The ways in which an issue's causes or consequences are framed likely contribute to the types of solutions the public perceives as appropriate for addressing the issue (Kennedy-Hendricks et al., 2016).

Message elements within frames can influence policy (Pan & Kosicki, 1993). Some researchers have investigated effects of framing messages about illicit opioid use. For example, one study suggested while depicting opioid addiction as a treatable condition led to decreased stigma and negative attitudes toward those experiencing addiction, the frame did not increase support for policies to benefit those affected (McGinty et al., 2015).

Purpose and Research Questions

While some research efforts have explored the effects of competing media frames on stigma attitudes toward those who have experienced drug abuse and addiction, there is no known research that has investigated the impacts of media frames crafted specifically to communicate details about the rural opioid epidemic. Therefore, the purpose of this study was to determine the effects of media frames on attitudes toward the rural opioid epidemic. The study was guided by the following research questions:

> **RQ$_1$**: How do certain media frames about the rural opioid epidemic affect perceptions of stigma, blame, and proposed solutions?

RQ2: How do perceptions of proposed solutions to the rural opioid epidemic vary based upon participants' community types?

RQ3: How do perceptions of rural America and exposure to illicit opioid users moderate the framing effects on stigma beliefs?

Methods

Data for this study were collected using a between-subjects experimental design to compare the impact of the message frame on perceptions of stigma and blame concerning opioid abuse (Ary et al., 2017). The experiment was embedded in a quantitative survey instrument. Data were collected from November 26, 2019 to December 5, 2019.

Participants

The population for this study was rural and urban/suburban residents in the United States. Study participants were recruited through Qualtrics Research Services, an online survey platform, at a cost of $5.00 per response. Participants were compensated for their involvement in the study. To ensure representation from both urban and rural residents, a quota was set to obtain responses from 50% rural residents and 50% urban or suburban residents. Additionally, responses were collected at equal levels from both males and females. Two measures were built into the instrument to verify the participant's attentiveness to the questionnaire. A total of 315 responses were collected initially, but a review of data resulted in a final sample of 259. Incomplete responses and responses from those who did not correctly respond to attention checks were omitted from the study.

Participants in the study ranged in age from 18 to 83 years, with a mean of 39 years. After removing some responses, the sample consisted of slightly more females (51%) than males (48%). About one percent chose not to indicate their gender. About 54% of the sample self-reported that they were from a rural community, while 46% said they lived in an urban or suburban area. Despite the fact that the sample skewed more conservative than liberal, 32.2% of participants said they identified as Democrats. The next most common political affiliation was Independent (29.3%), followed by Republicans (25.5%).

Procedure

Participants were provided with study information and required to consent to participate before advancing to the survey instrument. To meet established quotas, participants were prompted to provide their community type (urban, suburban, or rural), gender, and age. In order to provide a base-level of understanding of opioid drug types and uses, participants were presented with a brief description of different types of opioid drugs before being instructed to respond to nominal items to determine the participant's exposure to illicit (illegal or unlawful) or non-medical (without a prescription or used to achieve a high) opioid drug users. A stigma beliefs pretest followed, which consisted of 18 Likert-type items.

At the completion of the stigma beliefs pretest, participants were presented with a brief narrative about rural America that included the number of people who live in rural America and its characteristics. For comparative purposes, the narrative also included figures on land mass and population for both urban and rural areas. After reading the narrative, participants were asked to provide words or thoughts that came to mind when thinking about rural Americans or rural American communities. To gain further understanding of participants' perceptions of rural America, participants next responded to 22 Likert-type statements.

Participants were then instructed to read a randomly-assigned feature story about the rural opioid epidemic in its entirety. Each stimulus contained one of three possible frame elements: individual, causal, or consequence. The stories were based upon articles appearing in the *Farm and Dairy* newspaper's series about the rural opioid epidemic. The stimuli were designed to featured prominent news frames used to discuss the rural opioid epidemic (citation omitted) and to be inclusive of media frames shown to influence stigma (McGinty et al., 2019). Names and some of the information within the story were changed to add emphasis to certain elements for testing. The feature story stimuli are included in Figures 1, 2 and 3.

Figure 1

Feature Story for Individual Depiction Frame

Smith Breaks the Cycle of Opioid Addiction

Sitting on the front porch of his family's antique store in West Union, Ohio, Joe Smith has a rich legacy behind him. An American flag waves out front in a light breeze, and birds chatter. Inside, the immaculate interior reflects the family's hard work. The antique store operates as one of the most recognized businesses in Adams County, but Smith has not always been part of the legacy.

He started with alcohol at age 16, and progressed to recreational drugs. After a bad traffic accident, he became hooked on painkillers and opiates. He grew up in a family and a county where this shouldn't have happened, a rural county at least an hour away from any big city. But it happened, and it's happening even more often today. Across the state and across the nation, rural and farming communities are being hit hard by the spread of opioid drug abuse.

"In a town this size or anything like these farming communities around us, opiates are family destroyers," he said. "They go in and just basically tear the fabric of a family apart."

Smith found relief and began turning his life around a decade ago, and now he's a counselor for other people with addictions, working closely with the Adams County court system.

It was his own counseling that triggered steps toward recovery in 2007. "I just kind of had the revelation that the only time I'm any good is in treatment, so I better stay in it," he said. "It took some time, but it was worth it."

He went through treatment six times until 2010 when he finally stayed sober and got his life back. "Without sobriety, I have nothing," he said. "No marriage, no child, no home, no nothing."

Today, he's committed to helping others try to get their own lives back, too. He has counseled people at the local jail, trying to show them a better path and getting them the services they need. "What I like to do is share with them that I've been there — I know what you're going through," he said.

Figure 2

Feature Story for Causal Frame

Poor Prescription Drug Practices Fueled Rural Opioid Epidemic

Kentucky has seen a 66% increase in hospital admissions related to opioid drug overdoses in the past two years, according to a Kentucky Health Care Cost Containment Council report released in June.

In rural Wolfe County, misuse of opioid painkillers results in drug overdoses — and sometimes death — every day.

Many across the country trace the crisis back to 1996 when the American Pain Society introduced the phrase "pain is the fifth vital sign," making pain assessment as important as blood pressure, heart rate, respiratory rate and temperature. The other vital signs can be measured objectively, but pain can't.

"Fifteen years ago, the AMA (American Medical Association) was suggesting the use of oxycodone to subdue pain, the fifth vital sign," said Dr. Tom Miller, who practices at the Wolfe County General Hospital. "The medical community was very generous in prescribing this heroin in a capsule."

Miller said many doctors prescribed opioids without indicating the drug's potential for addiction to their patients.

"People get their hands on it and think, 'How could it be that bad if a doctor prescribed it?' They just didn't — and don't — understand the dangers," said Miller.

The pill addiction problem in rural Wolfe County erupted initially with three doctors who ran a pain clinic in Union Township and dispensed thousands of prescriptions for oxycodone-based drugs during 2002 and 2003, addicting hundreds, Miller said.

By 2010, the CDC had declared prescription pill abuse to be an epidemic in the United States.

Similar issues surfaced nationally and, as a result, federal guidelines became more stringent for physicians dispensing prescriptions, and doctors became more conservative in writing them, but in many cases, it was too little, too late.

"Those addicted to opioids want it more than a starving man wants food," said Miller. "It changes their brain composition to want more and more, to get the same feeling."

The county is orchestrating all of its resources to continue the war on opioids.

"What started with bad medical practices has led to more drug ODs than car accidents."

Figure 3

Feature Story for Consequence Frame

The Cost of Fighting Opioid Addiction

While the opioid epidemic is costing lives, it's also costing rural communities and taxpayers big bucks to fight. The Centers for Disease Control and Prevention has found that prescription opioid abuse costs $78.5 billion a year in crime, lost work productivity and health care. From private businesses to county governments, on down to the individual, no one is untouched when it comes to cost.

Somerset Police Lt. Lucas Harrison said the drug epidemic has reshaped his community and added elements of stress and worry to small-town life.

He said the drug issue has not only stressed law enforcement, but also the EMTs and fire and rescue personnel, who often have to respond to the same calls.

"You get a couple overdoses and that's resources that could be needed somewhere else," he said.

The jail, built more than 20 years ago, is designed to hold 66 inmates. On any given day, it's holding close to 90, at a cost of about $60 per inmate a day. Most of the crime is drug-related, in one way or another, Harrison said.

"We see an uptick in thefts — people are stealing stuff left and right from local stores, or out of cars — trying to sell this stuff off just to get money and get their next fix," he said.

According to Michael Potter, Wolfe County Commissioner, the county is doing about all that it can. "I can't imagine our community doing more than it is, both in government-funded as well as in private entities," Potter said. "We've got a lot of people engaged in this — it's a difficult issue that in many ways has threatened the vibrancy of our communities."

Potter said the community has shown support for fighting drugs by passing levies that fund the local mental health board and drug recovery programs. And, although treatment is costly for taxpayers, it's also costly to not provide treatment, leading to more unemployment and issues with crime. Potter said he hopes people living in Wolfe County can get back on track, so they can hold jobs and be contributing members of society.

"I just want the little towns in Wolfe County to be great places to raise families like they used to be, before the drugs took over. "

Upon completion of reading the randomly assigned feature story, participants were presented with a stigma beliefs posttest and asked to respond to the items. After completing the posttest, respondents were prompted to indicate, via open-ended response, who or what they believed to be to blame for the rural opioid epidemic. Then, in an effort to understand perceptions of proposed policy based-solutions, participants indicated levels of opposition or support four Likert-type items. Finally, participants responded to demographic questions including education, current employment, state of residence, political views, political party, and race. A debriefing statement was shared at the conclusion of the study to provide the participants with additional information about the feature story.

Measures

Exposure to illicit opioid users

The six items utilized to measure each participant's exposure to illicit opioid drug users were adapted from the exposure to drug users index developed by Palamar et al. (2011). Participants were asked to indicate their experience with illicit or non-medical drug users by responding "yes," "no," or "not sure" to each statement. For example, one statement from the measure was "I have a family member or relative who uses illicit or non-medical opioids." Per Palamar et al. (2011), responses "no" and "not sure" were coded into one variable to indicate absence of awareness to potential exposure. Collectively, the item responses to these questions were combined into one variable for mean score as indicator of experience with illicit opioid users. Reliability was established *a priori* during the pilot test through a Kuder-Richardson formula 20 test as the response options were dichotomous ($\alpha = .80$).

Stigma Beliefs

The stigma-beliefs survey consisted of 17 items that featured statements concerning the use of opioids and opioid users themselves. Participants were asked to respond to statements such as "using opioid drugs is morally wrong" using a seven-point Likert-type scale (1 = *strongly disagree* to 7 = *strongly agree*). The stigma beliefs items were adapted from stigma items developed and tested by Palamar et al. (2011). Responses to these questions were collapsed into mean scores as measures of stigma beliefs before ($M = 4.25$; $SD = 1.67$) and after ($M = 4.25$; $SD = 1.61$) the stimuli were presented. A Cronbach's alpha test was conducted to establish reliability *a priori* ($\alpha = .88$).

Perceptions of Rural America

A series of 22 statements were presented to gauge participant views of rural America. In this researcher-developed instrument, items were created based upon findings in the National Public Radio's (2018) Life in Rural America Report and aimed to assess perceptions of rural communities and people. Statements focused upon positive elements associated with rural communities, such as "rural communities and small towns have good people" as well as negative aspects and needs of rural communities, for instance, "rural American communities face many economic concerns." Other statements concentrated on factors such as perceptions of discrimination, drug addiction, and qualities of rural residents in general. Participants rated each item using a Likert-type scale (1 = *strongly disagree* to 7 = *strongly agree*). Negative items were reverse coded to ensure the same direction for all items. Item responses were combined to achieve an overall mean score of perceptions of rural America ($M = 4.17$; $SD = 1.50$). Reliability for this measure was ensured *a priori* ($\alpha = .78$).

Blame

A review of literature offered a variety of blame perceptions pertaining to drug abuse. Given the complex nature of the opioid epidemic, and the potential for any number of blame perceptions due to participants' beliefs, attitudes, and experiences, participants were prompted to share their

perceptions of blame via open-ended questions. The researcher later grouped and coded each of the responses according to identified emergent themes. To ensure reliability, a coder was trained and provided with a sample of 30 cases. Compared to the researcher's codes for the sample, an acceptable level of reliability was achieved ($\alpha = .99$).

Proposed Solution

Four Likert-type items adapted from a study conducted by McGinty et al. (2015) were presented to the participants in the study to evaluate support of proposed policy solutions to the rural opioid epidemic. The items were rated on a five-point Likert-type scale (1 = *strongly oppose*, 5 = *strongly support*). In addition to rating the Likert-type items, participants were provided the opportunity to share their own perceptions of potential solutions pertaining to the rural opioid epidemic via an optional open-ended question.

Manipulation Check

A manipulation check was conducted prior to the pilot test in order to confirm the three feature story treatments were reflective of the frames they were designed to express. Each of the three feature stories were presented randomly via Qualtrics survey link to 30 graduate students in agricultural education, agricultural communications, and agricultural leadership who were not included as part of the sample population. Participants read each feature story and responded to the following question: "*Assuming you would like to share the feature story you just read, which text would you likely use to describe the story in a tweet or Facebook post?*" Participants chose one option from the following responses: "*Rural opioid abuse can affect any individual*," "*Drug companies and bad doctors caused the rural opioid epidemic*," "*The rural opioid epidemic is costing small towns a lot of money*," or "*I'm not sure*." While some of these statements included language that may not have aligned with what participants in the manipulation check would actually choose to promote on their own social media channels, the statements were designed to most clearly resonate with the frame being presented in the story treatment. After selecting a response, participants also had the opportunity to leave additional feedback about the message.

Each of these responses was designed to align with one of the feature story treatments which included individual depiction, cause, and consequence. Eighty-seven percent of participants accurately identified the individual depiction frame as "*Rural opioid abuse can affect any individual*," 77% correctly identified the causal frame as "*Drug companies and bad doctors caused the rural opioid epidemic*," and 87% of participants identified the consequence frame, "*The rural opioid epidemic is costing small towns a lot of money*," correctly. Two participants selected *"I'm not sure"* for some of the feature stories, indicating the options were not phrases they would post. Based upon these levels of agreement and feedback from the participants, minor adjustments were made to each of the feature story treatments to further emphasize frame elements before proceeding with the pilot test.

Pilot Test

To establish reliability of the instrument and ensure random assignment of the message stimuli, a pilot test of the study was conducted using undergraduate students. A total 230 responses were

analyzed. Participants were recruited through the [College's] online recruitment system. To assess reliability, Cronbach's alpha was utilized. The perceptions of stigma beliefs measure (α = .88), perceptions of proposed solutions to the rural opioid epidemic (α =.84), measure for exposure to illicit opioid users (α = .80) were found to be reliable. The measure to determine perceptions of rural America had an initial Cronbach's alpha level of .77. Upon the removal of two items, an alpha level of .78 resulted.

Data Analysis

Data were collected through Qualtrics, exported to Microsoft Excel and then imported to SPSS v. 25. Participants were assigned a numerical code in order to compare responses from the pretest to the posttest. This study utilized both descriptive and inferential statistics to address the research questions as suggested by Field (2018) and Ary et al. (2018). Appropriate for scale measures, Cronbach's alpha was utilized as an internal-consistency measure to assess reliability of instruments (Ary et al. 2018).

A total of 259 participants living in both rural and urban areas were randomly assigned to either an individual depiction, causal, or consequence frame. To assess the effect of varying media frames about the rural opioid epidemic on perceptions of support for policy solutions, a one-way ANOVA was conducted. A crosstabs analysis was conducted to determine differences between the type of media frame and perceptions of blame for the rural opioid epidemic. The individual depiction frame included 85 participants, the consequence frame was presented to 84 participants, and 90 participants saw the causal frame.

To determine the effect of media frames on stigma beliefs, which were assessed both before and after the stimulus was presented, an ANCOVA was conducted. A linear relationship was observed between pretest and posttest stigma belief scores for each frame type, as assessed by a visual inspection of a scatterplot. The assumption of homogeneity of slopes was not violated as the interaction term was not statistically significant, $F(2, 253) = .09$, $p = .92$. Standardized residuals for the treatment conditions were normally distributed, as assessed by a visual inspection of Normal Q-Q plots. Visual inspection of an additional Normal Q-Q plot confirmed normal distribution of standardized residuals for the overall model. A visual inspection of the standardized residuals plotted against predicted values confirmed homoscedasticity. Finally, a Levene's test of equality of error variances revealed the assumption of homogeneity of variance had been met ($p = .31$). A review of standardized residuals revealed four outliers, which were either above or below three standard deviations. These four cases were omitted from further analysis.

Additionally, an independent samples t-test was conducted to determine how perceptions of proposed solutions to the rural opioid epidemic varied based upon community type of the participant. An inspection of a boxplot revealed five outliers, which were omitted from analysis. Scores for support for proposed solutions were normally distributed, as assessed by visual inspection of Normal Q-Q plots. There was homogeneity of variance for policy support scores as indicated by a Levene's test for equality of variances ($p = .50$).

Multiple linear regression was the test statistic used to determine effects between exposure to illicit opioid users and perceptions of rural America on the framing effects of stigma beliefs. Moderation effect analysis was conducted using the PROCESS version 3.4 plug-in for SPSS as suggested by Field (2018). A linear relationship between the variables was visually observed in a simple scatter plot. A Durbin Watson statistic of 2.1 indicated independence of observations. Homoscedasticity was confirmed through a visual inspection of a plot of standardized residuals versus standardized predicted values. As assessed by a visual inspection of a normal probability plot, residuals were normally distributed. Four outliers were identified within the dataset and omitted from analysis.

Results

Research question one sought to determine how certain media frames about the rural opioid epidemic affect perceptions of stigma, blame, and proposed solutions to the rural opioid epidemic. First, to determine the effects of media frame on stigma beliefs, a one-way ANCOVA was conducted. After adjusting for the stigma belief score prior to presenting the media frame, there was a statistically significant difference in post-test stigma beliefs scores between frames, $F(2, 251) = 6.74$, $p < .05$, $\eta_p^2 = .05$ (Table 1). A Bonferroni post hoc test was conducted and revealed significant differences between individual depiction ($M = 4.12$, $SD = 1.16$) and causal frames ($M = 4.30$, $SD = 1.06$), and individual depiction and consequence frames ($M = 4.33$, $SD = 0.90$), which indicated the individual depiction frame contributed to significantly lower stigma beliefs than the other frames. However, there were no significant differences between the causal and consequence frames.

Table 1

Analysis of Covariance of Posttest Stigma Belief Scores as a Function of Media Frame, with Pretest Stigma Belief Scores as Covariate

Source	df	SS	MS	F	p	η_p^2
Covariate	1	120.40	120.40	193.23	< .05	.43
Media Frame	2	4.08	2.04	3.27	< .05	.03
Error	255	158.89	.62	-	-	-
Total	259	4957.47	-	-	-	-

The next part of research question one sought to determine how media frames influence perceptions of blame about the rural opioid epidemic. Using an open-ended response question, some participants provided up to three blame perceptions. The most frequent perceptions of blame focused upon doctors and the medical community ($n = 75$), access to drugs and drug manufacturers ($n = 73$), unknown or no one in particular ($n = 48$), the user or their family ($n = 45$), the government or legal system ($n = 26$), environmental conditions ($n = 25$), and society ($n = 15$). Table 2 describes the perceptions of blame identified by participants.

Table 2

Descriptions of Blame Perception Categories and Frequencies (N = 308)

Blame Perception	Description	Frequency
Medical Community	Reference to doctors, hospitals, medical staff, or the healthcare system in general	75
Drug Manufacturers	Reference to drug manufacturers, drug dealers and overall access to drugs	73
Unknown / No One	No one in particular, or unknown. Often presented as a feeling of too many variables to select just one element of blame	48
Users or their Families	Reference to the user, their family, or friends as enablers	45
Government / Legal System	Elected officials, the government or legal system in general, laws, or people in higher power / decision making roles	26
Environment	Reference to a lack of community resources, or issues with environmental conditions, living situations, the economy, or education systems	25
Society	Conditions associated with society, or mention of "all of us" or "ourselves"	15
Social Media	Referred to a social media platform or the act of participating on social media.	1

Initial crosstabs analysis violated an assumption of the Chi-Square test, as six cells included expected count values too low for analysis. As a result, the two smallest categories for perceptions of blame, which were society ($n = 15$) and social media ($n = 1$), were collapsed and combined with the environment category ($n = 25$). A second cross-tabs analysis with the newly collapsed category in place revealed no significant differences between media frame and perception of blame ($\chi^2(10, N = 258) = 9.26, p = .51$), which indicated perceptions of blame do not vary across frame.

The final element of research question one was to determine how the media frame impacted support for proposed policy solutions. ANOVA revealed no statistically significant differences in score for support for proposed solutions between the different media frame groups, $F(2, 226) = 1.50, p = .23$ (Table 3). Means for policy support based upon each frame were as follows: Causal ($M = 3.61, SD = .83$), individual depiction ($M = 3.59, SD = .97$), and consequence ($M = 3.40, SD = .85$).

Table 3

ANOVA Results for Effects of Media Frame on Support for Proposed Policy Solutions

Source	SS	df	MS	$F_{(2, 256)}$	p
Between Groups	2.34	2	1.17	1.49	.23
Within Groups	200.63	256	.78	-	-
Total	202.97	258	-	-	-

Research question two aimed to assess perceptions of proposed solutions to the rural opioid epidemic varied based upon community type. An independent samples t-test revealed that the community type does not impact support for proposed solutions to the rural opioid epidemic $t(252) = .90$, $p = .37$. Policy support levels for urban or suburban participants ($M = 3.63$, $SD = .85$) were not significantly higher than rural participants ($M = 3.54$, $SD = .81$).

Multiple linear regression was the test statistic used to determine effects between exposure to illicit opioid users and perceptions of rural America on the framing effects of stigma beliefs. A single moderation analysis was conducted using the macro PROCESS version 3.4 plug-in for SPSS (Hayes, 2018) to determine if exposure or illicit opioid users or perceptions of rural America moderated the effects of message frame on stigma. There was no significant interaction effect between frame and exposure to illicit opioid users, $b = -.23$, 95% CI [-.66, .21], $t = -1.03$, $p = .30$, which indicates the relationship between frame and stigma beliefs is not moderated by exposure to illicit opioid users (Table 4). Additionally, no interaction effect between perceptions of rural America and frame was observed, $b = .08$, 95% CI [-.24, .40], $t = .48$, $p = .63$, indicating perceptions of rural America do not moderate framing effects of stigma beliefs (Table 5).

Table 4

Linear Model Predictors of Frame and Exposure to Illicit Opioid Users on Stigma Beliefs (N = 259)

Variable	b	SE B	t	p
Constant	4.28 [4.16, 4.39]	.06	71.21	$p < .05$
Frame	.15 [.01, .29]	.07	2.03	$p < .05$
Exposure to Illicit Opioid Users	.52 [.15, .89]	.19	2.78	$p < .05$
Frame x Exposure to Illicit Opioid Users	-.23 [-.66, .21]	.22	-1.03	$p = .30$

Note. $R^2 = .05$.

Table 5

Linear Model Predictors of Frame and Perceptions of Rural America on Stigma Beliefs (N = 259)

Variable	*b*	*SE B*	*t*	*p*
Constant	4.28 [4.16, 4.39]	.06	73.05	*p* < .05
Frame	.14 [.01, .29]	.07	1.93	*p* = .06
Perceptions of Rural America	-.54 [-.08, -.28]	.13	-4.08	*p* < .05
Frame x Perceptions of Rural America	.08 [-.24, .40]	.16	.51	*p* = .61

Note. $R^2 = .10$.

Conclusions & Implications

The rural opioid epidemic provides an example of just one significant challenge faced by rural America. Poverty, limited and declining employment opportunities, more rates of disability, outward migration of young people, lower levels of educational attainment, and other issues have made it difficult for many rural communities to thrive (Cromartie, 2018; Erwin et al., 2010; Laughlin, 2016; Thiede et al., 2017). Vulnerabilities associated with rural public health only exacerbate these issues (Bolin et al., 2015). The rural opioid epidemic affects nearly every aspect of life in small towns (Hazlett, 2018). To work toward an issue resolution and to address the educational needs about this issue (Dunn et al, 2016; Zhang et al., 2008), an understanding and awareness of public perceptions and beliefs about the rural opioid epidemic is key. This study was driven by this need and sought to investigate the role of media frames in effects on beliefs and perceptions about the rural opioid epidemic. The findings indicated there is much left to explore related to complicated issues of rural society and how the public forms beliefs and perceptions about the rural opioid issue. While previous studies have shown media frames similar to those used in this study have the potential to impact public attitudes about social issues and addiction stigma in particular (McGinty et al., 2016; 2019), aside from one significant difference in the findings, this study raises more questions than answers.

Consistent with previous studies about framing effects on stigma perceptions of opioid use (McGinty et al., 2015; 2019), significant differences between pretest and posttest scores of participant stigma beliefs were observed. Much like the aforementioned studies, the individual depiction frame employed in this study was the only stimulus to significantly affect perceptions of stigma beliefs. The study lends support to the argument that individual depictions of successful recovery from addiction can help to decrease social stigma (McGinty et al., 2015).

While previous studies found frames that focused on the cause of addiction as an individual's choice, or otherwise within their control, to increase perceptions of stigma (Corrigan et al., 2003), evidence from this study suggests not all causal frames are created equal. The defined cause of the rural opioid epidemic in this study was set as poor prescription drug practices, a previously untested type of causal frame. Here, placing emphasis on another stakeholder's actions, in this case, the drug manufacturer and poor prescription practices, as the cause for the rural opioid epidemic did not impact stigma beliefs. This suggests that although the cause was not specifically linked to a personal decision or choice made by opioid user, participants presented with the causal frame may not have been convinced the opioid users were not in some way the causes of their own situations.

A variety of blame perceptions were identified by participants, yet there were no differences in perceptions of blame based upon the media frame presented. This finding could be a nod to the potential for previously established perceptions of blame, and potential difficulty in changing those mindsets. However, despite the lack of differences in perceptions of blame, it is interesting that many of the responses participants shared, such as blame focus on doctors and the medical community, drug manufacturers, or the users or their families closely aligned with the elements presented in the message frames. Of note, the second most common response for blame perceptions, next to doctors and the medical community, was an indication of "no one" or "unknown," which suggests the complex nature and multiple factors associated with the rural opioid epidemic does not easily lend itself to a clear perception.

A practical implication of framing studies is the potential to connect message elements with influences in public policy (Pan & Kosicki, 1993), and the media often suggest policy solutions for issues of public health (Coleman et al., 2011). In fact, one past study about pregnant women engaging in illicit opioid use indicated messages crafted to prompt public sympathy and contradict stereotypes resulted in support for more leniency amongst vulnerable groups (Kennedy-Hendricks et al., 2016). However, in this study, the media frame did not have an effect on support for proposed policy solutions. This finding could be due in part to the structure of the stimuli as none of the treatment groups suggested policy changes as a potential solution. In fact, there were no mentions of any potential solutions in the rural opioid epidemic stories presented. The finding could also be influenced by the nature of the sample itself.

Policy support was also not influenced by whether the participant lived in an urban or rural area. Although insignificant, urban and suburban participants expressed slightly higher support for policy to address the rural opioid epidemic. At the same time, the study revealed an overall level of uncertainty about whether or not to support the policy solutions presented. This lack of certainty could be due to a variety of factors such as stigma, understanding, political ideology, or other influences. This study indicated a lack of difference between rural and urban/suburban resident support for policy solutions, but also revealed an overall level of uncertainty about whether to support the policy solutions presented. Considering the potential influence of political orientation as a factor in this finding, a *post-hoc* one-way ANOVA was conducted. The one-way ANOVA revealed support for proposed policy solutions on the rural opioid epidemic was statistically significantly different for different political party affiliates, $F(3, 251) = 4.40$, $p < .05$. A Tukey HSD test revealed significant differences in levels of support between republicans ($M = 3.33$; $SD = .95$) and democrats ($M = 3.79$; $SD = .84$).

This finding raises many questions about the differences between urban and rural residents' views because despite higher support of possible policy solutions, a post hoc analysis revealed urban or suburban residents' perceptions or rural America were significantly lower than rural participants' perceptions of rural America. This finding could also be an indication of urban and suburban participants' stronger perceptions of issues associated with rural America and the perceived need to address them. On the other hand, the rural participants perceive the issues with their communities to be less dire. This lack of significance could also be attributed to structural stigma (Tsai et al., 2019), which has long hindered responses to public health crises (Herek, 1999).

Lastly, this study revealed the framing effect on stigma beliefs was not moderated by the participant's exposure to illicit opioid users, nor by their perceptions of rural America. First, the level of exposure was measured with items pertaining to direct involvement with illicit opioid users in varying degrees of closeness – from observing to living with someone who used illicit opioids. Despite the fact that approximately 65% of participants in this study indicated people in their communities used illicit or non-medical opioids, the moderating factor was insignificant. What is further surprising about this finding is the volume of anecdotal evidence that suggests knowing someone who has struggled with an opioid addiction influences stigma associated with those individuals. Second, it is interesting that perceptions of rural America did not moderate framing effects on stigma beliefs, which may suggest, at least in some ways, the United States is not as polarized as portrayed or perceived. Regardless, in this case it appears that stigma beliefs are so powerful that few outside factors influence their formation.

Recommendations

The rural opioid crisis is just one of the many factors affecting the resiliency of countless rural communities. As rural communities seek to reach solutions and rebuild community resilience, stakeholders must address external stressors such as the rural opioid epidemic and begin to address these common vulnerabilities (Adger, 2000; Cutter et al., 2008). To gain resiliency, communities must acquire increases in knowledge, improved practices, and changed behaviors (Graham et al., 2016). In order to equip struggling rural communities with these qualities, the mass media have a role to play in influencing perceptions, awareness, and knowledge about complex issues. There is still much to learn concerning the complexities involved with the rural opioid epidemic and how communication techniques and messages can impact the issue.

Specific to the rural opioid epidemic, variation in perceptions of blame abounds. A better understanding of perceptions of blame could help communicators craft more effective messages to address community concerns. As such, it is suggested that future studies conduct tests on other causal frames with different elements of blame perceptions. Further, given that respondents in this study were left largely unaware with whom or what to place blame upon, it is suggested that communications practitioners take advantage of this potential blank slate with some individuals, and seize command of the message early, before stigma can make an impact.

Although it is evident solutions are needed to address the rural opioid epidemic, the concept of what the solution is can be complicated to define. One clear and measurable solution

could be based in policies aimed to address the issue (McGinty et al., 2015). This study encourages future research to investigate what other framing elements may influence policy support for complicated societal issues. Although the individual depiction frame appears to be a clear factor in changing perceptions, it is unclear what other frames may also influence attitudes about complex issues with policy implications. Future studies should investigate other potential policy solutions, beyond what was presented to participants in this study, in an effort to better understand what frames cultivate support for policy-based solutions. Despite the lack of clarity associated with this finding, aside from influence based upon political affiliation, an opportunity to build support for policy solutions could be more achievable if framed correctly. Future studies should investigate frames with direct elements of policy solutions to gain a better understanding about what types of frames influence policy support for this issue and others.

The last recommendation for future research involves the degree to which national issues are viewed as extreme by different groups. This study indicated virtually no differences between urban/suburban and rural residents on this issue largely associated with rural America which begs the question, what qualities of certain events or crises encourage the public to view the issue as a problem for everyone, and not just a problem for some? While it is possible the rural opioid epidemic is too unfamiliar for many individuals to make determinations about it, it seems reasonable to assume there are some qualities of crises that encourage unity amongst a multitude of groups that are impacted at varying degrees.

Until more is known, communications practitioners are encouraged to continue to explain the issue through stories of individual depiction in order to have the most significant chance in reducing stigma about this and other issues of public health. However, communications practitioners are also cautioned to approach stories of individual depiction carefully, as there is potential for the audience to assign blame to the affected individuals portrayed (McGinty et al., 2019). Communications practitioners are also encouraged to build relationships with public health officials who might be of assistance in helping to craft messages to explain this issue to the public. When issues face high levels of uncertainty, communications practitioners should seize the opportunity to impact public perceptions, attitudes, and beliefs about the issue.

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