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Use of formative research to inform family-based approaches to prevent prescription opioid

misuse among Mississippians

By

Mary Nelson Robertson

A Dissertation
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
in Human Development and Family Science
in the School of Human Sciences

Mississippi State, Mississippi

December 2019

Use of formative research to inform family-based approaches to prevent prescription opioid

misuse among Mississippians

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The United States is in the midst of an opioid epidemic, which is leading to approximately 130 deaths each day. While research on family-based approaches for substance misuse prevention, such as alcohol and tobacco prevention, has been conducted, few if any studies have focused on prescription opioid misuse prevention. Previous literature suggests that a comprehensive family-based approach can be effective in preventing substance misuse at the family-level. Considering the multiple age groups the sandwich generation cares for, the sandwich generation may have greater access to reaching multiple age groups to prevent prescription opioid misuse. Therefore, the purpose of this study is to use formative research findings to inform family-based approaches focused on preventing opioid misuse. A dual method approach that includes qualitative focus groups and quantitative surveys is used to explore adults' perceptions of prescription opioid misuse, factors perceived as influencing opioid misuse prevention, and perceived predictors of prescription opioid misuse prevention. Participants were adults, 30 to 59 years of age, which is the average age range of the sandwich generation. Extension agents recruited focus group participants (n = 55) and Qualtrics recruited survey participants (n = 335) for this study. Focus group transcripts were coded based on common ideas

that arose during the focus groups, previous literature, and the PRECEDE-PROCEED model. Focus group findings indicate that participants view the opioid crisis as a family problem, in which they have a role in preventing, and identified predisposing, reinforcing, and enabling factors that influence whether family members take a role in preventing prescription opioid misuse. Univariate frequencies and multiple linear regression analyses results of the survey data indicate that Theory of Planned Behavior determinants are predictive of the intention to talk about opioids with friends and family. In addition, comfort predicts intention to talk about opioids with friends and family, suggesting that Theory of Planned Behavior determinants and comfort predict intention. Extension agents, family life educators, and other community-health professionals can collaborate and use these findings to develop family-based approaches, such as family communication training and brief strategic family therapy, combined with community-based approaches such as motivational interviewing and media campaigns.

DEDICATION

In honor of my parents, Elyette and Jim Robertson, and in loving memory of my dear friend,

Climmie Lee Lyons.

ACKNOWLEDGEMENTS

I would like to extend sincere appreciation to my stellar committee members: Drs. Laura H. Downey, David R. Buys, Alisha M. Hardman, and Holli H. Seitz. I am forever indebted to their support, encouragement, guidance, and time. I will miss our many meetings and conversations shared around my dissertation and getting to know one another. You all are truly outstanding professionals and individuals who are each making a positive impact in your own, unique way. I would also like to acknowledge the School of Human Sciences, Department of Food Science, Nutrition and Health Promotion, Department of Human Development and Family Sciences, Extension Service, and Department of Health Promotion and Wellness for welcoming me to Mississippi State University and treating me like family. Each of you has made a significant impact on my life and who I am today.

I am overwhelmed by the love and support from my family, friends, and mentors who have cheered me on, prayed for me, and lifted me up along the way. I am forever thankful for my four grandparents who put a strong value on their grandchildren's education, especially an education from Mississippi State University. My two older brothers and sister-in-law have been extremely supportive throughout the entire process and for them I am extremely grateful. Last, but certainly not least, to my parents: I cannot express how appreciative I am for your inspiring me to follow my dreams and be the person I am today. Mama, thank you for your many phone calls, listening to me vent, cleaning my apartment, constant reassurance, and forcing me to relax every once and while. You are my rock, and I am forever grateful for you. Daddy, thank you for

your constant encouragement, financial sacrifice, and always wanting to hear more about my dissertation each visit. Mama and Daddy, I also want to thank you for continuing to point me to the Lord for strength throughout my life. After all, through God all things are possible, so thanks be to God. And to my many friends, aunts, uncles, cousins, and mentors who's names are not listed, this dissertation is also for you.

Since I was a little girl, I dreamed of attending Mississippi State University just like all my family members before me. Although I ended up at The University of Alabama, where I received an exceptional education, made lifelong friendships, and learned a great deal about failure and success, there is no place like home. Mississippi State University truly is a family, a family that took me in and accepted me for me. What an incredible experience I have had at Mississippi State University. Thank you, and Hail State!

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

x

CHAPTER I

USE OF FORMATIVE RESEARCH TO INFORM FAMILY-BASED APPROACHES TO

PREVENT PRESCRIPTION OPIOID MISUSE AMONG MISSISSIPPIANS

Introduction

Opioid misuse has increased at alarming rates across the United States in the last decade, leading the President of the United States and the Department of Health and Human Services to declare the opioid crisis a public health emergency in 2017. In 2017, 47,600 of the 70,237 drug overdose deaths that occurred in the United States involved opioids (Scholl, Seth, Kariisa, Wilson, & Baldwin, 2019). In the United States, more than 130 people die each day from an opioid-related overdose, which is more than the number of lives lost in car accidents and gun-related homicides (Centers for Disease Control and Prevention [CDC] & National Center for Health Statistics [NCHS], 2017). While illegal drugs such as heroin have been a public health and safety concern for many years, misuse of prescription opioid drugs have recently reached increasingly alarming rates. For the purpose of this study, opioid refers to prescription opioids only.

Prescription opioid-related overdose deaths were five times higher in 2017 than in 1999 in the United States (CDC & NCHS, 2017). Prescription opioid drugs are a substance (pill or patch) prescribed for pain relief. Prescription opioid drugs include pain reducing medications such as oxycodone, hydrocodone, morphine, and others. While prescription opioid drugs are effective for pain management, they have addictive properties leading to nearly 48,000 opioid-

related drug overdose deaths in the United States in 2017 (Scholl et al., 2019). Nearly half of all opioid-related drug overdose deaths involve a prescription opioid. In 2017, there were nearly 59 opioid prescriptions written for every 100 Americans (CDC & National Center for Injury Prevention and Control: Division of Unintentional Injury Prevention, 2018). The annual economic costs for this epidemic is $78.5 billion and continues to put a strain on healthcare, the workforce, and the criminal justice system (Florence, Zhou, Luo, & Xu, 2016). Family instability is another consequence of opioid misuse contributing to the prevalence of adverse childhood experiences, a strain on child welfare systems, and stark increases in grandparents raising grandchildren (Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993; Earls & Carlson, 2001; Lichter & Graefe, 2011; Raudenbush & Sampson, 1999; Sampson, Morenoff, & Gannon-Towley, 2022; Sherman, 2009).

According to a national poll released by the American Psychiatric Association (2018), nearly one in three Americans know someone who is or has been addicted to opioids or prescription painkillers. According to the findings from the 2017 National Survey on Drug Use and Health (NSDUH), the most commonly reported reason for respondents' (individuals 12 years and older) last misuse of a pain reliever was to relieve physical pain (Substance Abuse and Mental Health Services Administration [SAMHSA], 2018). Other reported reasons included to feel good or get high, to relax or relieve tension, to help with feelings or emotions, to help with sleep, to experiment or see what the drug was like, because they were "hooked" or needed to have the drug, and to increase or decrease the effects of other drugs (SAMHSA, 2018). According to the September 14, 2018 issue of the CDC's *Morbidity and Mortality Weekly Report*, one in five United States adults have chronic pain, and a higher prevalence of chronic pain was reported among rural residents (Dahlhamer et al., 2018). An estimated 11.1 million

individuals 12 years of age or older in the United Stated reported pain reliever misuse in 2017 (SAMHSA, 2018). Of the 11.1 million Americans, 7.8 million adults aged 26 years or older misused pain relievers in 2017 (SAMHSA, 2018).

The opioid epidemic has significantly affected rural communities. In October 2017, the rates of drug overdose deaths in rural areas surpassed the rates in urban areas (Scholl et al., 2019). According to the American Farm Bureau Federation, nearly half of rural adults are or have been directly impacted by opioid abuse (Morning Consult, 2017). People in rural communities are more likely than people in cities to overdose on prescription pain medications (Rigg & Monnat, 2015). The rate of opioid-related overdose deaths in non-metro counties is 45% higher than in metro counties (Faul et al., 2015). Rural adolescents are more likely to abuse prescription painkillers than their urban peers (Monnat & Rigg, 2015). Non-medical use of prescription painkillers has shown to be associated with social and health consequences among these rural adolescents, such as dropping out of school, deteriorating relationships, poorer health status, and mental health challenges. Anne Hazlett, the Assistant to the Secretary for Rural Development at the United States Department of Agriculture (USDA), said,

> While no corner has gone untouched by the opioid epidemic, the opioid epidemic has hit rural America particularly hard. The opioid epidemic in rural communities is more than a public health issue. This is a matter of rural prosperity. Opioid misuse is impacting the quality of life and economic well-being in small towns, which is why partnering with rural leaders to address this crisis is critical to the future of rural America. (USDA, 2018, para. 2)

Opioid Crisis in Mississippi

While all states have been affected by this crisis, Mississippi, a predominantly rural state, has been seriously impacted by the opioid crisis. From 2012 to 2016, 1,567 Mississippians died from drug overdose deaths (The Mississippi Opioid and Heroin Data Collaborative, 2019). During 2018, nearly 2.8 million opioid prescriptions were dispensed in Mississippi, which is a rate of 93 opioid prescriptions per 100 persons and is enough for approximately nine out of ten Mississippians (including men, women, and children) to have one opioid prescription (The Mississippi Opioid and Heroin Data Collaborative, 2019). In 2018, nearly 146 million opioid dosage units were dispensed in Mississippi, which is a rate of 4,880 opioid dosage units (pills) per 100 persons and is approximately enough for each Mississippi resident (including men, women, and children) to have 48 opioid dosage units (The Mississippi Opioid and Heroin Data Collaborative, 2019).   A reported 342 Mississippians died from overdose deaths in 2018 (The Mississippi Opioid and Heroin Data Collaborative, 2019). Of those reported, 210 were opioid-related, which was 22.1% higher in 2018 than in 2017 (The Mississippi Opioid and Heroin Data Collaborative, 2019). In 2017, an estimated 104,000 Mississippians ages 12 years and older misused pain relievers (SAMHSA & Center for Behavioral Health and Statistics and Quality, 2018). Of those 104,000 Mississippians, an estimated 10,000 were 12 to 17 years of age, 24,000 were 18 to 25 years of age, and 70,000 were 26 years of age or older (SAMHSA & Center for Behavioral Health and Statistics and Quality, 2018).

Family-Based Approaches to Substance Misuse Prevention

According to Kumpfer (1987), substance misuse is a disease of lifestyle, a "family disease," influenced by family environmental and genetic risk factors. Therefore, Kumpfer, Alvardo, and Whiteside (2003) suggest that all comprehensive substance misuse prevention

activities should include an emphasis on family. Typically, substance misuse prevention

activities that focus on short-term prevention have more support than long-term prevention

activities to prevent substance misuse. However, prevention activities that influence modification

of family dynamics are the most effective (Kumpfer, Alvardo, and Whiteside, 2003). Therefore,

the literature suggests that focusing on how the family operates as a whole instead of how

individual family members operate is most effective. Tobler and Kumpfer (2000) found that

family-based approaches have an effect size two to nine times greater than child-only prevention

approaches. While family-based approaches are effective in preventing substance misuse,

combining family-based approaches with school- or community-based approaches to create a

more comprehensive approach has the greatest effect and the most lasting effects on preventing

or delaying the onset of substance use or misuse (Kazdin, 1995; Kumpfer, Alvardo, & Whiteside,

2003; Sanders, 1996; Serketich & Dumas, 1996; Taylor & Biglan, 1998; Webster-Stratton &

Hammond, 1998; Webster-Stratton & Taylor, 2001).

Family-based approaches for preventing substance misuse include family skills training

(i.e., family connectedness and communication), family therapy (i.e., brief strategic, family

behavior, functional, multidimensional, and multisystemic therapy), and parent training (i.e.,

parental monitoring and communication) (National Institute on Drug Abuse, 2014). School-

based approaches include educational and skills training activities for youth in a school setting.

Community-based approaches may combine the family- and school-based approach with

additional mass media or public policy, creating a multi-component, comprehensive approach

(Griffin & Botvin, 2010).

A distinct age group that could lead the way in preventing substance misuse at the

family-level is the sandwich generation. The sandwich generation is described as individuals

who are caring for both a child and aging parent and who are typically 30 to 59 years of age (Cravey & Mitra, 2011; Do, Cohen, & Brown, 2014; Parker & Patten, 2013; Rathus, 2018). Due to the multiple generations that the sandwich generation cares for, the sandwich generation has multiple opportunities to intervene and reach multiple age groups. For example, someone from the sandwich generation may have the ability reach their children who might be young children, youth, or young adults, their spouse or fellow middle-aged adults, as well as older adults who are among their parents' age group. Therefore, the sandwich generation could follow family-based approaches to preventing substance misuse to reach individuals across the lifespan.

Statement of the problem

It is well-known that the opioid epidemic contributes to family instability and that evidence-based family approaches are effective in preventing substance misuse (Cavanaugh & Huston, 2008; Kumpfer, Alvarado, & Whiteside, 2003; Murthy, 2017; United States Department of Human and Health Services, 2017). Several studies have explored rural and urban differences in prescription opioid misuse and the impact prescription opioid misuse can have on families (Monnat & Rigg, 2015; Prunuske et al., 2014). There are demonstrated methods for reaching at-risk populations with critical health messages that promote preventative health behavior changes (CDC, 2011).

However, few if any studies have been conducted on the following topics:

- the perceptions of prescription opioid use and misuse among rural adults,
- the role of family members in prescription opioid misuse prevention techniques,
- research and evidence-based approaches with messages about preventing prescription opioid misuse within one's family, and
- community- or family-based educational outreach efforts focused on reaching adults about the dangers of prescription opioid misuse (SAMHSA, 2019).

Background of the problem

According to the United States Department of Health and Human Services (2019), the opioid epidemic is mostly accredited to pharmaceutical companies reassuring the medical community that opioids are not addictive, which led to a large increase in physicians prescribing opioid medications. Before realizing that opioids are indeed highly addictive, this increase in opioid prescribing rates led to a widespread increase of opioid misuse. While the pharmaceutical companies and the medical community are mostly blamed for the increased prescribing rates, over half of Americans aged 12 years or older reported obtaining opioids from a friend or relative (i.e., given by, bought from, or took from) for their most recent misuse in the past year in 2017 (SAMHSA, 2018). Due to the opioid crisis being such a complex issue with no single cause, legislation is having a challenging time in combatting the opioid crisis. State efforts tend to focus on more downstream interventions, such as treatment and recovery. While treatment and recovery are extremely important focus areas, it is also important to focus on preventing opioid misuse before it happens, specifically at the family-level. The "big picture" activities, such as prescription drug monitoring programs and policy interventions, currently underway in Mississippi are critical for stemming the opioid epidemic, however, "it is important that lay people in the community better understand what this crisis could mean for them, their families, and their communities," said David Buys, the State Health Specialist at Mississippi State University Extension Service.

Current Efforts in Mississippi to Combat the Opioid Crisis

Since 2014, the CDC has supported states' efforts to improve surveillance of opioid misuse through Prescription Drug Monitoring Programs, enhancing community and insurer/health system innovation, evaluating policy interventions, and conducting rapid response

projects (Frieden, 2017). According to the CDC, future efforts should include activities such as working with prescribers, increasing access to medication-assisted treatment and naloxone, and collaborating with law enforcement to reduce supply and access to opioids (Frieden, 2017). In Mississippi, state government, law enforcement, and healthcare leaders have begun fighting the opioid epidemic using similar strategies through focusing on criminalization of illegal opioid distribution, understanding and curbing liberal prescribing patterns by healthcare practitioners, and increasing access to naloxone and take-back boxes through law enforcement agencies. In 2016, the Mississippi governor established the Governor's Opioid and Heroin Taskforce; simultaneously, the State Board of Pharmacy began working with the Prescription Monitoring Program Database to better understand prescriber behaviors and to educate prescribers and pharmacists on best practices to prevent opioid misuse (Bryant, 2017). The Mississippi Department of Mental Health (MS-DMH) received funding from Substance Abuse and Mental Health Services Administration to implement a marketing campaign targeting opioid misuse prevention. The MS-DMH, also known as the Mississippi State Targeted Response (STR) and State Opioid Response (SOR) team, implemented the Stand Up, Mississippi campaign to combat the opioid crisis by connecting Mississippians to resources and treatment centers (MS-DMH, 2017). The Stand Up, Mississippi campaign, is currently being implemented to improve public perceptions, strengthen policies, and promote statewide partnerships to put an end to the opioid epidemic (MS-DMH, 2018). The Governor's Opioid and Heroin Taskforce also partnered with the MS-DMH and other state agencies to lead town hall meetings across the state to spark conversations and decrease the stigma associated with opioid misuse.

Mississippi State University Extension Service's PReventing Opioid Misuse In the SouthEast (PROMISE) Initiative is supported by the USDA Rural Health and Safety Education

(RHSE) and Substance Abuse and Mental Health Services Administration and aims to combat the opioid crisis through primary prevention efforts (Buys & Downey, 2017). This study was completed in part with the PROMISE Initiative formative research. The PROMISE Initiative proposes to gain a better understanding of where Mississippians obtain their opioid-related information and what prevention-oriented actions they are willing to take to prevent opioid misuse within their families. Utilizing formative research to better understand the perceptions of prescription opioid use and misuse among adults and the perceptions of influencing factors on prescription opioid misuse techniques can help spark the development of primary prevention-focused, family-based approaches that reach adults and their families. While the current interventions in Mississippi, both at the state- and community-level are critical for stemming the opioid epidemic, there is a significant need for family-based approaches to assist in combatting this crisis at the family level. Family-based approaches that strengthen families through enhancing family functioning and positive outcomes can be effective in preventing substance misuse, specifically comprehensive approaches that combine family-, community-, and school-based approaches (Kumpfer & Alvarado, 2003; Kumpfer & Hansen, 2014).

Purpose of this study

The purpose of this study is to utilize formative research findings to inform family-based approaches focused on preventing misuse of prescription opioids. Using formative research will allow the researchers to identify factors perceived by Mississippi adults as influencers of prescription opioid misuse prevention techniques. The influencing factors can be used to create family-based approaches best suited for Mississippi families.

Research Questions and Aims

The study will answer the following research questions:

Overall research question: Based on the formative research, what should be the focus of family-based approaches to prevent prescription opioid misuse among families in Mississippi?

Research Aim 1: To explore and document rural adults' perceptions of family roles in and factors that influence prescription opioid misuse prevention

1. Do family members perceive themselves as having a role in preventing prescription opioid misuse within their families?

2. What are the predisposing, reinforcing, and enabling factors perceived as influencing whether or not family members employ prescription opioid misuse prevention strategies?

3. Of these factors, which ones do families have a role?

Research Aim 2: To examine the association between adults' attitudes, subjective norms, perceived behavioral control, comfort with talking with their friends, parents, and children, and behavioral intention to talk about opioids with family and friends

1. What are the strongest predictors (attitude, subjective norm, or perceived behavioral control) that determine adults' intention to talk about opioids with friends, parents, and children?

2. Are adults' perceived comfort with talking with their friends, parents, and children associated with the Theory of Planned Behavior determinants in predicting intention to talk about opioids with friends, parents, and children?

Methodology

The current study follows the "Eight Stages of Formative Research," a framework created for the International Clinical Epidemiology Network by Nichter (2005). Formative research, also known as background research, is typically used to inform intervention development or pilot test instruments. The current study uses a dual approach that includes focus groups and surveys to explore adults' perceptions of prescription opioid misuse, factors perceived as influencing opioid misuse prevention, and perceived predictors of preventing opioid misuse as background research for the development of family-based approaches. See Table 1 for a complete list of Nichter's (2005) "Eight Stages of Formative Research" (Awah, et al., 2018; Nichter, Quintero, Nichter, Mock, & Shakib, 2004).

Table 1   Nichter's Eight Stages of Formative Research

Stages	
Stage One	To inform the process of problem solving through situational analysis of micro and macro environments, local perceptions and practices
Stage Two	To identify problems seen by various community members and stakeholders
Stage Three	To generate a list of options for interventions at different sites
Stage Four	To foster critical assessment of different options
Stage Five	To investigate how best to implement promising interventions
Stage Six	To introduce a process that monitors ongoing interventions and provides corrective feedback enabling midcourse correction
Stage Seven	To develop evaluative techniques that examine interventions from multiple perspectives taking into account multiple stakeholders
Stage Eight	To initiate a process of critical assessment that considers how an intervention and its results are being presented to public, scientific community, and policy makers; and investigates public understanding and the politics of representation

Note. Adapted from "Eight Stages of Formative Research," by Nichter, 2005, Qualitative Methods in Public Health: A Field Guide for Applied Research, p. 52-53. Copyright 2005 by Family Health International.

Nichter's (2005) "Eight Stages of Formative Research" provides an outline for a formative research approach that takes one through the stages of action research needed to develop, design, monitor, and evaluate a family-based approach for opioid misuse prevention. Stages one through three are covered in this study.

Significance of this study

Empirical research revealed that family-based approaches combined with school- or community-based approaches are most effective in preventing substance misuse (Kumpfer & Alvarado, 2003; Kumpfer & Hansen, 2014). While family evidence-based approaches are effective in preventing substance misuse, most family-based approaches focus primarily on alcohol and tobacco consumption. Considering the steady increase of opioid-related overdose deaths in the United States, Johnston, O'Malley, Miech, Bachman, and Schulenberg (2016) suggest a great need for researchers to broaden their attention to other substances such as

opioids. No known studies have examined family-based approaches to prevent prescription opioid misuse (SAMHSA, 2019). The need for this study is apparent in the lack of understanding of factors that influence adults' perceived role in prescription opioid misuse prevention and predictors in adults' perceived behavioral intention to prevent prescription opioid misuse within their families.

Extension agents, family life educators, and other community-health professionals could use these formative research findings to develop a family-based approach to preventing opioid misuse. Professionals can continue following Nichter's (2005) "Eight Stages of Formative Research," stages four through eight and utilize a combination of family- and community-based approaches to effectively strengthen families' ability to prevent prescription opioid misuse. Families can learn these prevention strategies through a media campaign, motivational interviewing, self-monitoring, goal-setting, or family therapy. This study will help improve practice at the community- and family-level through taking a combined, comprehensive approach to preventing opioid misuse. Using formative research to determine important focus areas for a family-based approach to prevent prescription opioid misuse among families will allow for community-based organizations to develop family-based approaches combined with other activities, such as media campaigns and self-monitoring, to prevent prescription opioid misuse among families.

Definitions

Sandwich generation. Individuals who are caring for both a child and an aging parent or who are 30-59 years of age (Parker & Patten, 2013; Rathus, 2018).

Opioid. A substance that is a prescription medication (pill or patch), prescribed for pain relief. The illegal drug, heroin, is also an opioid. However, for the purpose of this study, opioid refers to

prescription opioids. Examples of prescribed opioid pain relievers contain the active ingredients Oxycodone (OxyContin®, Percocet®), Hydrocodone (Vicodin®), Morphine (Kadian®, Avinza®), Codeine, and Fentanyl to name a few (National Institute on Drug Abuse, 2017; National Institute on Drug Abuse, 2019).

Prescription opioid misuse. Taking a medication in a manner or dose other than prescribed; taking someone else's prescription, even if for a legitimate medical complaint such as pain; or taking a medication to feel euphoria (i.e., to get high) (National Institute on Drug Abuse, 2019). Taking prescription medications in a way not intended by the prescribing doctor is also sometimes called "prescription drug misuse (World Health Organization, 2006). Drug misuse may become ongoing and compulsive, despite negative consequences.

Family-based approaches. Working with the family as a whole and the individual members of the family, both formally and informally, to enhance skills and strengthen family relationships within the family to promote behavior change or prevent unhealthy behavior (Hogue & Liddle, 2009; National Institute on Drug Abuse, 2014).

Primary prevention. Intervening before health effects ever occur, through measures such as altering unhealthy or risky behaviors, vaccinations, and avoiding exposures to hazards known to be associated with disease or health condition (Reisig & Wildner, 2008; CDC, n.d.).

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CHAPTER II

RURAL ADULTS' PERCEIVED ROLE OF FAMILY MEMBERS IN PRESCRIPTION

OPIOID MISUSE PREVENTION: IMPLICATIONS FOR

FAMILY-BASED APPROACHES

Abstract

This study explored and documented rural adults' perceptions of family roles in prescription opioid misuse prevention and the predisposing, reinforcing, and enabling factors that influence family members from taking those roles. Nine focus groups with rural adults (n=55) were conducted to evoke discussion about family roles in prescription opioid misuse prevention. Transcripts were coded based on common ideas that arose during the focus groups, previous literature, and the PRECEDE-PROCEED program planning model. Findings suggest that rural adults perceive the opioid epidemic as partially a family problem. Additionally, rural adults perceive themselves as having a critical role in preventing prescription opioid misuse among family members. Participants identified specific predisposing, reinforcing, and enabling factors that influence whether or not family members take responsibility in preventing prescription opioid misuse within their families. Rural adults also perceive that family-based education is important in preventing prescription opioid misuse. These results suggest that there is an interest in family-based approaches that enable or foster the skills and resources necessary to engage in prescription opioid misuse prevention behaviors. These enabling factors combined with efforts to address predisposing and reinforcing factors that facilitate prescription opioid misuse

21

prevention behaviors could be an effective strategy to prevent prescription opioid misuse at the family level.

Key words: prescription opioid misuse, rural adults, family approach, prevention

Introduction

Drug overdose deaths among both men and women, all races, and adults of nearly all ages are steadily increasing in the United States (National Center for Health Statistics [NCHS], 2016). In the United States, prescription opioid-related overdose deaths were five times higher in 2016 than in 1999 (Seth, Rudd, Noonan, & Haegerich, 2018), and in 2015, the rate of drug overdose deaths in rural areas surpassed the overdose death rates in urban areas (Mack, Jones, & Ballesteros, 2017). Nearly half of rural adults are or have been directly impacted by opioid misuse (Morning Consult Survey, 2017). Several studies have examined prescription opioid misuse among urban and rural populations, specifically the unique factors that contribute to opioid misuse in rural communities (Keyes, Cerdá, Brady, Havens, and Galea, 2014; Rigg & Monnat, 2015; Young, Havens, & Leukefeld, 2012). However few studies if any have examined family-based approaches focused on preventing prescription opioid misuse among rural populations.

Keyes, Cerdá, Brady, Havens, and Galea (2014) explored the urban and rural differences in prescription opioid misuse using the ecosocial and socioecological systems theories, exploring the social context, family context, peer influence, endogenous factor, and drug properties. The findings suggest four factors that explain increases in prescription opioid misuse in rural areas compared to urban areas: (1) increased sales of opiates in rural areas, which leads to greater access to opiates; (2) out-migration of upwardly mobile young adults from rural areas, which increases economic deprivation and can increase the risk for drug use; (3) close-knit relationships, which can contribute to faster diffusion of prescription opioids; and (4) increasing economic deprivation and unemployment, which can create a stressful environment that increases the risk of drug use (Keyes et al., 2014). While specific factors associated with

prescription opioid misuse in rural areas are largely unknown, these factors may explain the rise in prescription opioid misuse in rural areas compared to urban areas. Previous literature also suggests that factors such as weak economies, isolation, and structural characteristics may impact rural communities' increasing vulnerability to substance misuse (Byun, Meece, & Irvin, 2012; Rigg & Monnat, 2015; Roscigno & Crowley, 2001; Young et al., 2012).

Important Factors Influencing the Rural Opioid Epidemic

Adverse economic conditions and high rates of unemployment may create a higher vulnerability to substance misuse (Keyes et. al, 2014). According to Keyes et al. (2014), the increasing rates of out-migration of young people in rural areas can have a significant impact on the local economy (United State Census Bureau, 2010). For example, previous literature suggests that areas with an aging workforce, such as rural areas, have fewer new economic opportunities (Glasgow, 2000; McGranahan, 2003; Rupasingha, Goetz, & Freshwater, 2002). These economic hardships, such as decreased drive in career growth and economic mobility, can cause a great deal of stress for individuals (Glasgow, 2000; McGranahan, 2004; Rupasignha et al., 2002). According to the United States Department of Agriculture (USDA) (2014), rural economies depend on different industries to thrive. For example, the decline in manufacturing employment has greatly affected manufacturing-dependent counties, which account for 22% of the rural population in the United States (United States Department of Agriculture [USDA], 2014). Stress is well-known for being a risk factor for addiction, such as substance use disorders (al'Absi, 2011; Goeders, 2003; Koob, 1999; Sinha, 2008). Previous literature suggests that the stress from economic hardships increases the susceptibility of prescription opioid misuse (Dew, Elifson, & Dozier, 2007; Havens, Young, & Havens, 2011; Keyes et. al, 2014). These economic hardships can also influence the family structure.

Social factors, such as a close-knit family or community, can lead to increased access to prescription opioids. Similar to Cowan, Cowan, and Schulz (1996) and McKenry and Price's (2005) concept of "buffering," the traditional family in rural America has historically served as a protective factor for negative outcomes among family members. Examples of rural traditional family structure and process protective factors include cohesion, discipline, household composition, and inter-reliant socialization patterns (Dew et al., 2007). While these protective factors can enhance the resiliency of families, these protective factors can also increase the vulnerability of substance use. For example, most adults obtain prescription opioids from friends and relatives (McCance-Katz, 2017). These close-knit relationships found in rural communities can put individuals at risk of having greater access to opioids.

Structural factors, such as family instability, can lead to opioid misuse. However, as the economy declines, the population decreases, and poverty increases in rural areas, traditional family structures shift and change to survive. Rural families are now characterized by increased vulnerabilities such as unemployment, higher divorce rates, and greater numbers of single parents (McGranahan, 2003). These multiple stressors can be connected to increased rates in depression, anxiety, and substance misuse (McGranahan, 2003; Room, 2005). The increase in rural drug misuse because of economic hardships and family instability is consistent with previous literature that illustrates the relationship between increased rates of drug use and marital instability, low parent-child bonding, lack of parental monitoring, and low socioeconomic status (Dew et al., 2007; Room, 2005). Substance use impacts both the individuals of the family and the family as a whole.

Families living in rural areas face a unique set of risks related to prescription opioid misuse (Imig, Bokemeier, Keefe, Struthers, & Imig, 1996; Rhew, Hawkins, & Oesterle, 2011;

25

United States Department of Health and Human Services, 2017). While previous studies have

explored rural and urban differences in prescription opioid misuse, few if any studies have

explored rural families' perceptions of prescription opioid misuse in the context of family and

community. There are few if any, best practices listed in Substance Abuse and Mental Health

Services Administration's (SAMHSA) National Registry of Evidence-based Programs and

Practices (NREPP) that aim to prevent prescription opioid misuse among families, specifically

rural families (SAMHSA, 2017). Therefore there is a gap in the literature for family-based,

evidence-based approaches that aim to prevent prescription opioid misuse among rural families.

Family Evidence-Based Approaches for Prescription Opioid Misuse Prevention

Although there are no known family evidence-based approaches that focus specifically

on opioid misuse prevention, there are family evidence-based approaches focused on other

substance use prevention. The effectiveness of family evidence-based approaches to substance

use prevention has considerable empirical support in the research literature (Kumpfer, 2014;

Kumpfer & Alvarado, 2003; Sweet & Appelbaum, 2004; Tobler & Kumpfer, 2000). However,

most of the existing family evidence-based approaches focus solely to prevent or delay the onset

of substance misuse by youth (Kam & Miller-Day, 2017; Kumpfer, 2014; Reimuller, Hussong,

& Ennett, 2011). Effective family evidence-based approaches include behavioral parental

training, family skills training, family therapy, in-home family support programs, and family

education programs (Kumpfer & Alvarado, 2003). Nation and colleagues (2003) conducted a

review-of-reviews and identified nine characteristics that were consistently associated with

effective family-based approaches. The nine characteristics included having a theory-driven

approach, providing opportunities for positive relationships, being appropriately timed, being

socioculturally relevant, being comprehensive, comprising of varied teaching methods, providing

sufficient dosage, involving well-trained staff, and including outcome evaluation (Nation et al., 2003). Kumpfer (2014) suggests that "there is no one best family-focused program," because the context of the family and other family characteristics must be considered for the unique design of a family-based approach. While some family-based approaches focus on one individual, the literature suggests that comprehensive, multicomponent family-based approaches, such as adding family-based approaches to community- or school-based approaches, increases the effectiveness of the approach (Kumpfer & Alvarado, 2003; Kumpfer, Alvarado, & Whiteside, 2003; Liddle, Santisteban, Levant, & Bray, 2002; Lochman, 2000; Taylor and Biglan, 1998; Tobler & Kumpfer, 2000; Webster-Stratton & Taylor, 2001).

A Framework for Planning a Family-Based Approach to Prescription Opioid Misuse Prevention

The PRECEDE-PROCEED model takes an educational and ecological approach to program planning that all together considers context and people (Green & Kreuter, 2005). PRECEDE-PROCEED, as it will be referred hereafter, has been widely used to guide programs in a variety of settings for numerous health problems, including alcohol and other drugs (Deren et al., 2003; Fawcett, et al., 1997; Lloyd, et al., 1983; Matin et al., 2014; Mohamed & Khaton, 2017). PRECEDE-PROCEED consists of eight continuous phases to plan, implement, and evaluate a program or approach. PRECEDE is an acronym for Predisposing, Reinforcing, and Enabling Constructs in Educational/Environmental Diagnosis, and PROCEED is an acronym for Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development. PRECEDE describes the process that leads up to (precedes) an intervention, whereas PROCEED represents how to move forward (proceed) with the intervention itself (Gielen & Eileen, 1996; Green & Kreuter, 2005). While PRECEDE-PROCEED was developed

for use in public health, the model's basic principles transfer to other community and family

issues as well. Therefore, PRECEDE-PROCEED can be used to develop community- or family-

based approaches to prevention.

A key part of PRECEDE-PROCEED is the identification of factors that contribute to the

adoption of target health behaviors. As previously mentioned, these factors are categorized as

predisposing, reinforcing, or enabling for a given health behavior. A more detailed description

about and examples of these general factors is provided in Table 2.

Table 2   Description of PRECEDE-PROCEED Predisposing, Reinforcing, and Enabling
              Factors

Factor	Description	Examples
Predisposing	Antecedents to behaviors that provide motivation for action.	• Knowledge • Attitudes • Beliefs • Perceived needs and abilities, including self-efficacy
Reinforcing	Rewards or incentives for engaging in a healthy behavior.	• Social support, peer influence influences from other significant people such as health professionals, family members, or significant others • Social benefits, physical benefits, tangible or imagined rewards, and mass media promotions
Enabling	Conditions of the environment that facilitate health behaviors.	• Availability, accessibility, and affordability of resources • Supportive policies • New skills that are needed for a healthy behavior.

Note. Adapted from "Health Program Planning: An Educational and Ecological Approach," by
Green, L.W., & Kreuter, M. W., 2005. Copyright 2005 by The McGraw-Hill Companies, Inc.
(see also Howat, Jones, Hall, Cross, & Stevenson, 1997)

It is important to note that predisposing, enabling, and reinforcing factors can act as barriers or

facilitators of health behaviors.

Guiding Research Questions

Given the significant need for family-based approaches to prevent prescription opioid misuse among rural families, this study aims to explore and document perceptions about prescription opioid misuse among rural adults. Results from this study will be used to inform family-based educational outreach efforts. The researchers collected qualitative data from a sample of rural adults in a state in the Southeastern United States and sought to answer the following questions:

1. Do family members perceive themselves as having a role in preventing prescription opioid misuse within their families?

2. What are the predisposing, reinforcing, and enabling factors perceived as influencing whether or not family members employ prescription opioid misuse prevention strategies?

3. Of these factors, which ones do families have a role?

In addition to these questions, the researchers sought to gain a better understanding of what family-based approaches need to focus on to prevent prescription opioid misuse among rural families.

Methods

Qualitative Study Design and Sample

This interpretive qualitative study uses Nicther's "Eight Stages of Formative Research" as a framework to answer the research questions (Nichter, 2005). Group discussion was utilized to produce a greater understanding of participants' experiences and beliefs (Morgan & Krueger, 1998). Nine focus groups were conducted with 55 participants to explore and document rural adults' perceptions about prescription opioid misuse and family members' role in prescription

opioid misuse prevention. Purposive sampling was used to identify rural adults within the accessible population who met the following inclusion criteria

- resident of Itawamba, Lee, or Tishomingo County in Mississippi,
- 30 – 59 years of age,
- with or without prior knowledge on the topic of prescription opioids, and
- preferably not law enforcement, county/city officials, or medical professionals.

Rural adults who reside in three rural Mississippi counties most affected by the opioid epidemic were the accessible population for this study. This study was part of the PReventing Opioid Misuse In the SouthEast: PROMISE Initiative, which is a United States Department of Agriculture grant-funded project (Buys & Downey, 2017). The PROMISE Initiative aims to prevent prescription opioid misuse among rural adults and was funded in three rural counties most affected by the opioid crisis, according to opioid-related overdose and opioid prescribing rates. Therefore residents of Itawamba, Lee, and Tishomingo Counties in Mississippi were the accessible population for this study.

Participants 30-59 years of age were selected because that is the average age range of individuals in the sandwich generation. Individuals in the sandwich generation are likely to be caring for both a young child/youth and an aging parent or 30 – 59 years of age (Cravey & Mitra, 2011; Do et al., 2014; Parker & Patton, 2013; Rathus, 2018). The sandwich generation has access to reach young children, youth, young adults, middle-aged adults, and older adults, therefore, the researchers selected this age group in order to reach individuals across the lifespan. Some individuals may feel uncomfortable to speak about opioids in front of law enforcement or county and city officials, therefore the researchers intentionally chose not to recruit law enforcement or county and city officials to participate in this study. Because of the increased knowledge on the topics of opioids among medical professionals, medical professionals were also excluded.

Local Extension Service agents, who already have strong relationships with community members in their respective counties, used their personal judgment to identify those who met the inclusion criteria to participate in this study. Extension agents recruited six to eight participants for each focus group. Researchers met with the Extension agents face-to-face and over the phone to ensure that the Extension agents had a clear understanding of the study, inclusion criteria, and target population. The Extension agents used the script and press release statement provided by the project team to recruit participants through telephone calls, emails, face-to-face conversations, print media, and social media. Having multiple recruitment outlets allowed Extension agents to choose the recruitment style that worked best for the participants and themselves. The researchers remained in constant communication with the Extension agents to ensure any questions that arose during recruitment were answered.

Data Collection

Each focus group lasted an average of 90 minutes. The focus groups were held at locations familiar to the community and at times that the Extension agents suggested as comfortable and convenient for the participants. Participants were provided a meal at the focus groups. At the beginning of each focus group, the moderator obtained written consent from all participants. A trained team member moderated each focus group and a trained co-moderator took notes during each focus group. The focus group guide developed by the researchers followed Krueger's *Moderating Focus Groups* and provided the process followed by the moderator and co-moderator (Krueger, 1998). The focus group guide consisted of ten open-ended questions to raise discussion of participants' general perceptions of prescription opioid misuse, factors perceived to be easiest to change and most important to change in preventing prescription opioid misuse, efforts perceived to be the best at raising awareness, perceived

responsibilities of family members in preventing prescription opioid misuse, and perceptions of prescription drug-take back boxes (See Appendix A for the Forum Guide). All focus groups were digitally recorded with the participants' consent and subsequently transcribed verbatim in full by a paid transcription service, Same Day Transcriptions. Transcripts were reviewed for correctness with the digital recordings by the moderator.

In addition to the focus groups, participants were asked to provide demographic information on a paper survey at the end of the focus group. Demographic information included county, birth year, sex, race, marital status, education level, employment status, whether or not they have children, number of children, type of support provided to children (i.e., physical/instrumental, spiritual, financial, or other), descriptive aspects of parents, stepparents, and parents-in-law (i.e., younger than 65 years of age, 65 years of age or older, deceased, not applicable), type of support provided to parents, stepparents, and parents-in-law, and annual household income.

Data analysis

Data analysis occurred simultaneously with data collection. The researchers used a general thematic analysis approach, including coding and identification of themes to synthesize participant responses to focus group questions. Researchers used Braun and Clarke's (2006) "Phases of Thematic Analysis" as a guide for thematic analysis. Table 3 describes each phase of the thematic analysis process and explains how each phase was followed during the current study.

Table 3   Phases of Thematic Analysis

Phase	Description of the phase	Description of the phase as related to this study
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.	Read and re-read the transcripts, noted down initial ideas in a different colored ink each time.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.	Identified initial codes based on focus group guide, previous literature, and common ideas that arose in the data, Coded interesting features of the data across the entire data set, collated data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.	Collated codes into potential themes according to previous literature and PRECEDE-PROCEED model, gathered all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.	Checked if the themes work in relation to coded extracts and the entire data set, generated a thematic tables of the analysis by an overarching theme.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.	Refined the specifics of each theme through ongoing analysis, generated clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, the final analysis of selected extracts, relating back to the analysis to the research questions and literature, producing a scholarly report to the analysis.	Selected examples that relate back to the research questions/ aims and previous literature, produced this manuscript, preparing for future manuscripts.

Note. Adapted from "Using Thematic Analysis in Psychology," by Braun, V., & Clarke, V., 2006, *Qualitative Research in Psychology*, *3*, pp. 77-101. Copyright 2006 Edward Arnold Publishers Ltd.

To answer research question 1, researchers used common ideas that arose in the data as a guide to determine the perceived roles and responsibilities of family members to prevent prescription opioid misuse. To answer research question 2, the coding structure was based on predisposing, enabling, or reinforcing factors as described in Green and Krueter's (2005) PRECEDE-PROCEED model. To answer research question 3, common ideas that arose in the data were used to determine which roles the family perceive themselves as having a part in preventing prescription opioid misuse. Where appropriate, the researchers have provided direct quotations from focus group participants.

The researchers used qualitative data software, QSR International's NVivo Version 12, to manage the data and to assist with data analysis (NVivo, 2018). Descriptive statistics of the demographic information were inputted into an online survey platform, Qualtrics (2018), downloaded, and analyzed using IBM SPSS Statistics version 25 software (2018).

Rigor

When considering the rigor of the data and interpretations, credibility, transferability, dependability, and confirmability are important features to consider (Xu, 2006; Xu, 2018; Xu, Coats, & Davidson, 2011). Researchers used prolonged engagement, openness, monitoring one's subjectivity, emic, and referential adequacy to ensure the credibility of the data. Purposive sampling was used by the researchers to ensure the transferability of the data. Researchers utilized the "don't need to do it" strategy to ensure the dependability of the data. Finally, researchers used raw data, data reduction and analysis products, data reconstruction and synthesis products, process notes, and instrument development information strategies to demonstrate the confirmability of the data and interpretations. See Table 4 for a description of how the researchers ensured all four of these features to portray the rigor of this study.

Table 4   Trustworthiness of the Data

Features	Strategies	Purposes	Completed in this study	Description of feature as related to this study
Credibility (Parallel to internal validity) It addresses the issue of the inquiry providing assurances of the fit between respondents' views of their life and the inquirer's reconstruction and representation. Does it "ring true"? Is there compatibility between the constructed realities that exist in the minds of the inquiry's respondents and those that are attributed to them?	Prolonged engagement	Stay in the field until data saturation occurs • Gain trust • Counter distortions from researchers impact on the context • Limit researcher biases • Compensate for effects of unusual or seasonal events	Completed	By the ninth focus group, no new information was collected from the focus groups. Therefore, the researchers stopped conducting the focus groups since saturation of the data occurred.
	Openness	• Search for negative cases (e.g., instances and cases that do not fit within the pattern or working hypotheses) → broaden, change, cast doubt on the "rule" (e.g., looking into TTU 90% plus rating, probably one has more to learn by finding out from those less than 10%) • Open to rival or competing themes, explanations, and interpretations	Completed	New insights from each focus group were used to examine, verify, and clarify the perspectives from all focus groups.

Table 4 (continued)

Monitoring one's subjectivity	Keep separated personal thoughts while conducting fieldwork • Document the bases of inferences you make • The predispositions or biases of the researcher • Track changes in researcher during the course of fieldwork (e.g., "go native")	Completed	The moderator separated personal thoughts while conducting fieldwork by not contributing to the conversation but guiding the conversation instead. The moderator and co-moderator withheld themselves from sharing personal stories or biases during the focus group.
Emic	Capture participants' point of view (e.g., their vocabularies and classification systems)	Completed	The researchers captured the participants' point of view by adopting their vocabularies and classifying the data using the participants' thoughts and experiences.
Triangulation	The best way to elicit the various and divergent constructions of the reality that exists within the context of a study is to collect information about different events and relationships from different points of view. • Ask different questions • Seek different sources • Utilize different methods • Relate to theoretical perspectives	Not completed	This feature is beyond the scope of this study.

Table 4 (continued)

Referential adequacy	Preserve the important events and materials whenever possible & appropriate (e.g., pictures, student work, posts; Videotape provides a good record but it can be obtrusive.)	Completed	All notes taken on the flip-chart were written down, analyzed, and preserved.
Peer debriefing	This is done with a similar status colleague (not with a junior or senior peer) who is outside the context of the study and who has a general understanding of the nature of the study and with whom you can review perceptions, insights, and analyses. • Provide a "devil's advocate" • Test working hypotheses • Help develop the next step • Serve as a catharsis	Not Completed	While this was not completed with a similar status colleague, peer debriefing was completed with a senior mentor. The moderator coded the transcripts and spot checked the codes with a team member who is an expert in qualitative data analysis. Areas of disagreement were resolved through discussion and included another team member if necessary.

Table 4 (continued)

	Member checks	Go to the source of the information and check both the data and the interpretation. • Assess the intentionality of respondents • Correct errors • Provide additional volunteer information • Put respondent on record • Create an opportunity to summarize which is the first step to data analysis • Assess the overall adequacy of the data in addition to individual data points	Not completed	This feature was not completed due to lack of time by the researchers to meet with the participants again.

Table 4 (continued)

Transferability (Parallel to external validity) It deals with the issue of generalization in terms of case-to-case transfer. It concerns the inquirer's responsibility for providing readers with sufficient information on the case studied (Case A) such that readers could establish the degree of similarity between the case studied and the case to which findings might be transferred (Case B)	Thick description	Because transferability is a naturalistic study depends on similarities between sending and receiving contexts, the researcher collects sufficiently detailed descriptions of data in context and reports them with sufficient detail and precision to allow judgments about transferability to be made by the reader.	Not completed	This feature is beyond the scope of this study. Data collected from focus groups for this study does not lend itself to think descriptions.
	Purposive sampling	In contrast to random sampling that is usually done in a traditional study to gain a representative picture through aggregated qualities, naturalistic research seeks to maximize the range of specific information that can be obtained from and about that context by purposely selecting locations and informants that differ.	Completed	Purposive sampling was used to ensure the participants met the inclusion criteria of this study.

39

Table 4 (continued)

Dependability (Parallel to reliability) It focuses on the process of the inquiry and the inquirer's responsibility for ensuring that the process was logical, traceable, and documented. An inquiry must also provide its audience with evidence that if it were replicated with the same or similar respondents (subjects) in the same (or a similar) context, its finding would be repeated.	Don't need to do it	Since there can be no validity without reliability (and thus no credibility without dependability), a demonstration of the former is sufficient to establish the latter. If it is possible using the techniques outlines in relation to credibility to show that a study has that quality, it ought not to be necessary to demonstrate dependability separately. (Arguable)	Completed	The credibility strategies used in this study can also be used to determine the dependability of this study. For example, conducting the focus groups until saturation occurred and adopting the participants' vocabularies ensure that this study is a dependable study as well as a credible study. Allowing saturation to occur ensures that the researchers did not miss any important information from the participants. Adopting the participants' vocabularies ensures that this study shares the participants' point of view instead of the researchers' point of view.
	Overlap	In effect, overlap methods represent triangulation which is typically undertaken to establish validity, not reliability, although demonstration of the former is equivalent to demonstration of the latter. (Still Arguable)	Not completed	This feature is beyond the scope of this study.

Table 4 (continued)

Stepwise replication	Teams deal with data sources separately and, in effect, conduct their inquiries independently. (Not recommended)	Not completed	This feature is beyond the scope of this study. Peer debriefing was used instead of stepwise replication.
Inquiry audit	An auditor examines documentation (through critical incidents, documents, and interview notes) and a running account of the process (such as the investigator's daily journal) of the inquiry. The auditor examines the process of the inquiry, and in determining its acceptability the auditor attests to the dependability of the inquiry. The inquiry auditor also examines the product--the data, findings, interpretations, and recommendations--and attests that it is supported by data and is internally coherent so that the "bottom line" may be accepted. This latter process establishes the confirmability of the inquiry. Thus a single audit, properly managed, can be used to determine dependability and confirmability simultaneously.	Not completed	This feature is beyond the scope of this study.

Table 4 (continued)

Confirmability (Parallel to Objectivity) It concerns with establish the fact that the data and interpretations of an inquiry are not merely figments or biases of the inquirer's imagination.	Raw data	Recorded videotapes, written field notes, documents, survey results	Completed	After the transcripts were received from the Same Day Transcription service, the moderator listened to the audio recording to ensure the transcripts were accurately transcribed. The moderator also checked the co-moderator's notes with the transcripts.
	Data reduction and analysis products	Write-ups of field notes, summaries and condensed notes, theoretical notes such as working hypotheses, concepts, and hunch	Completed	The moderator and co-moderator discussed each focus group on the car ride home from each focus group and noted any hunches or concepts that arose from that focus group.
It calls for linking assertions, findings, conclusions, interpretations, and recommendations to the data themselves in, readily discernible ways, to see if they can be traced to and supported by data sources.	Data reconstruction and synthesis products	Themes that were developed, findings and conclusions, final report	Completed	Themes were developed based on common ideas that arose during the focus groups, previous literature, and the PRECEDE-PROCEED model.

Table 4 (continued)

	Process notes	Methodological notes, trustworthiness notes, audit trail notes	Completed	The moderator and co-moderator had a checklist that they followed in order to ensure that each focus group was conducted in the same way.
	Material relating to intentions and dispositions	Inquiry proposal, personal notes, expectations	Not completed	This feature is beyond the scope of this study.
	Instrument development information	Pilots, forms and preliminary schedules, observation formats, surveys	Completed	The focus group guide was developed using Krueger's evidence- and research-based focus group development guide.

Note. Adapted from "Trustworthiness of Data," by Xu, 2018. (see also Xu, 2006; Xu, Coats, & Davidson, 2011)

Findings

Sample

Fifty-five individuals participated in the focus groups. One participant was not from the included counties, so her responses were not included in the demographic information. However, her responses were included in the analyses of the qualitative data because her statements could not be identified and excluded from the transcripts. Of the 54 focus group participants, 39 (72.2%) identified as female and 15 (27.8%) identified as male. Forty-six of the participants (85.2%) identified as white and 7 (13%) identified as black or African American, compared to a relative ratio of 84.7% and 13.3% in those three Mississippi counties (United States Census Bureau, 2018). The average age of participants was 48 years of age. Most participants reported being employed full time (70.4%) and an annual household income of $60,000 to $69,999. These demographic characteristics are summarized in Table 5.

Table 5   Demographic Characteristics of Focus Group Participants

Variable	N(%)
Gender	
Male	15(27.8)
Female	39(72.2)
Race	
White	46(85.2)
African American	7(13)
Other	1(1.9)
County	
Itawamba	22 (40.7)
Lee	15(27.8)
Tishomingo	17(31.5)
Marital Status	
Married	45(83.3)
Widowed	2(3.7)
Divorced	4(7.4)
Separated	
Never Married	3(5.6)
Living together but not married	
Education Level	
Less than high school	
High school graduate	5(9.3)
Some college	11(20.4)
2 year degree	5(9.3)
4 year degree	17(31.5)
Professional degree	15(27.8)
Employment Status	
Employed full time	38(70.4)
Employed part time	4(7.4)
Unemployed looking for work	
Unemployed not looking for work	4(7.4)
Retired	5(9.3)
Student	1(1.9)
Disabled	2(3.7)
	Mean
Age	48 years
Annual Household Income Average Range	$60,000 - $69,999

Of the 54 total participants, 48 (88.9%) reported having one or more children, and all of the participants reported having one or more living parent (i.e., mother, step-father, mother-in-law). Most participants provide physical/instrumental support for their children (77.8%) and parents (53.7%). Most participants reported providing financial support for their children (66.7%), whereas only 14.8% of participants reported providing financial support for their parents. These family characteristics are summarized in Table 6.

Table 6   Family Characteristics of Focus Group Participants

Variable	N(%)
Child Status	
Children	48(88.9)
No children	6(11.1)
Physical/Instrumental support for children	42(77.8)
Spiritual support for children	44(81.5)
Financial support for children	36(66.7)
Other support for children	4(7.4)
Parent status	
Mother	
Younger than 65 years of age	14(25.9)
65 years of age or older	28(51.9)
Deceased	8(14.8)
Not applicable	4(7.4)
Step-mother	
Younger than 65 years of age	3(5.6)
65 years of age or older	2(3.7)
Deceased	
Not applicable	49(90.7)
Mother-in-law	
Younger than 65 years of age	11(20.4)
65 years of age or older	20(37)
Deceased	9(16.7)
Not applicable	14(25.9)
Father	
Younger than 65 years of age	9(16.7)
65 years of age or older	31(57.4)
Deceased	11(20.4)
Not applicable	3(5.6)

Table 6 (continued)

Step-father	
Younger than 65 years of age	2(3.7)
65 years of age or older	5(9.3)
Deceased	1(1.9)
Not applicable	46(85.1)
Father-in-law	
Younger than 65 years of age	8(14.8)
65 years of age or older	17(31.5)
Deceased	14(25.9)
Not applicable	15(27.8)
Physical/Instrumental support for parent(s)	29(53.7)
Spiritual support for parent(s)	28(51.9)
Financial support for parent(s)	8(14.8)
Other support for parent(s)	2(3.7)
	Mean
Number of Children	2
Age of Children	20 years

Family Members' Role in Prescription Opioid Misuse Prevention

The opioid crisis is perceived as a serious problem within these communities and a problem that is affecting families. As one community member stated, "I think we see it… But I think it's--it's becoming a huge problem in our community, and it's devastating families. And like she said, heartache, heartbreak... I don't know of a family, that I know, that is not affected by that." This statement confirms that the opioid epidemic is increasingly impacting rural communities, most community members know someone affected by the opioid crisis, and prescription opioid misuse is upsetting families in their communities. Another rural community member commented, "Because even if it affects one family in the community it's affecting the community." Rural adults across the focus groups made the distinct connection that when a family is hurting in their community, the whole community is hurting. Another rural adult member shared that, "It affects the whole family dynamics, because, people love their family.

47

And so when one family member get in trouble with drugs it stresses other family members out."
Perhaps a main concern of the rural adults is that the opioid misuse problem begins at the family level expanding to the community level. Rural adults expressed that they are first concerned about the families in their communities, then they are concerned about their communities. Perhaps as perceived by the focus group participants, the prescription opioid misuse lives out in families.

With this crisis in view, rural community members shared the importance of fellow community members realizing that each person has a role in preventing prescription opioid misuse within their family. One rural adult commented, "I think just not realizing the full effect of the small part that each person is playing creates to the big problem--or contributes to the big problem." Across all the focus groups, rural community members shared the belief that they, as a family member, have a crucial role in prescription opioid misuse prevention. One community member stated, "Yeah, you do have a role to play. You know, you have to be an example to your, you know, your kids, your grandkids, your sister, your brother, your friend. You know, you have to."

One rural adult stated, "I think as parents, we all have a lot, have a role to play." Another rural adult commented, "That is our responsibility number one. To teach them (family members) to be responsible for themselves." Rural adults perceived that parents have a key role to play in prevention. One rural adult stated, "You know, the education starts at home, too. I mean, if you're raising kids, then there's no reason why, when they get to an age where they can understand, that you're not, you know, trying to educate them at home, too." Across the focus groups, community members discussed several ways that family members can prevent prescription opioid misuse within their families. One community member stated, "We need to be,

we need to be the mom counting the pills in the bottle." Another rural adult shared, "Well,

talking to your children. I mean really talking to them. Be a parent, not a friend." Rural

community members perceive education as the most important and easiest to change factor in

preventing prescription opioid misuse. However, rural community members believe that there

are a number of influencing factors as to whether or not family members engage in prescription

opioid misuse prevention behaviors.

Predisposing, Reinforcing, and Enabling Factors of Family Members to Prevent Prescription Opioid Misuse

Seven predisposing, two reinforcing, and seven enabling factors were identified by

participants. Table 7 lists the predisposing, reinforcing, and enabling factors that act as a barrier

or facilitator prescription opioid misuse prevention within rural families. The factors in bold are

the family-focused factors.

Table 7   Predisposing, Reinforcing, and Enabling Factors Perceived by Focus Group Participants as Influencing Prescription Opioid Misuse Prevention Behaviors

Factors	Exemplar Quotes
Predisposing Factors	
Knowledge	
Aware of the nature/extent of prescription opioid problem	"And just the views that some people have. And I was—I was one of the worst for years. I had that mentality like, why can't you just stop? What is your problem? What kind of person are you that you, you know, that's what you do in your free time with your money from your family and everybody else, you know? And I was really judgmental because I did not understand—I mean, I, I still don't understand why people do it the first time."
Key people in their life who have experienced prescription opioid misuse or died by opioids	"Until -- until it's affected you through family or whatever most people don't think realize or think about so -- so it has not affected you in some direct way so then realizing it is a problem or could be a problem is -- you are not thinking about it. It's like anybody else whenever you know, a car accident whatever kind of thing you know you don't -- until it happens to your kid or you you don't think about you really need to slow down, you really need to do this or wear your seatbelt or whatever it is. It is like any of these other cultural shifts like wearing seatbelts or smoking or other things that we have done you have got to -- you have got to -- and to me, I think once you go back to media and stuff that's the power of that is to tell stories that connect to people and help them see the effects of these things. So you can plant those seeds before it happens I think most people until it's happened to them on the radar, so they are not even thinking about it. Thinking about locking up drugs or my prescriptions instead -- because I wouldn't -- never have like I said, until it happens to somebody. I think the same thing you said, but there is not a sigma in the beginning when it is prescribed. But then when it isn't when you recognize it is a problem or when your family recognizes the problem it is a stigma because you don't want to admit I got a problem. So then you just -- just keep going."
	"One that has the experience, has been there, is who I would listen to."

Table 7 (continued)

Attitude

Denial	"Everyone's in denial. Don't talk about it."
	"They assume it like ignorance they just assume that it's not a problem for their family member it only happens to other people's family."
Stigma associated with prescription opioid misuse	"And so, I think that changing the way that some people view it and helping people be less judgmental and more supportive, like they say, you know, it would go a long way. Because a lot of people hide everything. For, for so long so many people around me did it, but because I had that mentality about it, they never let me know. I was blown away by some of the people that I finally found out were involved in things because they hid it so well from me. Because they knew how judgmental, and they knew what I thought about it. And it keeps them from being able to talk to you and open up and ask for help."
Discomfort with talking about opioids with family members	"You're afraid that you're gonna shut somebody out by bringing it up and they're not gonna want to deal with you anymore…"

Beliefs

May see doctors as part of the problem	"...I have never actually seen one (doctor) say, 'Okay. This is your last—this is it.' None of them."

Perceived needs and abilities, including self-efficacy

Take care of their family	"To me it's like and I tell my family you can hate me, that's fine. But I'm still going to take care of you and I'm would rather take care of you and things be fine and you hate me rather than me be your best friend and your life goes down the drain."

Table 7 (continued)

Reinforcing Factors	
Social support, peer influence influences from other significant people such as health professionals, family members, or significant others	
Key people (i.e., doctors, preachers, family members) in their life are talking about the importance of preventing behaviors related to prescription opioids	"I think as a whole, as a community, as church-goers, we need to be out there. You know, encouraging people, reaching out to those that are in poverty, or have easy access, or we know in pain. So you know, they're taking meds. I mean, we should be reaching out to those people."
	"Well, talking to your children. I mean, really talking to them. Be a parent, not a friend."
Lack of familial support	"I think—I think that's very—I think that's very important because that, you know, we've talked a lot about the kids that don't have that. They don't have the parents that are involved in their lives."
	"Because this right here is what you see and it may not be the child. It may be the parent. And the parent and the child never have a conversation because nobody is looking at any (one another)."

Table 7 (continued)

Enabling Factors	
Availability, accessibility, and affordability of resources	
Physicians, prescribing behaviors, and patient satisfaction	"Well, the doctor prescribed it so it's okay. You know, I think they think that. You know?" "That's the ease of access. Too easy to get."
Lack of resources to complete prescription opioid misuse prevention behaviors	"…in the end. And so, we need more, uh, things available in our immediate community. And then, we need resources to be able to pay for it – Blue Cross Blue Shield, Cigna, United Health Care, Medicare, Medicaid. All of – we need to be able to put these people who say they are in pain in a place where they can feel better but without having to take these things."
Take-back boxes in their communities	"It needs to be at a dropped-off location and that we. They do it in Fulton. But you're going to have to – you're gonna have to do it every ten miles. You know what I mean? People aren't going to drive to Fulton [laugh] to throw away their pain pills. They're not going to do it." "Have a designated place" "And not once time a year" "And their family members can get it because there's not a, there's not a process."

Table 7 (continued)

New skills that are needed for a healthy behavior

Skills to talk about opioids with their children	"Where when you're in a bigger city, nobody cares, you know. And so, yeah, things that—things that are more private, some way to reach out to people in a more private, completely confidential setting is—because here, what happens? You get—you go to jail for drugs and you're on mobile patrol. Within an hour, everybody knows that you got arrested for drugs. And…"
	"When the kids are young keeping it out of site don't talk about it don't let them know you have it type thing if you have a prescription or whatever. But as they get older it is harder to -- so it goes back to the dinner table."
Skills to talk to doctors about opioids	"Yeah. A lot of the—a lot of people probably don't even think about the fact that there's an alternative. If they go in there in pain, they want a quick fix."
Skills to monitor family opioid use	"I think just accountability. Like, you know, I have a lot of people that, I mean, that don't have an issue with it. But if they are prescribed it for an actual reason, they give it to their husband and say, "Hey, put this up and give it to me when I need it," instead of just having access to it."
	"Or, you know, even making sure someone—just someone in the house knows that you've got this prescription and, you know…"
Skills to secure medications	"If there's kids in the house, teenagers especially, she needs to make sure they're in her possession at all times. Not available to them in the house."

Note. The factors in bold font are the family-focused factors.

Predisposing factors related to prescription opioid misuse prevention within families included: awareness of the nature of the prescription opioid misuse problem, having key people in their life who have experienced prescription opioid misuse or died by opioids, denial, stigma associated with prescription opioid misuse, discomfort with taking about opioids with family members, perceptions that the opioid crisis is only a medical problem, and knowing that they have a role as a family member to prevent prescription opioid misuse and a willingness to play that role.

Two reinforcing factors were: seeing and hearing key people in their life talking about the importance of prescription opioid misuse prevention behaviors and lack of familial support.

Enabling factors for this group included: physicians' prescribing behaviors and strong desire to satisfy their patients, lack of resources to complete prescription opioid misuse prevention behaviors, take-back boxes in their communities, skills to talk about opioids with their children and doctors, skills to monitor family opioid use, and skills to secure medications.

Need for Family-based Approaches to Prevent Prescription Opioid Misuse

These predisposing, reinforcing, and enabling factors that act as a barrier or facilitate prescription opioid misuse prevention behaviors among rural adults suggest that perhaps, as perceived by focus group participants, there is an opportunity for family-based approaches that work to empower and build the skills of rural adults to engage in prescription opioid misuse prevention behaviors. It is important, rural community members believe, that parents in rural areas are aware of the prescription opioid misuse problem and are able to employ prescription opioid misuse prevention behaviors within their family households. Rural adults view themselves as having a crucial role in prescription opioid misuse prevention, for example, one rural adult stated, "I mean, everything starts there [with the family]." This statement, along with the

predisposing, reinforcing, and enabling factors, demonstrate that rural adults perceive themselves as needing to increase their awareness and knowledge of prescription opioids (i.e., what an opioid is, what opioid misuse is, and ways to prevent opioid misuse), increase their comfort with talking to family members and doctors about opioids, reinforce other family members to engage in prescription opioid misuse prevention behaviors, and build their skills to talk about opioids with family members and doctors, monitor family opioid usage, and secure medications.

Discussion

Focus group participants perceive prescription opioid misuse as a family problem. These rural adults also expressed family members' roles in prescription opioid misuse prevention and the predisposing, reinforcing, and enabling factors that influence or support behavioral and environmental changes in prescription opioid misuse prevention within families. In total, seven predisposing, two reinforcing, and seven enabling factors were identified by focus group participants. Each of these factors relate to preventing prescription opioid misuse at the family level.

The findings from this research suggest rural community members perceive the opioid crisis to be a huge problem among families in their communities. The focus group participants' perception that the opioid crisis is a huge problem among families in their communities is consistent with previous literature that suggests as rates of drug use increase so do other family problems such as marital instability, low parent-child bonding, and lack of parental monitoring (Dew et al., 2007; Room, 2005). Rural community members also perceive themselves to have a crucial role as family members in preventing prescription opioid misuse among all age groups within their family, whether it be their child, parent, spouse, or sibling. Focus group participants' perceptions of their role in preventing opioid misuse contributes to Kumpfer's

(2014) findings that the entire family needs to be considered when planning family-based approaches. While community members perceive the opioid crisis as a serious problem, one in which they as family members have a role in prevention, rural community members have a number of factors that encourage or discourage them from taking responsibility. These findings demonstrate a strong need to fill the gap in the literature for family-based, evidence-based approaches that aim to prevent prescription opioid misuse among rural families.

These predisposing, reinforcing, and enabling factors perceived by community members as influencing rural adults to take responsibility can serve as a guide to developing a prevention-focused approach for families (Lloyd et al., 1983; Matin et al., 2014; Mohamed & Khaton, 2017). Building upon the predisposing, reinforcing, and enabling factors that encourage rural adults to take responsibility through empowering key people in rural adults' lives such as physicians and preachers to talk about the importance of prescription opioid misuse behaviors and continuing to raise awareness of the opioid problem may encourage rural family members to engage in prescription opioid misuse prevention behaviors. Equipping family members with the necessary skills and resources to overcome these predisposing, reinforcing, and enabling factors that discourage prescription opioid misuse prevention behaviors may empower family members to take responsibility as well. Skills may include how to talk to family members about opioids, how to talk to doctors about opioids, how to monitor family opioid usage, and how to secure medications. Resources such as take-back boxes may help enable rural adults to engage in prescription opioid misuse prevention behaviors such as proper disposal of unused medications.

Rural adults view that education begins at home and that education is the most important and easiest to change in preventing prescription opioid misuse. With a strong emphasis on the perceived role of family members to engage in prescription opioid misuse prevention behaviors

57

at home, rural community members express the great need for family-based educational outreach efforts designed to empower rural family members to engage in prescription opioid misuse prevention behaviors. Considering that these rural community members believe that educating parents will spark prescription opioid misuse prevention behaviors within the home and positively influence the community, a multi-component and comprehensive approach that combines family- and community-based approaches might be effective in preventing substance misuse at the family-level (Kumpfer, 2014; Kumpfer & Alvarado, 2003; Nation et al., 2003; Sweet & Appelbaum, 2004; Tobler & Kumpfer, 2000). Continuing Nicther's (2005) "Eight Stages of Formative Research" to develop this type of approach will contribute to filling the gap in the literature for family-based, evidence-based approaches that aim to prevent prescription opioid misuse among rural families (SAMHSA, 2017).

Family-based approaches designed to provide resources and equip rural adults with the skills necessary to engage in prescription opioid misuse prevention strategies are warranted. Specifically, educating rural adults on the signs, symptoms, and risks associated with prescription opioids, and how to employ prescription opioid misuse prevention behaviors such as locking up medications, talking to family members about opioids, and disposing of unused opioids is warranted. Combining these educational efforts with reinforcing factors that encourage prescription opioid misuse prevention behaviors, such as having key people in their life (i.e., preachers, doctors, family members) talk about the importance of prescription opioid misuse prevention behaviors, may be an effective strategy in preventing prescription opioid misuse. These recommendations are consistent with Nation and colleagues' (2003) nine characteristics of an effective family-based approach. For example, using the PRECEDE-PROCEED model as a guide will allow a theory-driven approach, encouraging key people in their life to talk about the

importance of opioids and equipping individuals to talk to their family members about opioids

will provide opportunities for relationships, and utilizing a family- and community-based

approach will allow for a comprehensive approach, which are all consistent with Nation and

colleagues' (2003) recommendations for an effective family-based approach.

Limitations

The results of this study should not be interpreted without considerations of some

limitations. First, there were several indistinguishable comments made by participants that could

not be deciphered and included in the transcripts. Additionally, the researchers were not able to

host a follow-up focus group to member check the information in the communities due to a

number of unforeseen events. Since this is qualitative research, the researchers did not seek

representativeness and generalizability in the statistical sense. While the researchers believe that

the rural adult participants are similar to rural adults across the Southeast, the researchers cannot

state that the rural adults are representative of all rural adults in their local communities,

Mississippi, or the Southeast. Finally, while the researchers believe that the rural adult

participants provided rich discussion, the stigma attached to prescription opioid misuse may have

hindered participants from speaking freely during the focus groups.

<center>**Conclusion**</center>

Based on the information gathered from the focus groups, the researchers believe that a

comprehensive family-based approach is one way to equip family members with the necessary

resources and skills (enabling factors) to engage in prescription opioid misuse prevention

behaviors. The researchers believe that these approaches should be combined with predisposing

and reinforcing factors that facilitate prescription opioid misuse prevention behaviors, such as

having key people in their life talk about the importance prescription opioid misuse prevention and continuing to raise awareness of the nature of the prescription opioid misuse problem. The researchers recommend that the family-based approaches focus on building the skills needed to engage in prescription opioid misuse prevention behaviors combined with emphasizing existing factors that encourage prevention behaviors may be the most effective way of promoting behavior change at the family-level. Because of the great need for family-based approaches in rural areas, there is a potential for public health professionals, certified family life educators, Extension Service agents, and other health professionals to consider these components to develop a family-based approach for prescription opioid misuse prevention education among rural families.

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CHAPTER III

APPLYING THEORY OF PLANNED BEHAVIOR TO PREDICT INTENTION TO TALK ABOUT OPIOIDS WITH FAMILY MEMBERS AND FRIENDS: ROLE OF FAMILY COMMUNICATION

Abstract

The opioid epidemic in the United States is a serious public health crisis, and previous research suggests that family communication is effective in preventing substance misuse. The aim of this study was to examine the association between adults' attitudes, subjective norms, and perceived behavioral control (Theory of Planned Behavior determinants), and their perceived behavioral intention to talk about opioids with family and friends. In addition, the researchers examined the effect that comfort talking with family and friends and Theory of Planned Behavior determinants has on intention to talk about opioids with family and friends. Findings from this quantitative study suggest that the sample's attitudes, subjective norms, and perceived behavioral control are statistically significant predictors of the intention to talk about opioids with children, whereas attitudes and perceived behavioral control were found to be statistically significant predictors of the intention to talk about opioids with friends and parents. However, findings suggest that comfort predicts intention over and above the Theory of Planned Behavior determinants. Therefore, family life educators have a role in preventing prescription opioid misuse by building capacity within families to have conversations about opioids through enhancing comfort levels and Theory of Planned Behavior determinants.

67

Introduction

The United States is in the midst of an opioid epidemic, which accounted for nearly 48,000 deaths in the United States in 2017 (Scholl, Seth, Kariisa, Wilson, & Baldwin, 2019). While this crisis was primarily seen in injection drug users (i.e., heroin users) in large urban areas, this national public health crisis is now seen as a leading cause of death for all users of opioids, both medical and non-medical opioids (Bailey & Wermeling, 2014). Opioid misuse hinders people's mental, physical, relational, and economic well-being and is a significant concern in the United States (Kam & Miller-Day, 2017). In 2017 approximately 767,000 adolescents ages 12 to 17 years, 2.5 million young adults ages 18 to 25 years, and nearly 8 million adults 26 years or older misused prescription opioids, also known as prescription pain relievers (Substance Abuse and Mental Health Services Administration [SAMHSA], 2018). This crisis is devastating families all across the United States, affecting people of all ages, races, and socioeconomic backgrounds.

Substance misuse affects everyone in the family, therefore developmental and family scholars have examined family-based approaches for preventing substance misuse (Barnes & Farrell, 1992; Kumpfer, 1987; Kumpfer, Alvarado, & Whiteside, 2003). Most human development and family communication literature focuses on preventing substance use and misuse during early adolescence and young adulthood (Ebersole, Miller-Day, & Raup-Krieger, 2014; Kam & Miller-Day, 2017; Kumpfer, 2014; Menegatos, Lederman, & Floyd, 2016; Reimuller, Hussong, & Ennett, 2011). While adolescence and young adulthood are critical developmental periods for preventing substance use disorders, middle-aged and older adults are described as a vulnerable population for developing substance use disorders as well (Perlman, 2019; SAMHSA, 2018). In addition to most developmental and family scholars' heavy focus on

adolescents and young adults to prevent substance use disorders, many of these studies focus

mostly on alcohol or tobacco prevention, and few if any studies have examined prescription

opioid misuse prevention specifically (Johnston, O'Malley, Miech, Bachman, & Schulenberg,

2016; Kam & Miller-Day, 2017). In fact, Johnston and colleagues (2016) reported that there is a

significant gap in the literature addressing family-based approaches for preventing other drug

use, such as opioids and marijuana. A common family-based approach to substance misuse

prevention seen throughout the literature is family communication (Fosco, Stormshak, Dishion,

& Winter, 2012; Griffin, Botvin, Scheier, Diaz, & Miller, 2000; Kam & Miller-Day, 2017).

Previous literature suggests that parent-child connectedness and open discussions about

substance use can prevent alcohol and tobacco use among adolescents (Carver, Elliott, Kennedy,

& Hanley, 2016; Jackson, Haw, & Frank, 2011; Kam, Basinger, & Abendschein, 2015; Kam,

Potocki, & Hecht, 2014; Miller-Day & Dodd, 2004; Reimuller, Hussong, & Ennett, 2011). Thus,

family communication can serve as a protective factor against substance misuse (Kam, 2011;

Miller-Day & Kam, 2010; Pettigrew, Shin, Stein, & Van Raalete, 2017; Schrodt, Witt, &

Messersmith, 2008). Most studies examine parent-child communication in regard to substance

use prevention, not taking into consideration communication with other family members and

peers (Carver et al., 2016; Choi et al., 2017; Luk, Fahat, Iannotti, & Simons-Morton, 2010).

Family Communication and Substance Use Prevention Research

Epstein, Bishop, Ryan, Miller, and Keitner (1993) define family communication as the

way family members exchange verbal and non-verbal information. While family communication

can be negatively impacted by substance misuse, family communication can be used to prevent

or delay the onset of substance misuse (Compton & Craig, 2019; Hernandez, Rodrigues, &

Spirito, 2015; Kumpfer, Alvardado, & Whiteside, 2003; Velleman, Templeton, & Copello,

2005). Previous literature suggests that families have an important role in preventing drug misuse among family members, specifically through open-communication about drugs within the content of the family (Dishion, Kavanaugh, Schneiger, Nelson, & Kaufman, 2002; Griffin & Botvin, 2011; Lochman & van den Steenhoven, 2002). Carver, Elliott, Kennedy, and Hanley (2016) conducted an integrated literature review of the relationship between communication and alcohol, tobacco, and drug use in adolescence and concluded that the way in which parents talk about substance use with their adolescents is critical. Conversations that are open and allow both the parents and the children to contribute equally appear to be more effective than parent lectures at preventing substance use (Chaplin et al., 2014; Highet, 2005).

In addition to open communication, previous literature findings suggest that the frequency and quality of communication about substance use matters. For example, several studies yielded findings that suggest more frequent communication between parent and children about substance use is associated with higher rates of alcohol and cigarette use, and higher rates of cannabis use initiation among adolescents (de Leeuw et al., 2008, 2010; Harakeh, Scholte, de Vries, & Engels, 2005; Harakeh, Schholte, Vermulst, de Vries, & Engels, 2010; Nonnemaker et al., 2012; van den Eijnden, van de Mheen, Vet, & Vermulst, 2011; van der Vorst et al., 2005, 2010). However, literature also suggests that high-quality communication between parents and children about substance use is associated with lower rates of tobacco and alcohol use (Harakeh et al., 2005; Harakeh et al., 2010; Koning, van den Eijnden, Glatz, & Volleberg, 2013; Mares, Lichtwarck-Aschoff, & Engels, 2013; Otten, van der Zwaluw, van der Vorst, & Engels, 2008; van den Eijnden, van de Mheen, Vet, & Vermulst, 2011). Therefore the quality of communication is more important than the frequency of communication in preventing substance misuse among adolescents. High quality communication is often associated with high parent-

child connectedness and open communication (Carver et al., 2016; Cleveland, Gibbons, Gerrard, Pomery, & Brody, 2005; Huver, Engels, Vermulst, & de Vries, 2007). Therefore parent-child connectedness is an important factor to consider.

Parent-child connectedness is defined as bonds and relationships between parents and children or feelings of satisfaction, love, warmth, and closeness a child has with his/her parents (Barber & Schluterman, 2008; Carver et al., 2016; Markham et al., 2010; Resnick et al., 1997; Townsend & McWhirter, 2005). Previous literature suggests that parent-child connectedness influences the outcome of communication about drug use and misuse (Barber & Schluteman, 2008; Carver et al., 2016; Townsend & McWhirter, 2005). Both parents and children play active roles within parent-child connectedness, therefore, parent-child connectedness is a key part of whether adolescents and parents feel comfortable talking with one another about varying topics, such as substance misuse (Carver et al., 2016; Lezin, Rolleri, Bean & Taylor, 2004; Markham et al., 2010; Ryan, Jorm, & Lubman, 2010). Therefore, parent-child connectedness influences family communication and comfort with family communication.

The way in which parents communicate with their children about substance use also matters. Parents use a variety of approaches and messages when talking with their children about substance use (Carver, Elliott, Kennedy, & Hanley, 2016). These communication approaches have been categorized into two types, "harder" and "softer" communication (Ennett, Bauman, Foshee, Pemberton, & Hicks, 2001). Ennett, Bauman, Foshee, Pemberton, and Hicks (2001) define "harder" communication as parents being more direct and telling children not to use substances and define "softer" communication as parents sharing the possible harms and consequences of substance use. For example, "harder" communication involves parents telling their children rules and not to use substances, and "softer" communication involves parents

sharing health risks and potential consequences of substance misuse with their children (Carver et al., 2016; Chaplin et al., 2014; Ennett et al., 2001; Kam, 2011). Several researchers have found that softer communication is associated with a decreased likelihood of substance use among adolescents (Chaplin et al., 2014; Huver, Engels, & de Vries, 2006).

Previous literature suggests that parents perceive themselves as talking about substance use with their children more frequently than their children perceive their parents to be talking about substance use (Nonnemaker, Silber-Ashley, Farrelly, & Dench, 2012; van der Vorst, Engels, Meeus, Dekovic, & Van Leeuwe, 2005). This may be due to their lack of confidence or comfort in talking about substance use with their children. Due to the stigma surrounding substance use, talking about substance use with children can be extremely difficult for parents, specifically in finding a balance between open discussions and lectures (Carver et al., 2016; Mallick, 2003). Therefore, there is a need to improve parents' comfort and confidence in having conversations with their children. Family-based approaches that involve parenting sessions that cover strengthening relationships and communication may be effective in preventing alcohol and tobacco use (Foxcroft & Tsertsvadze, 2011; Thomas, Baker, Thomas, & Lorenzetti, 2015). While several studies have examined parent-child communication as a family-based approach to preventing substance use, few if any studies have examined the relationships of communication between middle-aged adults and their parents or middle-aged adults and their friends and substance use prevention. Research suggests that peer education is effective in prevention, therefore it is necessary to investigate what promotes talking about substance use with friends, parents, and children (Damon, 1984; Skelly, Hall, Risher, & Brown, 2018; Turner & Shepherd, 1999). The sandwich generation, defined as someone who is caring for both a young child, adolescent, or young adult and an aging parent or who is 30 to 59 years of age, might be the ideal

73

group to investigate because of the multiple age groups accessible by the sandwich generation (Cravey & Mitra, 2011; Do et al., 2014; Parker & Patten, 2013; Rathus, 2018). The sandwich generation might have access to reach individuals who are in early childhood, adolescence, young adulthood, middle adulthood, and older adulthood because of the multiple age groups they are caring for.

Theory of Planned Behavior as a Guide to Intention to Talk About Opioids with Friends and Family

Previous research reported that Ajzen's (1991) Theory of Planned Behavior is effective in predicting an individuals' intention to perform health behaviors (Fisbein & Yzer, 2003). Ajzen's Theory of Planned Behavior suggests that attitudes, subjective norms, and perceived behavioral control toward a behavior, together predict an individual's behavioral intentions and behaviors (Ajzen, 1991). Theory of Planned Behavior has been extensively used in predicting health-related human behaviors, such as alcohol consumption, cervical cancer screenings, depression- and help-seeking behaviors, and childhood obesity prevention (Ajzen, 1991; Bohon, Cotter, Kravitz, Cello, & Fernandez y Garcia, 2016; Norman, Webb, & Millings, 2019; Roncancio et al., 2015; Zorrilla et al., 2019). Recently, researchers have also operationalized the Integrated Behavioral Model, which is an updated version of Theory of Planned Behavior that was developed during a workshop organized by the National Institute of Mental Health (Bhochhiboya & Branscum, 2018; Fishbein, Middlestadt, & Hitchcock, 1994). The goal of the workshop was to develop a theoretical framework that integrated common constructs from well-known health behavior theories, such as the Theory of Planned Behavior, Health Belief Model, and Social Cognitive Theory (Fishbein et al., 1994; Rosenstock et al., 1994). At the workshop, well-known health behavior theorists, such as Albert Bandura and Martin Fishbein, agreed on intentions,

environment, skills/abilities, and self-efficacy, emotional reaction, social pressure, attitudes, and personal standards/self-image for behavior change, which led to the origination of Integrated Behavioral Model (Fishbein, 2000; Fishbein & Cappella, 2006). Like Theory of Planned Behavior, Integrated Behavioral Model identified intention, attitudes, perceived norms, and perceived behavioral control as the most significant factors in predicting behavior (Fishbein & Yzer, 2003; Montano & Kaspryzk, 2008; Montano, Kaspryzk, von Haeften, & Fishbein, 2001; von Haeften, Fishbein, Kaspryzk, & Montano, 2000; von Haeften, Fishbein, Kasprzyk, & Montano, 2010). However, Integrated Behavioral Model expands Theory of Planned Behavior through the addition of subjective norms to include both subjective and descriptive norms and the recognition that skills/abilities and the environment can directly predict health behavior (Fishbein & Ajzen, 2010).

Several reviews of the Theory of Planned Behavior have supported the efficiency and effectiveness of Theory of Planned Behavior for predicting and understanding health-related behaviors (Armitage & Connor, 2001; Cooke, Sniehotta, & Schuz, 2007; McEachan, Connor, Taylor, & Lawton, 2011). Bhochhibyoa and Branscum (2018) conducted a systematic review of the application of Theory of Planned Behavior and the Integrated Behavioral Model towards predicting and understanding alcohol-related behaviors and found that the Theory of Planned Behavior/Integrated Behavioral Model predicted 45% to 75% variance of intentions and 26% to 90% of the alcohol-related behaviors. Few studies, if any, have applied the Theory of Planned Behavior/Integrated Behavioral Model to predicting the behavior of talking about opioids with friends, parents, and children among the sandwich generation. Thus, this study applies the theoretical constructs of the Theory of Planned Behavior/Integrated Behavior Model to predict

the intention to talk about opioids with friends, parents, and children among the sandwich

generation. Please see Figure 1 for a model of the Theory of Planned Behavior.
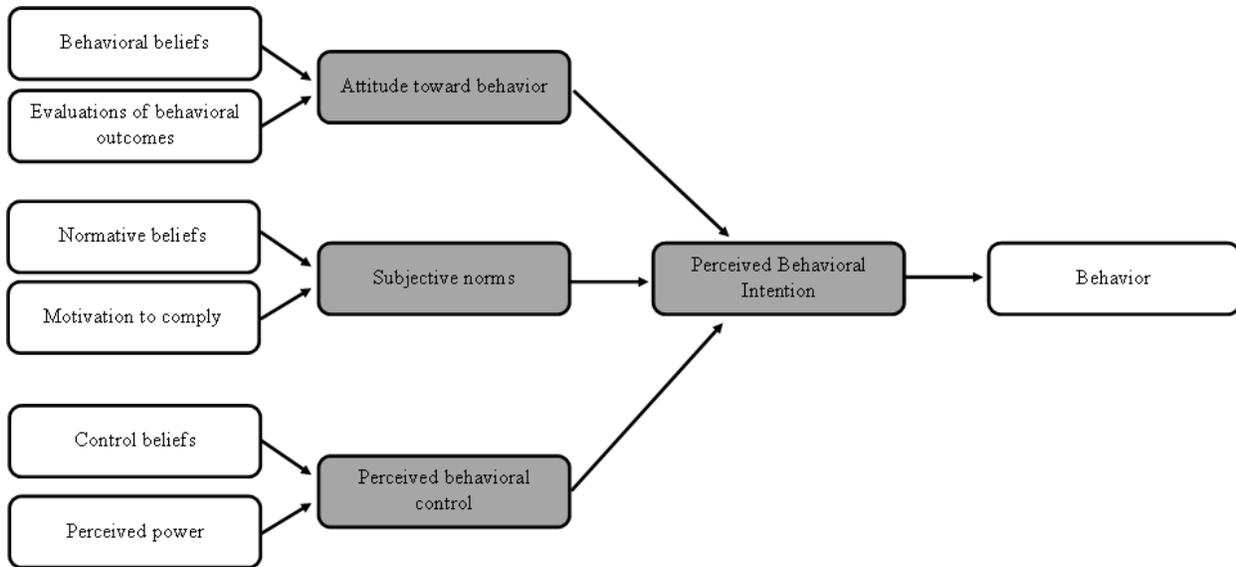
Figure 1   Theory of Planned Behavior Model (on the basis of Ajzen, 1991).

Note. The constructs shaded in gray are the constructs used in this study. Adapted from "Figure 3. Theory of Reasoned Action and Theory of Planned Behavior," by National Cancer Institute, *Theory at a Glance: A Guide For Health Promotion Practice*, 2005, p. 18.

The main concepts of the Theory of Planned Behavior include attitudes, subjective

norms, perceived behavioral control, behavioral intention, and distal variables. Attitudes are

described as the personal evaluation of the behavior (Ajzen, 1991; National Cancer Institute,

2012). Subjective norms are defined beliefs about whether close peers approve or disapprove of

the behavior and the motivation attached to the behavior (Ajzen, 1991; National Cancer Institute,

2012). Perceived behavioral control is the belief in one's self that one can perform the behavior

(Ajzen, 1991; National Cancer Institute, 2012). Behavioral intention is the perceived likelihood

that one will perform the behavior (Ajzen, 1991; National Cancer Institute, 2012). Distal

variables include demographics, such as age, biological sex, marital status, caregiver status, and

76

educational attainment. These concepts have been well supported to predict health-related behaviors among a wide array of ages. Therefore, the Theory of Planned Behavior is ideal for predicting the intention to talk about opioids among the sandwich generation.

Guiding Research Questions

Gaining an understanding of how attitudes, subjective norms, and perceived behavioral control influence behavioral intention to talk about opioids with friends, parents, and children can help inform family-based approaches focused on preventing prescription opioid misuse. This study aims to answer the following research questions:

(1) What are the strongest predictors (attitudes, subjective norms, or perceived behavioral control) that determine adults' intention to talk about opioids with friends, parents, and children?

(2) Is adults' perceived comfort with talking with their friends, parents, and children associated with the Theory of Planned Behavior determinants in predicting intention to talk about opioids with friends, parents, and children?

Method

This quantitative study used a cross-sectional, descriptive, and non-experimental study design to examine the association between the sandwich generation's attitudes, subjective norms, perceived behavioral control, and behavioral intention (Theory of Planned Behavior constructs) to talk about opioids with friends, parents, and children.

Participants and Procedure

This data included 335 Mississippi adults who were 30 to 59 years of age. This age range is the average age range of the sandwich generation, who are likely to be caring for both a young

child/youth and an aging parent (Cravey & Mitra, 2011; Do et al., 2014; Parker & Patten, 2013; Rathus, 2018). The sandwich generation has access to reach multiple age groups, such as young children, youth, young adults, middle-aged adults, and older adults because they are caring for multiple age groups. There is no known research that examines the unique risks and needs of the sandwich generation as it relates to prescription opioid misuse prevention. Therefore, this age group was examined in this study because of the multiple age groups cared for by the sandwich generation.

Participants were recruited by a Qualtrics panel to participate in a web-based survey (Qualtrics, Provo, UT). The proprietary company, Qualtrics (Provo, UT) recruited participants through a variety of sources including social media, permission-based networks, customer loyalty web portals, targeted email lists, and website intercept recruitment (Qualtrics, Provo, UT, 2018). Quota sampling was used to gather a sample representative of the sex and racial composition of the state of Mississippi according to the most recent U.S. Census data (United States Census Bureau, 2011).

Measures

The researchers developed a 164-item web-based survey using Qualtrics software (Provo, UT) to collect demographic information and measure perceptions of prescription opioid use and misuse and drug securing behaviors, information seeking and scanning, willingness to use prescription drug take-back boxes, and history of prescription opioid use (Qualtrics, Provo, UT) (see Appendix B for the survey tool). The survey measured comfort with talking about opioids with friends, parents, and children, as well as the Theory of Planned Behavior determinants (i.e., attitudes, subjective norms, and perceived behavioral control) and intention to talk about opioids

78

with friends, parents, and children. Additional details about the methodology of this project can be found in Robertson et al. (2019).

Demographic Information

Demographic information included sex, race, county, birth year, marital status, education level, employment status, annual household income, whether or not they have children, number of children, age of children, type of support provided to children (i.e., physical/instrumental, spiritual, financial, or other), descriptive aspects of parents, stepparents, parents-in-law (i.e., younger than 65 years of age, 65 years of age or older, deceased, not applicable), and type of support provided to parents, stepparents, and parents-in-law.

Assessment of Theory of Planned Behavior Constructs

The Theory of Planned Behavior constructs, attitudes, subjective norms, and perceived behavioral intention were measured directly on a six-point, Likert-type scale for discussing prescription opioid use with friends, parents, and children separately. The assessment for the constructs is described here using sample statements for discussing prescription opioid use with friends as an example but was similar for children and parents. *Perceived behavioral intention* was assessed by asking participants to report on a 6-point scale (extremely unlikely to extremely likely) how likely they are to "share information about prescription opioid use with my friends." *Attitudes* were assessed by asking participants to report on a 6-point scale (not at all important to extremely important) how important "discussing opioid use with my friends." *Subjective Norms* were assessed by asking participants to report on a 6-point scale (strongly disagree to strongly agree) their level of agreement with "most people who are important to me talk to their friends about prescription opioid use." Perceived behavioral control was measured using a 100-point

scale. *Perceived behavioral control* was assessed by asking participants to rank their level of confidence on a 100-point scale (cannot do at all to highly certain can do) in their ability to "talk to my friends about prescription opioid use." Approximate measures that involved using one variable were used for each Theory of Planned Behavior construct, therefore reliability tests such as Cronbach's alpha were not determined for the Theory of Planned Behavior constructs.

Comfort with Talking to their Friends, Parents, and Children

Comfort talking about opioids with their friends, parents, and children was measured combining three variables measured on a six-point, Likert-type scale (comfort talking with friends, $\alpha = 0.88$; comfort talking with parents, $\alpha = 0.91$; comfort talking with children, $\alpha = 0.90$). The six-point scale responses ranged from extremely uncomfortable to extremely comfortable. This scale assessed participants' comfort with having an open discussion, talking about difficult topics, and discussing prescription opioid use with friends, parents, and children.

Analysis

The survey data was exported from Qualtrics to SPSS Statistics software version 25.0 for analysis (IBM SPSS, 2018). The researchers performed linear regression analyses to determine if attitudes, subjective norms, and perceived behavioral control were associated with the intention to talk about opioid use with friends, parents, and children. In addition, the researchers performed multiple linear regression to determine if demographic characteristics (i.e., sex, race, levels of support provided to parents or children, age of parents, and age of children) and comfort talking with friends, parents, or children influenced the relationship between the Theory of Planned Behavior determinants and perceived behavioral intention.

Results

Sample characteristics

Of the 495 participants, 335 participants answered all of the questions asked and provided all the demographic data requested, therefore the study cohort consisted of 335 participants. Most of the study participants resided in a rural county, identified as male, white, non-Hispanic, and a high school graduate or higher (see Table 8). As demonstrated in Table 8, these characteristics were representative of the state of Mississippi. At the time of this study, most participants reported an annual household income range of $40,000 - $49,999, which is not comparable to the 2010 Mississippi Census Bureau characteristics.

Table 8   Demographic Characteristics of Participants

Variable	N(%)	MS Census Data (%)*
Sex (N/%)		
Male	171(51.0)	48.5
Female	164(49.0)	51.5
Rural (N/%)		
Rural	192(57.3)	50.65
Urban	143(42.7)	49.35
Race (N/%)		
White	199(59.4)	59.2
Black or African American	123(36.7)	37.8
Other	13/(3.9)	3
Ethnicity (N/%)		
Hispanic	36(10.7)	3.2
Non-Hispanic	299(89.3)	96.8
Marital Status (N/%)		
Married	163(48.8)	
Widowed	6(1.8)	
Divorced	34(10.2)	
Separated	17(5.1)	
Never married	83(24.9)	
Living together but not married	31(9.3)	
Education Level (N/%)		
Less than high school	23(6.9)	
High school graduate or higher	212(63.3)	83
Bachelor's degree or higher	100(29.8)	21
	Mean(SD)	**Mean**
Number in Household (N/SD)	3(1.50)	3
Age (years) (N/SD)	43(8.40)	
Number of children	2(1.18)	
Number of living parent(s)	2(1.54)	

Note. *2010

Tables 9 through 11 demonstrate the family characteristics of the participants. Most

participants were considered to be in the sandwich generation since they cared for both a child

and a parent (57.9%), with the participants having an average of 2 children and 2 parents. The

mean age range of the participants' children was 9 to 19 years of age, suggesting that most

participants had adolescent children. Most participants had one or more parents who were 65

years of age or older (62.4%). Most participants provided emotional, instrumental, spiritual, and

financial support for all their children. However, most participants provided emotional support,

but not instrumental, spiritual, or financial support for their parents.

Table 9 Family Characteristics of Participants

Variable	N(%)
Caregiver Status (n = 335)	
No child or parent	18(5.4)
Child only	24(7.2)
Parent only	99(29.6)
Child and Parent	194(57.9)
	Mean(SD)
Number of Children	2(1.18)
Number of Parent(s)	2(1.54)

Table 10   Demographic Information about Child(ren) of Participants

	First Child (n = 218) Mean(SD)	Second Child (n = 170) Mean(SD)	Third Child (n = 93) Mean(SD)	Fourth Child (n = 30) Mean(SD)	Fifth child (n = 12) Mean(SD)	Sixth child (n = 5) Mean(SD)	Seventh child (n =2) Mean(SD)
Age (years)	19(9.42)	17(8.75)	15(8.34)	13(8.32)	14(7.47)	9(7.29)	12(9.19)
Types of Support for Children	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)
Emotional	203(93.12)	160(94.12)	86(92.47)	26(86.67)	11(91.67)	4(80)	1(50)
Instrumental	134(61.47)	114(67.06)	66(70.97)	23(76.67)	10(83.33)	3(60)	1(50)
Spiritual	176(80.73)	143(84.12)	79(84.95)	24(80)	11(91.67)	4(80)	2(100)
Financial	149(68.35)	124(72.94)	72(77.42)	20(66.67)	10(83.33)	3(60)	1(50)
Other	42(19.27)	36(21.18)	21(22.58)	8(26.67)	3(25)		

Table 11 Demographic Information about Parent(s) of Participants

	Mother	Step-mother	Mother-in-law	Father	Step-father	Father-in-law
Parent status (n = 335)	N(%)	N(%)	N(%)	N(%)	N(%)	N(%)
Younger than 65 years of age	116(34.6)	28(8.4)	60(17.9)	78(23.3)	32(9.6)	40(11.9)
65 years of age or older	128(38.2)	26(7.8)	70(20.9)	97(29)	21(6.3)	65(19.4)
Deceased	82(24.5)	11(3.3)	61(18.2)	141(42.1)	26(7.8)	78(23.3)
Not applicable	9(2.7)	270(80.6)	144(43)	19(5.7)	256(76.4)	152(45.4)
Types of Support for Parent(s)						
Emotional	194(79.51)	25(46.3)	80(61.54)	121(69.14)	33(62.26)	55(52.38)
Instrumental	88(36.07)	8(14.81)	29(22.31)	47(26.86)	12(22.64)	23(21.9)
Spiritual	127(52.05)	16(29.63)	47(36.15)	75(42.86)	19(35.85)	40(38.1)
Financial	70(28.69)	9(16.67)	22(16.92)	31(17.71)	7(13.2)	15(14.29)
Other	35(14.34)	20(37.04)	33(25.38)	38(21.71)	13(24.53)	38(36.19)

Theory of Planned Behavior Constructs and Comfort Talking About Opioids with Friends, Parents, and Children

As demonstrated in Tables 12 through 14, a significant, positive relationship exists between attitudes, subjective norms, perceived behavioral control, perceived behavioral intention, and overall comfort with talking about opioids with friends, parents, and children. Overall comfort, perceived behavioral control, and perceived behavioral intention with talking about opioids had the strongest correlations. These results suggest that as one variable increases, so does the other variables. For example, as overall comfort increases, so does perceived behavioral control.

Table 12   Correlations Between Theory of Planned Behavior Determinants, Comfort, and Intention to Talk about Opioids with Friends

	Mean	SD	1	2	3	4
1. Attitudes	3.73	1.64				
2. Subjective Norms	3.18	1.54	0.37***			
3. Perceived Behavioral Control	75.45	27.11	0.26***	0.13*		
4. Perceived Behavioral Intention	4.29	1.62	0.47***	0.26***	0.58***	
5. Overall Comfort	4.68	1.31	0.31***	0.11*	0.56***	0.53***

Note. *$p < .05$. **$p < .01$. ***$p < .001$

Table 13   Correlations between Theory of Planned Behavior Determinants, Comfort, and Intention to Talk about Opioids with Parents

	Mean	SD	1	2	3	4
1. Attitudes	3.64	1.81				
2. Subjective Norms	3.13	1.54	0.39***			
3. Perceived Behavioral Control	74.87	30.85	0.40***	0.15**		
4. Perceived Behavioral Intention	4.23	1.76	0.49***	0.19***	0.63***	
5. Overall Comfort	4.63	1.52	0.42***	0.12*	0.66***	0.57***

Note. *p < .05. **p < .01. ***p < .001

Table 14   Correlations between Theory of Planned Behavior Determinants, Comfort, and Intention to Talk about Opioids with Children

	Mean	SD	1	2	3	4
1. Attitudes	4.96	1.34				
2. Subjective Norms	3.87	1.6	0.32***			
3. Perceived Behavioral Control	86.04	22.35	0.48***	0.19**		
4. Perceived Behavioral Intention	4.96	1.54	0.52***	0.37***	0.49***	
5. Overall Comfort	5.07	1.21	0.53***	0.23**	0.56***	0.55***

Note. *p < .05. **p < .01. ***p < .001

As seen in Tables 15 through 17, the variables used to measure overall comfort have statistically significant relationships for overall comfort with talking to friends, parents, and children.

Table 15   Correlations between Comfort Variables for Talking to Friends

Indicate how comfortable you are with the following behaviors:	Mean	SD	1	2	3
1. Having an open discussion with my friends.	4.74	1.46			
2. Talking about difficult topics with my friends.	4.64	1.45	0.71***		
3. Discussing prescription opioid use with my friends.	4.67	1.46	0.71***	0.72***	
4. Overall Comfort - Friends	4.68	1.31	0.90***	0.90***	0.90***

Note. *p < .05. **p < .01. ***p < .001

Table 16   Correlations between Comfort Variables for Talking to Parents

Indicate how comfortable you are with the following behaviors:	Mean	SD	1	2	3
1. Having an open discussion with my parents.	4.67	1.66			
2. Talking about difficult topics with my parents.	4.54	1.66	0.75***		
3. Discussing prescription opioid use with my parents.	4.69	1.62	0.82***	0.76***	
4. Overall Comfort - Parents	4.63	1.52	0.93***	0.91***	0.93***

Note. *p < .05. **p < .01. ***p < .001

Table 17   Correlations between Comfort Variables for Talking to Children

Indicate how comfortable you are with the following behaviors:	Mean	SD	1	2	3
1. Having an open discussion with my children.	5.16	1.29			
2. Talking about difficult topics with my children.	4.95	1.35	0.67***		
3. Discussing prescription opioid use with my children.	5.09	1.33	0.83***	0.75***	
4. Overall Comfort - Children	5.07	1.21	0.91***	0.89***	0.94***

Note. *p < .05. **p < .01. ***p < .001

Respondents reported higher levels of comfort with discussing prescription opioid use than having an open discussion and talking about difficult topics with their parents. Respondents reported higher levels of comfort discussing opioid use than talking about difficult topics with their children. Respondents also reported higher levels of comfort with discussing prescription opioid use than talking about difficult topics with their friends.

As seen in Table 18, statistically significant, positive relationships exist between all variables. There is a significant relationship between the overall comfort in talking with friends and parents, friends and children, and parents and children (see Table 18). This suggests that as comfort with talking with one group increases, comfort with talking with a different group increases and vice versa. For example, as comfort with discussing prescription opioid use with parents increases, comfort with discussing prescription opioid use with children increases as well. Another example is that as overall comfort with talking to friends decreases, overall comfort with talking to children decreases as well.

89

Table 18   Relationship between Participants' Perceived Overall Comfort with Talking with Friends, Parents, and Children

	Mean	SD	1	2
1. Overall Comfort - Friends	4.68	1.31		
2. Overall Comfort - Parents	4.63	1.52	0.72***	
3. Overall Comfort - Children	5.07	1.21	0.72***	0.73***

Note. *p < .05. **p < .01. ***p < .001

Linear Regression

Since relationships between Theory of Planned Behavior determinants and perceived behavioral intention exist and relationships between Theory of Planned Behavior determinants, overall comfort, and perceived behavioral intention exist, two separate linear regression models were run to analyze the effect of those variables on perceived behavioral intention. No statistically significant relationships with Theory of Planned Behavior Constructs and demographic characteristics existed, therefore, demographic characteristics were not used in the linear regression models.

Theory of Planned Behavior Determinants as Predictors of Perceived Behavioral Intention to Talk about Opioids with Friends, Parents, and Children

Results from the linear regressions, shown in Table 19, demonstrate that attitudes, subjective norms, and perceived behavioral control were all three found to significantly predict intention to talk about opioids with children ($R^2 = 0.39$, $F(3, 214) = 45.28$, $p < .001$). Whereas, attitudes and perceived behavioral control were found to be statistically significant predictors of intention to talk about opioids with friends ($R^2 = .45$, $F(3,331) = 90.66$, $p < .001$) and parents (R^2

90

= .46, F (3,331) = 94.97, p < .001). Subjective norms were not found to be a statistically

significant predictor of intention to talk about opioids with friends or parents.

Table 19   Theory of Planned Behavior Determinants in Predicting the Intention to Talk About
            Opioids with Friends, Parents, and Children

| | Intention to Talk About Opioids with: | | | | | | | | |
| | Friends (n = 335) | | | Parents (n = 335) | | | Children (n = 218) | | |
Variable	B	$SE\ B$	β	B	$SE\ B$	β	B	$SE\ B$	β
Attitudes	0.31	0.04	0.31***	0.27	0.05	0.28***	0.35	0.07	0.31***
Subjective Norms	0.08	0.05	0.08	0.01	0.05	0.01	0.2	0.05	0.21***
Perceived Behavioral Control	0.03	< .01	0.49***	0.03	< .01	0.52***	0.02	< .01	0.30***
R^2		0.45			0.46			0.39	
F		90.66***			94.97***			45.28***	

Note. *p < .05. ** p < .01. ***p < .001.

Theory of Planned Behavior Determinants and Overall Comfort as Predictors of Perceived Behavioral Intention to Talk about Opioids with Friends, Parents, and Children

        Results from the multiple linear regression suggest that perceived higher levels of

comfort talking about opioids predicts intention to talk about opioids with parents, friends, and

children over and beyond Theory of Planned Behavior determinants as they were measured. As

seen in Table 20, comfort talking about opioids with friends strengthens the relationship between

subjective norms and intention to talk about opioids with friends, making attitudes, subjective

norms, and perceived behavioral control all three statistically significant predictors of intention

to talk about opioids with friends (R^2 = .48, F(4,330) = 77.19, p < .001). The relationships of the

Theory of Planned Behavior determinants and intention to talk about opioids with parents (R^2 =

.49, F (4,330) = 78.9, p < .001) and children (R^2 = .44, F (3,214) = 40.94, p < .001) did not show

any differences in significance after adding comfort to the regression model. However, adding

comfort to the regression models did increase the variance explained by the model. After adding

comfort as a predictor in the model, there was a 3% increase in the variance explained from the

friends model, a 3% increase in the variance explained from the parents model, and a 5%

increase in the variance explained from the children model.

Table 20   Theory of Planned Behavior Determinants and Comfort in Predicting Perceived
Behavioral Intention to Talk about Opioids with Friends, Parents, and Children

	Intention to Talk About Opioids with:								
	Friends (n = 335)			Parents (n = 335)			Children (n = 218)		
Variable	*B*	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β
Attitudes	0.27	0.04	0.27***	0.23	0.05	0.23***	0.25	0.07	0.22**
Subjective norms	0.09	0.05	0.08*	0.03	0.05	0.02	0.19	0.05	0.20***
Perceived Behavioral Control	0.02	<.01	0.37***	0.02	<.01	0.39***	0.01	<.01	0.19**
Comfort	0.28	0.06	0.22***	0.26	0.06	0.22***	0.35	0.09	0.28***
R^2	0.48			0.49			0.44		
F	77.19***			78.9***			40.94***		

Note. *$p < .05$. ** $p < .01$. ***$p < .001$.

Discussion

This is the first known study to examine the relationships between Theory of Planned

Behavior determinants in predicting the intention to talk about opioids with family members and

friends. Results demonstrated that attitudes, subjective norms, and perceived behavioral control

are all statistically significant predictors of the intention to talk to children about opioids,

whereas only attitudes and perceived behavioral control are statistically significant predictors of

intention to talk with friends and parents about opioids. These findings support previous

literature that Ajzen's (1991) Theory of Planned Behavior in that attitudes, subjective norms, and

perceived behavioral control are predictive of intention to engage in health-related behaviors,

such as talking to friends and family members about opioids (Norman, Webb, & Millings, 2019; Roncancio et al., 2015; Zorrilla et al., 2019). Therefore, family-based approaches should focus on improving the attitudes and perceived behavioral control of adults in talking to their friends, parents, and children about opioids. While subjective norms are statistically significant in predicting the intention to talk about opioids with children, subjective norms are not statistically significant in predicting the intention to talk about opioids with friends and parents. Therefore, focusing on subjective norms is not as important as focusing on attitudes and perceived behavioral control when developing and designing family-based approaches.

Furthermore, results demonstrated that comfort serves as an added predictor and strengthens the relationship between subjective norms and intention to talk about opioids with friends. The findings of comfort strengthening the relationships is consistent with previous literature that suggest parents find it uncomfortable and difficult to talk to their children about substance use (Carver, Elliott, Kennedy, & Hanley, 2016; Mallick, 2003). However, results from this study suggest that adults perceive having an open discussion, talking about difficult topics, and discussing prescription opioid use with their children as more comfortable than with their friends and parents. The strong correlation between overall comfort talking to their friends and children and their parents and children suggest that as comfort talking with one group increases, comfort talking to the other group also increases and vice versa. Therefore, there is room for participants' levels of comfort talking to friends, parents, and children to increase, therefore, focusing on increasing adults' comfort levels talking to their children may increase adults' comfort with talking to their friends and parents as well.

Finally, results showed that overall comfort predicts intention over and beyond the Theory of Planned Behavior determinants. Adding overall comfort as a predictor also strengthens the regression model. Earlier findings suggest that as comfort talking with children increases, so does comfort talking to friends and parents. Therefore, it is crucial for family-based approaches to be designed around increasing levels of comfort talking to family members and friends, attitudes, subjective norms, and perceived behavioral control to increase the likelihood of adults to talk to their friends, parents, and children about opioids.

Family-based approaches to improving attitudes, subjective norms, perceived behavioral control, and comfort may include family skills trainings or therapy. For example, strengthening family skills such as family connectedness may increase comfort and perceived behavioral control toward talking with friends, parents, and children about opioids. Strengthening family skills may also improve attitudes and subjective norms of talking about opioids with friends, parents, and children. Educating parents through parent trainings on how to talk to their friends, parents, and children about opioids may also increase the comfort of talking about opioids with friends and family. Family life educators can provide talking points and have participants practice having these conversations through role play to improve Theory of Planned Behavior constructs and comfort toward talking about opioids with friends, parents, and children. In addition to family-based approaches, family-life educators can collaborate with school professionals and community health professionals to strengthening families through a comprehensive, multi-level approach that combines the previously discussed family-based approaches and school- and community-based approaches to be even more effective.

Implications for Family-based Approaches

Understanding the influence that Theory of Planned Behavior determinants have on the intention to talk about opioids with friends, parents, and children could contribute to the development of family-based approaches aimed at preventing prescription opioid misuse. These findings could be used to inform family-based approaches to increase the likelihood of adults' intention to talk about opioids with their friends, parents, and children. In this sample, attitudes, subjective norms, and perceived behavioral control were predictive of the intention to talk about opioids with children, whereas attitudes and perceived behavioral control were predictive of the intention to talk about opioids with friends and parents. However, comfort strengthens the relationship between subjective norms and intention to talk about opioids with friends. Comfort levels for talking about prescription opioids were higher than comfort levels for having open discussions or talking about difficult topics, which raises the question of what participants consider to be a difficult topic and whether or not participants perceived opioids as a difficult topic. Future research is warranted to examine those questions. Qualitative research would probably be best at addressing what adults consider to be difficult topics and whether or not opioids are a difficult topic to discuss with family and friends. There is also a need to promote talking about opioids with friends, parents, and children among adults through family-based approaches, such as family skills training, parent training, and family therapy. Considering the previous literature that family communication about substance use within the family can prevent and delay the onset of substance misuse, family life educators can provide talking points to enhance individual comfort when talking with family members about opioids. Given that attitudes perceived behavioral control are the strongest predictors of the three Theory of Planned Behavior constructs in predicting the intention to talk about opioids with friends, parents, and

95

children, family life educators could provide families with information in an effort to change their attitudes and enhance their perceived behavioral control toward talking about opioids with family and friends. Family life educators have a role in preventing prescription opioid misuse by building capacity within families to have conversations about opioids.

Limitations and Future Directions

This study presented a few limitations. While this study is generalizable to the state of Mississippi, the results could not be generalized to the entire United States adult population. The second limitation was that a cross-sectional study does not allow causality to be established. Therefore, the results do not determine the exact predictors of perceived behavioral intention. The third limitation is that approximate measures were used to determine the Theory of Planned Behavior constructs and investigate the research questions. If exact measures were available and used, the relationships might be even stronger. Despite these limitations, findings from this study may inform future research and practice aimed at promoting family communication and communication in general to prevent opioid misuse.

Future research should continue to establish the validity of Theory of Planned Behavior influences on talking about opioids with friends, parents, and children. For example, developing more exact measures for the Theory of Planned Behavior constructs may lead to even stronger relationships between the Theory of Planned Behavior constructs. Future research to determine ways to improve attitudes, subjective norms, perceived behavioral control, and perceived comfort may be effective in increasing the likelihood of the sandwich generation to talk about opioids with their friends, parents, and children. While talking about substance use with children has been shown to be effective in preventing or delaying the onset of substance use, few if any

96

studies have examined talking about opioid use specifically. Therefore, future research is warranted on the effectiveness of talking about opioids with family and friends as a way to prevent prescription opioid misuse. While these findings are helpful for the development of family-based approaches, future research is warranted on the development, implementation, and overall effectiveness of these type of family-based approaches.

Conclusion

Previous research suggests that parents talking to their children about substance use can prevent or delay the onset of substance use and the Theory of Planned Behavior has been applied effectively in predicting behavioral intention of engaging in health-related behaviors such as alcohol use prevention, physical activity, and fruit and vegetable intake. Findings from this study suggest that improving adults' attitudes, subjective norms, perceived behavioral control, and overall comfort will increase adults' perceived behavioral intention of talking about opioids with family and friends. Improving the comfort of adults talking with their family and friends is important in increasing the likelihood of adults to talk with their family and friends about opioids. Family-based approaches that focus on improving comfort, attitudes, subjective norms, and perceived behavioral control may be effective in increasing the likelihood of adults talking to their family and friends about opioids to prevent prescription opioid misuse.

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CHAPTER IV

CONCLUSION

Introduction

This chapter presents a summary of the studies and important conclusions drawn from the data presented in Chapters two and three. Implications for action and future research recommendations are also described in this chapter. Although it is widely accepted that substance misuse, such as opioid misuse, contributes to family instability, few if any studies have examined or developed family-based approaches that specifically focus on preventing opioid misuse among families. Therefore, this study utilizes formative research to inform family-based approaches focused on preventing the misuse of prescription opioids. A dual method approach that included quantitative surveys and qualitative focus groups was used to inform the findings, implications, and future recommendations described in this chapter.

Discussion

Findings suggest that participants perceive the opioid epidemic is a serious problem among families in their communities and that they as family members have a critical role in preventing prescription opioid misuse within their families. Documenting these perceptions is important because these findings can strengthen the literature on perceptions of prescription opioid use and misuse. Green and Kreuter's (2005) PRECEDE-PROCEED model is widely accepted in the literature as a guide for developing approaches for health-related problems

107

(Lloyd et al., 1983; Matin et al., 2014; Mohamed & Khaton, 2017), therefore PRECEDE-PROCEED was used as a guide to identify seven predisposing, two reinforcing, and seven enabling factors that influence participants' role in preventing opioid use within their families. Core roles identified by participants included raising awareness of this problem, having key people in their life who have experienced the opioid crisis, decreasing denial and stigma, improving comfort with talking about opioids with family members, increasing resources to complete prevention behaviors, and enhancing skills to talk about opioids with family members, skills to monitor opioid usage within the family, and skills to secure medications in their households. Previous literature supports the predisposing, reinforcing, and enabling factors such as the discomfort with talking with family members and lack of skills and resources needed to talk to family members identified by participants as discouraging family members to take responsibility in preventing substance misuse within their families (Carver, Elliott, Kennedy, & Hanley, 2016; Mallick, 2003). Empirical literature suggests that talking to family members about substance use and misuse is an effective strategy to prevent substance misuse (Carver, Elliott, Kennedy, & Hanley, 2016; Choi, et al., 2017; Luk, Fahat, Iannotti, & Simons-Morton, 2010). Therefore, educational outreach efforts that focus on empowering and equipping family members with the necessary skills to talk to their family members about opioid misuse might be an effective strategy in preventing opioid misuse.

This is the first known study to examine the predictors of adults' perceived behavioral intention to talk about opioids with their friends and family. Using Ajzen's (1991) widely-accepted Theory of Planned Behavior as guide, these findings suggest that attitudes and perceived behavioral control significantly predict participants' intention to talk about opioids

with their friends, parents, and children. Subjective norms was only found to be a significant predictor of intention to talk about opioids with children. These findings are somewhat consistent with previous literature, except that subjective norms were not found to be a significant predictor of intention across talking to all three groups. Participants' perceived overall level of comfort with talking about opioids with family and friends was also considered. Those findings suggest that as overall level of comfort with talking about opioids with one group (i.e., friends, parents, or children) increases, so does comfort with talking about opioids with a different group. Findings also suggest that comfort enhances the relationship between subjective norms and intention to talk about opioids with friends. These findings contribute the literature needed on research- and evidence-approaches with messages about preventing opioid misuse within one's family and community.

These findings also contribute to the literature around comfort in talking to children about substance use (Nonnemaker, Silber-Ashley, Farrelly, & Dench, 2012; van der Vorst, Engels, Meeus, Dekovic, and van Leeuwe, 2005). Perhaps comfort is the most important factor to focus on to increase the likelihood of adults talking about opioids with their friends and family. Previous literature suggests that parents feel as if they talk to their children more than often than they actually do because it is so uncomfortable for them to talk about substance use with their children (Nonnemaker, Silber-Ashley, Farrelly, & Dench, 2012). Increasing comfort may increase the likelihood of these conversations.

Documenting that adults view the opioid crisis as an important issue in which they have a role to play demonstrates that adults want to do something about this serious crisis. Recording that adults perceive having key people in their life talk about the importance of opioid misuse

prevention, discomfort with talking about opioids with family members, and lack of skills and resources needed to talk about opioids with family members as influencing them to take or not to take that role suggests that there is a strong need for educational outreach efforts that focuses on preventing opioid misuse at the family-level. Gaining a better understanding that attitudes, perceived behavioral control, and overall comfort are important predictors of intention to talk about opioids with family members can inform focus areas for family-based approaches. Therefore, a family-based approach designed around these findings may be an effective way to reach families and prevent opioid misuse.

Conclusions

Participants view themselves as having a crucial role in preventing opioid misuse within their families, considering participants view opioid misuse as a family problem. Participants view that education begins at home and that education is the most important and easiest to change in preventing prescription opioid misuse. Participants perceive that the problem starts at home then expands to the community. With a strong emphasis on the perceived role of family members to engage in prescription opioid misuse prevention behaviors at home, participants express a great need for family-based educational outreach efforts designed to empower rural family members to engage in prescription opioid misuse prevention behaviors. Rural community members believe that educating parents will spark prescription opioid misuse prevention behaviors within the home and positively influence the community. Therefore, family-based approaches that expand upon the predisposing, reinforcing, and enabling factors is needed.

Family-based approaches designed to provide resources and equip rural adults with the skills necessary to engage in prescription opioid misuse prevention strategies are warranted.

110

Specifically, educating rural adults on the signs, symptoms, and risks associated with prescription opioids, and how to employ prescription opioid misuse prevention behaviors such as locking up medications, talking to family members about opioids, and disposing of unused opioids is warranted. Combining these educational efforts with reinforcing factors that facilitate prescription opioid misuse prevention behaviors, such as having key people in their life (i.e., preachers, doctors, family members) talk about the importance of prescription opioid misuse prevention behaviors, may be an effective strategy in preventing prescription opioid misuse.

Attitudes, normative beliefs, perceived behavioral control, and comfort can predict intention to talk about opioids with family and friends. As comfort with talking with one group about opioids increases, so does comfort with talking with another group. Therefore, enhancing comfort with talking with family and friends about opioids may also improve the Theory of Planned Behavior determinants and in return increase the likelihood of an adult to talk to their friends and family about opioids. Family-based approaches, such as family communication training, brief strategic family therapy, and parental monitoring, combined with community-based approaches, such as motivational interviewing, media campaigns, and goal setting may be effective in preventing prescription opioid misuse within families.

Implications for Action

Considering the empirical literature that suggests family-based approaches are most effective at preventing substance misuse when combined with community- or school-based approaches, there is a call to action for community-based organizations to develop family-based approaches combined with other activities to prevention prescription opioid misuse among families (Kumpfer & Alvarardo, 2003; Kumpfer & Hanson, 2014; Nations et al., 2000).

111

Extension agents, family life educators, and other community-health professionals can work together and use these findings to develop family-based approaches, such as family communication training, brief strategic family therapy, and parental monitoring training, combined with community-based approaches such as motivational interviewing, social marketing campaign, and goal-setting. Combining these activities to take a multi-component, comprehensive approach to reaching families and preventing opioid misuse may be an effective strategy. Developing activities specifically geared toward the sandwich generation and how they can reach multiple age groups might allow multiple age groups to be reached through the designed activities.

Future Research Recommendations

This study has provided original insights into the use of formative research to inform opioid misuse prevention-focused family-based approaches. Whereas the researchers explored the first three stages of Nichter's (2005) "Eight Stages of Formative Research," future research can further explore Nichter's (2005) "Eight Stages of Formative Research" through utilizing Nichter's (2005) stages four through eight. Further continuing Nichter's "Eight Stages of Formative Research" might strengthen the design and implementation approach through critical assessments, investigating implementation plans, piloting approaches, and evaluating those approaches. While this study is one of the first to examine family-based approaches to prevent opioid misuse specifically, there is still a great need for additional research efforts to explore approaches to prevent opioid misuse (Johnston, O'Malley, Bachman, and Schulenberg, 2016). While this study does begin to fill the gap in literature surrounding the lack of understanding of factors that influence adults' perceived role in prescription opioid misuse prevention and

predictors in adults' perceived behavioral intention to prevent prescription opioid misuse within their families, further research is needed to examine additional behaviors and intentions related to other opioid misuse prevention techniques such as monitoring opioid use and disposing of unused opioids.

Limitations

While the researchers used a dual approach of quantitative and qualitative research and data, gaining a greater depth of understanding, this study is not without limitations. While this study is representative of the three counties in which the participants reside in, the study findings are not generalizable to the state or United States. While the researchers used Extension agents, who already have a strong rapport with their community members, to recruit focus group participants, the researchers may have been able to guide deeper discussions with the participants had they had time themselves to build rapport with the participants prior to each focus group. Having trust with the focus group participants prior to the focus group may have allowed the participants to be more open with the researcher/moderator. While the survey development team was an interdisciplinary team, approximate measures were used for the Theory of Planned Behavior constructs. While the approximate measured used accomplished the goal of the survey, precise measures may have made the analyses more powerful. Finally, the research team was interested in caregiver status. While the research team measured the number of children, number of parents, and types of support participants provided to their children and parents, the research team could have directly asked whether or not the participants are caring for their children and parents to better grasp whether or not the participants were truly part of the sandwich generation.

There is a great need for future researchers to consider the role of caregiving in family-based approaches.

Personal Reflections

The dissertation process has been one of the most challenging, yet rewarding experiences of my life. I have learned a great deal about research, writing, opioids, rural communities, time management, and myself. Throughout the dissertation process, I have several key takeaways:

Survey development process. The survey development, implementation, and analyses process was a major learning experience for me. There are several survey items I would go back and change and add if I were able to. For example, I would add multiple survey items for each of Ajzen's Theory of Planned Behavior constructs instead of just one survey item per construct.

Focus groups. I absolutely loved going out into the community and hearing real people share their real opinions and stories around opioid misuse. I would host more focus groups again in a heartbeat. However, analyzing the focus group data took a great deal of focus and time. If I could start over, I would like to go into those communities prior to hosting the focus groups and build stronger relationships with the individuals in order to gather deeper responses.

Go with the flow. While there are several things that I would do differently, my mistakes taught me how to keep moving forward, learn from my mistakes, and let go of the things that are beyond my control.

Just do it. I learned that the dissertation is not going to write itself. I learned that sometimes it just starts by just typing the first word of the dissertation to get started.

Committee members. I cannot say enough awesome things about my interdisciplinary committee. I am beyond grateful for a committee who respects and encourages one another all while being honest and unique in their own way. I met with my committee members regularly from the start. I believe that these meetings allowed us all to be on the same page moving forward each semester. These meetings allowed us to communicate openly, talk through concerns, and figure out solutions when necessary. My committee members are truly the cream of the crop.

Your dissertation is not your final piece of work. I put so much pressure on myself thinking that my dissertation had to be my greatest life accomplishment. However, I believe that my dissertation is the start to my greatest accomplishments yet to come.

To those of you who are considering studying for your PhD, do it. The process may cause a great deal of stress and require you to miss out on several fun moments, but the process is worth it. Never give up. Thank you.

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APPENDIX A

PROMISE INITIATIVE FOCUS GROUP GUIDE SPRING 2018

Introduction

The PReventing Opioid Misuse in the SouthEast (PROMISE) Initiative aims to find out what groups of people think about the opioid epidemic and determine ways to address opioid misuse in their communities. The PROMISE Initiative is being conducted by Mississippi State University Extension, University of Mississippi Medical Center, Mississippi State Department of Health, Office of Rural Health and Primary Care and Office of State Pharmacy, Mississippi Bureau of Narcotics, and Mississippi Department of Mental Health on behalf of United States Department of Agriculture. (see Appendix A.1 & A.2 for PROMISE Initiative Information Sheet and Consent Form)

Participants

The "sandwich generation" defined as individuals who are caring for their aging parents while supporting their children is the target population (Sandwich generation, n.d.). Individuals who are part of the "sandwich" generation typically range in age from 30 - 59 years (Taylor, Parker, Patten, & Motel, 2013; Do, Cohen, & Brown, 2014; O'Sullivan, 2015; Solberg, Solberg, & Peterson, 2014). Therefore, 5 – 10 (6 – 8 preferred) adults 30-59 years of age will be recruited for each focus group.

Environment

The focus groups will take place at a school, extension office, town hall, or other public building. A comfortable setting with circled seating will be provided.

Focus Group Script

Moderator

Moderator: Graduate Research Assistant (see Appendix A.3 for Moderator Skills)

Co-Moderator: MS Extension Agent (see Appendix A.4 for Co-Moderator Skills)

Co-Moderator: Undergraduate who is trained in notetaking (See Appendix A.5 for Note Taking Skills and Appendix A.7 for Note Taking Form)

Welcome

Good evening and welcome to our session. Thank you for taking time to join us to talk about opioid use in your community. My name is _____ and working with me is _____. We are both with Mississippi State University Extension Services. The United States Department of Agriculture asked us to get some information from county residents about your perceptions of opioid use in the community. They want to know your thoughts on opioid use and ways to address the opioid crisis. We are having discussions like this with several groups around Northeast Mississippi.

You were invited because you are the ones who know the community best.

There are no right or wrong answers but rather differing points of view. Please feel free to share your point of view even it if it differs from what others have said. It is important that we respect one another's opinions. We are here to learn all views of the community.

You have probably noticed the tape recorder. We are tape recording the session because we do not want to miss any of your comments. People often say very helpful things in these discussions, and we cannot write them all down fast enough. We will be on a first name basis tonight, and we will not use any names in the reports. You may be assured of complete confidentiality. The results of our discussion will be used to develop

a social marketing campaign that addresses the opioid epidemic and opioid use education materials for extension agents to implement in the community.

Throughout the discussion, I will be using the term "opioid." An opioid is a substance that is a prescription medication (pill or patch), prescribed for pain relief. The illegal drug, heroin, is also an opioid. For the discussion tonight, we will be discussing prescription opioids. Examples of prescribed opioid pain relievers contain the active ingredients Oxycodone (*OxyContin®, Percocet®*), Hydrocodone (*Vicodin®*), Morphine (*Kadian®, Avinza®*), Codeine, and Fentanyl to name a few. to name a few. You can refer to your opioid fact card at any point during the discussion (see Appendix A.6). The discussion of opioids may hit close to home for some of you or may not hit close to home at all for some of you. Therefore, it is important that we respect one another's viewpoints. We want all your perceptions of opioids, because you are the people who need to know about the risks associated with opioids.

Before we begin, I ask that everyone please silence their cell phones. If you need to take a call, please step out of the room.

Well, let's begin. We have placed name cards on the table in front of you to help us remember each other's names. Let's find out some more about each other by going around the table. Tell us your name, where you live, and your favorite flavor of ice cream.

Focus Group Questions

1. Now that we know a little bit about one another let's get back to the topic of tonight's discussion, opioids. – *pause* – What comes to mind when I say the word "opioids?" (2-3 minutes)

2. How do you think the use of opioids is affecting your community? What factors lead to opioid misuse (list on poster board)? (3-5 minutes)

3. Keeping these factors in mind, I am going to pass out pieces of paper. Please write down what would prevent opioid misuse from occurring in your community? *– allow 1 – 2 minutes for participants to write down their answers - What about in the home? What are things you can do?* Now that we each have an idea of factors that lead to opioid misuse, let's discuss the factors as a group. What would prevent opioid misuse from occurring (list on poster board)? (4-6 minutes)

   a. Now let's rank these factors as most important to least important. Of the factors listed, what factor do you think is most important in preventing opioid misuse. What factor is next important… *and so on until all factors are ranked. Read over the list with the group. Do you all think this is an accurate list? If yes, move on to next question. If no, ask what factor they would move until the list is complete.* (4- 6 minutes)

b. Now that we have an idea of what factors are most important, let's rank these factors as most likely to change to least likely to change. Sometimes the most important factor is the most challenging to change, so it is okay if the lists do not match up in order. What factor do you think would be easiest to change? What factor do you think would be the next easiest to change… *and so on until all factors are ranked. Read over the list with participants. Do you all think this is an accurate list? If yes, move on to next question. If no, ask what factor they would move until the list is complete.* (4-6 minutes)

4. For the remainder of tonight's session, we are going to talk about efforts communities and families can take to prevent opioid misuse. Raising awareness about preventing opioid misuse can be an initial step towards prevention. So, let's first talk about raising community members' awareness about preventing opioid misuse. What efforts should be taken to increase community member's awareness of ways to prevent opioid misuse? (e.g. education sessions, information sessions, social marketing campaigns) (4-6 minutes)

5. Given your suggestions of ways to raise awareness to prevent opioid misuse, now I am interested in how you seek information. Thinking about ways you get information will help us figure out how to get information to the community.

a. For instance, think about a typical day in your life? – pause – What types of material do you read every day (e.g., billboards, newspapers, pamphlets, posters, social media outlets, etc.)? (1-2 minutes)

123

b. Where do you look for information about you or a loved one's health? (e.g., websites, doctor's office, pharmacy) (1-2 minutes)

c. Which information source do you trust most when it comes to you or a loved one's health? (e.g., news outlets, websites, doctors) (1-2 minutes)

6. What information would you like to see around your community about opioid misuse (e.g. ways to monitor prescription medication) (write on scratch paper then list on poster board)? *Prompt: You know important messages important to your lives, mention prescription take-back boxes if not brought up during the discussion.* (2-3 minutes)

7. We have spent a lot of time discussing opioid misuse in the sense of our community, so now let's take a minute to think about our own families. – pause – What would it take to convince you and/or your family and friends that they have a role to play in prevention prescription opioid misuse? *Prompt: family and friends have a role in preventing prescription opioid misuse. If necessary, use alcohol as an example. For instance, if alcohol is ever in your household, do you take any steps to keep the alcohol out of reach or locked up from children under the age of 21? If yes, then what did it take to convince you that you needed to put the alcohol out of reach from young children? Now, let's go back to our original question. What would it take to convince you and/or your family and friends that it is important to monitor prescription opioid use?* (3-5 minutes)

a. How could family members take responsibility? (e.g., monitoring prescription opioid use, locking prescriptions up, properly disposing of unused prescription opioids) (1-2 minutes)

124

       i. Some families do not take this responsibility, what do you think

          prevents them from doing so? (2-3 minutes)

8. Now that we discussed ways to take responsibility for opioid misuse prevention,

   let's talk about disposal methods as one specific way to prevent opioid misuse.

   What do you think are the best options for disposing of prescription opioids? *If*

   prescription take-back boxes are mentioned → I see that some of you mentioned

   prescription drug take-back boxes as an option for properly disposing of

   prescription medications and am interested in hearing your thoughts on take-back

   boxes. Here is a picture of prescription drug take-back boxes (see Appendix A.8).

   Prescription drug take-back boxes are monitored boxes that provide a safe place

   for individuals to properly dispose of unused prescription medications. After

   seeing this picture and hearing a brief description of prescription take-back boxes,

   what is your general impression of prescription take-back boxes? (list on scratch

   paper) *If prescription take-back boxes are not mentioned* → No one really

   mentioned prescription drug take-back boxes as an option for properly disposing

   of prescription medications, so I am interested in hearing your thoughts on take-

   back boxes. Here is a picture of prescription drug take-back boxes (see Appendix

   H). Prescription drug take-back boxes are monitored boxes that provide a safe

   place for individuals to properly dispose of unused prescription medications.

   After seeing this picture and hearing a brief description of prescription take-back

   boxes, what is your general impression of prescription take-back boxes? (list on

   scratch paper) (3-4 minutes)

a. What could be a benefit of using prescription take-back boxes? (2-3 minutes)

b. What could be potential barriers to using prescription take-back boxes? (2-3 minutes)

9. Of all the things we talked about tonight, what is most important to you? (2-3 minutes)

10. What other thoughts about this issue would you like to add? (2-3 minutes)

Thank you all for taking time to participate in our discussion on the opioid epidemic in your communities. We learned a great deal of information this evening.

Before you leave, we ask that you provide us with your email address so we can send you a quick online survey that allows us to find a little more information about your perceptions of the prescription opioid misuse. The survey will be completely anonymous. If you complete the survey, you will be entered for a chance to win a $50 gift card to Amazon.

Thank you again for your time and openness during our discussion of opioids tonight. Safe travels and please take some leftovers home with you.

PROMISE Initiative Information Sheet

The PReventing Opioid Misuse in the SouthEast (PROMISE) Initiative aims to find out what groups of people think about the opioid epidemic and determine ways to address opioid misuse in their communities. The PROMISE Initiative is being conducted by Mississippi State University Extension, University of Mississippi Medical Center, Mississippi State Department of Health, Office of Rural Health and Primary Care and Office of State Pharmacy, Mississippi Bureau of Narcotics, and Mississippi Department of Mental Health on behalf of United States Department of Agriculture.

Before agreeing to take part in this project, it is important that you understand why this project is being done and what it involves. Please read the following information carefully:

Your participation in this research is voluntary. You can withdraw from the study at any time and can refrain from answering any question.

The information provided by you remains anonymous. This means that you will not be identified in the results.

All information you provide will be treated as confidential. This means that it will not be passed on to anyone else in any way that could identify you.

The information you provide will be analyzed for use and what you say might be presented as a direct quotation in a report or academic paper but not in a way that could identify you.

The data collected for this project will be stored by us on a computer network accessible only with the use of a password or in a locked and secure cabinet.

If you would like more information about the project you can email the project coordinator, Mary Nelson Robertson, at mnr72@msstate.edu.

Document Appendix A.2

PROMISE Initiative Consent Form

Your consent in writing is needed to confirm your involvement in this focus

group session. Signing this form means that you have agreed to be a part of the focus

group session but does not stop you from changing your mind at a later time. You can

withdraw from the focus group session at any time and doing so will not affect your

public or community standing. To withdraw from the focus group session, please contact

the Project Coordinator, Mary Nelson Robertson, at mnr72@msstate.edu.

Please initial by each statement:

_____ I confirm that I have read and understand the information sheet for the above

study and have had the opportunity to ask questions.

_____ I understand that my participation is voluntary and that I am free to withdraw

at any time, without giving reason.

_____ I agree to take part in the above study.

_____ I agree to the interview/ focus group session/ consultation being audio

recorded.

_____ I agree to the use of anonymized quotes in publications.

Name (printed)	Signature	Date

Document Appendix A.3

Moderator Skills (Krueger, 2002)

Select the right moderator
Exercise mild, unobtrusive control
Adequate knowledge of opioids
Appears like the participants

Use an assistant moderator
Handles logistics
Takes careful notes
Monitors recording equipment

Be mentally prepared
Alert and free from distractions
Has the discipline of listening
Familiar with questioning route

Use purposeful small talk
Create a warm and friendly environment
Observe the participants for seating
arrangements

Make a smooth & snappy introduction
Standard introduction
   1. Welcome
   2. Overview of topic
   3. Ground rules
   4. First question

Use pauses and probes
5-second pause
Probes:
"Would you explain further?"
"Would you give an example?"
"I don't understand."

Record the discussion
Tape recorders
Written notes

Control reactions to participants
Verbal and nonverbal
Head nodding
Short verbal responses
(avoid "that's good", "excellent")

Use subtle group control
Experts
Dominant talkers
Shy participants
Ramblers

Use appropriate conclusion
Three Step Conclusion:
   1. Summarize with confirmation,
   2. Review purpose and ask if
      anything has been missed,
   3. Thanks and dismissal

Document Appendix A.4

Co-Moderator Skills (Krueger, 2002)

- Help with equipment, refreshments, and incentives

- Arrange the room

- Welcome participants as they arrive

- Sit in designated location

- Take notes throughout the discussion

- Operate recording equipment

- Do not participate in the discussion

- Ask questions when invited

- Give an oral summary

- Debrief with moderator

- Give feedback on analysis and reports

Document Appendix A.5

Note Taking Skills (Krueger, 2002)

Note taking is a primary responsibility of the assistant moderator
The moderator should not be expected to take written notes during the discussion.

Clarity and consistency of note taking
Anticipate that others will use your field notes. Field notes sometimes are interpreted days or weeks following the focus group when memory has faded. Consistency and clarity are essential.

Field notes contain different types of information
It is essential that this information is easily identified and organized (see Appendix G).

Quotes
Listen for notable quotes; the well said statements that illustrate an important point of view. Listen for sentences or phrases that are particularly enlightening or eloquently express a particular point of view. Place name or initials of speaker after the quotations. Usually, it is impossible to capture the entire quote. Capture as much as you can with attention to the key phrases. Use three periods ... to indicate that part of the quote was missing.

Key points and themes for each question
Typically participants will talk about several key points in response to each question. These points are often identified by several different participants. Sometimes they are said only once but in a manner that deserves attention. At the end of the focus group the assistant moderator will share these themes with participants for confirmation.

Follow-up questions that could be asked
Sometimes the moderator may not follow-up on an important point or seek an example of a vague but critical point. The assistant moderator may wish to follow-up with these questions at the end of the focus group.

Big ideas, hunches, or thoughts of the recorder
Occasionally the assistant moderator will discover a new concept. A light will go on, and something will make sense when before it did not. These insights are helpful in later analysis.

Other factors
Make a note of factors which might aid analysis such as passionate comments, body language, or non-verbal activity. Watch for head nods, physical excitement, eye contact between certain participants, or other clues that would indicate level of agreement, support, or interest.

Consider using a standardized recording form (see Appendix A.7)

Document Appendix A.6

Opioid Fact Card

Table 21   Front of Opioid Fact Card

What are opioids?

Opioids are a class of drugs that include the illegal drug heroin, synthetic opioids such as fentanyl, and pain relievers available legally by prescription. Opioids act on opioid receptors in both the spinal cord and brain to reduce the intensity of pain-signal perception. Opioids also affect brain areas that control emotion, which can further diminish the effects of painful stimuli.

- Prescription Opioids can be prescribed by doctors to treat moderate to severe pain, but can also have serious risks and side effects.
- Fentanyl is a synthetic opioid pain reliever. It is many times more powerful than other opioids and is approved for treating severe pain, typically advanced cancer pain.
- Heroin is an opioid drug made from morphine, a natural substance taken from the seed pod of the various opium poppy plants grown in Southeast and Southwest Asia, Mexico, and Colombia. Heroin can be white or brown powder or a black sticky substance known as black tar heroin. Heroin can be injected sniffed, snorted, or smoked.

Some common Prescription Opioids (generic and brand names):

- Methadone
- Oxycodone (OxyContin®, Percocet®)
- Hydrocodone (Vicodin®)
- Oxymorphone (Opana®)
- Morphine (Kadian®, Avinza®)
- Diphenoxylate (Lomotil®)
- Codeine
- Fentanyl

Table 22   Back of Opioid Fact Card

What is opioid misuse?

Opioid misuse or misuse of prescription drugs means taking medication in a manner other than prescribed (e.g., taking someone else's prescription, even if for a legitimate medical complaint such as pain; taking medication to feel euphoria (i.e., to get high))

Consequences for opioid misuse: social, economic, and health problems associated with substance use (e.g., illnesses, physical dependence, overdose, crime, car crashes, and suicides related to substance use)

Effects on the body: increased sensitivity to pain, constipation, drowsiness, mental confusion, nausea, vomiting, and dry mouth, sleepiness, and dizziness, confusion, depression, low levels of testosterone that can result in lower sex drive, energy, and strength, itching and sweating

Signs of opioid overdose: slow, shallowed breathing, clammy skin, convulsions, respiratory depression and arrest (stop breathing), coma, and death.

Anyone who misuses opioids is at risk of overdosing. It does not matter if the individual is a new or experienced user or if the individual snorts, injects, or takes pills.

Naloxone (Narcan®, Evzio®) is a medication designed to rapidly reverse opioid overdose. It binds to opioid receptors and can reverse and block the effects of other opioids. It can be administered via injection or nasal spray.

Document Appendix A.7

Note Taking Form

Instructions: Please use this form to record the proceedings of the focus group. Notes should be extensive and accurately reflect the content of the discussion, as well as any salient observations of nonverbal behavior, such as facial expressions, hand movements, group dynamics, etc.

Date of Focus group Session	
County of Focus group Session	
Location of Focus group Session	
Number of Participants	
Moderator Name	
Co-Moderator Name	
Co-Moderator Name	

Responses to Questions

Q1. Now that we know a little bit about one another let's get back to the topic of tonight's discussion, opioids. What comes to mind when I say the word "opioids?"

Brief Summary/Key Points	Notable Quotes

Document Appendix A.8

Picture of Prescription Drug Take-Back Box

Figure 2   Prescription Drug Take-Back Box

MedReturn Drug Collection Unit
Standard Unit

MedReturn II

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137

APPENDIX B

PROMISE 1.0 SURVEY

PROMISE 1.0 Survey

Q1 You are being asked to take part in a research project. The project is being done by Mississippi State University Extension Service.
The purpose of this project is to determine the perceptions of prescription opioid use in rural Mississippi.

Taking part in this study involves completing a web survey that will take about 20 minutes. This survey contains questions about things that might have an influence on your health. Your responses to survey questions are completely anonymous.

There will be no direct benefits to you unless health programs are created for rural communities as a result of this survey. There are no foreseeable risks associated with taking part in this survey. The survey data will help us understand the perceptions and intentions of prescription opioid misuse in rural Mississippi.

If you have questions about this project, please contact Mary Nelson Robertson at mnr72@msstate.edu.

If you understand the statements above, are 30 – 59 years old, and freely consent to be in this study, click on the I AGREE button to begin.

○ I AGREE (1)

○ I DO NOT AGREE (2)

Skip To: End of Block If You are being asked to take part in a research project. The project is being done by Mississippi... = I DO NOT AGREE

Page Break

First, we would like to get to know a little bit about you before the survey begins. Please provide the answer that you identify with most.

Q75 What state do you currently live in?

CHAPTER V▼ Alabama (1) ... Wyoming (52)

Skip To: End of Block If What state do you currently live in? != Mississippi

Q33 What county do you currently live in?

CHAPTER VI▼ Adams County (1) ... Yazoo County (82)

Q27 What is your sex?

○ Male (1)

○ Female (2)

○ Other (3)

Q66 What year were you born?

CHAPTER VII▼ 1950 (1) ... 2018 (69)

Q29 Which of the following races best represent you? Select all that apply.

☐ Native Hawaiian or Pacific Islander (1)

☐ Asian (2)

☐ American Indian or Alaska Native (3)

☐ Black or African American (4)

☐ White (5)

☐ Other (6)

Q68 Are you of Hispanic, Latino/a, or Spanish origin?

○ No (1)

○ Yes (2)

Q67 Do you have children?

○ No (1)

○ Yes (2)

Q79 Did you participate in a community engagement forum sponsored by the PROMISE Initiative?

○ No (1)

○ Yes (2)

End of Block: Demographics

Start of Block: Block 1 - Perceptions of Prescription Opioids

Page Break ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

The following questions ask about your thoughts and attitudes about prescription opioid use. An **opioid** is a substance that is a prescription medication (pill or patch), prescribed for pain relief. The illegal drug, heroin, is also an opioid. However, for the purpose of this survey, opioid refers to prescription opioids. Examples of prescribed opioid pain relievers contain the active ingredients Oxycodone (OxyContin®, Percocet®), Hydrocodone (Vicodin®), Morphine (Kadian®, Avinza®), Codeine, and Fentanyl to name a few.

Q78 How bad or good is the following behavior to you?

	Extremely bad (1)	Moderately bad (2)	Slightly bad (3)	Slightly good (4)	Moderately good (5)	Extremely good (6)
The use of prescription opioids is (1)	○	○	○	○	○	○

Opioid misuse is defined as taking a medication in a manner or dose other than prescribed; taking someone else's prescription, even if for a legitimate medical complaint such as pain; or taking a medication to feel euphoria (i.e., to get high).

Q91 How bad or good is the following behavior to you?

	Extremely bad (1)	Moderately bad (2)	Slightly bad (3)	Slightly good (4)	Moderately good (5)	Extremely good (6)
The misuse of prescription opioids is (1)	○	○	○	○	○	○

Page Break

Q4 Indicate your level of agreement with the following:

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Somewhat agree (4)	Agree (5)	Strongly agree (6)
Prescription opioids are a reliable way to manage pain. (1)	◯	◯	◯	◯	◯	◯
Opioid misuse is a problem in my community. (2)	◯	◯	◯	◯	◯	◯
Most people who are important to me talk to their friends about prescription opioid use. (8)	◯	◯	◯	◯	◯	◯
Most people who are important to me talk to their parents about prescription opioid use. (7)	◯	◯	◯	◯	◯	◯

Most people who are important to me talk to their children (if age appropriate) about prescription opioid use. (6)	○	○	○	○	○	○
Most people who are important to me approve of monitoring prescription opioid use (i.e., locking up prescription medications, keeping prescription medications out of reach, counting the number of pills, etc.). (3)	○	○	○	○	○	○
Most people who are important to me monitor their own prescription opioid use. (4)	○	○	○	○	○	○

| Most people who are important to me monitor their family member's prescription opioid use. (5) | ○ | ○ | ○ | ○ | ○ | ○ |

Q5 Indicate how important the following behaviors are to you.

	Not at all important (1)	Low importance (2)	Slightly important (3)	Moderately important (4)	Very important (5)	Extremely Important (6)
Discussing prescription opioid use with my friends (5)	○	○	○	○	○	○
Discussing prescription opioid use with my parents (4)	○	○	○	○	○	○
Do you have children? = Yes						
Discussing prescription opioid use with my children (if age appropriate) (3)	○	○	○	○	○	○
Monitoring my own prescription opioid use (1)	○	○	○	○	○	○
Monitoring the prescription opioid use of my family members (2)	○	○	○	○	○	○

Locking up prescription opioids in my house (6)	○	○	○	○	○	○
Keeping prescription opioids out of reach in my house (7)	○	○	○	○	○	○
Doing something about the opioid crisis (8)	○	○	○	○	○	○

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Q7 Indicate how comfortable you are with the following behaviors.

	Extremely uncomfortable (1)	Slightly uncomfortable (2)	Moderately uncomfortable (3)	Moderately comfortable (4)	Slightly comfortable (5)	Extremely comfortable (6)
Having an open discussion with my friends (9)	○	○	○	○	○	○
Having an open discussion with my parents (7)	○	○	○	○	○	○
Do you have children? = Yes						
Having an open discussion with my children (8)	○	○	○	○	○	○
Talking about difficult topics with my friends (6)	○	○	○	○	○	○
Talking about difficult topics with my parents (4)	○	○	○	○	○	○

Talking about difficult topics with my children (5)

○   ○   ○   ○   ○   ○

Discussin g prescriptio n opioid use with my friends (3)

○   ○   ○   ○   ○   ○

Discussin g prescriptio n opioid use with my parents (1)

○   ○   ○   ○   ○   ○

Discussin g prescriptio n opioid use with my children (if age appropriat e) (2)

○   ○   ○   ○   ○   ○

Q6 Indicate how likely you are to do the following behaviors.

	Extremely unlikely (1)	Moderately unlikely (2)	Slightly unlikely (3)	Slightly likely (4)	Moderately likely (5)	Extremely likely (6)
Share information about prescription opioid use with a complete stranger (4)	○	○	○	○	○	○
Share information about prescription opioid use with my friends (3)	○	○	○	○	○	○
Share information about prescription opioid use with my parents (1)	○	○	○	○	○	○
Do you have children? = Yes						
Share information about prescription opioid use with my children (if age appropriate) (2)	○	○	○	○	○	○

Lock up prescription opioids in my house (5)	○	○	○	○	○	○
Keep prescription opioids out of reach in my house (6)	○	○	○	○	○	○
Read a billboard or poster about prescription opioid use (7)	○	○	○	○	○	○

- -

Page Break ——————————————————————————————

Q10 On a scale of 0 to 100, 0 representing cannot do at all and 100 representing highly certain can do, how confident are you that you can do the following behaviors? Please slide the marker to the answer that best fits you currently.

Cannot do at all   Moderately can   Highly certain
                              do   can do

0   10   20   30   40   50   60   70   80   90   100

Have an open discussion with my friends. ()	
Have an open discussion with my parents. ()	
Have an open discussion with my children. ()	
Talk to my friends about difficult topics. ()	
Talk to my parents about difficult topics. ()	
Talk to my children about difficult topics. ()	
Talk to a complete stranger about prescription opioid use. ()	
Talk to my friends about prescription opioid use. ()	
Talk to my parents about prescription opioid use. ()	
Talk to my children (if age appropriate) about prescription opioid use. ()	
Ask a doctor for an alternative method to prescription opioids to soothe my pain. ()	
Make a plan to monitor prescription opioid use within my family (i.e., locking up prescription medication, keeping prescription medication out of reach, counting the number of pills, etc.). ()	
Monitor prescription opioid use within my family. ()	
Lock up prescription opioids in my house. ()	
Keep prescription opioids out of reach in my house. ()	
Engage in behaviors suggested on billboards, posters, or other forms of media. ()	

Page Break

End of Block: Block 1 - Perceptions of Prescription Opioids

Q80 Select answer "A."

○ Z (1)

○ D (2)

○ A (3)

○ F (4)

- -

Q85 The following questions ask about where you get information related to health. Providing ways that you get information will help us figure out how to get information to the community.

- -

Q69 Have you ever looked for information about health or medical topics from any source?

○ No (1)

○ Yes (2)

○ Don't recall (3)

- -

Q70 Have you ever looked for information about prescription opioids from any source?

○ No (1)

○ Yes (2)

○ Don't recall (3)

Q71 Think about the most recent time you looked for information about health or medical topics. Select the top 3 places that you looked for information about health or medical topics at that time.

☐   Health provider (1)

☐   Family/friends (2)

☐   Internet, please specify which website: (3)

_____

☐   Television, please specify which television channel: (4)

_____

☐   Radio, please specify: (5)

_____

☐   Newspaper, please specify: (6)

_____

☐   Magazine (7)

☐   Books (8)

☐   Email (9)

☐   Mississippi State University Extension Service (14)

☐   Pamphlet (10)

☐   Pastor or Religious Officer (11)

☐   Social media, please specify: (12)

_____

☐   Other sources, please specify: (13)

_____

Q73 Imagine you have a strong need to get information about prescription opioids. Select the top 3 places that you would look for information about prescription opioids.

☐   Health provider (1)

☐   Family/friends (2)

☐   Internet, please specify which website: (3)

_____

☐   Television, please specify which television channel or radio station: (4)

_____

☐   Radio, please specify: (5)

_____

☐   Newspaper, please specify: (6)

_____

☐   Magazine (7)

☐   Books (8)

☐   Email (9)

☐   Mississippi State University Extension Service (14)

☐   Pamphlet (10)

☐   Pastor or Religious Officer (11)

☐   Social media, please specify: (12)

_____

☐   Other sources, please specify: (13)

_____

Q20 Thinking about the past 12 months, did you hear or come across information about prescription opioids even when you were **not actively** looking for it?

○ Yes, please specify the source of information. (1)

_____

○ No (2)

○ Don't recall (3)

Q21 How many times did you hear or come across information about prescription opioids from each of the following sources when you were **not actively** looking for it?

	Not at all (1)	One or two times (2)	Three times or more (3)	Don't recall (4)
Health provider (1)	○	○	○	○
Family/friends (2)	○	○	○	○
Internet (3)	○	○	○	○
Television (4)	○	○	○	○
Radio (5)	○	○	○	○
Newspaper (6)	○	○	○	○
Magazine (7)	○	○	○	○
Billboard (8)	○	○	○	○
Books (9)	○	○	○	○
Email (10)	○	○	○	○
Mississippi State Extension Service (16)	○	○	○	○
Pamphlet (11)	○	○	○	○
Pastor or Religious Officer (12)	○	○	○	○
Poster (13)	○	○	○	○
Social Media (14)	○	○	○	○

| Other, please specify: (15) | ○ | ○ | ○ | ○ |

Q24 Have you seen or heard of the StandUp MS Campaign?

○ No (1)

○ Yes (2)

○ Don't recall (3)

The following questions ask about prescription drug take-back boxes. Prescription drug take-back boxes are monitored boxes that provide a safe place for individuals to properly dispose of unused prescription medications. Prescription drug take-back boxes look similar to the images seen below.

Q12

MedReturn Drug Collection Unit
Standard Unit

MedReturn II

Q13 Have you heard of a prescription drug take-back box before?

○ No (1)

○ Yes (2)

Page Break

162

Q14 Indicate how important the following are to you:

	Not at all important (1)	Low importance (2)	Slightly important (3)	Moderately important (4)	Very important (5)	Extremely important (6)
Disposing of prescription opioids (1)	○	○	○	○	○	○
Having a prescription drug take-back box in my community (2)	○	○	○	○	○	○
Dropping off unused prescription opioids at a prescription take-back box (3)	○	○	○	○	○	○
The placement of prescription drug take-back boxes in my community (4)	○	○	○	○	○	○

Q15 Indicate your level of agreement with the following:

	Strongly Disagree (1)	Disagree (2)	Somewhat disagree (3)	Somewhat agree (4)	Agree (5)	Strongly agree (6)
Most other people would use prescription drug take-back boxes to dispose of prescription opioids, if boxes are available. (1)	○	○	○	○	○	○

Q16 Indicate how likely you are to do the following behavior.

	Extremely unlikely (1)	Moderately unlikely (2)	Slightly unlikely (3)	Slightly likely (4)	Moderately likely (5)	Extremely likely (6)
Use a prescription drug take-back box to dispose of unused medications. (1)	○	○	○	○	○	○

Page Break

164

Q17 Indicate how comfortable you would be dropping off unused prescription opioids at a prescription drug take-back box located in a:

	Extremely uncomfortable (1)	Moderately uncomfortable (2)	Slightly uncomfortable (3)	Slightly comfortable (4)	Moderately comfortable (5)	Extremely comfortable (6)
Law enforcement agency (e.g., police station, highway patrol office) (1)	○	○	○	○	○	○
Church (2)	○	○	○	○	○	○
Pharmacy (3)	○	○	○	○	○	○
Grocery store (4)	○	○	○	○	○	○
Town Hall (5)	○	○	○	○	○	○
City Hall (6)	○	○	○	○	○	○
Hospital (7)	○	○	○	○	○	○
Medical clinic (8)	○	○	○	○	○	○

Q18 Indicate how convenient for you it would be dropping off unused prescription opioids at a prescription drug take-back box located in the following locations.

	Extremely inconvenient (1)	Moderately inconvenient (2)	Slightly inconvenient (3)	Slightly convenient (4)	Moderately convenient (5)	Extremely convenient (6)
Law enforcement agency (e.g. police station, highway patrol office) (1)	○	○	○	○	○	○
Church (2)	○	○	○	○	○	○
Pharmacy (3)	○	○	○	○	○	○
Grocery store (4)	○	○	○	○	○	○
Town Hall (5)	○	○	○	○	○	○
City Hall (6)	○	○	○	○	○	○
Hospital (7)	○	○	○	○	○	○
Medical clinic (8)	○	○	○	○	○	○

Q19 On a scale of 0 to 100, 0 being cannot do at all and 100 being highly certain can do, indicate your level of certainty to use a prescription drug take-back box if:

Cannot do at all   Moderately can
do

Highly certain
can do

0   10   20   30   40   50   60   70   80   90   100

A complete stranger asked me to ()	
My friend asked me to ()	
My parent asked me to ()	
My child asked me to ()	
A medical professional asked me to ()	
I read a message on a billboard ()	
I read a message on a poster ()	
I watched a television commercial ()	
I heard a message over the radio ()	
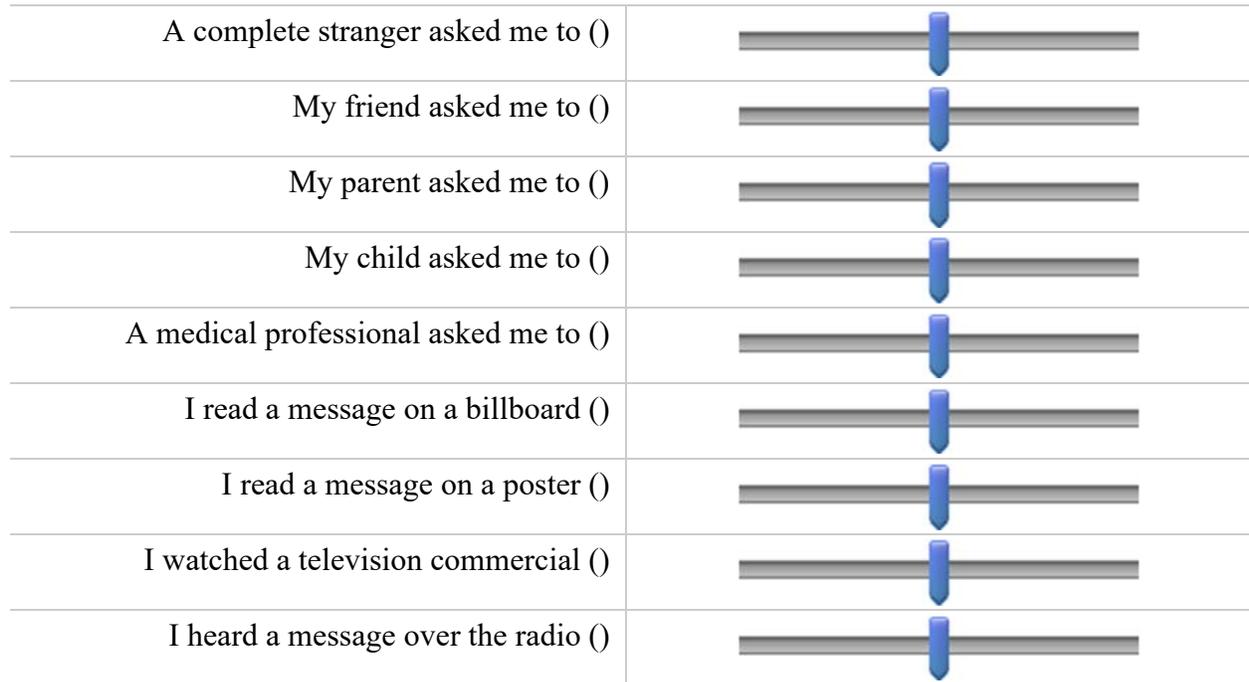
Page Break

Q100 In addition to prescription drug take-back boxes, some pharmacies are providing their patients with a solution, DisposeRx, that consists of a small packet with an FDA-safe chemical blend that, when emptied into a pill bottle with warm water, makes the medications — they can be powder, pills, tablets, capsules or liquids — unusable and safe to dispose of in a home trash can. Have you heard of DisposeRx before?

○ No (1)

○ Yes (2)

Q101 Can you see yourself using DisposeRx to dispose of prescription opioids?

○ No (1)

○ Yes (2)

○ Unsure (3)

Q74 On a scale of 0 to 100, 0 being do not at all prefer and 100 being strongly prefer, indicate your level of preference to using the following disposal methods to dispose of prescription opioids:
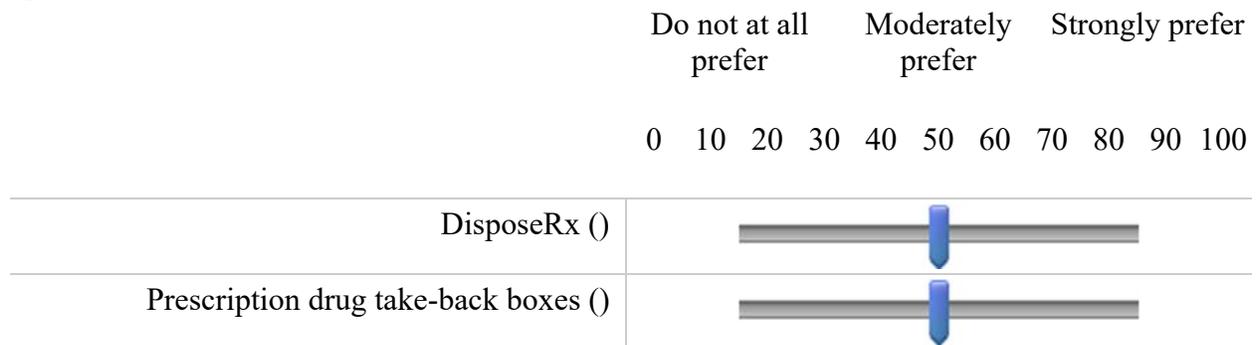
	Do not at all prefer	Moderately prefer	Strongly prefer
	0 10 20 30 40 50 60 70 80 90 100		
DisposeRx ()			
Prescription drug take-back boxes ()			

Q86 The following questions allow us to get to know a little bit more about you.

Q31 What is your current marital status?

○ Married (1)

○ Widowed (2)

○ Divorced (3)

○ Separated (4)

○ Never married (5)

○ Living together but not married (6)

Q32 What is the highest grade or year of school you completed?

○ Less than high school (1)

○ High school graduate (2)

○ Some college (3)

○ 2 year degree (4)

○ 4 year degree (5)

○ Professional degree (6)

○ Doctorate (7)

- -

Q34 What is your current employment status?

○ Employed full time (1)

○ Employed part time (2)

○ Unemployed looking for work (3)

○ Unemployed not looking for work (4)

○ Retired (5)

○ Student (6)

○ Disabled (7)

Page Break ———————————————————————————————————

Q92 How many children do you have?

○ 1 (1)

○ 2 (2)

○ 3 (3)

○ 4 (4)

○ 5 (5)

○ 6 (6)

○ 7 (7)

Q36 What is the age of your first child in years?

▼ Under 1 year (1) ... 59 (60)

Q94 What is the age of your second child in years?

▼ Under 1 year (1) ... 59 (60)

Q95 What is the age of your third child in years?

▼ Under 1 year (1) ... 59 (60)

Q96 What is the age of your fourth child in years?

▼ Under 1 year (1) ... 59 (60)

Q93 What is the age of your fifth child in years?

▼ Under 1 year (1) ... 59 (60)

Q97 What is the age of your sixth child in years?

▼ Under 1 year (1) ... 59 (60)

Q98 What is the age of your seventh child in years?

▼ Under 1 year (1) ... 59 (60)

Q70 What type of support do you provide for each of your following children? Select all that apply.

	Emotional (e.g., I give my children hugs or pats on the back. I listen to my children when they are having a bad day.) (1)	Financial (e.g., I buy my children's clothes. I buy my child's gas for his or her car.) (2)	Instrumental (e.g., I drive my children to school. I cook meals for my children.) (3)	Spiritual (e.g., I teach my children about a higher power, such as God. I pray to a higher power for my children.) (4)	Other (5)
How many children do you have? = 1 *Or How many children do you have? = 2* *Or How many children do you have? = 3* *Or How many children do you have? = 4* *Or How many children do you have? = 5* *Or How many children do you have? = 6* *Or How many children do you have? = 7* First child (1)	☐	☐	☐	☐	☐

How many children do you have? = 2 *Or How many children do you have? = 3* *Or How many children do you have? = 4* *Or How many children do you have? = 5* *Or How many children do you have? = 6* *Or How many children do you have? = 7*	☐	☐	☐	☐	☐

Second child (2)

How many children do you have? = 3 *Or How many children do you have? = 4* *Or How many children do you have? = 5* *Or How many children do you have? = 6* *Or How many children do you have? = 7*	☐	☐	☐	☐	☐

Third child (3)

How many children do you have? = 4 *Or How many children do you have? = 5* *Or How many children do you have? = 6* *Or How many children do you have? = 7* Fourth child (4)	☐	☐	☐	☐	☐
How many children do you have? = 5 *Or How many children do you have? = 6* *Or How many children do you have? = 7* Fifth child (5)	☐	☐	☐	☐	☐
How many children do you have? = 6 *Or How many children do you have? = 7* Sixth child (6)	☐	☐	☐	☐	☐
How many children do you have? = 7 Seventh child (7)	☐	☐	☐	☐	☐

Q71 If you marked other in the previous question, please specify what other type(s) of support you provide for your child(ren).

_____

Page Break

Q40 We would like to learn about your parents. Please tell us a little bit about the following family members.

	Younger than 65 years of age (1)	65 years of age or older (2)	Deceased (3)	Not Applicable (4)
Mother (1)	○	○	○	○
Step-mother (4)	○	○	○	○
Mother-in-law (5)	○	○	○	○
Father (2)	○	○	○	○
Step-father (6)	○	○	○	○
Father-in-law (7)	○	○	○	○

Q72 What type of support do you provide the previously discussed family members? Select all that apply.

	Emotional (e.g., I give my mother hugs and pats on the back. I listen to my father-in-law when he is having a bad day.) (1)	Financial (e.g., I buy my father groceries with my own money. I pay for someone to sit with my mother-in-law. I pay for my step-father's electricity bill.) (2)	Instrumental (e.g., I drive my father to the doctor. I buy my mother's groceries with her debit card. I cook meals for my step-mother.) (3)	Spiritual (e.g., I educate my mother on a higher power, such as God. I pray to a higher power for my father.) (4)	Other (5)
We would like to learn about your parents. Please tell us a little bit about the following family... = Mother [Younger than 65 years of age] *Or We would like to learn about your parents. Please tell us a little bit about the following family... = Mother [65 years of age or older]* Mother (1)	☐	☐	☐	☐	☐

We would like to learn about your parents. Please tell us a little bit about the following family... = Step-mother [Younger than 65 years of age]

Or We would like to learn about your parents. Please tell us a little bit about the following family... = Step-mother [65 years of age or older]

Step-mother (2)

☐　☐　☐　☐　☐

We would like to learn about your parents. Please tell us a little bit about the following family... = Mother-in-law [Younger than 65 years of age]

Or We would like to learn about your parents. Please tell us a little bit about the following family... = Mother-in-law [65 years of age or older]

Mother-in-law (3)

☐　☐　☐　☐　☐

We would like to learn about your parents. Please tell us a little bit about the following family... = Father [Younger than 65 years of age]

Or We would like to learn about your parents. Please tell us a little bit about the following family... = Father [65 years of age or older]

Father (4)

☐ ☐ ☐ ☐ ☐

We would like to learn about your parents. Please tell us a little bit about the following family... = Step-father [Younger than 65 years of age]

Or We would like to learn about your parents. Please tell us a little bit about the following family... = Step-father [65 years of age or older]

Step-father (5)

☐ ☐ ☐ ☐ ☐

| *We would like to learn about your parents. Please tell us a little bit about the following family... = Father-in-law [Younger than 65 years of age]* | | ☐ | ☐ | ☐ | ☐ | ☐ |
| *Or We would like to learn about your parents. Please tell us a little bit about the following family... = Father-in-law [65 years of age or older]* | | | | | | |

Father-in-law (6)

- -

Display This Question:

If What type of support do you provide the previously discussed family members? Select all that apply. = Mother [Other]

Or What type of support do you provide the previously discussed family members? Select all that apply. = Step-mother [Other]

Or What type of support do you provide the previously discussed family members? Select all that apply. = Mother-in-law [Other]

Or What type of support do you provide the previously discussed family members? Select all that apply. = Father [Other]

Or What type of support do you provide the previously discussed family members? Select all that apply. = Step-father [Other]

Or What type of support do you provide the previously discussed family members? Select all that apply. = Father-in-law [Other]

Q73 If you marked other in the previous question, please specify what other type(s) of support you provide for those family members.

_____

- -

Q99 How many people live in your household?

▼ 1 (1) ... 15 (15)

Q44 What is your annual household income from all sources?

○ Less than $10,000 (1)

○ $10,000 - $19,999 (2)

○ $20,000 - $29,999 (3)

○ $30,000 - $39,999 (4)

○ $40,000 - $49,999 (5)

○ $50,000 - $59,999 (6)

○ $60,000 - $69,999 (7)

○ $70,000 - $79,999 (8)

○ $80,000 - $89,999 (9)

○ $90,000 - $99,999 (10)
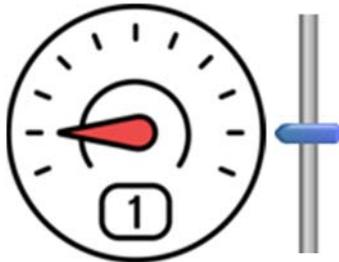
○ $100,000 - $149,999 (11)

○ More than $150,000 (12)

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Q87 The following questions ask more personal questions regarding opioid use and misuse. We want to remind you that this is a completely confidential survey.

Q81 On a scale of 0 to 10, 0 being none at all and 10 being a great deal, how much thought have you given to opioids prior to today?

0 (0)
1 (1)
2 (2)
3 (3)
4 (4)
5 (5)
6 (6)
7 (7)
8 (8)
9 (9)
10 (10)

Q47 How often do you use prescription opioids?

○ Daily (1)

○ Weekly (2)

○ Monthly (3)

○ Yearly (4)

○ Never (5)

Q48 How often are unused prescription opioids kept in your house?

○ Daily (1)

○ Weekly (2)

○ Monthly (3)

○ Yearly (4)

○ Never (5)

Q53 Do you have a family history of substance use disorders? Substance use disorders occur when the recurrent use of alcohol and/or other drugs causes clinically and functionally significant impairment, such as health problems, disability, and failure to meet major responsibilities at work, school, or home. (e.g., alcoholism, opioid use disorder, nicotine use disorder)?

○ No (1)

○ Yes (2)

Q54 Did your parents discuss previous family substance use disorders with you? Substance use disorders occur when the recurrent use of alcohol and/or other drugs causes clinically and functionally significant impairment, such as health problems, disability, and failure to meet major responsibilities at work, school, or home.

○ No (1)

○ Yes (2)

Q55 Have you ever had a prescription for an opioid?

○ No (1)

○ Yes (2)

Q56 When did you have your most recent prescription for an opioid?

○ 6 months ago or less (1)

○ A year ago or less (2)

○ More than 1 year, but not more than 5 years ago (3)

○ More than 5 years ago, but not more than 10 years ago (4)

○ Over 10 years ago (5)

- -

Q57 During the past 30 days, how many days did you use your prescription opioids?

▼ 0 (1) ... 30 (31)

- -

Q59 Do you know someone who has misused prescription opioids to the extent that it has affected their life?

○ No (1)

○ Yes (2)

Q60 What relation to you is that individual?

○ Friend of a friend (1)

○ Friend (2)

○ Parent (3)

○ Child (4)

○ Other family member (5)

Q88 Have you ever gotten a prescription opioid from someone other than a medical provider?

○ No (1)

○ Yes (2)

Q89 Who did you get the prescription opioid(s) from?

○ Family member (1)

○ Friend (2)

○ Off the street (3)

○ Other, please specify: (4) _____

✳

Q61 Is there anything else you would like to add or comment on?

_____

_____

_____

_____

_____

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Q82 Thank you for participating in this survey!

If you or someone you know needs help, please call the National Helpline, **1-800-662-HELP (4357)**, or visit **http://standupms.org/**.

Q78
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Community engagement forum participants will be directed to a separate survey to enter your information for a chance to win a $50 Amazon gift card.

End of Block: Block 5 - Personal Prescription Opioid Questions