

Training Pharmacists to Implement Depression Screening Services
by

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Abstract

Background: Depression is the leading cause of disability in persons over 15 years old. It is estimated that over 7% of people have depression but only 40-50% of those actually receive treatment. Inadequate treatment has sweeping negative effects, including school dropout, decreased work productivity, and suicide. Rural areas are affected to a greater degree due to the increase of the “mental health care gap”: the phenomenon of increasing mental health conditions that are not being kept up with by the number of mental health providers. Pharmacists offer a solution here by being more accessible to rural patients than other mental healthcare providers. Studies have demonstrated the feasibility and patient acceptance of pharmacists offering depression screening services in urban pharmacies; however, the rate of implementation of such services is low. Thus, this project seeks to inform an effective depression screening training program for rural community pharmacies, thus improving implementation of depression screening services in underserved areas by incorporating current practices, strategies to address barriers, and preferred implementation strategies.

Hypothesis 1: Knowledge, intention, confidence, attitude, subjective norms, and perceived behavior control of a depression screening service will be improved from pre-training to immediately post-

training in pharmacists after participating in a depression screening training webinar.

Hypothesis 2: Knowledge, confidence, attitude, subjective norms, and perceived behavior control of a depression screening service will continue to be increased from pre- to 3-months post the depression screening training webinar.

Hypothesis 3: Implementation of depression screening services will increase from pre- to 3-months post after the depression screening training webinar.

Methods: A survey was developed and pre-tested with a stakeholder panel to identify current community pharmacist depression screening practices, unique barriers/facilitators, stigma towards patients with mental health, and preferred implementation strategies that rural pharmacists may encounter when implementing a depression screening service. This survey was sent to rural pharmacists in Alabama and Mississippi identified with the Hayes directory and RUCA codes 4-10. Subsequently, a live webinar training program was developed using data from the initial survey and a second stakeholder panel to fill in knowledge gaps, address barriers, improve confidence and beliefs, and disseminate preferred implementation strategies to implementing a depression screening service in rural pharmacies. This webinar was delivered to rural and

urban pharmacists in Alabama and Mississippi who were identified using the Hayes directory and a continuing education office listserv. Knowledge, intention, confidence, and beliefs were assessed pre, post, and three months post the webinar.

Results: Eighty-five rural pharmacists completed the survey for a response rate of 14%. Rural pharmacists reported they have several barriers towards implementing a depression screening service: primarily low confidence, lack of time, and lack of knowledge for themselves and their staff. The training webinar significantly increased pharmacist confidence, knowledge, and beliefs pre-post and maintained the increase 3-months post webinar for every variable except subjective norms. Intention to implement and implementation behaviors did not significantly increase. Barriers towards implementation were primarily lack of time and lack of staff.

Conclusion: While the interventional educational webinar increased pharmacists' knowledge, confidence, and attitudes towards depression screening services, intention to implement as well as actual implementation of these services remained low to non-existent. Further research should be undertaken to gain a better understanding of systematic barriers pharmacists face when implementing depression screening services so that potential solutions may be found.

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List of Abbreviations

BMQ - Beliefs about Medications Questionnaire

CFIR - Consolidated Framework for Implementation Research

mBMQ - modified Beliefs about Medicines Questionnaire

MHC - Mental Health Conditions

MHP - Mental Health Provider

MTM - Medication Therapy Management

PBC - Perceived Behavioral Control

PCP - Primary Care Physicians

PDD - Perceived Devaluation & Discrimination

PHQ-9 - Patient Health Questionnaire

QR - Quick Response

RCM - Rural Community Member

RP - Rural Pharmacist

RUCA - Rural-Urban Commuting Area

RURAL-CP - Rural Research Alliance of Community Pharmacies

TBP - Theory of Planned Behavior

Chapter 1 – Introduction

1.1 Background of Problem

1.1.1 Depression and Mental Health Prevalence

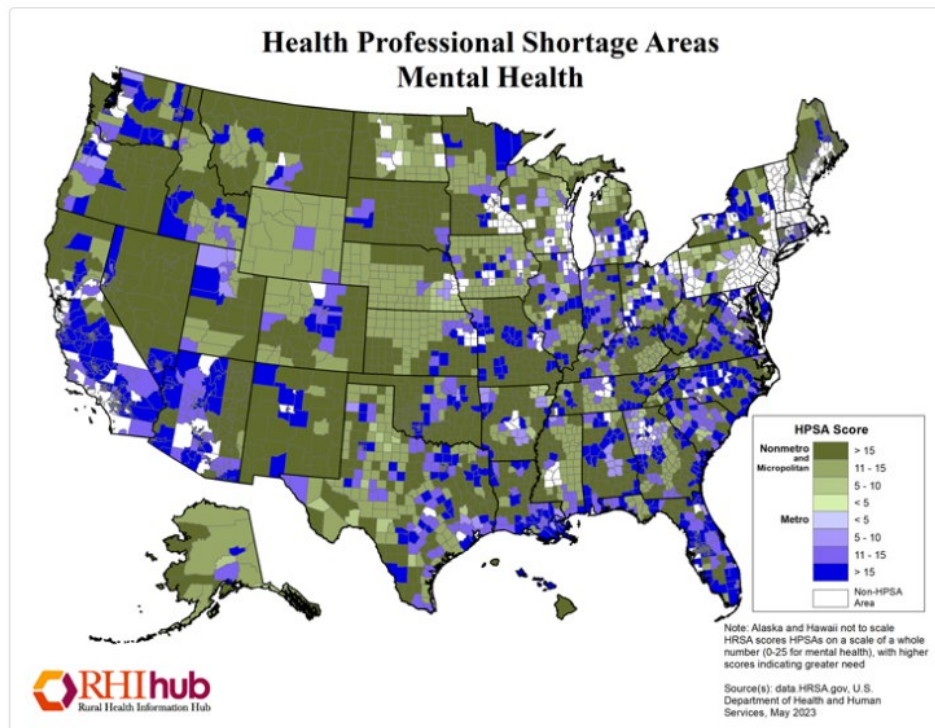
Depression is the leading cause of disability in persons over 15 years old,¹ and in light of the recent COVID-19 pandemic, rates of depression have only increased.^{2,3} One in five people in the U.S. are affected by a mental health condition.^{4,5} In Alabama, suicide is ranked as the 13th cause of death as of 2020.^{6,7} Furthermore, Alabama's Blue Cross Blue Shield patients have some of the highest rates of depression.⁸ Even so, only 33-50% of people seek and receive treatment for their depression leading to large amounts of the population with untreated depressive disorders.^{5,9,10} Inadequate treatment has sweeping negative effects, including decreased work productivity, school dropouts, and suicide,^{5,9,11} and depression alone causes annual losses in productivity that cost the U.S. upwards of \$31 billion.¹²

1.1.2 Rural Access to Mental Health Care

Studies have shown under-diagnosis of mental health conditions (including depression) and under-utilization of treatments are common in rural areas.^{13,16-18} This is further evidenced by research showing that rural residents are less likely to seek mental health treatment than their urban counterparts.¹⁹⁻²¹ One reason for the limited mental health treatment in rural areas is the shortage

of mental health care providers in rural communities of the U.S. This is referred to as the “mental healthcare gap” (Figure 1.2).²² Leading health organizations have called on all health professionals (including pharmacists) to fill these gaps.²³ Walgreens and the National Council for Behavioral Health and American Pharmacists Association are offering mental health first aid training to pharmacists.²⁴ Similarly the American Association of Psychiatric Pharmacists (AAPP) has begun an initiative to decrease stigma towards mental health among pharmacists.²⁵

Figure 1.2: Mental Health Professional Shortage Areas^{26–33}



Rural Mental Health. Rural Health Information Hub. Published October 20, 2021. Accessed August 2, 2023. <https://www.ruralhealthinfo.org/topics/mental-health> (Image courtesy of Rural Health Information Hub).

1.1.3 Advanced Care Pharmacy Services and Accessibility

Pharmacists have been shown to be the most accessible health care provider (more accessible than both mental health care providers and primary care physicians).^{31–33} Pharmacists are accessible both geographically (90% of people live within 2 miles of a pharmacist) and financially (patients do not typically pay to receive pharmacist counseling services).³⁴

Pharmacists have also been shown to increase health outcomes when used in advanced care services within rural populations.^{35–38} While pharmacists are not equipped to offer behavioral counseling services nor mental health diagnoses, they can counsel patients on psychotropic medications, provide screening services, afford access to technology for tele-services,³⁹ and improve patients' health literacy.^{27,40} The role of the pharmacist has expanded to include advanced care services, well-positioning them to offer depression screening services, especially in rural communities where limited medical clinics are available.⁴¹

1.1.3.1 DEPRESSION SCREENING IN PHARMACIES

The US Preventive Task Force recommends that all patients aged 12 and over be screened for depression.⁴² The Patient Health Questionnaire (PHQ-9), a commonly used depression screening tool, includes nine questions based on the Diagnostic and Statistical Manual of Mental Disorders (DSM5-TR) criteria that can be answered independently by the patient or with a healthcare provider

reading them to the patient. The PHQ-9 has been shown to be reliable and valid and is easy to use by both patients and providers.²⁷⁻³⁰

Studies have determined that implementing depression screening services in pharmacies is feasible and acceptable to pharmacists and patients by increasing screening of patients, improving medication therapy, and maintaining patient satisfaction.⁴³ While these services are feasible and effective, the uptake of pharmacy-based depression screening services among community pharmacies has been slow especially in rural areas.⁴⁴ Offering depression screening services in rural pharmacies is one solution to improve diagnosis and treatment rates by utilizing highly trained healthcare personnel to initiate mental healthcare services for rural populations.

1.1.4 Implementation Science as an Approach

Implementation of evidence-based interventions has historically been a slow process, leading to the need to incorporate implementation science principles when designing and implementing an intervention.^{45,46} Implementation science has been shown to have positive impacts on moving evidence based research into practice more quickly.⁴⁶ An implementation framework should be chosen to guide implementation practice (including selection of implementation strategies) and research decisions (such as research questions and methodology).⁴⁶ The Consolidated Framework For Implementation Research (CFIR) was chosen for this study because it provides a structure for approaching

complex real-world constructs and has been widely used to successfully develop implementation strategies and to evaluate implementation success especially in pharmacy practices.^{1,4,5,9,11}

1.2 Problem Statement & Purpose of Study

A training program incorporating end users' needs via a participatory design may empower pharmacists to implement depression screening services.

Depression is a leading cause of disability in rural America.^{5,9,10,17,18,20}

However, many patients do not seek or receive treatment due to a lack of access to mental health care.⁴⁷⁻⁴⁹ As a result, strategies to improve access to mental health care such as depression screenings are critical. Delivering an educational webinar addressing current rural pharmacists' barriers and facilitators may be effective in increasing implementation of depression screenings in pharmacies and ultimately increasing access to mental health care for rural patients.

This research focused on gaining an understanding of rural pharmacist preferences for implementing depression screening services using implementation science: specifically, the CFIR. An educational webinar was designed that incorporates these pharmacist preferences. The **purpose** of this study was to develop and deliver a depression screening training program for rural community pharmacists considering current practices, unique barriers/facilitators to rural populations, and preferred implementation strategies. The study results were expected to empower community pharmacists in rural

settings to provide depression screening services to patients. The research questions this study aims to answer are:

1. What are the current practices, barriers and facilitators, and preferred implementation strategies to implementing a depression screening service in rural pharmacies?
2. What are the effects of an educational webinar on pharmacists' knowledge, behavior, intention, confidence, and beliefs towards implementing a depression screening service?

1.3 Specific Aims

Aim 1: Investigate current practices, barriers and facilitators, and preferred implementation strategies to implementing a depression screening service in rural pharmacies by using an online survey.

This exploratory survey was designed based on preliminary data from a previous study on mental health/psychotropic stigma, a stakeholder panel, and CFIR.⁵⁰ The survey collected data on (1) current depression screening practices among rural community pharmacists in Alabama, (2) unique barriers and facilitators that rural pharmacists may encounter when implementing a depression screening service, and (3) preferred implementation strategies. These three parts were assessed using a cross-sectional online survey with open-ended and Likert-type questions. Rural community pharmacists were identified and contacted by mail or fax using the Hayes directory.^{47,51} This exploratory survey informed development of Aim 2's educational webinar.

Aim 2: Design, deliver, and assess a training program to improve knowledge, intention, confidence, and beliefs towards implementing a depression screening service in rural pharmacists.

Results from Aim1's survey and a stakeholder panel were used to design a depression screening training program. The training program was a recorded live webinar that focused on (1) implementation strategies for incorporating depression implementing screening services in rural pharmacies, (2) how to administer and score the depression screener, (3) how to communicate the results to the patient, (4) ways and whom to refer patients with a positive score, and (5) barriers/facilitators pharmacists may encounter when implementing a depression screening service in rural pharmacies. Training program outcome assessment was measured pre-post and 3-month post using an online survey that included: (1) knowledge of depression screening administration, scoring, and referral; (2) confidence and intention/behavior toward implementing depression screening services; and (3) beliefs towards implementing depression screening services. The CFIR and the Theory of Planned Behavior (TPB) were used to guide the development of the implementation strategies as well as the assessment of the training program.⁵²

1.4 Study Significance & Contributions

Access to mental health services is vital to increase treatment. Yet, access is limited, especially in rural areas. Rural pharmacies can be an important access point to rural patients seeking mental healthcare services, specifically depression screenings, however implementation of these services is scarce. This

study contributed to the knowledge of rural pharmacist barriers/facilitators towards implementing depression screening services.

This study has the potential to increase access to mental health care services by increasing the implementation of depression screenings in pharmacies. While research has shown depression screenings in pharmacists are effective, no research has been done to understand and address the barriers towards implementing these services. Therefore, this study addresses a critical gap in the literature.

1.5 Innovation

This study is innovative because it offers a solution to increase patient access to depression screening services where limited mental health care is available. This study also uses implementation science principles to ensure successful intervention in real-world organizations. Findings can be used to facilitate adoption and implementation of depression screening services in community pharmacies while adding to the foundation of the knowledge of implementing mental health services in rural communities.

1.6 Organization of Dissertation

This dissertation is organized into five chapters. The first chapter includes a general overview of the background and nature of the problem as well as a brief overview of the aims, methods, significance, and innovation. The second

chapter provides a comprehensive overview of the literature and frameworks used in this study. Chapter three goes into detail of the methodology used to accomplish this study, including: study design, setting, participants, recruitment, data collection, measures, and analysis. The fourth chapter reports the results of data analysis for Aim's 1 and 2. Chapter five discusses the findings and implications for future research.

Chapter 2 - Literature Review

2.1 Mental Health in the U.S.

Levels of depression have reached an all-time high in the U.S. Over 32% of Americans report symptoms of depression or anxiety as of 2023.⁵³ The percent of Americans who reported only symptoms of depression at some point in their life reached 29% with ~18% reporting current depression symptoms in 2023.⁵² Compared to 2019 where one out of every five people were affected by a general mental health condition⁵³ and lifetime depression rates were at ~22%,⁵³ rates of depression in the U.S., which were already high, show a sharp increase. Young adults in particular are at risk for depression with current rates at 25% in 18-20 year olds.⁵⁴

Of the people who are diagnosed with a mental health condition, over 70% do not receive treatment.^{12,21} Even when people do receive treatment, it is often initiated up to a decade after the onset of symptoms.^{4,5,11,55} Delayed and inadequate treatment has sweeping negative effects and consequences include decreased work productivity, school dropouts, and suicide.⁵⁵ Improperly treated mental health conditions can also lead to increased hospitalizations, increasing the overall cost of care.⁵⁶ Healthcare costs are estimated at \$187.8 billion for mental health conditions with the most costly condition, depression, costing \$71 billion.¹¹ The effects of mental health conditions have cost the U.S. an estimated \$193.2 billion in lost earnings every year.¹² Depression alone causes annual losses in productivity that cost the U.S. upwards of \$31 billion.¹²

Anywhere from 10 to 20 million individuals attempt suicide every year and around 1 million complete suicide.⁵⁷ For these reasons and more, the World Health Organization (WHO) has declared depression to be the “leading cause of disability and poor health worldwide”,^{41,58} and the US Preventive Task Force recommends that everyone over the age of 12 years old be screened for depression.⁵⁸

2.1.1 Impact of COVID-19 on Mental Health

Rates of depression have only increased due to the COVID-19 pandemic according to a Kaiser Family Foundation (KFF) survey, as well as a survey assessing healthcare workers' mental health during the pandemic.⁵⁹ The Centers for Disease Control and Prevention (CDC) reports that mental health conditions have increased with over 40% of adults over age 18 experiencing mental health conditions like depression, anxiety, or substance misuse.⁶⁰ Sanborn et al. found that the number of psychotropic medications significantly increased when compared to pre-pandemic rates.⁵⁹ Mental health conditions were only further aggravated in populations that were on the front lines of the COVID-19 pandemic or in people who lost their jobs.⁶¹ The unemployment rate in the U.S. was a staggering 14.7% at the worst of the pandemic.⁵⁷ Mental health has always had a negative impact on society and with the advent of the pandemic and further decreased access to mental healthcare due to social distancing or job loss, this “leading cause of disability and poor health”⁶² has become even worse. Using underutilized healthcare providers, like pharmacists, to provide mental health

services (e.g. screening services & referrals) has become even more important in recent years to improve access to mental healthcare.

2.1.2 Mental Health in Alabama & Mississippi

Specifically, in the state of Alabama, 794,000 adults had a mental health condition with 214,000 having a serious mental health condition.^{62,63} Depression prevalence is double the national average and reported symptoms of anxiety and depression occurred in 43% of Alabamians.^{6,64} Suicide was ranked as the 11th leading cause of death as of 2020⁶⁵ and the suicide rate was 15.8 age-adjusted deaths per 100,000 people in 2021.⁶⁴ This led to the rate of suicide being higher than the rate of homicide in 2019.⁶⁶ Mental health conditions have been increasing in Alabama for over a decade: in 2014, 10.7% of adolescents aged 12-17 had at least one diagnosed mental health condition, which was an increase from 7.6% in 2011.⁶⁴ Rates of suicide have been consistently higher than overall U.S. rates since 2000.⁶⁷

In Mississippi 431,000 adults have a mental health condition with 120,000 having a serious mental health condition.⁶⁸ In 2021, the percentage of adults who have ever been told they have depression was 20%⁶⁷ with 43% of adults reporting symptoms of anxiety or depression.⁶⁵ Suicide is the 12th leading cause of all deaths in Mississippi with a record high of 16.18 age-adjusted deaths per 100,000 people reached in 2021.^{5,69}

2.1.3 The Mental Healthcare Gap in Rural Settings

People in both urban and rural areas have similar prevalence rates of mental health conditions.^{13,14} Despite this, rates of mental health service utilization are lower in rural areas.^{13,15,16} Studies have shown under-utilization and underdiagnosis are common in rural areas. One example shows only 24% of parents sought help from a mental health professional for their child who had emotional and behavioral problems.^{19,20} This undertreatment stems from several reasons, with one of the main reasons being the serious shortage of mental healthcare providers in rural communities.⁷⁰ In some areas, there is only one mental health professional for every 1,000 individuals (including psychiatrists, psychologists, social workers, counselors, and psychiatric nurses combined).^{21,69} This gap in treatment is called the “mental healthcare gap,” and it is growing.^{71,72}

2.1.3.1 THE MENTAL HEALTHCARE GAP IN ALABAMA & MISSISSIPPI

The states of Alabama and Mississippi have large rural populations: one out of every five people in Alabama and more than half the people in Mississippi live in a rural areas.^{13,14,73} Since people in rural areas are less likely to seek help for mental health conditions, it is not surprising that these states have high numbers of people with mental health conditions and low numbers of people who are treated.⁶² Over 207,000 Alabama and 119,000 Mississippi adults did not receive needed mental healthcare and this was primarily due to cost in both states.^{62,67} Over 58% of people in Alabama and 80% of people in Mississippi live in an area that does not have enough mental health providers.⁶⁷ Over 65% of the

adolescent population in Mississippi, aged 12-17, who have depression did not receive any care.⁷⁴ Alabama has four physical crisis centers, however these centers cover only 16 of the 67 counties.²¹ People in Alabama have identified mental health conditions and substance use disorders as their second greatest health concern; however, Alabama currently has extreme shortages of mental health providers and centers.²² This shortage in rural areas makes it difficult for rural Alabamians and Mississippians to access mental healthcare services.

2.2 Using Pharmacists to Bridge the Mental Healthcare Gap

With these severe gaps in mental health services, leading health organizations have called on all health professionals to fill in these gaps.^{22,75} Primary care physicians (PCPs) are sometimes forced to fill these gaps since they are often the only healthcare professional point of contact for many people.^{75,76} However, while PCPs are more prevalent than mental health providers, they are still in short supply in many rural areas and the long wait times to see them can deter patients with mental health conditions from making an appointment.²⁶

On the other hand, pharmacists are a highly trained yet underutilized health provider who can help facilitate access to screenings and referrals for patients.³⁴ Pharmacists have been shown to improve health outcomes when used in advanced care services within rural populations.³¹⁻³³ They are also accessible in rural areas both geographically (90% of people live within 2 miles of

a pharmacist) and financially (patients do not typically pay to receive pharmacist counseling services).²³

Pharmacists do not require appointments and are prevalent in urban and rural communities alike. Accordingly, they have been the target of initiatives to improve access to mental healthcare. Walgreens, the National Council for Behavioral Health, and the American Pharmacists Association are offering mental health first aid training to pharmacists.²⁴ Similarly, the American Association of Psychiatric Pharmacists (AAPP) has begun an initiative to decrease stigma towards mental health among pharmacists.³¹⁻³³ Pharmacists have been shown to be more accessible than mental health providers and PCPs,⁴⁰ and pharmacist roles have been expanding to include advanced care services, such as chronic disease state management, comprehensive medication management, and screenings.⁷⁷⁻⁷⁹ This accessibility coupled with advanced care training makes pharmacists an ideal healthcare provider to provide initial mental healthcare including screenings and referrals.

2.2.1 Perceptions of Pharmacists in Mental Healthcare Teams

In Alabama, pharmacists cannot diagnose or prescribe treatment so they will refer patients with positive scores to a qualified professional. Therefore, one of the first steps in using pharmacists to fill the mental healthcare gap is to understand patient and other healthcare providers' perceptions of pharmacists in mental healthcare. Previous research has shown that pharmacists have been received positively on mental healthcare teams by both patients and other

healthcare providers.⁸⁰ A systematic review of the impact of pharmacists in mental health collaborative teams found nine articles which showed collaborative teams that include pharmacists are effective at improving mental health outcomes in patients with depression, thus, demonstrating pharmacists' importance on mental healthcare teams.⁷⁸ Mental health providers value pharmacists' input because they feel that "pharmacists have greater knowledge and expertise concerning the likelihood of interactions with particular drug combinations".⁷⁷ Mental health providers also feel that pharmacists are "unbiased" and "trustworthy" when compared to drug company representatives.⁸¹ Pharmacists were seen as being able to spend more time with patients when compared to primary care physicians (PCPs).^{79,82,83} Patients have been shown to have a high comfort level and trust in pharmacists and feel that the pharmacy is a "safe space" to talk about their mental health concerns: especially for patients who had a prior established relationship with their pharmacist.⁸⁴

While pharmacists have been shown to be effective and trusted by patients and other healthcare providers, pharmacists' own perceptions of themselves are sometimes less positive. For example, pharmacists have decreased confidence toward discussion of mental health conditions and treatments.⁸⁵ Likewise, one study showed pharmacists felt confident monitoring efficacy and recognizing adverse effects of medications used to treat mental health conditions only 28.1% and 48.3% of the time, respectively.⁸⁶ This research indicates that pharmacists would benefit from education on mental health screenings, conditions, and treatments.

2.2.2 Barriers Towards Implementing Services in Pharmacies

Historically, barriers have been identified that impact community pharmacists implementing services. These barriers include patient's willingness to participate, the educational background of the pharmacist, confidence of the pharmacist, legal liability of the pharmacist, customer loyalty, time constraints, the lack of a counseling area, lack of reimbursement, support staff availability and training, and physician attitudes.⁸⁷ El-Den et al.'s systematic review showed that barriers toward pharmacist-led screening included time and privacy constraints.⁸⁸ Another study of implementing depression screening services in pharmacies showed that time, stigma, and a lack of patient awareness of the pharmacist's role.⁸⁹

One study identified the most common barriers for pharmacists who already provided medication therapy management (MTM) services were related to compensation.⁹⁰ For pharmacists who did not already provide MTM services, barriers included a lack of staffing and poor access to information.

Addressing these barriers is paramount so that rural pharmacies will be able to implement depression screening services. To this end, gaining an understanding of which barriers are most salient to rural pharmacists is an important and necessary step in implementing these services.

2.2.3 Pharmacist Stigma Towards Mental Health

While pharmacists are willing and interested in offering MTM services, they may be less comfortable counseling patients with mental health conditions

than patients with more common conditions like hypertension due to stigma.⁹¹ Similarly, student pharmacists show stigma towards patients with mental health conditions like schizophrenia and severe depression that does not always lessen with years in pharmacy school.⁹²

Stigma is defined by the Mayo clinic as “When someone views you in a negative way because you have a distinguishing characteristic or personal trait that’s thought to be, or actually is, a disadvantage (a negative stereotype)”.⁹³ Mental health stigma can negatively influence patients and providers in a variety of ways. Patients may not want to come into clinics for treatment or take their medications.⁹⁴ Providers may give lower quality treatment or treat patients’ symptoms as if they are not concerning.⁹⁵ Similarly, medication stigma can also contribute to patients not seeking or participating in treatment. One study performed on psychiatric veterans found that medication stigma is common with patients.⁴⁸ They reported feeling uncomfortable and judged when taking these medications.

We performed preliminary research to assess the differences in mental health and psychotropic stigmas in student pharmacists in Fall 2019.⁹⁶ This study used the Perceived Devaluation Discrimination (PDD) Scale and a modified Beliefs about Medicines Questionnaire (mBMQ) - General. The PDD Scale used 12 items to indirectly measure mental health stigma⁹⁷. This measure has previously been validated and tested for reliability with a reliability of 0.8⁹⁸. The Beliefs about Medicines Questionnaire (BMQ) - General was modified and used to indirectly measure psychotropic stigma through 8 items⁹⁸.

The Beliefs about Medicines Questionnaire (BMQ) -General was developed to collect perspectives of general medication use, thus, we modified the questionnaire (mBMQ) to collect perspectives of psychotropic medications specifically.⁴⁸ Thus, for each item in the questionnaire, we added the word 'psychotropic' preceding the word 'medicine(s)'. Both the PDD and mBMQ were tested for reliability and validity in the student pharmacist population,⁴⁹ with 390 participants responding. Results indicated that student pharmacists demonstrated significantly different levels of stigma towards mental health conditions compared to psychotropic medications with stigma towards psychotropic medications being greater. Neither stigma towards mental health conditions nor stigma towards psychotropic medications decreased across successive cohorts. This data shows that mental health and medication stigma remain problems among student pharmacists and are not solved by the end of pharmacy school.

To get a better understanding of pharmacists' levels of stigma, licensed and practicing pharmacists were surveyed with the PDD and mBMQ.⁹⁹ Rural pharmacists were recruited by email from a currently available listserv for both the survey and interview. Thirty-five pharmacists completed the survey. Pharmacists were found to have stigma towards mental health conditions with less stigma towards psychotropic medications. Stigma has been shown to be a barrier for both patients and healthcare providers and is an issue that needs to be addressed during the implementation of a depression screening training program.

2.3 Depression Screenings

Mental health screenings are the first step in mental health treatment. Depression screenings particularly have been identified as the first step in improving treatment for this mental health condition^{41,58} and the US Preventive Task Force recommends that everyone over the age of 12 years old be screened for depression.¹⁰⁰ One of the most commonly used questionnaires for depression screening is the Patient Health Questionnaire (PHQ-9) (shown in Figure 2.1).⁴²

Figure 2.1: Patient Health Questionnaire – 9 (PHQ-9)^{30,42,43}

PATIENT HEALTH QUESTIONNAIRE - 9				
Over the <u>last 2 weeks</u> , how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3
FOR OFFICE CODING _____ + _____ + _____ + _____ =Total Score: _____				
If you checked off <u>any</u> problems, how <u>difficult</u> have these problems made it for you to do your work, take care of things at home, or get along with other people?				
Not difficult at all <input type="checkbox"/>	Somewhat difficult <input type="checkbox"/>	Very difficult <input type="checkbox"/>	Extremely difficult <input type="checkbox"/>	
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The PHQ-9 includes nine questions that can be answered independently by the patient or with a healthcare provider reading them to the patient. The PHQ-9 has been used for depression screening services in a variety of environments, for many different populations, and can be used to diagnose depression or monitor the severity of depressive symptoms as the patient goes through treatment.⁴² The PHQ-9, based on DSM-IV criteria, has been shown to be reliable, valid, and easy to use by both patients and providers.¹⁰¹ It also has a sensitivity of 78% and a specificity of 85% in medical settings.³⁵⁻³⁸ These attributes make the PHQ-9 an ideal questionnaire to use for depression screenings.

2.3.1 Pharmacists and Depression Screenings

While pharmacists are not equipped to offer behavioral counseling services nor mental health diagnoses, they can offer initial depression screening services and refer patients who have positive scores to a physician or mental health professional.⁸⁷ Pharmacists have been shown to be acceptable providers of general screening services in a systematic review that looked at n=44 manuscripts.⁸⁴ This review showed that 81-97% of patients were satisfied with pharmacists leading screening services in their community. Pharmacists reported they were confident and comfortable providing screenings; however, this confidence was thought to be disease specific. Finally, other healthcare providers were also found to be accepting of pharmacist-led screening services.

Pharmacists have been shown to be willing, interested, and an appropriate healthcare provider in offering depression screening services.²⁷ Hare and Kraenow implemented a depression screening service in pharmacies located in supermarkets as a pilot study.²⁸ This study tested the feasibility and effectiveness of using community pharmacists to deliver depression screenings using the Harvard Department of Psychiatry/National Depression Screening Day Scale (HANDS) to the community. The results of this study showed that pharmacists were able to perform depression screenings and that patients would follow recommendations of the pharmacist afterward. Knight et al. tested a depression screening model in an urban diabetes management clinic.²⁹ Their goal was to identify undiagnosed or undertreated depression in patients with diabetes. Forty-five patients were recruited and screened using the Zung Self-rating Depression Scale (SDS) with 50% being undertreated and 48% screening positive for depression. This study confirmed that pharmacists are able to screen for depression and these screenings can also serve as a “quality assurance tool” for patients currently diagnosed with depression.

Knox et al. evaluated a depression screening tool in a university campus pharmacy.³⁰ Pharmacists screened patients using the SDS tool while patients waited for a prescription. This study showed patients were satisfied and comfortable talking with a pharmacist about depression and they thought the information provided by the pharmacist was useful. Rosser et al. developed, implemented and evaluated a depression screening service in community pharmacies.¹⁰² This study had pharmacists screen patients using the Patient

Health Questionnaire (PHQ-9) and then refer patients with positive scores to their primary care physician. Patients referred in this way were likely to receive treatment when screened for depression by a community pharmacist. The study showed depression screening services resulted in around 60% of patients who had positive scores initiated or had an adjustment in their therapy.

In 2018, a study was performed that had clinical pharmacists screen for depression, using the PHQ-9, in all patients who had uncontrolled diabetes.¹⁰³ Results of the screening were sent to all referring providers as well as possible medical treatments and other suggestions in patients who screened positive for depression (n=11). Physicians' response rate to the pharmacist recommendation was low (3 of 11 responded). This led the researchers to conclude that faxing alone is not recommended as primary communication with providers.

Cohen et al. compared the effect of a pharmacist-led vs nurse-led diabetes/depression management telehealth program.^{30,102–104} Patients with both diabetes and depression were randomized to either the pharmacist-led or nurse-led telehealth care and screened for depression with the PHQ-9 and Center for Epidemiologic Studies Depression Scale (CES-D). The pharmacist-led arm showed significant improvement for medication adherence (13.9; 95% CI 6.6 to 21.2). The nurse-led arm showed a significant decrease in A1c (nurse led= 6.9 ± 0.9; pharmacist led= 8.8 ± 2.0). Neither arm showed significant improvement in depression.

In rural areas, pharmacists may be the most easily accessible healthcare provider available to the community. This makes them ideal to provide screening

services to rural populations who may not be able to see a PCP regularly. Utilizing screening tools like the PHQ-9 in pharmacies has been successfully demonstrated,^{87,88} but the uptake in real-world rural community pharmacies is severely limited and barriers do exist. Barriers include a lack of time of the pharmacist to perform depression screening, stigma towards mental health conditions by both the pharmacist and patient, and a lack of awareness of the pharmacists' role by the general public.⁸⁸ Pharmacies also need to have a private area where patients feel comfortable taking a screening questionnaire.⁴⁴ Proven and successful implementation strategies may help guide pharmacists in implementing depression screening services by addressing these known barriers and other unknown barriers.

2.4 Theoretical Frameworks

2.4.1 Implementation Science

Studies have shown that only 14% of research will be implemented within 17 years of discovery.¹⁰⁵ This finding prompted the development of the implementation science field, which determines facilitators and barriers, and tests determinant associations and implementation outcomes.⁴⁶ Implementation science has been defined as “the scientific study and application of strategies to promote the systematic uptake of research findings and other evidence-based practices into routine use, thereby improving the quality and effectiveness of health services.”^{45,46} Implementation science has been shown to have positive impacts on moving evidence based research into practice more quickly:

increasing the implementation of evidence based research from 14% to 80% after three years.⁴⁶

An implementation framework should be chosen first to guide implementation practice (including selection of implementation strategies) and research decisions (such as research questions and methodology).¹⁰⁶ There are over 30 implementation strategies which are used to observe/guide implementation, identify factors of implementation, and evaluate implementation (as seen in Table 2.1).¹⁰⁷ Implementation frameworks have been described as “windows into the key attributes, facilitators, and challenges related to promoting implementation”.⁴⁶

While each framework has its’ own strengths and weaknesses, each of them also share important assumptions: 1) they recognize the complexity of implementing evidence based research into real world settings, 2) they consider the perspectives of all stakeholders, 3) they realize that active implementation strategies work better than passive ones, and 4) they concede that implementation occurs in stages and take that into consideration in their frameworks.¹⁰⁸

The Consolidated Framework for Implementation Research (CFIR), uses five major domains (intervention characteristics, outer setting, inner setting, characteristics of individuals, and process of implementation) that can help develop and test implementation strategies of evidence-based services in healthcare.⁴⁶ CFIR provides a structure for approaching complex real-world constructs and has been widely used to successfully develop implementation

strategies and to evaluate implementation success especially in pharmacy practices.^{109,110}

There are many implementation strategies used to increase the uptake of interventions (Table 2.1). Implementation strategies may include disseminating educational materials, educational sessions at the pharmacy, feedback and reminders, the use of a champion, and behavioral economics.^{111,112} Behavioral economics, the study of cognitive biases that lead to behaviors that may not maximize an individual’s utility, has been applied to many health behavior change interventions.^{113,114} It can be applied to changing both patient and provider behavior by incorporating strategies that include altering the environment so that performing the service is easier, using incentives to motivate staff to perform new duties, and making enrollment in the service the default option.¹¹⁵ Preferred implementation strategies will be necessary to understand and to improve implementation uptake of the depression screening service.

Table 2.1: Implementation Strategies and Definitions^{46,116}

Strategy	Definition
Alter incentive/allowance structures	Work to incentivize the adoption and implementation of the clinical innovation
Assess for readiness and identify barriers and facilitators	Assess various aspects of an organization to determine its degree of readiness to implement, barriers that may impede implementation, and strengths that can be used in the implementation effort
Audit and provide feedback	Collect and summarize clinical performance data over a specified time period and give it to clinicians and administrators to monitor, evaluate, and modify provider behavior
Build a coalition	Recruit and cultivate relationships with partners in the implementation effort

Change physical structure and equipment	Evaluate current configurations and adapt, as needed, the physical structure and/or equipment (e.g., changing the layout of a room, adding equipment) to best accommodate the targeted innovation
Conduct cyclical small tests of change	Implement changes in a cyclical fashion using small tests of change before taking changes system-wide. Tests of change benefit from systematic measurement, and results of the tests of change are studied for insights on how to do better. This process continues serially over time, and refinement is added with each cycle
Conduct educational meetings	Hold meetings targeted toward different stakeholder groups (e.g., providers, administrators, other organizational stakeholders, and community, patient/consumer, and family stakeholders) to teach them about the clinical innovation
Conduct local needs assessment	Collect and analyze data related to the need for the innovation
Conduct ongoing training	Plan for and conduct training in the clinical innovation in an ongoing way
Create a learning collaborative	Facilitate the formation of groups of providers or provider organizations and foster a collaborative learning environment to improve implementation of the clinical innovation
Develop a formal implementation blueprint	Develop a formal implementation blueprint that includes all goals and strategies. The blueprint should include the following: 1) aim/purpose of the implementation; 2) scope of the change (e.g., what organizational units are affected); 3) timeframe and milestones; and 4) appropriate performance/progress measures. Use and update this plan to guide the implementation effort over time
Develop an implementation glossary	Develop and distribute a list of terms describing the innovation, implementation, and stakeholders in the organizational change
Develop educational materials	Develop and format manuals, toolkits, and other supporting materials in ways that make it easier for stakeholders to learn about the innovation and for clinicians to learn how to deliver the clinical innovation
Distribute educational materials	Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically
Facilitation	A process of interactive problem solving and support that occurs in a context of a recognized need for improvement and a supportive interpersonal relationship
Identify and prepare champions	Identify and prepare individuals who dedicate themselves to supporting, marketing, and driving through an implementation, overcoming

	indifference or resistance that the intervention may provoke in an organization
Involve patients/consumers and family members	Engage or include patients/consumers and families in the implementation effort
Promote adaptability	Identify the ways a clinical innovation can be tailored to meet local needs and clarify which elements of the innovation must be maintained to preserve fidelity
Provide ongoing consultation	Provide ongoing consultation with one or more experts in the strategies used to support implementing the innovation
Recruit, designate, and train for leadership	Recruit, designate, and train leaders for the change effort
Tailor strategies	Tailor the implementation strategies to address barriers and leverage facilitators that were identified through earlier data collection

2.4.1.1 RESEARCH DESIGNS USED IN IMPLEMENTATION SCIENCE

Many research designs have been shown to be useful when performing implementation science research. These include randomized trials, non-randomized (which includes pre-post and observation), and hybrid designs that combine elements of implementation and clinical effectiveness research.⁴⁶

Quasi-experimental and observational studies are the most common for implementation science within pharmacy practice.¹¹⁷ These types of studies create tools and lay foundational groundwork for future randomized controlled studies.

Hybrid designs are particularly useful in implementation research since they look at both the efficacy and effectiveness stages of an intervention. Doing this can improve outcomes in real world settings more quickly.⁴⁶ There are three

types of hybrid designs (labeled Type 1, Type 2, and Type 3). Type 1 involves performing a clinical intervention while also gathering information on real-world implementation. Type 2 is testing an intervention and implementation strategy at the same time. And Type 3 is when an implementation strategy is tested that also observes the clinical intervention and outcomes. Observational studies are a feasible way to study pharmacists' intention to implement depression screenings.

2.4.1.2 CONSOLIDATED FRAMEWORK FOR IMPLEMENTATION RESEARCH

The CFIR was chosen for this study because of its wide use in health services research (particularly within pharmacy) and the large evidence base supporting its use and efficacy.¹⁰⁸ The CFIR has five domains with multiple sub-domains underneath each: 1) intervention characteristics, 2) outer setting, 3) inner setting, 4) characteristics of individuals, and 5) process of implementation.^{86,88,89} These domains are explained in more detail below and in Figure 2.2.

1. Intervention characteristics: Parts of the intervention that will influence implementation. Eight factors are included in this domain (e.g., perceived internal or external origin, evidence quality and strength, relative advantage, complexity, and cost).
2. Outer setting: Influences on the implementation of the intervention from outside the site of the intervention. Four factors make up this domain (e.g., patient needs and resources, external policy and incentives).

3. Inner setting: Influences on the implementation of the intervention from inside the site of the intervention. Twelve factors make up this domain (e.g., implementation climate, leadership engagement, available resources, and learning climate).
4. Characteristics of individuals: How each person involved in the implementation may influence said implementation. Five factors make up this domain (e.g., self-efficacy, knowledge and beliefs about the intervention).
5. Implementation Process: Strategies or tactics that may influence the implementation of the intervention. This domain includes eight factors (e.g., planning, engaging necessary stakeholders, and reflecting and evaluating).

Since pharmacists have been shown to have decreased confidence and increased discomfort when performing depression screenings and interacting with patients with MHCs,^{108,118} two components of the CFIR are particularly relevant: pharmacists knowledge and self-efficacy/confidence toward performing a depression screening service.⁸⁶⁻⁸⁹ Similarly, evidence, cost, and structural characteristics such as having a private counseling area and time to perform a depression screening were identified as relevant.¹¹⁸ Finally, assessment of implementation strategies was deemed relevant so that an understanding of pharmacist perceptions of the most beneficial strategies could be gained in order to tailor future implementation services.^{108,118} Subsequently, the CFIR predicts

that optimizing these factors should result in a greater likelihood that pharmacists will implement the service in question.^{108,119}

Figure 2.2: Domains of CFIR¹²⁰

Intervention	Outer Setting	Inner Setting	Individual	Process
<ul style="list-style-type: none"> •Source •Evidence •Advantage •Adaptability •Triability •Complexity •Design •Cost 	<ul style="list-style-type: none"> •Needs and Resources •Cosmopolitanism •Peer Pressure •Policies and Incentives 	<ul style="list-style-type: none"> •Structure •Networks and Communication •Culture •Climate •Readiness 	<ul style="list-style-type: none"> •Knowledge and Belief •Self-efficacy •Stage of Change •Identification •Other Attributes 	<ul style="list-style-type: none"> •Planning •Engaging •Executing •Reflecting and Evaluating

2.4.1.3 CFIR AND IMPLEMENTATION OF SCREENING SERVICES

Researchers have used the CFIR to implement a variety of screening services in pharmacies. Gemmeke et al. evaluated the implementation of a fall prevention service (which included screening patients for risk) in pharmacies.¹²¹ Findings showed that nine pharmacies implemented the service but still had barriers like time and staff shortages which limited the sustained implementation of the service. The CFIR was used by Kenney et al. to summarize and assess findings from studies that involved the implementation of opioid misuse intervention, including the implementation of a patient screening protocol.¹²² The

patient screening service went on to screen n=333 patients and identifying opioid misuse in 15% of them. A second study using CFIR to implement a screening for opioid use disorder found that while challenges occurred, the use of the CFIR made implementation of such a service more feasible by tailoring strategies, decreasing stigma, and increasing staff confidence.¹²³

Using the CFIR in implementation research is useful and common in implementing screening services in pharmacies. The CFIR can identify both facilitators and barriers that will help enhance implementation of depression screening services in the future.

2.4.2 The Theory of Planned Behavior

Behavioral theories can be used to gain a systematic understanding of the mechanisms between peoples' internal and external factors and how those factors relate to changing their behavior.¹²⁴ These theories can and should contribute to implementation planning and evaluation.^{51,125}

The Theory of Planned Behavior (TPB)^{126,127} is a social behavioral theory that links a person's beliefs to their intention and ultimately to their behavior. The TPB was chosen for this research project due to the inclusion of intention as a primary measurement of behavior. This study will not be able to gain an accurate measure of behavior, however, the intention to implement a depression screening service can be reliably measured. While intention by itself has been shown to be a poor indicator of behavior change,¹²⁸ persons who have greater control over their behavior are more likely to carry out their intentions.¹²⁹ TPB

accounts for perceived behavioral control as an additional determinant of behavior. Sheeran & Conner 2017 also showed that the predictors of intention (attitude, subjective norms, and perceived control) cohere into a “motivational coherence” which showed that greater motivational coherence correlated with a stronger relationship between intention and behavior.¹³⁰

It is important to note several limitations of the TPB. This theory does not address the timeframe between the intention to perform a behavior and “behavioral action”. Moreover, this theory does not account for other factors such as fear, mood, past experiences, environmental factors, or economic factors that also influence intention. Finally, the TPB operates under the assumption that decision making is a linear process and not that decision making can change over time.^{51,130–132}

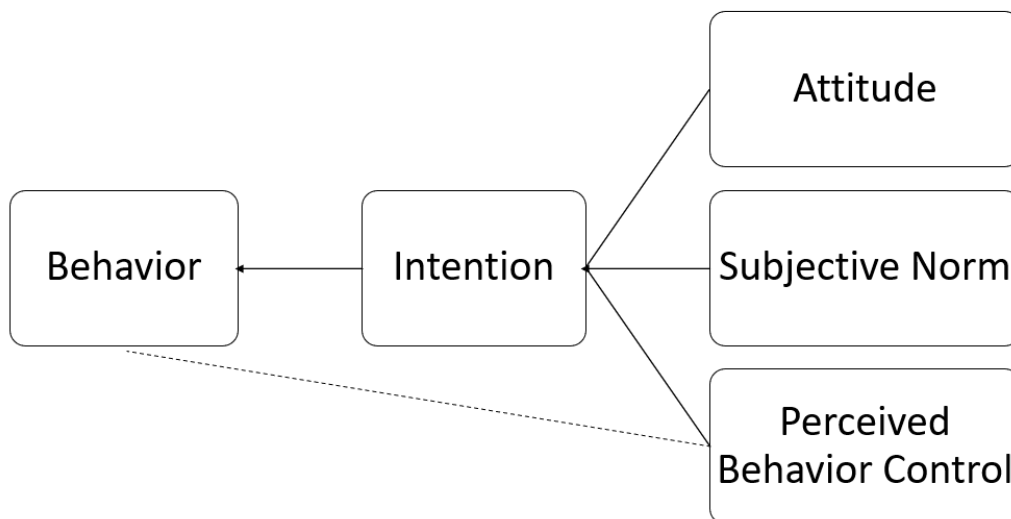
2.4.2.1 CONSTRUCTS OF THE THEORY OF PLANNED BEHAVIOR

The TPB postulates that three constructs influence one’s intention to perform a behavior, and the intention to perform a behavior directly influences one’s behavior (Figure 2.3). These three constructs are 1) attitude, 2) subjective norms, and 3) perceived behavioral control.^{51,133} They are explained in more detail below:

1. Attitude: How favorable or unfavorable a person regards the behavior.
 - a. Outcome expectancy: How likely the behavior is to produce the wanted outcome.

2. Subjective norms: A person's beliefs of their peers' and other important persons' approval or disapproval of the behavior.
 - a. Normative beliefs: What a person believes about the "code of behavior" in groups of people.
 - b. Motivation: The motivation to comply with the "code of behavior" in these groups
3. Perceived behavioral control: How easy or difficult a person believes the behavior is to perform.
 - a. Perceived Power: how much influence or power those factors have to facilitate or impede the performance of the behavior.
 - b. Control beliefs: What a person perceives as factors that may impede or facilitate their behavior.

Figure 2.3: The Theory of Planned Behavior¹³⁴



2.4.2.2 TPB AND INTENTION TO PROVIDE SCREENING AND OTHER SERVICES

The TPB has been used to examine physicians intention to perform cervical cancer screening services.¹³⁵ Hu et al. found that when the TPB was combined with a knowledge assessment, it was a useful model in predicting physician's intention to provide these screening services. Thus, a knowledge assessment was added to this dissertation to improve detection of pharmacists' intention to screen patients for depression. Physician assistants' (PAs) beliefs were also examined by the TPB to asses attitudes towards suicide screening for adolescents.¹³⁶ PAs were found to support screening for suicide as a successful strategy for identifying suicide risk earlier, however, many PAs did not offer these screening services due to lack of time. This study showed that the TPB is viable for examining intention in healthcare providers as well as giving support to pharmacists offering mental health screening services for patients.

The TPB has also been used to examine pharmacists' intention to provide various services for patients. Frenzel et al. used the TPB to examine pharmacists who did not implement an opioid risk screening.¹³⁷ This study found that these pharmacists had positive attitudes and subjective norms towards implementing an opioid risk screening. However, the perceived behavioral control construct had the highest number of negative responses. This suggested subjective norms like "difficulty in offering the screening" and "unsuccessful integration of past interventions" were the most influential factors in pharmacists implementing this screening. Similarly, when Dowling-McClay et al. described pharmacists beliefs toward offering HIV/HCV prevention services, they found that pharmacists had

variable beliefs about willingness and perceived fit for offering these services.⁴⁶

Overall, the TPB has been successfully used to assess intention to implement screening services in a range of healthcare providers including pharmacists.

2.6 Study Purpose

Current research is lacking tools that address the unique barriers rural pharmacists may face when implementing depression screening services in their pharmacies. Because depression screenings offered by pharmacists are feasible and effective, the goal of this research is to implement a training program to give rural pharmacists the tools necessary to implement a depression screening service in their pharmacies.

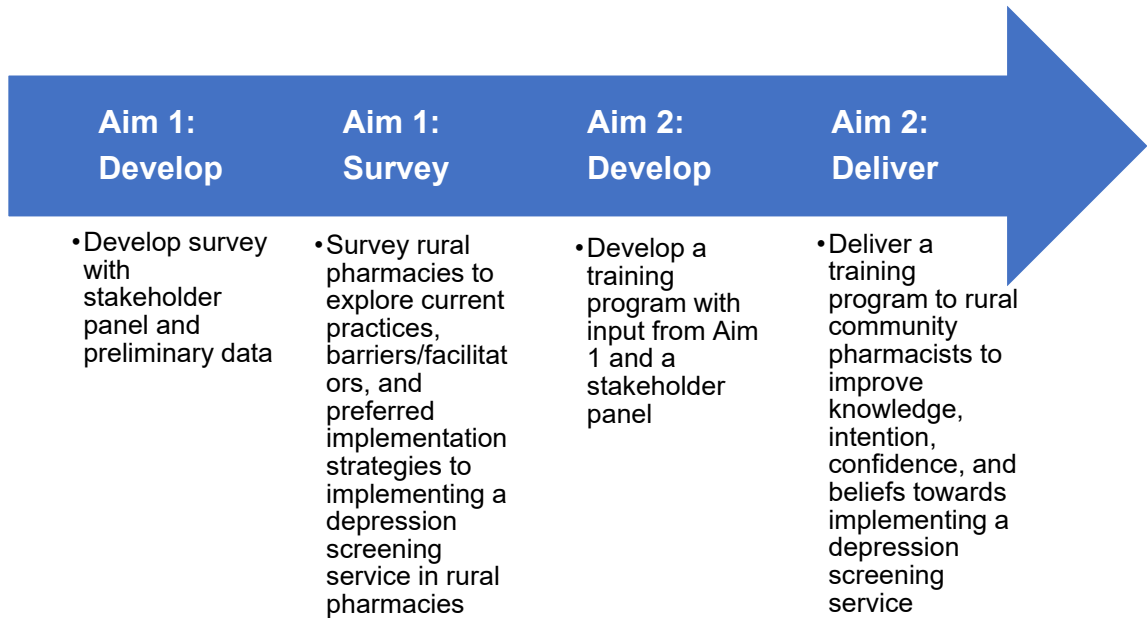
This proposed study seeks to understand facilitators and barriers to implementation of depression screening services and use that information to equip pharmacists with implementation strategies in order to improve uptake of depression screening services in rural pharmacies. The **purpose** of this study was to develop and deliver a depression screening training program for rural community pharmacists incorporating current practices, unique barriers/facilitators to rural populations, and preferred implementation strategies.

Findings can be used to facilitate uptake of depression screening services in community pharmacies while also adding to the foundation of the knowledge of implementing mental health services in rural communities. Future research should focus on an in-depth on-site analysis of the implementation of depression screening services in rural pharmacies focusing on assessing implementation

outcomes including fidelity, acceptability, adoption, appropriateness, cost, feasibility, penetration, and sustainability.¹³⁸ This would improve researchers understanding of how pharmacists are using the developed implementation tools in real-world settings. Similarly, future research should focus on minority communities since rural communities can have primarily minority populations. This would allow differences in community culture and uptake of screening services to surface so that researchers would be able to account for these differences in future training programs.

Chapter 3 – Methods

Figure 3.1.1: Project Overview^a



^aIRB approval was obtained at each stage of this project

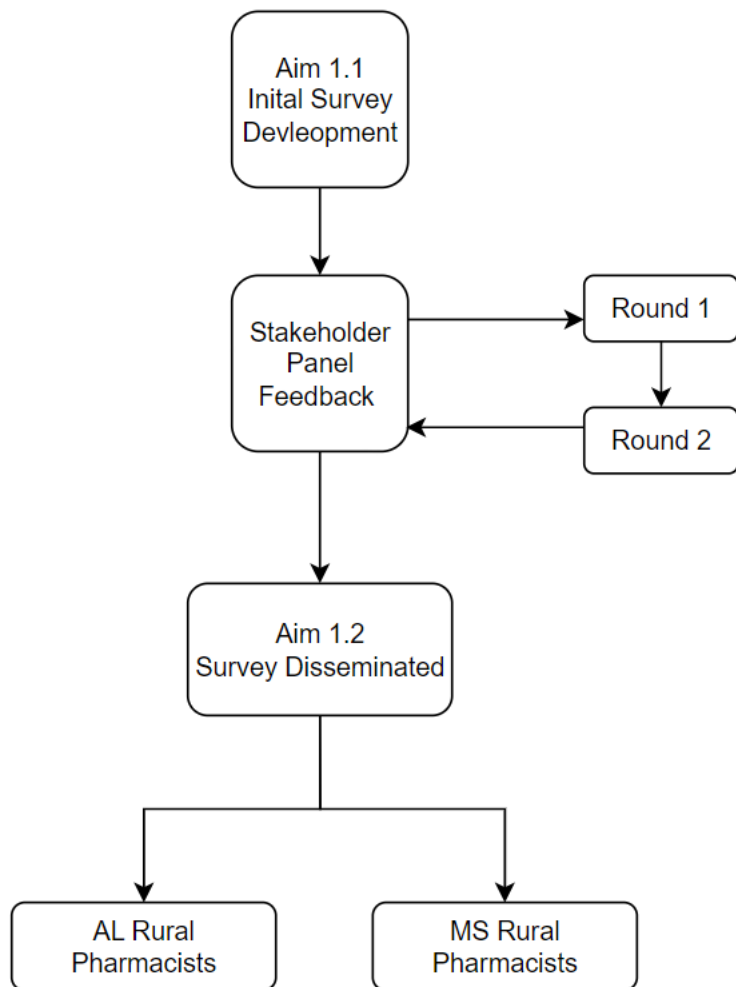
3.1 Specific Aim 1

Investigate current practices, barriers/facilitators, and preferred implementation strategies to implementing a depression screening service in rural pharmacies.

An exploratory survey was designed based on preliminary data from a previously conducted survey on mental health/psychotropic stigma⁵⁰ and a stakeholder panel. Rural community pharmacists were identified and contacted by mail using the Hayes directory.⁸⁰ This exploratory survey was expected to provide new information on perceived barriers unique to rural pharmacies when

implementing a depression screening service and preferences for implementation strategies to inform the development of a training program which would be salient to rural pharmacists. Figure 3.1 above shows the project overview. Figure 3.2 below shows an overview of Aim 1.

Figure 3.1.2: Aim 1 Overview



3.1.1 Subaim 1.1

Develop an exploratory survey to assess rural pharmacists' current practices, barriers/facilitators, and preferred implementation strategies to implement a depression screening service.

An exploratory survey was designed based on a stakeholder panel and preliminary data from (1) a published systematic review detailing pharmacists' impact on mental health teams,¹³⁸ (2) a mental health and psychotropic stigma survey conducted among pharmacy students,⁴⁹ and (3) a published abstract detailing barriers towards access to mental health among adolescents.^{96,97} The stigma survey used the Perceived Devaluation and Discrimination (PDD) Scale to measure internalized mental health stigma and stereotype awareness.¹³⁹ A stakeholder panel then pre-tested the survey using a modified Delphi method.^{47,108}

3.1.1.1 SURVEY DEVELOPMENT

The survey was developed to collect data on (1) current depression screening practices among rural community pharmacists in Alabama, (2) unique barriers and facilitators that rural pharmacists encounter when implementing a depression screening service (including stigma and confidence of pharmacists), and (3) preferred implementation strategies. Table 3.1.1 shows example constructs and questions for each domain.

Table 3.1.1: Example of survey domains/constructs

Domains	Example constructs	Example questions
1. Current Practices	Depression screening service implemented	“Do you currently have a depression screening service in your pharmacy?” “If yes, how does the depression screening occur?”
2. Barriers/ Facilitators	Stigma	PDD scale
	Confidence/self-efficacy	Depression screening/PHQ-9 confidence scales
	Evidence	What kind of evidence, if any, is needed about the benefits of a depression screening service to get pharmacists on board?
	Patient’s willingness to participate	The patients at my pharmacy are not willing to participate in a depression screening service
	Legal liability	Legal liability may be a problem if my pharmacy offers a depression screening service
	Time	I do not have enough time to offer a depression screening service at my pharmacy
	Support staff	I have the support staff necessary to offer a depression screening service
3. Preferred implementation strategies	Develop a formal implementation blueprint	Setting a goal or objective for depression screening services
	Alter incentive/allowance structures	What kinds of incentives would you use to help your staff implement a depression screening service?
	Revise professional roles	Establishing staff member roles for depression screening services
	Use mass media	Preparing an outreach/marketing plan for depression screenings
	Involve executive boards	Approaching management, corporate, or owners to gain support
	Intervene with patients/consumers to enhance uptake and adherence	Establishing a procedure to identify patients who would benefit from a depression screening Establishing a procedure to follow-up with patients who test positive for depression
	Purposely reexamine the implementation	Establishing a plan to continuously evaluate and improve the pharmacy's depression screening services

3.1.1.1.1 Current Depression Screening Practices

Current practices were added to the exploratory survey to inform content of Aim 2's training webinar. For example, if the majority of pharmacists currently had a depression screening service implemented, then the webinar would change its focus to analysis and improvement of depression screening services instead of basic implementation strategies for depression screening services. Current practices were assessed by asking pharmacists if the pharmacy they worked at currently had a depression screening service implemented. If the answer was yes, they were asked to describe the service in a text box.

3.1.1.1.2 Unique Barriers and Facilitators


The Consolidated Framework for Implementation Research (CFIR)^{87,88,114} was used to inform survey development in regard to barriers and facilitators. Barriers toward pharmacists implementing services were identified from the literature.⁴⁷ Barriers and facilitators were assessed in two different ways: (1) pharmacists were asked to rank barriers based on importance from a list of eight barriers from the CFIR and (2) pharmacists were asked to state their agreement with how each barrier or facilitator affected the pharmacy they worked at with Likert-type questions. These methods were chosen in order to get a more comprehensive understanding of the barriers pharmacists face in implementing a depression screening service in their pharmacy. On the one hand, ranking barriers can give an understanding of the key barriers pharmacists face. On the

other hand, ranking questions can often leave out other factors that may be important, which is why a Likert-type question was also included.

Other barriers assessed were pharmacists' confidence (or self-efficacy) in performing a depression screening service and in using the PHQ-9 to screen patients for depression. Pharmacist confidence was assessed since self-efficacy is an important factor to account for according to the CFIR.¹¹⁴ Confidence in performing a depression screening service was assessed using a modified scale from Hastings et al.¹¹⁴ The scale was modified to ask about depression screening services instead of vaccine services so that pharmacists' confidence in performing a depression screening service. Two items from the original scale were removed since they did not pertain to depression screening. Further, the 1-7 scale was changed to a 1-5 scale to maintain consistency with the rest of the survey. Table 3.1.2 details the scale modification process.

Confidence in using the PHQ-9 was assessed on a Likert-type scale asking participants to rate their agreement with six statements. Statements included items like "I am familiar with the PHQ-9", "I know how to score the PHQ-9", "I am confident in my ability to answer patient or caregiver questions about the PHQ-9".

Table 3.1.2: Modifications to Confidence Scale^{96,97}

Confidence Questions	Modified Questions	Scale
<i>With regard to the pneumococcal vaccine, how confident are you that you can do each of the following?</i>	<i>With regard to a depression screening service, how confident are you that you can do each of the following?</i>	1 Not at all confident
Obtain an accurate patient vaccine history	Obtain an accurate patient mental health history	2
Identify patients who qualify to receive the vaccine	Identify patients who qualify to receive a depression screening	3
Identify patients with contraindications to the vaccine	<i>Removed</i>	4
Initiate a conversation with a patient about receiving the vaccines	Initiate conversations with a patient about receiving a depression screening	5
Discuss vaccine costs	<i>Removed</i>	6
Administer the vaccines	Administer a depression screening	7 Very confident
Answer patient questions about the vaccines	Answer questions about a depression screening	
		1 Not at all confident
		2
		3
		4
		5 Very confident

Likewise, pharmacists' stigma towards patients with mental health conditions was assessed with the PDD scale.^{90,138} Stigma has been shown to be an important factor to assess in pharmacists who are providing services for mental health conditions.⁹⁷ The PDD was chosen to assess stigma towards patients with mental health conditions since it is a validated questionnaire ($\alpha = 0.86-0.88$) that has been tested for reliability with a test-retest reliability of 0.93.¹⁴⁰ The PDD also assess both intrinsic and extrinsic stigma by measuring the extent a person believes most people will discriminate against patients with

mental health conditions.^{47,108} The items included in the PDD are included in Appendix A.

3.1.1.1.3 Preferred Implementation Strategies

The Consolidated Framework for Implementation Research (CFIR)⁴⁷ was used to inform survey development in regard to preferred implementation strategies. Preferred implementation strategies were identified from the CFIR¹¹⁵, Powell et al.¹⁴¹, and Hohmann et al.¹¹⁵ and adapted/modified into questions in order to assess which strategy pharmacists would find the most helpful. Powell et al. identified implementation strategies and their definitions in 2015 by using a panel of experts and a modified Delphi process.¹¹⁴ Hohmann et al. assessed pharmacist vaccine behaviors after an intervention by using CFIR to inform domains.^{142,143}

Preferred implementation strategies were assessed in two different ways: (1) Pharmacists were asked to state their agreement with how helpful or not each implementation strategy would be to implement a depression screening service at the pharmacy they worked at with Likert-type questions and (2) pharmacists were asked to answer open ended questions asking about specific strategies and how those strategies would work best in their pharmacy.

3.1.1.2 STAKEHOLDER PANEL

A stakeholder panel was chosen to give feedback on the survey to get continuous input from those most affected by the study outcomes.¹⁴⁴ The

stakeholder panel consisted of a purposively selected sample including one mental health expert (a psychologist), two rural community pharmacists, and two rural community members (who were not healthcare providers). The mental health expert was recruited from the University of Alabama at Birmingham’s mental health clinic. Two members of the Rural Research Alliance of Community Pharmacies (RURAL-CP) were recruited to represent rural pharmacists.

The two rural community members were recruited through fliers sent by email through the RURAL-CP and word of mouth. The first recruitment attempt involved asking pharmacists in the RURAL-CP to recruit their patients. When this failed, word of mouth was used among dissertation committee members to recruit two rural community members. Table 3.1.3 shows the recruiting strategy. Appendix B includes the recruitment fliers sent to each group.

Recruitment involved (1) an initial email giving an overview of the project and gauging interest, (2) a Zoom call to go over the project in more detail and go over incentive information, and (3) completion of a signature form needed to process payment.

Table 3.1.3: Stakeholder Panel Recruitment Process

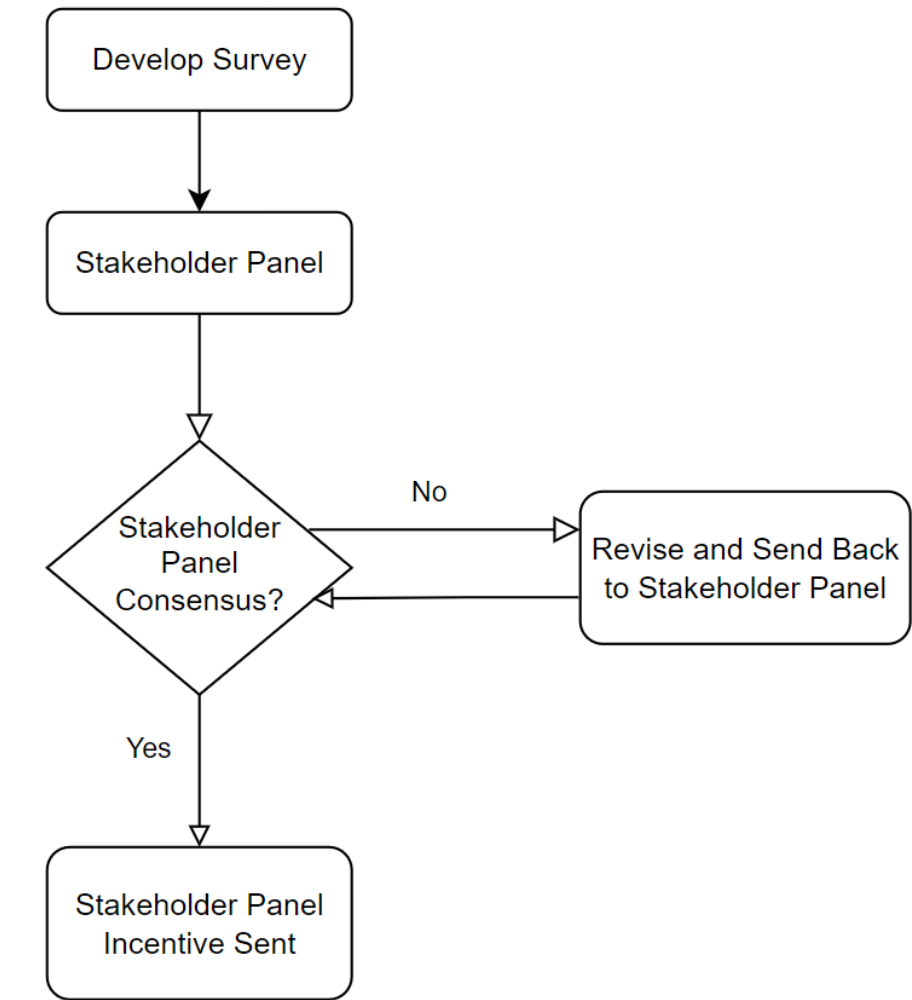
ID	Interest email	Zoom info call	Form received	Notes
<i>Mental health provider</i>				
MC1	4/16/2021	4/30/2021	5/3/2021	Dr. Jackson contact
<i>Rural Community Members</i>				
RC1	7/2/2021	7/13/2021	7/13/2021	Dr. Jackson contact
RC2	7/2/2021	7/16/2021	7/22/2021	Dr. Jackson contact

<i>Rural Pharmacists</i>				
Pharm1	4/30/2021	5/14/2021	6/3/2021	RURAL-CP member
Pharm2	4/16/2021	4/28/2021	4/29/2021	RURAL-CP member

3.1.1.3 PROCEDURES

After initial survey development and stakeholder panel recruitment, a modified Delphi method was used to refine development of the survey by sending the initially developed survey with embedded assessment questions to the stakeholder panel. Stakeholder panel members then answered the embedded assessment questions, and the survey was revised based on their feedback. Each stakeholder panel participant was given two weeks to complete the pre survey and provide feedback on survey components for each round. Consensus of the stakeholder panel members was expected to be reached within three rounds, however only two rounds were needed. After consensus was reached, compensation of \$100 was provided to each member. Figure 3.1.3 shows an overview of Subaim 1.1.

Figure 3.1.3: Overview of Subaim 1.1



3.1.1.3.1 Definition of Rural

Due to the diverse ecosystems in America, “rural” has different meanings in different contexts;¹⁴⁵ therefore, this study used the Rural-Urban Commuting Area (RUCA) definition to categorize rural areas.¹⁴⁶ Categorization 1 was used, and codes 4-10 were selected to represent rural areas.¹⁴⁵ This definition was chosen since it is commonly used among healthcare research, and RUCA codes

are flexible and can be grouped differently depending on the analysis that is being performed.¹³⁹

3.1.1.3.2 Pre-Survey: Delphi method Round 1

A modified Delphi method was used via an online questionnaire to generate consensus on wording and content of survey items.¹⁴⁷ All surveys were delivered through Qualtrics.¹⁴⁸ Participants were asked to complete the survey as well as provide feedback on the content and wording of survey items.

Assessment was performed by Likert-type and open-ended questions at the end of each question block in the first pre-survey. Appendix C includes the full Qualtrics pre-survey for round one. Six question blocks were included in the pre-survey: 1) Demographics, 2) Mental health experiences, 3) Depression screening and PHQ-9 experiences, 4) Barriers and facilitators to implementing a depression screening, 5) Stigma towards patients with mental health conditions, and 6) Preferred implementation strategies. Question blocks and the questions associated with each are in Table 3.1.4. At the end of the pre-survey, three questions were asked that assessed the survey globally for length, understandability, and confusing portions.

Table 3.1.4: Pre-Survey Round 1 Question Blocks & Questions

Question Block	Question Topic	Question Type
Demographics	Age	Multiple Choice
	Gender	Multiple Choice
	Race/Ethnicity	Multiple Choice
Mental Health Experience	Years in role	Multiple Choice
	Interaction with patients with MHC	Yes/No
	Interaction with patients on Psychotropics	Yes/No

Depression Screening and PHQ-9 Experience	Pharmacy offer Depression screening services	Yes/No
	Describe services	Text
	Confidence performing a depression screening service	Likert-type
	Confidence using PHQ-9	Likert-type
Barriers/Facilitators	Barriers toward implementing a depression screening service	Ranking question
	Barriers/Facilitators	Likert-type
	Private screening area	Yes/No
Stigma	Stigma towards people with mental health conditions (PDD scale)	Likert-type
Preferred implementation strategies	Difficulties implementing depression screening services	Text
	What would make it easier	Text
	Evidence needed	Text
	Preparedness	Text
	Attitudes	Text
	Helpful implementation options	Text
	Incentives	Text
Costs	Text	

Assessment questions asked at the end of each question block were five Likert-type questions with a scale from 1-5 with 1 being “Strongly disagree” and 5 being “Strongly agree” as well as one open ended question. These Likert-type questions assessed five domains including: 1) understandability, 2) ease of answering, 3) ability to clearly see questions on device, 4) reasonability, and 5) applicability (Figure 3.1.4). The open-ended question asked stakeholder panel members to “Please include any other thoughts you may have about the above questions” (Figure 3.1.5). These assessment questions were modified from Hohmann 2019.¹⁴⁹ All assessment questions for all pre-survey rounds were in red text to increase the ease of differentiation for stakeholder panel members. Figure 3.1.6 illustrates where assessment questions were located at the end of each question block.

Figure 3.1.4: Assessment Likert-Type Questions

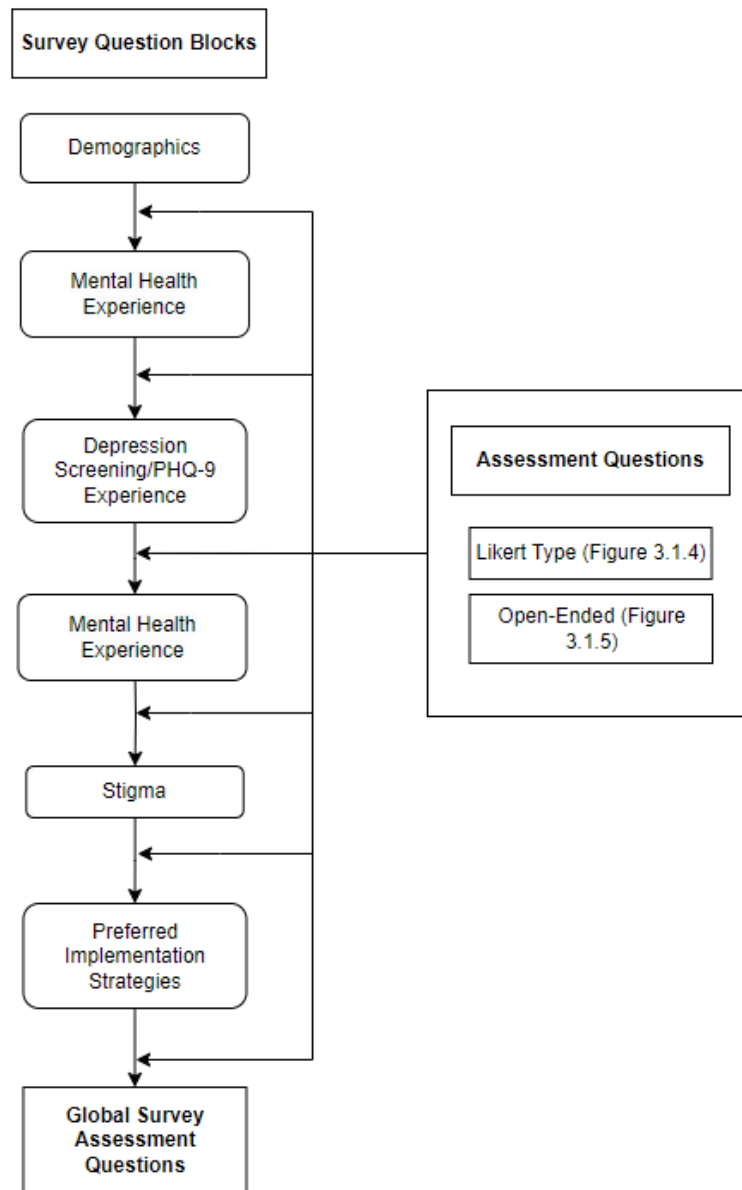
Please indicate your thoughts on the above questions by rating your level of agreement to each of the following.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The questions were easy to understand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I was able to easily answer the questions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I was able to see the questions clearly on my device	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
These questions seem reasonable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
These questions seem applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 3.1.5: Open-Ended Assessment Questions

Please include any other thoughts you may have about the above questions.

Figure 3.1.6: Pre-Survey Question Blocks and Assessment Question Types



Scores for each question block’s assessment questions are listed in (Table 3.1.5). Every stakeholder panel (n=5) member answered the first question (“The questions are easy to understand”). The rest of the assessment questions were not answered by each member. It is uncertain why stakeholder members did not answer each question.

Table 3.1.5: Pre-survey Round 1 Assessment Scores

Question Domain		# of participants				
		Strongly disagree	Disagree	Neither	Agree	Strongly agree
Demographic Question Block						
<i>Please indicate your thoughts on the above questions by rating your level of agreement to the following statements</i>	The questions were easy to understand	1	--	--	1	3
	I was able to easily answer the questions	--	--	--	--	3
	I was able to see the questions clearly on my device	--	--	--	--	3
	These questions seem reasonable	--	--	--	--	3
	These questions seem applicable	--	--	--	1	2
Mental Health Experience Question Block						
<i>Please indicate your thoughts on the above questions by rating your level of agreement to the following statements</i>	The questions were easy to understand	--	--	--	2	3
	I was able to easily answer the questions	--	--	1	--	2
	I was able to see the questions clearly on my device	--	--	--	1	2
	These questions seem reasonable	--	--	--	1	2
	These questions seem applicable	--	--	--	1	1
Depression Screening/PHQ-9 Experience						
<i>Please indicate your thoughts on the above questions by rating your level of agreement to the following statements</i>	The questions were easy to understand	--	--	--	2	3
	I was able to easily answer the questions	--	--	1	1	1
	I was able to see the questions clearly on my device	--	--	--	1	2
	These questions seem reasonable	--	--	--	--	3
	These questions seem applicable	--	--	--	--	3
Barriers/Facilitators Question Block						
<i>Please indicate your thoughts on the above questions by rating your level of agreement to the following statements</i>	The questions were easy to understand	--	1	1	--	3
	I was able to easily answer the questions	--	--	1	1	1
	I was able to see the questions clearly on my device	--	--	--	1	2
	These questions seem reasonable	--	--	--	--	3
	These questions seem applicable	--	--	--	--	2

Stigma Question Block						
<i>Please indicate your thoughts on the above questions by rating your level of agreement to the following statements</i>	The questions were easy to understand	--	--	--	3	2
	I was able to easily answer the questions	--	--	1	1	1
	I was able to see the questions clearly on my device	--	--	--	1	2
	These questions seem reasonable	--	1	--	--	2
	These questions seem applicable	--	1	--	1	1
Preferred Implementation Strategy Question Block						
<i>Please indicate your thoughts on the above questions by rating your level of agreement to the following statements</i>	The questions were easy to understand	--	--	--	2	3
	I was able to easily answer the questions	--	--	--	2	1
	I was able to see the questions clearly on my device	--	--	--	1	2
	These questions seem reasonable	--	--	--	--	3
	These questions seem applicable	--	--	--	--	3

Feedback from the open-ended question “Please include any other thoughts you may have about the above questions” primarily included the clarification and/or streamlining of questions or question blocks (Table 3.1.6). However, there were several comments that expressed concern about the ranking barriers question, the PDD questionnaire assessing mental health stigma, and the open-ended questions assessing preferred implementation strategies. The ranking question was changed to ask participants to rank their top three barriers instead of ranking all nine barriers. I worked with the mental health provider in the stakeholder panel on the mental health stigma questionnaire, and we ultimately decided to keep the PDD since it can assess both implicit and explicit stigma. The open-ended questions assessing preferred implementation

strategies were modified to be Likert-type questions which are less burdensome for participants to answer. Several open-ended questions were retained at the end of the preferred implementation strategy question block to gather more detailed thoughts from rural pharmacists. A further breakdown of the feedback received and incorporated into the second pre-survey is in Table 3.1.6. All open-ended question responses are in Appendix D.

Table 3.1.6: Pre-Survey Feedback Incorporation

Question Block	Participant	Feedback from stakeholder panel	Response type	Updated Items/Response	
Demographics	MHP	Recommend including “non-binary” option and “other” option so participants can write gender identity	Question change	Original Question Please indicate your gender. <ul style="list-style-type: none"> • Male • Female Prefer not to answer	Updated question Please indicate your gender. <ul style="list-style-type: none"> • Male • Female • Non-binary** • Other _____** • Prefer not to answer
	RCM1	Does not see how these questions pertain to a depression screening	Clarification by email	“Demographic questions are included so I can check for diversity in my sample. Diversity of age, gender, race, etc.”	
MHC Experiences	MHP	Include examples after “mental health conditions”	Question clarification	Original: In this section, please tell us a bit about your professional and personal experiences with mental health conditions	Updated: In this section, please tell us a bit about your professional and personal experiences with mental health conditions (e.g. depression, anxiety, etc)**
	RP1	Define MHC			
	RCM1	Define “interaction” in second question	N/A	Did not change since no RP had a question about this	
Depression & PHQ-9 Experience	MHP	Make “I have used the PHQ-9” a yes-no question	Question change	Original: Likert- type question	Updated: “The Patient Health Questionnaire (PHQ-9) is often used as the tool with which to deliver a depression screening to patients. Have you used the PHQ-9 before?” <ul style="list-style-type: none"> • Yes • No • Not sure
	MHP	Include options to choose from instead of an open answer text box for question 17	N/A	Did not change since it was not clear what types of services (if any) to include in a list	

Barriers/ facilitators	RP1	Question 41: Barrier statement 7 unclear	Clarified statement	Original: "They will not be able to refer patients who screen positive for depression to the physicians in my area"	Updated: "The physicians I work with are not supportive of pharmacies referring patients from depression screenings"***
	RCM1	Question 41: Ranking question too long	Question change	Original: Rank all 9 barriers from least to most important	Updated: Rank top three barriers from list
Stigma	MHP	Is PDD validated?	Email response	The mental health stigma questionnaire is validated. It is called the Perceived Devaluation and Discrimination Scale [PDD].	
	RP1	Change PDD statement for clarity	Email response	I cannot change these questions since I am using a validated questionnaire.	
	RCM1	Does not understand purpose of PDD	Email response	I am using [the PDD] to look at pharmacist's implicit stigma towards patients with mental health conditions.	
Implementation strategies	MHP	Change open ended questions to Likert-type	Question change	Original: 8 open ended text box questions	Updated: 14 Likert-type questions with 5 open ended text box questions after

Abbreviations:

MHP: Mental Health Provider

RCM: Rural Community Member

RP: Rural Pharmacist

***Red Font: Changes made based on stakeholder feedback

At the end of the pre-survey, the stakeholder panel was asked to assess the survey globally. Three open-ended questions asked about survey length, overall understandability of the survey, and if there were any confusing portions of the survey. Feedback primarily reinforced the individual question block feedback (shown in Table 3.1.6) and is detailed in Table 3.1.7 below.

Table 3.1.7: Summarized Global Feedback on PRE-SURVEY 1

Assessment	Participant	Summarized Feedback
Survey Length	RP1	Implementation strategy section: remove open ended boxes and include Likert-type questions instead
	RCM1	Ranking all 8 barriers may be too long
	RP2, RCM2, MHP	Length is good
Understandability	All	No changes. Questions are understandable
Confusing questions?	RP1	Implementation strategy section: open ended questions need formatting
	MHP	Stigma questions may be confusing and cumbersome
	RP2, RCM1, RCM2	No confusing questions
Abbreviations:		RCM: Rural Community Member
MHP: Mental Health Provider		RP: Rural Pharmacist

One other change was added to the pre-survey that was not pulled from stakeholder feedback. A question asking for the title of the pharmacist that included a selection “other” with a text box for specification was added to sort out any participant that was either not a pharmacist or a pharmacist manager/owner.

3.1.1.3.3 Pre-Survey: Delphi Method Round 2

The pre-survey was revised based on feedback from Round 1, and then sent back to the stakeholder panel members for a second round of review and

feedback. Participants were once again given two weeks to complete the Round 2 pre-survey and provide feedback. The updated pre-survey for Round 2 removed the Likert-type assessment questions (Figure 3.1.4) for question blocks that did not have major changes. This included all question blocks except the barrier/facilitator and preferred implementation strategy question blocks.

Removing unnecessary assessment questions decreased the burden on the stakeholder panel in an attempt to maintain the quality of feedback provided.

The open-ended questions were kept after all question blocks so that stakeholders could provide any other feedback that did not come out in Round 1. Assessment questions (both Likert-type and open-ended) were kept in red text for ease of differentiation. The barrier/facilitator and preferred implementation strategy blocks had major changes that needed to be approved by the stakeholder panel. Therefore, both the assessment Likert-type and open-ended questions were kept in order to maintain consistency of feedback between the first and second rounds of the pre-survey. Appendix C includes the full Round 2 pre-survey and Table 3.1.8 shows the question blocks with updated questions.

Table 3.1.8: Pre-Survey Round 2 Question Blocks & Questions

Block	Question Topic	Question Type
Demographics	Age	Multiple Choice
	Gender	Multiple Choice
	Race/Ethnicity	Multiple Choice
	Pharmacist Title	Select all that apply**
Mental Health Experience	Years in role	Multiple Choice
	Interaction with patients with MHC	Yes/No
	Interaction with patients on Psychotropics	Yes/No
Depression Screening and PHQ-9 Experience	Pharmacy offers depression screening services	Yes/No
	Describe services	Text

	Confidence performing a depression screening service	Likert
	Confidence using PHQ-9	Likert
Barriers/ Facilitators	Barriers toward implementing a depression screening service	Rank Top 3 question**
	Barriers/Facilitators	Likert
	Private screening area	Yes/No
Stigma	Stigma towards people with mental health conditions (PDD scale)	Likert
	Preferred strategies	Likert**
Preferred implementation strategies	Evidence needed	Text
	Preparedness	Text
	Attitudes	Text
	Incentives	Text
	Costs	Text

**Changed from Table 3.1.4: Pre-survey Round 1 Question Block

Participants were sent the link to the revised pre-survey with changes from the Round 1 pre-survey in red text, as illustrated in Table 3.1.6 above as well as Figure 3.1.7 below. Figure 3.1.8 illustrates where assessment questions were located at the end of each question block for Round 2 of the pre-survey.

Figure 3.1.7: Pre-Survey Round 2: Demographics Block Assessment Question Example (Open-Ended Question Only)

Q7

3. Are you of Hispanic, Latino, or Spanish origin?

- Yes
 - No
 - Prefer not to answer
-
-

Q8

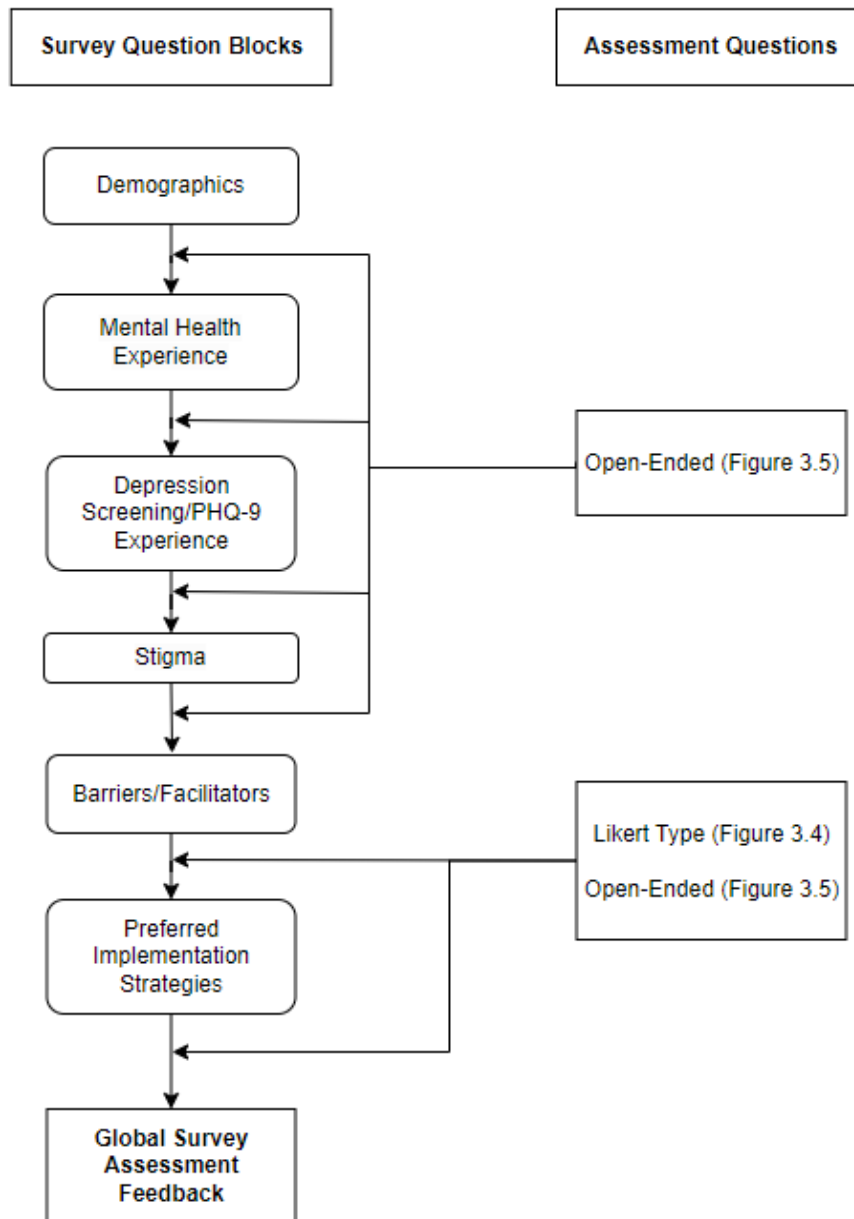
Please indicate your title (select all that apply):

- Staff pharmacist
 - Pharmacy manager
 - Owner/partner
 - Other (please specify):
-
-

Q9

Please include any feedback you may have about the above questions.

Figure 3.1.8: Pre-Survey Question Blocks and Assessment Question Locations



All feedback was positive and in agreement in round 2 of the pre-survey. There were several comments about technical issues and formatting considerations, however, the technical issues were not able to be replicated and the formatting suggestions were either not feasible or did not represent an

accurate understanding of pharmacy practice, so no changes were made. Table 3.1.9 includes more information on these comments and the rationale for not making changes. Of note, there was one negative comment about the inclusion of the “non-binary” option in the gender demographic question:

“Q5: We are health professionals; there are only two genders. That's basic biology 101. Anything else is a mental illness (that should be addressed not humored.) If we are going to compromise on such a simple point, why bother doing any research....just go with whatever you feel or whatever is popular. The correct options are: Male, Female, or Prefer Not to Answer. Anyone suggesting anything else, is not a serious scientific mind.” – Stakeholder Panel Member

This comment was discussed with my mentor and carefully considered since similar attitudes may be common in rural southern areas⁵⁰ and these attitudes may bias responses or prevent participants from taking the survey. However, no changes were made since promoting inclusion and diversity was deemed to be more important.

Table 3.1.9: Feedback and Rationale for Non-Inclusion of Feedback

Feedback	Rationale
<i>Reorder confidence questions: depression screening</i>	Did not change: Questions were ordered by the steps of a depression screening service
<i>Reorder confidence questions: PHQ-9</i>	Did not change: Questions were ordered by the steps of using the PHQ-9
<i>Shorten items in rating agreement with barriers question to save time for pharmacists</i>	Was not able to shorten items in a way that made sense
<i>Items in rating agreement with barriers question are duplicates</i>	The items identified were asking about two different concepts: (1) financial burden of a depression screening service and (2) reimbursement for offering a depression screening service
<i>Technical issue with ranking question</i>	Was not able to replicate issue
<i>Answer option was hidden</i>	Was not able to replicate issue

Global feedback on the survey was in complete agreement in terms of length being appropriate, no additions or removals necessary, and no part being confusing. All comments from the stakeholder panel are included in Table 3.1.10.

Table 3.1.10: Global feedback on Pre-Survey Round 2

Global question	Comments
<i>Length of survey</i>	"not too short. I don't think it's terribly long either."
	"Good length and important questions that should be asked of individuals and maybe get some help for them, especially some may feel more comfortable talking with pharmacist instead of doctor, who they may think is judging them."
	"Just Right."
<i>Did anything need to be added or taken out?</i>	"no"
	"Seemed comprehensive to me."
<i>Was any question or line confusing?</i>	"Everything was clear and easy to understand."

One of the pharmacist panelists did not complete the second pre survey. The stakeholder panel members that completed the second pre survey reached consensus on the content and wording of survey items. Panelists each received a \$100 financial incentive upon completion of the second pre-survey. The incentive was sent after all feedback was received and the decision was made that consensus had been reached. The financial incentive was chosen due to the time involved in completing the questionnaires and the number of iterations that needed to be completed. The decision was made to have a standardized incentive amount since all stakeholder panel members were performing the same activities. Table 3.1.11 contains detailed information on participation through the

entirety of the survey development. Appendix E includes further details on incentive payments throughout the research project.

Table 3.1.11: Stakeholder Panel Pretest Survey Participation

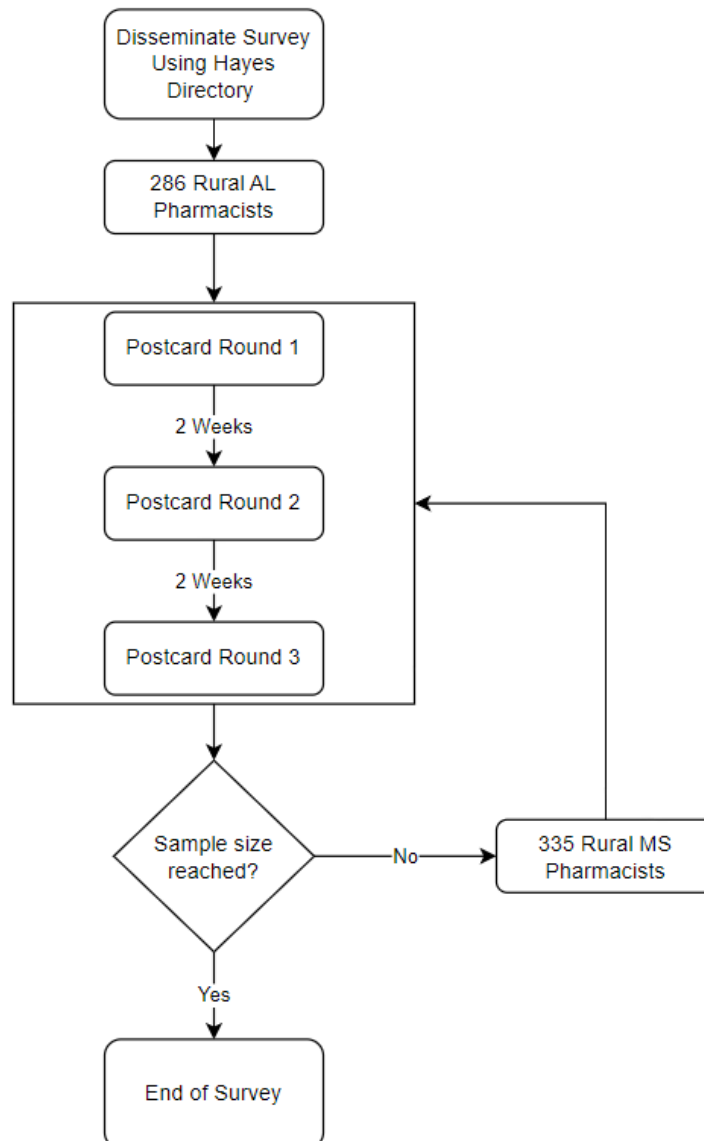
Member ID	Round 1		Round 2		
	<i>Survey sent</i>	<i>Date completed</i>	<i>Date Sent</i>	<i>Reminder email</i>	<i>Date received</i>
MC1	5/3/2021	5/4/2021	8/2/2021	N/A	8/3/2021
RC1	7/16/2021	7/16/2021	8/2/2021	N/A	8/8/2021
RC2	7/22/2021	7/23/2021	8/2/2021	N/A	8/7/2021
Pharm1	6/4/2021	6/17/2021	8/2/2021	N/A	8/9/2021
Pharm2	4/29/2021	5/11/2021	8/2/2021	8/24/2021	N/A

3.1.2 Subaim 1.2

Conduct a survey to assess current depression screening practices, barriers/facilitators, and preferred implementation strategies among rural pharmacies.

After development and pretesting, the survey was disseminated among rural pharmacists in Alabama and Mississippi. Figure 3.1.9 shows an overview of Subaim 1.2.

Figure 3.1.9: Overview of Subaim 1.2



3.1.2.1 PARTICIPANTS

Rural community pharmacies were contacted by mail using the Hayes directory: a directory of U.S. pharmacies and their contact information.¹⁵⁰ “Rural” was decided using RUCA codes 4-10 as described in section 3.1.1.4. Individual pharmacists were eligible to participate if they were a registered pharmacist employed at a rural community pharmacy. Only one response from each pharmacy was allowed to prevent multiple similar responses from skewing results. Though respondents will be referred to as “pharmacists” from here on out, they served as key informants for pharmacies. There was a total of 621 rural pharmacies in Alabama and Mississippi. Therefore, based on a 95% confidence interval and 10% margin of error, the sample size needed was 83 pharmacists from individual rural pharmacies to ensure a representative population.¹⁵⁰ The confidence interval of 95% is commonly used in sample size calculations which is why it was chosen for this research.¹⁵¹ The 10% margin of error was chosen due to this being an exploratory survey.^{72,152}

3.1.2.2 PROCEDURES

All rural Alabama pharmacies (n=286) were contacted first. A postcard was mailed to each rural pharmacy in Alabama. The postcard included information about the survey as well as a quick response (QR) code link and short link with instructions for accessing the online survey. Postcards were sent out three times: the second one two weeks after the first one, and the third one four weeks after the first. After sending out three rounds of postcards to rural pharmacies in Alabama, 37 of the needed 83 pharmacists had been recruited.

Therefore, all rural Mississippi pharmacies (n=335) were contacted next. Mississippi was chosen due to its similarity to Alabama in rurality (82% of Alabama counties are considered rural compared to 79% of Mississippi counties)¹⁵³ and postcards were sent out on the same schedule as before starting on February 3rd, 2022. Sample size was met after the addition of pharmacists from Mississippi.

Some changes to the timing of mailing the postcards were made due to the holidays in November and December as well as a printing delay in February. The dissemination timeline is illustrated further in Table 3.1.12. Pharmacists who completed the questionnaire received a \$25 Amazon gift card. Incentive payment details are in Appendix E.

Table 3.1.12: Postcard Dissemination for Subaim 1.2 Survey

State	Round	Date sent	Notes
AL	1	11/18/2021	Initial postcards sent to rural pharmacists in AL
	2	12/6/2021	Delayed several days due to holiday
	3	1/12/2022	Delayed mailing until after holidays
MS	1	2/3/2022	Initial postcards sent to rural pharmacists in MS
	2	2/22/2022	Printer/post office delay
	3	3/14/2022	Printer delay

Online surveys were chosen to mitigate exposure to viral particles from COVID-19 both by mail and in person surveys. While exposure to viral particles through surface contact is not as common, all measures should be taken to limit exposure to this research population.⁴⁹ The Hayes directory was chosen due to

the increased access to rural pharmacists it provided. In prior research, email listservs were used which did not result in adequate response rates.^{154–157}

The self-administered online questionnaire was anonymous and included items assessing current use of depression screening tools, barriers and facilitators to implementing a depression screening service, stigma towards mental health conditions (using the Perceived Devaluation Discrimination Scale [PDD]), and preferred implementation strategies (e.g., disseminating information, training, feedback and refinement, goal setting, teamwork, and incentive systems).¹⁵⁸ See Appendix F for the final survey.

The content and structure of the final questionnaire was informed by formative research in [Chapter 3.1.1.1](#) and included the following sections: 1) Demographics, 2) Mental health experiences, 3) Depression screening and PHQ-9 experiences, 4) Barriers and facilitators to implementing a depression screening, 5) Stigma towards patients with mental health conditions, and 6) Preferred implementation strategies. Barriers were assessed by having participants rank their top three barriers in order of importance as well as having Likert-type questions so participants can score each barrier if they “strongly agree” or “strongly disagree” it is important. Open-ended questions were included so participants could expand on why they ranked barriers the way they did and to add any information not included in the survey. Stigma towards patients with mental health conditions was assessed by the PDD which used Likert-type questions to assess implicit stigma. Likert-type and open-ended questions were used to assess pharmacist preference for implementation strategies.

3.1.2.3 DATA ANALYSIS

All domains were analyzed with descriptive statistics. Barriers and stigma factor scale items were reverse coded if necessary. All analyses were performed using IBM SPSS Statistical Software version 27¹⁵⁹ with an a priori alpha level of 0.05. Table 3.1.13 includes further details on instrument analysis.

T-tests were run on variables with two groups and ANOVAs were run on variables with three or more groups. One-way ANOVAs were utilized to evaluate one independent variable on the dependent variable. Two-way ANOVAs were utilized to evaluate multiple independent variables effect on the dependent variable. Correlations were performed to see associations between continuous variables.^{160–162} For all parts of the survey, assessment of non-response bias was performed by comparing early and late responders. The first 20% of respondents were compared to the last 20% to see if they differed on certain variables, such as demographics or pharmacy setting.

Confidence. Exploratory factory analysis was performed since the confidence scales were modified. Scores were averaged and t-tests and two-way ANOVAs with Bonferroni post hoc was run across demographics. Correlations between the mean of confidence implementing a depression screening service and the mean of confidence using the PHQ-9 scores were analyzed with the Pearson correlation coefficient.

Barriers. Barriers were analyzed in two ways. 1) A 5 item Likert-type scale where individual results were averaged and analyzed with a one-way ANOVA across demographics. 2) A rank choice question where the answers were weighted with the most important barrier given the highest score of “3”, the

second most important barrier given a score of “2”, and the third most important barrier given a score of “1”. The total weighted score was then calculated for each barrier.

Stigma. Stigma towards patients with mental health conditions was assessed with the PDD. Exploratory factory analysis was performed since the scale was modified. The PDD has been consistently shown to load onto two factors (positive and negative perceptions),¹¹⁴ therefore, a principle components analysis with varimax rotation with fixed number of factors to extract (n=2) was run. Items 4, 6, 7, 9, 10, and 11 were reverse coded. Scores were averaged and analyzed across demographics with a one-way ANOVA.

Preferred implementation strategies. Implementation strategies were averaged and assessed with a one-way ANOVA across demographics.

Table 3.1.13: Aim 1 Measures

MEASURE	SOURCE	SCALE	ANALYSIS
<p>Demographics Age, gender, race, ethnicity, pharmacist title, years in role, mental health experience, depression screening experience, PHQ-9 experience</p>	<ul style="list-style-type: none"> • Online survey • Multiple choice questions 	<ul style="list-style-type: none"> • Categorical 	<ul style="list-style-type: none"> • Descriptive
Confidence			
<p>Performing a depression screening</p> <ul style="list-style-type: none"> • Obtain mental health history • Identify patients • Initiate conversations • Administer • Answer questions 	<ul style="list-style-type: none"> • Online survey • 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree • Modified from Hastings et al.¹¹⁴ • <i>Ex Question: I am confident I can obtain an accurate patient mental health history</i> 	<ul style="list-style-type: none"> • Ordinal • 5 items 	<ul style="list-style-type: none"> • Descriptive • Scores averaged • 2-sample t-test • One-way ANOVA • Bonferroni post hoc • Cronbach's alpha for internal consistency
<p>Using the PHQ-9</p> <ul style="list-style-type: none"> • Knowledge • Score • Administer • Comfort • Answer questions 	<ul style="list-style-type: none"> • Online survey • 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree • Modified from Hastings et al.⁴⁷ • <i>Ex Question: I know how to score the PHQ-9</i> 	<ul style="list-style-type: none"> • Ordinal • 5 items 	<ul style="list-style-type: none"> • Descriptive • Scores averaged • 2-sample t-test • One-way ANOVA • Bonferroni post hoc • Cronbach's alpha for internal consistency
<p>Performing a depression screening * Using the PHQ-9</p>	<ul style="list-style-type: none"> • Averaged confidence performing a depression screening score • Averaged confidence using the PHQ-9 score 	<ul style="list-style-type: none"> • Continuous 	<ul style="list-style-type: none"> • Pearson correlation coefficient
Barriers/Facilitators			
<p>Barriers/Facilitators</p> <ul style="list-style-type: none"> • Time • Knowledge • Private area • Legal liability • Patient willingness • Difficulty • Reimbursement 	<ul style="list-style-type: none"> • Online survey • Rank choice question • 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree • Adopted from CFIR¹³⁸ 	<ul style="list-style-type: none"> • Ordinal • 3 rank choice items • 10 Likert items 	<ul style="list-style-type: none"> • Descriptive • Scores averaged • 2-sample t-test • One-way ANOVA • Bonferroni post hoc • Cronbach's alpha for internal consistency

<ul style="list-style-type: none"> • Support staff • Physician support • Private counseling area 	<ul style="list-style-type: none"> • <i>Ex question: I do not have the knowledge or skills to deliver a depression screening</i> 		
<p>Stigma</p> <ul style="list-style-type: none"> • Towards patients with mental health conditions 	<ul style="list-style-type: none"> • Online survey • 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree • PDD⁴⁷ • <i>Ex question: Most people think less of a person after they have been hospitalized for a mental illness</i> 	<ul style="list-style-type: none"> • Ordinal • 12 items 	<ul style="list-style-type: none"> • Descriptive • Scores averaged • 2-sample t-test • One-way ANOVA • Bonferroni post hoc • Cronbach's alpha for internal consistency
<p>Stigma *Confidence</p>	<ul style="list-style-type: none"> • Averaged stigma score • Averaged confidence performing a depression screening • Averaged confidence using the PHQ-9 	<ul style="list-style-type: none"> • Continuous 	<ul style="list-style-type: none"> • Pearson correlation coefficient
Preferred implementation strategies			
<p>Preferred implementation strategies</p> <ul style="list-style-type: none"> • Evidence needed • Preparedness • Attitudes • Incentives • Costs 	<ul style="list-style-type: none"> • Online survey • 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree • Open ended questions • Adopted from CFIR^{163,164} • <i>Ex question: Preparing an action plan is helpful</i> 	<ul style="list-style-type: none"> • Ordinal • 14 Likert items • 5 open ended items 	<ul style="list-style-type: none"> • Descriptive • Scores averaged • 2-sample t-test • One-way ANOVA • Bonferroni post hoc • Cronbach's alpha for internal consistency

3.1.2.4 QUALITATIVE DATA ANALYSIS

Qualitative research was performed with a phenomenological approach and an interpretivist research paradigm.¹⁶³ Open-ended questions were asked in a survey format to investigate the specific phenomenon of pharmacists' barriers/facilitators towards implementing a depression screening service.

The primary investigator is a trained unlicensed pharmacist who entered into their PhD education wanting to research pharmacists in mental health care. Research in mental health has always been a passion of theirs and consequently must be taken into consideration when analyzing qualitative data: namely that other pharmacists may not be as passionate about mental health and working with patients who have mental health conditions. This was important to remember during analysis due to using phenomenological research, in which researchers must suspend their own beliefs and perceptions about the phenomena in question.¹⁶⁵

Open ended questions were analyzed with qualitative thematic analysis using inductive coding. Qualitative analysis was performed by the primary investigator. Thematic analysis was chosen as the qualitative analysis method due to its flexibility and ability to examine differences of perspective from individual participants. The steps used in thematic analysis are (1) becoming familiar with the data, (2) generating initial codes, (3) generating themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report.¹⁶⁶

Three rounds of coding were required to generate final codes and themes. Round 1 generated initial codes, round 2 refined codes, and round 3 generated final themes by combining similar and removing irrelevant codes. Member checking occurred in Aim 2 with pharmacists from the stakeholder panel being able to see and interpret results from this survey.¹⁰⁸

3.2 Specific Aim 2

Design, deliver, and assess a training program to improve knowledge, intention, confidence, and beliefs towards implementing a depression screening service in rural pharmacists.

A depression screening training program was designed and delivered via a live webinar for rural pharmacists using data from Aim 1 and a stakeholder panel. Outcomes were assessed pre, post, and 3 months post the educational intervention. Assessed outcomes included rural pharmacist knowledge, confidence, intention, and attitudes towards implementing a depression screening service. This training program was designed to empower pharmacists to initiate depression screening services in rural areas: increasing access to mental health care for these disadvantaged populations. The primary hypotheses were:

Hypothesis 1: Knowledge, intention, confidence, attitude, subjective norms, and perceived behavior control of a depression screening service will be improved from pre-training to immediately post-training in pharmacists after participating in a depression screening training webinar.

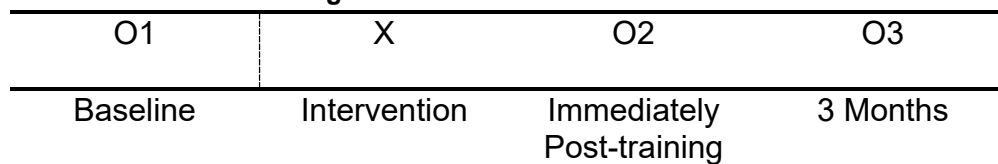
Hypothesis 2: Knowledge, confidence, attitude, subjective norms, and perceived behavior control of a depression screening service will continue to be increased from pre- to 3-months post the depression screening training webinar.

Hypothesis 3: Implementation of depression screening services will increase from pre- to 3-months post after the depression screening training webinar.

Research Design

A one group, pre-post quasi-experimental design was used to accomplish Aim 2 (Figure 3.2.1). A stakeholder panel was used to make sure that input from potential parties of a depression screening service were consulted and given the opportunity to provide input and feedback. Pharmacists who attended the webinar were invited to participate in the research study and their responses were recorded pre, post, and 3-months post the webinar.

Figure 3.2.1: Pre-Post test Design

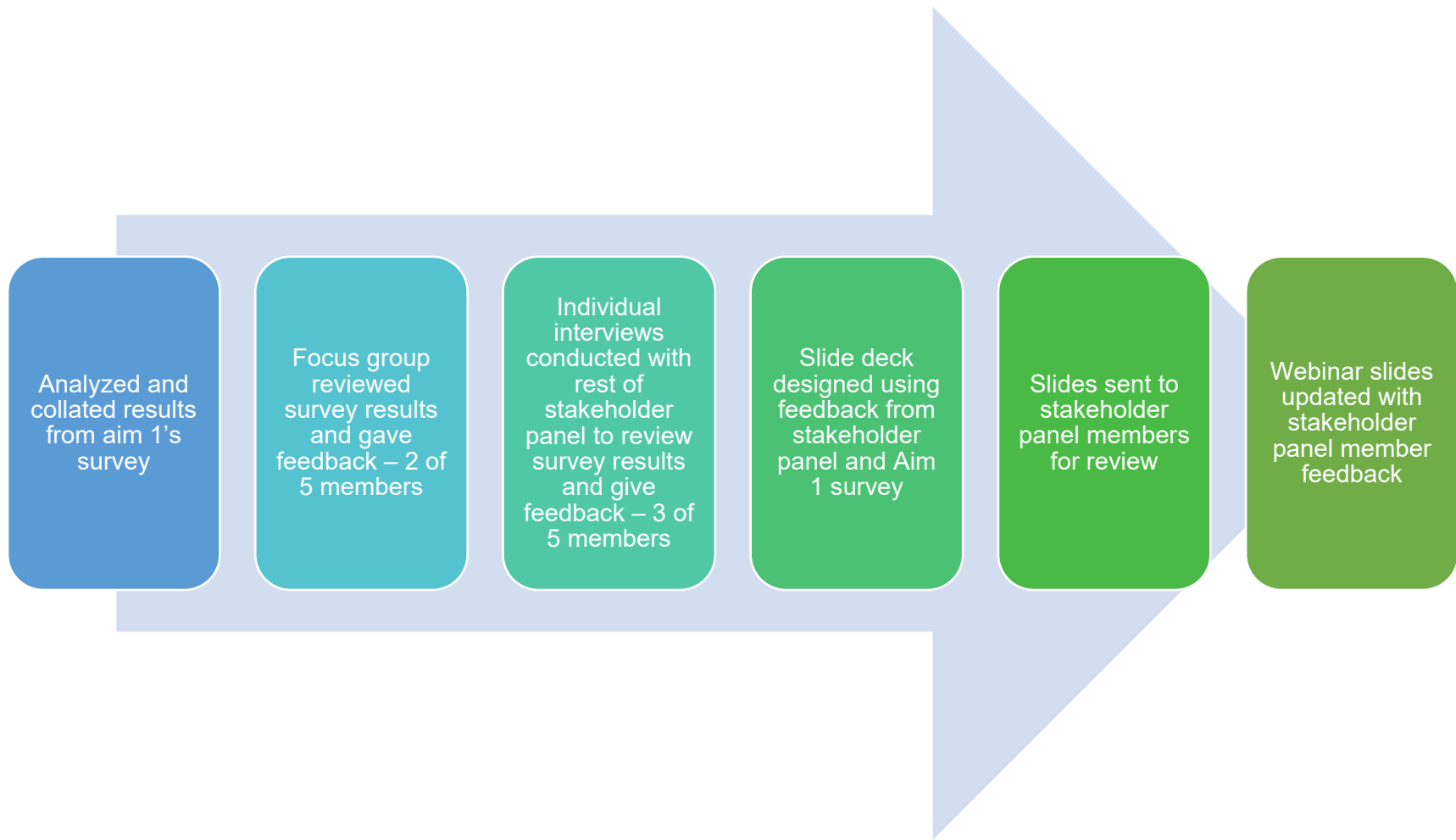


3.2.1 Subaim 2.1

Develop a depression screening training program for rural pharmacists.

An educational webinar was designed based on data from Aim 1's survey as well as a stakeholder panel's input after reviewing results from Aim 1's survey. Figure 3.2.2 shows an overview of Subaim 2.1.

Figure 3.2.2: Overview of webinar design



3.2.1.1 STAKEHOLDER PANEL RECRUITMENT

A stakeholder panel was used to develop the training program, incorporating findings from the Aim 1’s survey. Attempts were made to recruit the same members of the first stakeholder panel. One rural pharmacist and one rural community member from the first stakeholder panel agreed to participate in the second stakeholder panel.

Recruitment was conducted similarly to Aim 1 by emailing previous Aim 1 stakeholder panel members as well as rural pharmacists from the RURAL-CP and through word of mouth. Initially, one focus group was planned with all five members of the stakeholder panel attending. However, not all five members were able to be recruited at one time. Thus, one focus group was conducted with two members (the mental health provider and one community member). Subsequent stakeholder members were recruited for individual interviews. Recruitment details and timelines for the second stakeholder panel are detailed in Table 3.2.1.

Table 3.2.1: Recruitment process for Stakeholder panel

ID	Date contacted	Method	Notes
<i>Mental health provider</i>			
MHP 1	10/19/2022	Email	No response
MHP 2**	11/30/2022	Email	Agreed. Attended Focus group. (Dr. Jackson recommended)
<i>Rural community member</i>			
RC 1	10/19/2022	Email	No response
RC 2**	10/19/2022	Email	Agreed but was unable to attend focus group due to personal emergency.
	1/10/2023	Email	Agreed. Interview.
RC 3**	11/10/2022	Email	Agreed. Attended Focus group.
<i>Rural Pharmacist</i>			

Pharm 1**	10/19/2022	Email	No Response.
	1/10/2023	Email	Agreed. Interview
Pharm 2	10/19/2022	Email	No response.
	1/10/2023	Email	No Response
Pharm 3	10/31/2022	Email	Agreed. But could not attend focus group or interview
	1/10/2022	Email	No Response
Pharm 4**	10/31/2022	Email	No Response
	1/10/2023	Email	Agreed. Interview.
Pharm 5	11/8/2022	Email	No response
	11/29/2022	Email	Did not agree
Pharm 6	1/9/2023	Email	No Response
Pharm 7	1/9/2023	Email	No Response

**participated in a focus group or interview

3.2.1.2 PROCEDURES

The Consolidated Framework for Implementation Research (CFIR) was used to guide the development and assessment of the training program.⁴⁶ CFIR was chosen due to its wide use in health services research (particularly within pharmacy) and the large base of evidence that shows its effectiveness.⁴⁹ Information gained from Aim 1's survey on current practices, barriers, and preferred implementation strategies informed this training program.¹⁶⁶ The data from Aim 1 was supplemented by a stakeholder panel to add context to the data from the various stakeholder perspectives.

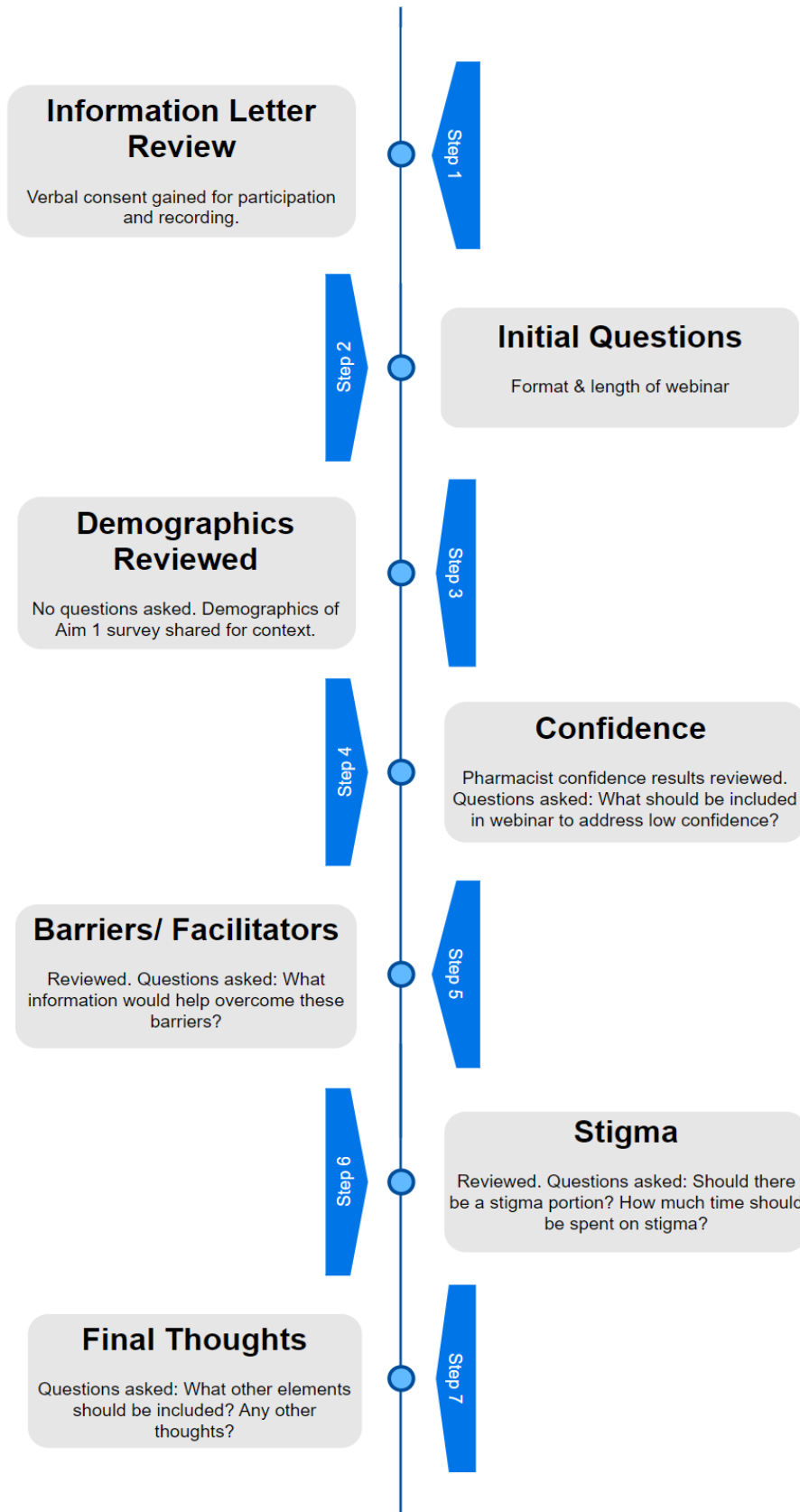
3.2.1.2.1: Focus group / Interview procedures

The focus group/interview procedures (Appendix G) included emailing each participant a copy of the information letter before the focus group/interview, which occurred on Zoom. At the beginning of the one-hour focus group/interview,

participants were asked if they had any questions about the information letter or project in general. After answering all questions, participants were asked if they consented to participate in the project. If any participant did not agree to participate, they were free to leave the Zoom meeting. Each participant was then asked for their consent to be recorded. At this point, the participants were presented with a summary of the findings from Aim 1's survey.

Before beginning the summary of Aim 1 results, initial thoughts on the length and format of a webinar were obtained. Then a summary of demographics of the survey participants was shared to give stakeholder members context of who had answered the survey. Afterwards, the remainder of the survey results were shared with the stakeholder members. Throughout the summary, the participants were asked questions about their thoughts on what should be included in a webinar based on the findings from the survey. An overview of the content included, and questions asked is in Figure 3.2.2 with the full document in Appendix G. After completion of the focus group/interview, participants received a \$50 Amazon gift card.

Figure 3.2.2: Overview of focus group/interview procedures



3.2.1.3 WEBINAR DEVELOPMENT

The webinar was created by the primary investigator with consultation from the co-investigators and stakeholder panel. Topics were informed by needs and barriers obtained from the Aim 1 survey and results from the stakeholder panel's focus group and interviews. Thematic analysis of qualitative data using deductive coding was performed on the focus group and interview transcripts. Qualitative analysis was performed by the primary investigator. Qualitative thematic analysis methodology was similar to Aim 1 and is described in [Ch. 3.1.2.4](#). Themes analyzed included: 1) format/length of webinar, 2) how to increase confidence in a webinar, 3) what should be incorporated to address mental health stigma, 4) ways to overcome barriers found in the Aim 1 survey, and 5) other elements that should be included.

Member checking occurred in this aim with pharmacists from the stakeholder panel being able to see and interpret results from Aim 1's survey to see if the results resonated with their own experiences.¹⁴⁸ Pharmacists also reviewed the training webinar slides created after interviews/focus group analysis to make sure the information and training included were what they would need to implement a depression screening service.

Qualitative analysis found that stakeholder panel members were primarily in agreement with each other on content to include in a training webinar and are reported below.

1. *Format/length of webinar.* Most panel members agreed on a 1-hour webinar that was offered online. Pharmacists wanted a live CE option.

One of the pharmacists thought that a full day workshop would be the best

format to educate pharmacists on implementing a depression screening service but did agree that an hour-long webinar would be appropriate at this time.

“I do like to have a live portion where you kind of hear people talking and I don't know, there's something that it sticks better that way. But I think on demand after alive. To me, that is the best of both worlds” - Pharmacist 1

2. *Confidence*: Panel members were in agreement that the training webinar itself would increase pharmacist confidence to perform a depression screening.

“Developing those skills of communication and the knowledge of what you're asking and things like that [will help develop confidence]” – Pharmacist 2

3. *Stigma*: While one pharmacist acknowledged that they sometimes “rolled their eyes” at stigma training, they always walked away from those types of trainings with a better understanding of their patients and themselves. The rest of the panel was in agreement that a section on stigma should be included in a training webinar.

“I think if I'm sitting through a training session and they come at stigma, I'm probably going to kind of roll my eyes a little bit, if I'm being honest. But I can remember going through [stigma training] and thinking... I do know some people are not going to have the social graces to try and hide [stigma].” – Pharmacist 1

4. *Barriers*: There were four main barriers identified that pharmacists wanted to be addressed in a training webinar: 1) the lack of time, 2) knowledge, 3) reimbursement, and 4) privacy.

- a. *Time*: The lack of time was identified by both patients and pharmacists as a barrier. However, pharmacists and patients both noted that people can make the time for things they are passionate about.

“There [are] the time barriers. On the other side of that, If you are passionate about this and you want to help people, you can make time.” – Pharmacist 2

- b. *Knowledge*: Improving knowledge by training was identified as one of the main ways to overcome barriers.

“... training, just getting familiar with it, but at some point you have to have the practice of being able to actually use it... doing paperwork will be good to give the background knowledge” – Pharmacist 1

- c. *Reimbursement*: Pharmacists had differing perspectives on reimbursement. While both agreed they should be paid for their time, one talked about pharmacists needing to stop devaluing themselves. The other talked about using a screening service as a cost-leading service.

“So reimbursed. Yes, I get that. Okay, here's the flip side of that. On an owner's perspective, mental health medicines tend to sometimes more than others, have a better reimbursement. But also on the financial side, I'm thinking, hey, I've screened this person. I've built a relationship with them. They're going to get their prescriptions and come to my store. Well, then they're going to tell all their friends, hey, [pharmacy 2], they're some good people.” – Pharmacist 2

- d. *Privacy*: It was noted that while most pharmacies have some private area, the amount of privacy afforded differs from pharmacy to pharmacy and some patients or pharmacists may not feel like they have enough privacy with the space they have.

“In [our] pharmacy, we have like, the little booth. So I guess depending on how intense the conversation got it I don't know if that would give somebody as much privacy as they would want.” – Pharmacist 1

- 5. *Other elements*: The primary theme that emerged was that a referral process should be included in a training webinar. The mental health provider stressed that a referral process was necessary to any depression screening service offered. Pharmacists also noted that making sure they had a physician or counselor/therapist to refer patients to was paramount.

“I think also helping pharmacists know, okay, I've done the screening, but then what do I do with the information? And I think that may be perhaps like a barrier for some people... now I have an actively suicidal patient, what do I do?... Giving a fact sheet with here is [the] National Suicide Prevention Hotline. Here's your 24/7 resources and local referrals. So even if the patient... doesn't get counseled on it, they still have that with them. And then the pharmacist can say, I provided resources, I've done my due diligence.” – Mental Health Provider

- 6. *Other thoughts*: Four primary themes emerged from this question: 1) Pharmacists are helpers, 2) Accessibility, and 3) Implementation tips.

- a. *Pharmacists are helpers*: it was interesting to note that a pharmacist and a patient both mentioned the fact that pharmacists are in a “helping profession” and that while there may be barriers

such as time, pharmacists should make the effort to give the best care and services possible to their patients.

“So, yes, we got to get paid for our time. I hear that all the time. Blah, blah, blah, blah, blah. Yeah, there is. But I'm sorry, you went into a profession that helps people. We're here to help people. And so you might not be reimbursed with money, but you could be down the road with something else.” – Pharmacist 2

- b. *Accessibility:* Pharmacists and patients both thought that offering a depression screening service was a good fit for pharmacies.

“I feel like pharmacy is a good fit for something like this because with pharmacy, people can come right in and talk to you. And a lot of times we play therapists anyway where people come in and they might tell us directly or they give us bits and pieces of where their life might be falling apart in one area or the other. So I don't feel like this is too far from what we already do.” – Pharmacist 2

- c. *Implementation tips:* The mental health provider noted that having certain days as “Depression screening days” may be less overwhelming to implement.

“I wonder if even if pharmacists weren't able to implement this every day for all patients, [pharmacists could] identify patients at least one day a year. Even have a sign like it's National Depression Screening Day.” – Mental Health Provider

3.2.1.3.1: Feedback on created webinar – Member checking

After the stakeholder focus group and interviews, feedback was incorporated, and a training program slide deck was developed. Additionally, a pharmacist/patient dialogue transcript was created that would be used to film an example video of a pharmacist performing a depression screening. These slides and transcript were sent to the panel by email for final comments and feedback. One stakeholder panel member did not provide feedback on the webinar. Table 3.2.2 details final stakeholder panel participation dates. After each stakeholder panel member provided feedback, they received a second \$50 Amazon gift card.

Table 3.2.2: Stakeholder Panel Participation

Member ID	Webinar Development		Webinar Feedback		
	Type	Date	Email 1 Sent	Email 2 Sent	Date of Reply
MCH2	Focus group	12/8/2022	3/9/2023	3/23/2023	3/26/2023
RC2	Interview	1/3/2023	3/7/2023	N/A	3/14/2023
RC3	Focus group	12/8/2022	3/7/2023	N/A	3/7/2023
Pharm1	Interview	1/13/2023	3/7/2023	N/A	3/21/2023
Pharm4	Interview	1/18/2023	3/7/2023	3/23/2023	N/A

3.2.1.4: FINAL WEBINAR

The finalized webinar training program elements focused on (1) implementation strategies for incorporating depression screening services into rural pharmacies, (2) how to administer and score the depression screener (PHQ-9), (3) how to communicate the results to the patient, (4) how and to whom to refer patients with a positive score, and (5) barriers/facilitators pharmacists may encounter when implementing a depression screening service

in rural pharmacies. Finalized webinar components are listed in Table 3.2.3 below and the full slide deck is in Appendix H.

Table 3.2.3: Webinar Components

Component	Description
<i>Background</i>	<ul style="list-style-type: none"> ● Depression effects ● Evidence of depression screenings in pharmacies ● Stigma
<i>What is a Depression Screening</i>	<ul style="list-style-type: none"> ● Video example ● Components of a depression screening
<i>Identification of eligible participants</i>	<ul style="list-style-type: none"> ● General population screening ● Targeted screening
<i>PHQ-9 training</i>	<ul style="list-style-type: none"> ● Definition ● How to score ● Examples
<i>Referral</i>	<ul style="list-style-type: none"> ● Where to refer generally ● National level resources ● Importance of locating local resources
<i>Tips</i>	<ul style="list-style-type: none"> ● Implementation tips from survey and focus groups ● Marketing tips from survey and focus groups

3.2.2 Subaim 2.2

To assess outcomes of a training program designed to improve rural pharmacist knowledge, intention to implement, self-efficacy, and attitudes towards implementation of a depression screening program.

3.2.2.1 PARTICIPANTS

Participants were recruited similarly to Aim 1 detailed in [Ch. 3.1.2.1](#). The Hayes directory and the Harrison College of Pharmacy (HCOP), Office of Continuing Education's (CE office) listserv was used to recruit pharmacists as participants in the webinar. Pharmacists were eligible to participate if they were a registered pharmacist employed at a community pharmacy. They did not need to have completed the Aim 1 survey to participate, though pharmacists who participated in the Aim 1 survey were not prohibited from participating in the webinar. The sample size was estimated from the study that most closely resembled this study.^{150,167} With an effect size of .42 and an estimated attrition rate of 50%, a total sample of 74 was needed to detect changes in outcomes.¹⁶⁸ With an estimated 15% rate of participation,¹⁶⁹ the 621 rural pharmacies in Alabama and Mississippi was deemed sufficient to reach the needed sample size.

Table 3.4.4: Sample Size Estimation

Effect Size	Before attrition		Attrition 50%	
	Power = .8	Power = .95	Power = .8	Power = .95
.73 ¹⁴⁸	14	22	28	44
.42 ¹⁷⁰	37	63	74**	126

**Indicates chosen sample size

3.2.2.2 PROCEDURES

The training program was delivered and assessed as a live recorded webinar with 1 hour continuing education (CE) credit for rural pharmacists. The 1 hour CE was counted as “live” if the pharmacist joined the webinar as it was presented but not if they watched the recording. The Harrison College of Pharmacy Office of Continuing Education assisted in handling the logistics of webinar delivery.

Information about the training program and how to register were distributed by mail, fax, and/or email. Postcard and fax advertisements included information about the day and time of the webinar as well as QR codes to the registration link and Qualtrics survey. Figures 3.2.3 and 3.2.4 show the information included on the postcard and fax.

Figure 3.2.3: Example Postcard Sent to Rural Pharmacists



1 Register for the webinar by scanning the QR code.

May 16th, 7-8 PM CST
<https://bit.ly/3Va4Uvt>

May 17th, 12-1 PM CST
<https://bit.ly/41Zwe1E>

2 Take the first survey by scanning the QR code.

<https://bit.ly/3Kfz3of>

Auburn University,
 Harrison School of Pharmacy,
 2316 Walker Building,
 Auburn, Alabama 36849

Send to:

If you have any questions, please contact **Brandy Davis** at **334-449-2981** or **BRD0001@auburn.edu** or **Kimberly Garza** at **KBLO005@auburn.edu**

Thank you for your time and participation!

Figure 3.2.4: Example Fax Sent to Rural Pharmacists



AUBURN UNIVERSITY
 Harrison College of Pharmacy

Pharmacists are invited to participate in a research project titled:

"Screening for Depression in Community Pharmacies: Tools to get you started"

Gain 1 **h** CE credit by participating in a webinar and completing a pre and post survey. Gain a \$20 gift card by completing a survey 3 months after the webinar.

The webinar will be 1 hour **long** and each survey will take around 10 minutes to complete.

First step: Register for the webinar by scanning the QR code or typing in the URL.

	May 16 th , 7-8 PM bit.ly/3Va4Uvt		May 17 th , 12-1 PM bit.ly/41Zwe1E
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Second step: Take the first survey by scanning the QR code or typing in the URL.

 bit.ly/3Kfz3of

If you have any questions, please contact Brandy Davis at 334-449-2981 or BRD0001@auburn.edu or Kimberly Garza at KBLO005@auburn.edu

Thank you for your time and participation!

The Auburn University Institutional Review Board has approved this document for use from 03/21/2023 to 03/21/2025. Protocol # 20-130 BX 1363

The CE office sent out their regular advertising email to their listserv, which included HCOP alumni, former and current CE participants, and others who asked to be added. Further advertising via faxes and postcards was sent to rural pharmacists (RUCA codes 4-10) in AL and MS using the Hayes directory. Focus was placed on advertising to rural pharmacists although no criteria were used to limit pharmacist participation in the webinar.

Potential participants were contacted at most three times: the first contact two weeks before the webinar, the second contact one week before the webinar, and the third contact one or two days before the webinar.¹⁷¹

For the first round of webinars (May 16th and 17th), postcards and faxes were sent to *rural* pharmacists in Alabama and Mississippi listed in the Hayes directory, while the AU CE office sent out emails to everyone on their listserv (both rural and non-rural). The second round of webinars were originally scheduled on June 20th and 21st, but were cancelled due to researcher illness. Response rate was low for the first round of webinars and the sample size was not met; therefore, for the third round of webinars (July 11th and 12th), faxes were sent to all pharmacists in Alabama and Mississippi listed in the Hayes directory (both rural and non-rural) and the AU CE office once again sent out emails to everyone on their listserv (both rural and urban). By including all pharmacists, regardless of rurality, a broader audience would be reached and have access to the training webinar. Table 3.2.4 includes more information on the timing of contact.

Table 3.2.5: Advertising timelines for webinars

Type	Date Sent	Number sent to	Who sent to	Notes
May Webinars: 16th & 17th				
Fax	5/1/2023	387	AL rural pharmacists	Sent to MS a 2 nd time since AL pharmacists received email from CE office
	5/2/2023		MS rural pharmacists	
	5/15/2023	212	MS rural pharmacists	
Postcards	5/8/2023	612	AL & MS rural pharmacists with address in Hayes directory	
Email	4/27/2023	~1,500	AU HCOP CE office listserv	Includes: HCOP alumni, former and current CE participants
June Webinars: 20th & 21st				
Fax	6/15/2023	656	AL pharmacists	Webinars cancelled
	6/16/2023		AL pharmacists	
Email	?	~1,500	AU HCOP CE office listserv	
July Webinars: 11th & 12th				
Fax	6/28/2023	991	MS & AL pharmacists with fax number in Hayes directory	Sent last half to AL pharmacists after holiday weekend
	6/29/2023			
	7/5/2023			
	7/9/2023	991		
Email	7/5/2023	~1,500	AU HCOP CE office listserv	

Assessment of the webinar was conducted using three surveys: one before the webinar (pre), one immediately after the webinar (post), and one 3-months after the webinar (3M-post). The training program offered live CE credit to all pharmacists who attended the live portion of the webinar and non-live CE credit to all pharmacists who watched the recording. Pharmacists were required

to complete the pre-post surveys to obtain CE credit. A \$20 gift card was offered to pharmacists who completed the 3M-post survey.

To assess program outcomes, measures were conducted pre- post- and 3-month post-webinar with an online questionnaire using Qualtrics. Outcomes included (1) participant knowledge, (2) intention to implement a depression screening service in their pharmacy, (3) self-efficacy toward implementing a depression screening service, (4) attitudes towards depression screening services, and (5) confidence towards implementing a depression screening service. Since implementation of a depression screening service could not be measured directly, intention was also measured.

3.2.2.3 ASSESSMENT SURVEY DEVELOPMENT AND ANALYSIS

Seven domains were used to assess the effectiveness of the webinar: knowledge, confidence, intention, attitude, subjective norms, perceived behavior control, and behavior. Example survey questions are included in Table 3.2.5. The full pre, post, and 3-month post surveys are included in Appendix I. The Theory of Planned Behavior (TPB) Manual for Researchers by Francis et al.¹⁷² was used to guide the overall development of questions to assess constructs from TPB: intention, attitude, subjective norms, and perceived control.

Table 3.2.6: Survey Domains and Example Questions

Domain	Example questions
<i>Knowledge</i>	What is the Patient Health Questionnaire (PHQ-9) used for? a. Diagnosing depression b. Monitoring treatment for depression c. Improving depression symptoms d. Both A and B e. All of the above
<i>Confidence</i>	Likert-type scale from 1-5 with 1 being not confident and 5 being very confident How confident are you at the following: <ul style="list-style-type: none"> Identify patients who qualify to receive a depression screening Initiate conversations with a patient about receiving a depression screening
<i>Attitude</i>	Implementing a depression screening service in the pharmacy is: Harmful 1 2 5 8 10 Beneficial
<i>Behavioral beliefs</i>	Likert-type scale from 1-5 with 1 being strongly disagree and 5 being strongly agree <ul style="list-style-type: none"> Offering a depression screening service is something positive for patients It causes a lot of worry and concern for the patient if they are found to have depression
<i>Subjective norms</i>	Likert-type scale from 1-5 with 1 being strongly disagree and 5 being strongly agree <ul style="list-style-type: none"> Patients who come into the pharmacy think I should screen them for depression Mental health professionals would approve of my screening patients for depression
<i>PBC</i>	Likert-type scale from 1-5 with 1 being strongly disagree and 5 being strongly agree <ul style="list-style-type: none"> I do not have enough time to offer a depression screening service at my pharmacy I do not have the skills or knowledge to offer a depression screening service
<i>Intention</i>	Do you intend to screen patients for depression in your pharmacy?

Descriptive statistics were used to analyze demographic data. Knowledge, intention, belief, and behavior constructs were also characterized using descriptive statistics. Intention, perceived behavior control, attitude, subjective norm, and confidence factor scale items were reverse coded if necessary.

“Other” text responses were reviewed and converted to one of the options where applicable. For job title text responses “PRN pharmacist”, “Floater pharmacist”, “Consultant”, “Fill in pharmacist”, “Transitions of care pharmacist”, “Relief pharmacist”, “Clinical”, “HOP pharmacist”, “Clinic pharmacist”, and “pharmaceutical scientist/consultant” were converted to “Staff pharmacist”; “Clinic Mgr”, “Supervisor”, and “Director” were converted to “Pharmacy manager”; and “CEO” was converted to “Owner/Partner”.

Each survey (O1, O2, and O3) was analyzed individually. Exploratory factor analysis on baseline data (O1) was performed to identify underlying constructs within each domain. Principle components analysis with varimax rotation was used with factor loadings greater than 0.3 considered significant for retention.^{173,174} Items were grouped, and internal consistency was assessed using Cronbach’s α at O1, O2, and O3. Internal consistency was considered high if Cronbach’s α was greater than .7 (Table 3.2.6).¹⁷⁵ Test-retest reliability was assessed with bivariate Pearson 2-tailed correlation at matched O2 and O3 times. Test-retest consistency was considered high if the p-value was less .05 and the correlation coefficient was greater than .7.¹⁷⁴

Table 3.2.7: Cronbach’s α interpretation¹⁵⁸

Interval of Cronbach’s α	Reliability criteria
$.90 \leq \alpha < 1$	<i>Excellent reliability</i>
$.70 \leq \alpha < .90$	<i>High reliability</i>
$.50 \leq \alpha < .70$	<i>Moderate reliability</i>
$\alpha < .50$	<i>Low reliability</i>

The surveys were then combined and matched by respondent name and analyzed for trends. Not every respondent for O1 responded to O2 or O3 and vice versa. One change was made to the O3 survey after several responses were collected. This change was to reorganize the end of the survey so that the question asking for respondents' names was separated from the question asking for their email address. This was to ensure that respondents understood their name was going to be used to link their responses from the previous surveys and their email was going to be used to send the incentive. All analyses were performed using IBM SPSS Statistical Software version 27¹⁷⁶ with an a priori alpha level of 0.05. Table 3.2.7 shows outcome measures and analyses that were used to analyze the results of the training program.

Knowledge

Knowledge was assessed through six questions. Questions consisted of multiple-choice answers from 'a' to 'e'. Questions covered the topics 1) identifying patients who need to be screened for depression, 2) list the symptoms of depression can look like, 3) explain what the PHQ-9 is for and how to use it, 4) determine whether a patient should be referred and explain the steps to refer them, 5) list referral resources. Higher scores indicated a higher knowledge. Reliability was assessed with Kuder-Richardson Formula 20 (KR20) and test-retest with bivariate Pearson 2-tailed correlation.¹⁵⁹ Knowledge scores were calculated based on the percent of questions correct. Change in mean knowledge scores at O1, O2, and O3 was compared using one-way repeated

measures ANOVA with Bonferroni post-hoc tests. One-way repeated measures ANOVA was used to analyze if there was an effect between two independent “within subjects” factors over time.¹¹⁴

Confidence

Confidence was assessed using five survey items adapted from a previously published scale from Hastings et al.¹⁷⁷ The survey items consisted of a Likert-type scale rated from 1 (Strongly disagree) to 5 (Strongly agree). Statements assessed the pharmacists’ confidence towards performing a depression screening and included statements like, “Obtain an accurate patient mental health history”, “Identify patients who qualify to receive a depression screening”, and “Administer a depression screening”. An odd number of response choices was used to retain the “neutral” choice and avoid a forced response.¹⁷¹ The mean of these items produced a composite scale with higher scores indicating a higher confidence.^{171,176} Change in mean scores were compared using a one-way repeated measures ANOVA with Bonferroni post-hoc tests.

Intention

Intention to implement a depression screening service was assessed as one multiple choice question asking if they intended to implement a depression screening service in the next three months. Intention was assessed at baseline (O1) and post training webinar (O2). Choices included the options: yes, either “in

the next three months” or “in the future, but not in the next three months” (scored as 1); and “no” or “unsure” (scored as 0).¹⁷⁸ Intention was analyzed pre-post using a generalized estimating equations (GEE) repeated measures analysis to compare change in intention over time. Intention was also analyzed using a logistic regression to predict which factors (knowledge, confidence, or beliefs) had an effect on intention to implement a depression screening service. One-way t-tests were run to measure the change in intention mean scores pre-post.

Attitude

Attitude was assessed by using a semantic differential scale.

Respondents were presented with a sentence, “Implementing a depression screening service is...”. Four pairs of adjectives were rated, each on a 0-10-point scale: harmful=0 – beneficial=10; good=0 – bad=10; pleasant=0 – unpleasant=10; worthless=0 – useful=10.^{171,176} Good – bad and pleasant-unpleasant scores were reverse coded. The mean of the four scales was used as a composite score with higher scores indicating a more positive attitude. Change in mean scores were compared using a one-way repeated measures ANOVA with Bonferroni post-hoc tests.^{171,176}

Subjective norms

Subjective norm was assessed using a 6 item Likert-type scale rated on a 1 (strongly disagree) – 5 (strongly agree) scale. Statements included patient, mental health professional, other pharmacist, and physician perspectives. The

mean of these items produced a composite score with higher scores indicating more positive subjective norms.^{171,176} Change in mean scores were compared using a one-way repeated measures ANOVA with Bonferroni post-hoc tests.

Perceived behavioral control (PBC)

PBC was assessed using a 3 item Likert-type scale rated on a 1 (strongly disagree) – 5 (strongly agree) scale using statements like: “I do not have enough time to offer a depression screening service at my pharmacy”, “I do not have the skills or knowledge to offer a depression screening service”, and “If I offer depression screenings, I will detect problems at an early stage”. The mean of these items produced a composite score with higher scores indicating a higher perceived behavioral control.^{171,176} Change in mean scores were compared using a one-way repeated measures ANOVA with Bonferroni post-hoc tests.

Implementation

Implementation was assessed at baseline (O1) and 3-months post intervention (O3). At baseline, pharmacists were asked if they had a depression screening service at their current place of employment. At 3-months post intervention (O3) pharmacists were asked a single yes/no question: if they or someone else at the pharmacy had screened patients for depression in the past 3 months.¹¹⁴ “Yes” answers brought participants to a separate block of questions. “No” answers brought participants to a different question block. Behavior was analyzed pre- and three month-post using a GEE repeated measures analysis to

compare change in behavior over time. Logistic regression was used to predict which factors (knowledge, confidence, or beliefs) had an effect on implementing a depression screening service within three months of the webinar.

Yes block. This block included an open-ended text question asking how many patients they had screened, a select all that apply question asking what groups of patients they had screened, two open-ended text question asking pharmacists to explain relevant aspects of their service and their referral process, and two select all that apply questions asking about facilitators and barriers.

No block. This block had one select all that apply question that asked about barriers faced and one open-ended question asking them to explain other reasons they did not implement a depression screening service.

3.2.2.3.1 Missing data

Participants were asked to complete all questions in the survey by using a “Request Response” option in Qualtrics whereby a modal window would appear when participants clicked on the next page button if they had not answered all the previous questions. Participants could click “Ok” on the modal window and continue to the next page if they did not want to answer the remaining questions. Consequently, there was missing data due to item or survey non-response. For item non-response, the participant was included in analyses for all non-missing

items. For survey-non-response, the participant was not included in analyses between time-points.

Table 3.2.8: Aim 2 Measures

Measure	Source (Time)	Scale	Analysis
Demographics Age, gender, race, ethnicity, pharmacist title, years in role	<ul style="list-style-type: none"> • Online survey (O1) • Multiple choice questions 	<ul style="list-style-type: none"> • Categorical 	<ul style="list-style-type: none"> • Descriptive
Knowledge (Primary)			
Knowledge <ul style="list-style-type: none"> • Who should be screened • Depression symptoms • PHQ-9 general knowledge • When to refer • Referral resources 	<ul style="list-style-type: none"> • Online survey (O1, O2, O3) • Multiple choice (percent correct) • <i>Example question: Who does the US Preventative Task Force recommend to be screened for depression?</i> 	<ul style="list-style-type: none"> • Continuous • 6 items 	<ul style="list-style-type: none"> • Descriptive • Scores calculated as percent correct • One-way repeated measures ANOVA • Bonferroni post-hoc • KR-20 for internal consistency
Intention (Secondary)			
Intention to implement a depression screening service	<ul style="list-style-type: none"> • Online survey (O1, O2) • Multiple choice (yes/no) 	<ul style="list-style-type: none"> • Categorical 	<ul style="list-style-type: none"> • Descriptive • Logistic regression
Confidence (Secondary)			
Performing a depression screening <ul style="list-style-type: none"> • Obtaining mental health history • Identifying patients • Initiating conversations • Administering • Answering questions 	<ul style="list-style-type: none"> • Online survey (O1, O2, O3) • 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree • Modified from Hastings et al.¹⁷⁶ • <i>Example Question: I am confident I can obtain an accurate patient mental health history</i> 	<ul style="list-style-type: none"> • Ordinal • 5 items 	<ul style="list-style-type: none"> • Descriptive • Scores averaged • One-way repeated measures ANOVA • Bonferroni post hoc • Cronbach's alpha for internal consistency
Beliefs (Secondary)			
Attitude <ul style="list-style-type: none"> • Harm vs benefit • Worthless vs use • Good vs bad • Pleasant vs unpleasant 	<ul style="list-style-type: none"> • Online survey (O1, O2, O3) • 10-point semantic differential scale • Adopted from Conner et al.¹⁷¹ and Francis et al.¹⁷⁶ • <i>Example question: Implementing a depression screening service in the pharmacy is worthless.</i> 	<ul style="list-style-type: none"> • Ordinal • 4 items 	<ul style="list-style-type: none"> • Descriptive • Scores averaged • One-way repeated measures ANOVA • Bonferroni post hoc • Cronbach's alpha for internal consistency
Subjective Norms	<ul style="list-style-type: none"> • Online survey (O1, O2, O3) 	<ul style="list-style-type: none"> • Ordinal 	<ul style="list-style-type: none"> • Descriptive

<ul style="list-style-type: none"> • Patient perspectives • Pharmacist perspectives • Physician perspectives • Mental health provider perspectives 	<ul style="list-style-type: none"> • 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree • Adopted from Conner et al.¹⁷¹ and Francis et al.¹⁷⁶ • <i>Example question: The physicians in my area would approve of me referring patients who screen positive for depression to them.</i> 	<ul style="list-style-type: none"> • 6 	<ul style="list-style-type: none"> • Scores averaged • One-way repeated measures ANOVA • Bonferroni post hoc • Cronbach's alpha for internal consistency
<p>Perceived Behavior Control</p> <ul style="list-style-type: none"> • Evidence needed • Preparedness • Attitudes • Incentives • Costs 	<ul style="list-style-type: none"> • Online survey (O1, O2, O3) • 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree • Adopted from Conner et al.¹⁷¹ and Francis et al.⁴⁷ • <i>Example question: I do not have enough time to offer a depression screening at my pharmacy</i> 	<ul style="list-style-type: none"> • Ordinal • 3 items 	<ul style="list-style-type: none"> • Descriptive • Scores averaged • One-way repeated measures ANOVA • Bonferroni post hoc • Cronbach's alpha for internal consistency
Behavior (Secondary)			
<p>Behavior</p> <p>Implemented a depression screening service</p>	<ul style="list-style-type: none"> • Online survey (O3) • Multiple choice (yes/no) 	<ul style="list-style-type: none"> • Categorical 	<ul style="list-style-type: none"> • Descriptive • Logistic regression
<p>Implemented a depression screening service</p> <ul style="list-style-type: none"> • Number of patients screened • Groups of patients screened • Implementation strategies • Screening/referral process 	<ul style="list-style-type: none"> • Online survey (O3) • Self-report • Multiple choice (select all that apply) • Open ended question • Adopted from CFIR⁴⁷ 	<ul style="list-style-type: none"> • Continuous • Categorical • Text 	<ul style="list-style-type: none"> • Descriptive
<p>Did not implement a depression screening service</p> <p>Barriers faced to implementation</p>	<ul style="list-style-type: none"> • Online survey (O3) • Multiple choice (select all that apply) • Open ended question • Adopted from CFIR^{52,53,57} • <i>Example question: I will not be reimbursed when offering a depression screening</i> 	<ul style="list-style-type: none"> • Categorical • Text 	<ul style="list-style-type: none"> • Descriptive

Chapter 4 – Results

4.1 Specific Aim 1

Investigate current practices, confidence, barriers/facilitators, and preferred implementation strategies to implementing a depression screening service in rural pharmacies.

A stakeholder panel was used to inform survey development and the results of that Subaim are detailed in [Chapter 3.1.1](#). The survey had a total of 121 respondents. Thirty-six of those were removed from the analyses due to either not being a pharmacist (n=29) or not completing greater than 50% of the survey (n=7) for a final number of 85 respondents and a response rate of 14%. The sample size needed to reach power was 83, thus, power was met ([Ch. 3.1.2.1 Participants](#)). With a 95% confidence level, the margin of error was 6.86%.

4.1.1 Survey Demographics

The majority of pharmacists were white (n=61), not-Hispanic (n=82), and from Mississippi (n=47). Gender was split evenly between male and female (n=42). Most pharmacists had interacted with patients with mental health conditions (n=81) and patients on psychotropics (n=83). Further demographic breakdowns can be found in Table 4.1.1.

Table 4.1.1: Demographics of Survey Respondents

Demographics (n=84)	n (%)
State	
Alabama	37 (44)
Mississippi	47 (56)
Gender	
Female	42 (50)
Male	42 (50)
Age	
19-24	1 (1)
25-34	21 (25)
35-44	24 (29)
45-54	20 (24)
55-64	11 (13)
65 and above	7 (8)
Race	
White	61 (73)
Asian	13 (16)
African American	8 (10)
Native Hawaiian or Pacific Islander	1 (1)
Multiple	1 (1)
Ethnicity	
Non-Hispanic, Latino, or Spanish	81 (96)
Hispanic, Latino, or Spanish	2 (3)
Prefer not to answer	1 (1)
Pharmacist Role	
Staff pharmacist	23 (27)
Pharmacy manager	40 (48)
Owner/partner	21 (25)
Years in Current Role	
Less than 1	5 (6)
1-5	29 (35)
6-10	17 (20)
11-20	14 (17)
More than 20	19 (23)

4.1.2 Current practices and mental health experiences

Most pharmacists reported they had interacted with patients who had mental health conditions and with patients on psychotropics. However, the majority of pharmacists did not work in a pharmacy that offered depression screening services and had not used the PHQ-9 before. Table 4.1.2 shows the breakdown of pharmacist depression screening experience.

Table 4.1.2: Pharmacist Mental Health & Depression Screening Experience

Mental Health Experience (n=84)	n(%)
<i>Interacted with patients with MHC</i>	
Yes	81 (96)
No	3 (4)
<i>Interacted with patients on psychotropics</i>	
Yes	83 (99)
No	1 (1)
<i>Currently offered depression screening</i>	
Yes	5 (6)
No	79 (94)
<i>Had used a PHQ-9 before</i>	
Yes	8 (10)
No	76 (90)

When asked to describe their depression screening services in an open question format, the majority of respondents again reported they did not offer this service, or the question was not applicable. Of the four pharmacists that did describe their service, none explained their service in more than a couple of words (Table 4.1.3).

Table 4.1.3: Pharmacist Description of Current Depression Screening Services

Question	Themes	n^a	Quotes
<i>Please describe the depression screening services offered by the pharmacy if applicable.</i>	No description	62	"We do not offer this service" "N/A"
	Description	4	"My pharmacy offers depression screening services that is applicable"
			"Hotline"
			"Pamphlets"
			"Medication therapy management"

^afrequency with which the theme/category was coded across transcripts

4.1.3 Confidence

Confidence was assessed in two different ways: Confidence towards performing a depression screening and confidence using the PHQ-9 as a depression screening tool. Exploratory factor analysis (EFA) showed scale items loaded on 2 factor(s) with eigenvalues ≥ 1 that explained 84% of the variance (Table 4.1.4). Bartlett's test of sphericity was significant, $\chi^2(45) = 1037.177$ ($p < .001$), which indicates the scale's suitability for factor analysis. The Kaiser–Meyer–Olkin measure of sampling adequacy (MSA) was above .800 ($n = .850$), so the data was considered appropriate for factor analysis. The overall depression screening and PHQ-9 confidence scale had high internal consistency (Cronbach's $\alpha = .939$ & $.964$ respectively).

Table 4.1.4: Exploratory factor analysis rotated component matrix

		Factor 1	Factor 2
Depression screening confidence scale	<i>Obtain mental health history</i>		.859
	<i>Identify patients to receive depression screenings</i>		.911
	<i>Initiate conversations about depression screenings</i>		.821
	<i>Administer depression screenings</i>		.855
	<i>Answer questions about depression screenings</i>		.825
Using PHQ-9 confidence scale	<i>Know how to talk to patients about the PHQ-9</i>	.913	
	<i>Know how to score the PHQ-9</i>	.899	
	<i>Can administer the PHQ-9</i>	.861	
	<i>Comfortable using as a tool</i>	.885	
	<i>Answer questions about the PHQ-9</i>	.893	

4.1.3.1 PERFORMING DEPRESSION SCREENINGS

The mean score for confidence in being able to perform a depression screening service was low (2.52 ([SD]=1.14) on a scale from 1 to 5, with 1 being

low and 5 being high). The items that assessed confidence and their individual means (SD) are in Table 4.1.5.

Table 4.1.5: Confidence performing a depression screening

Question	Mean (SD)
<i>Obtain mental health history</i>	2.46 (1.25)
<i>Administer depression screenings</i>	2.49 (1.31)
<i>Answer questions about depression screenings</i>	2.51 (1.29)
<i>Initiate conversations about depression screenings</i>	2.56 (1.26)
<i>Identify patients to receive depression screenings</i>	2.60 (1.27)
Average confidence	2.52 (1.14)

4.1.3.2 PHQ-9 USAGE

Pharmacists' familiarity with the PHQ-9 (1.95 [SD=1.0] on a scale from 1 to 5, with 1 being low and 5 being high) and overall confidence using the PHQ-9 (2.00 ([SD]=0.92 on a scale from 1 to 5, with 1 being low and 5 being high) was low. Further breakdown of pharmacists' confidence with the individual items and means (SD) are in Table 4.1.6.

Table 4.1.6 Confidence using the PHQ-9

Question	Mean (SD)
<i>Know how to score the PHQ-9</i>	1.85 (0.98)
<i>Know how to talk to patients about the PHQ-9</i>	1.93 (1.00)
<i>Can administer the PHQ-9</i>	2.01 (1.04)
<i>Answer questions about the PHQ-9</i>	2.10 (1.04)
<i>Comfortable using as a tool</i>	2.14 (1.08)
Average confidence	2.00 (0.92)
<i>Familiarity with PHQ-9</i>	1.95 (1.00)

4.1.3.3 CONFIDENCE PERFORMING A DEPRESSION SCREENING SERVICE VS CONFIDENCE USING THE PHQ-9

A Pearson correlation coefficient was computed to assess the linear relationship between a pharmacist's confidence performing a depression screening service and a pharmacist's confidence using the PHQ-9. There was a statistically significant, though moderate, positive correlation between the two variables, $r(82) = .562, p < .001$.

4.1.3.4 CONFIDENCE PERFORMING A DEPRESSION SCREENING SERVICE VS DEMOGRAPHICS

A two-sample t-test was performed to analyze the association between location (i.e. Alabama or Mississippi), sex (i.e. male or female), and ethnicity (i.e. non-Hispanic or Hispanic) on confidence performing a depression screening service (Table 4.1.7). There was not a significant difference in confidence between pharmacists located in Alabama or Mississippi. Likewise, there was not a significant difference in confidence between male and female pharmacists. Finally, there was not a significant difference in confidence between non-Hispanic, Spanish, or Latino and Hispanic, Spanish, or Latino pharmacists.

Table 4.1.7: Confidence performing a depression screening * Demographics

Mean confidence scores for each demographic	
<i>Location</i>	<i>M(SD)</i>
<i>Alabama</i>	2.58 (1.12)
<i>Mississippi</i>	2.48 (1.18)
<i>Gender</i>	<i>M(SD)</i>
<i>Male</i>	2.66 (1.01)
<i>Female</i>	2.39 (1.26)

<i>Ethnicity</i>	<i>M(SD)</i>		
<i>Hispanic, Latino, or Spanish</i>	3.70 (1.84)		
<i>Non-Hispanic, Latino, or Spanish</i>	2.50 (1.13)		
Confidence performing depression screenings			
	<i>df</i>	<i>t</i>	<i>p-value</i>
<i>Location</i>	82	.386	.701
<i>Gender</i>	82	1.069	.288
<i>Ethnicity</i>	81	1.467	.146

A two-way ANOVA was performed to analyze the association between age and race on confidence performing a depression screening. Levene's test rejected the null hypothesis of equal population variances for confidence ($F[9,71] = 2.075, p = .043$) so equal variances were not assumed and the Welch statistic was run. Neither age nor race were significantly associated with confidence performing a depression screening, (Age: $F_{\text{Welch}}(4,26) = 1.004, p = .424$; Race: $F_{\text{Welch}}(3,4.959) = 1.065, p = .443$).

A two-way ANOVA was performed to analyze the association between the role of the pharmacist and the years in their current role on confidence performing a depression screening (Table 4.1.8). Levene's test did not reject the null hypothesis of equal population variances for confidence performing a depression screening ($F[12,70] = 1.542, p = .130$) so equal variances were assumed. There was not a statistically significant interaction between the association between the role of the pharmacist and the years in their current role ($F(7, 70) = .347, p = .929$). Simple main effects analysis showed that pharmacist's role **did** have a statistically significant association on confidence (p

= .01). Alternatively, pharmacist's years in their current role did not have a statistically significant association on confidence (p = .805).

The Bonferroni post hoc analysis showed that the mean value of confidence performing a depression screening was statistically significantly higher for the owner/partner role compared to the manager role. Mean confidence for the staff pharmacist role was significantly lower than the owner role. There was no statistically significant difference between the pharmacist staff and manager role (Table 4.1.9).

Table 4.1.8: Confidence * Pharmacist role & Years currently in role

Item	Confidence performing depression screenings	
	<i>F</i>	<i>p-value</i>
<i>Pharmacist Role</i>	4.888	.010**
<i>Years in Role</i>	.405	.805
<i>Role*Years in role</i>	.347	.929

**Significant ($\alpha < .05$)

Table 4.1.9: Bonferroni post hoc analysis: Pharmacist title*Confidence performing depression screenings

Mean Confidence Scores for Each Pharmacist Title			
Title	Mean (SD)		
<i>Staff pharmacist</i>	2.18 (.93)		
<i>Pharmacy manager</i>	2.39 (1.01)		
<i>Owner/Partner</i>	3.15 (1.39)		
Difference in confidence between groups			
Interaction	Mean difference (SE)	p-value	95% CI
<i>Staff*Manager</i>	-0.207(.29)	1.00	-0.94, 0.52
<i>Staff*Owner</i>	-0.970(.33)	.017**	-1.81, -0.13
<i>Manager*Owner</i>	-0.762(.30)	.042**	-1.52, -0.01

**Significant ($\alpha < .05$)

4.1.3.5 CONFIDENCE USING THE PHQ-9 VS DEMOGRAPHICS

A two-sample t-test was performed to analyze the association between location (i.e. Alabama or Mississippi), sex (i.e male or female), and ethnicity (i.e. non-Hispanic or other ethnicity) on confidence using the PHQ-9 (Table 4.1.10). There was not a statistically significant difference in confidence between pharmacists located in Alabama or Mississippi. Likewise, there was not a significant difference in confidence between male and female pharmacists nor non-Hispanic, Spanish, or Latino and Hispanic, Spanish, or Latino pharmacists.

Table 4.1.10: Confidence using the PHQ-9 * Demographics

Mean confidence scores for each demographic			
Location	M(SD)		
<i>Alabama</i>	2.17 (.993)		
<i>Mississippi</i>	1.86 (.613)		
Gender	M(SD)		
<i>Male</i>	1.94 (.901)		
<i>Female</i>	2.05 (1.020)		
Ethnicity	M(SD)		
<i>Hispanic, Latino, or Spanish</i>	1.00 (.000)		
<i>Non-Hispanic, Latino, or Spanish</i>	2.03 (.958)		
Confidence using the PHQ-9			
	<i>df</i>	<i>t</i>	<i>p-value</i>
<i>Location</i>	82	.832	.128
<i>Gender</i>	82	-.530	.598
<i>Ethnicity</i>	81	-1.509	.135

A two-way ANOVA was performed to analyze the association between age and race on confidence using the PHQ-9. Levene's test did not reject the null hypothesis of equal population variances for confidence using the PHQ-9

($F[9,71] = 1.086, p = .384$) so equal variances were assumed. There was not a statistically significant interaction between the association of age and race ($F(5, 71) = 1.756, p = .133$). Simple main effects analysis showed that neither age nor race had a statistically significant association on confidence (Table 4.1.11).

A two-way ANOVA was performed to analyze the association between the role of the pharmacist and the years in their current role on confidence using the PHQ-9. Levene's test did not reject the null hypothesis of equal population variances for confidence ($F[12,70] = 1.125, p = .355$) so equal variances were assumed. There was not a statistically significant interaction between the association between the role of the pharmacist and the years in their current role ($F(7, 70) = .237, p = .975$). Simple main effects analysis showed that neither pharmacist's role nor year in their current role had a statistically significant association (Table 4.1.11).

Table 4.1.11: Confidence using the PHQ-9 vs Demographics

Demographic	Confidence using the PHQ-9	
	<i>F</i>	<i>p-value</i>
<i>Age</i>	1.33	.193
<i>Race</i>	0.72	.546
<i>Role</i>	2.53	.087
<i>Years in Role</i>	1.68	.165

4.1.3.6 CONFIDENCE VS EXPERIENCE WITH MENTAL HEALTH

A two-way ANOVA was performed to analyze the association between experience with patients who have mental health conditions and currently

offering depression screening services on confidence performing a depression screening. Levene's test of equality of error variances was not significant for confidence performing a depression screening ($F[2,80] = 0.968, p = .384$) or confidence using the PHQ-9 ($F[2,80] = 1.628, p = .203$) so equal variances were assumed for each test. Interactions with patients with mental health conditions and currently offering a depression screening service did not have a statistically significant interaction, effect on pharmacists' confidence performing a depression screening service, or confidence using the PHQ-9 (Table 4.1.12).

Table 4.1.12: Experience with mental health * Confidence

Item	Confidence performing depression screenings		Confidence using the PHQ-9	
	<i>F</i>	<i>p-value</i>	<i>F</i>	<i>p-value</i>
<i>Interacted with patients with MHC</i>	.651	.422	.051	.822
<i>Currently offer depression screenings</i>	2.055	.156	3.299	.073
<i>Interacted*Currently offer</i>	.651	.422	1.809	.182

A two-way ANOVA was performed to analyze the association between experience with patients on psychotropics and previous use of the PHQ-9 on confidence performing a depression screening (Table 4.1.13). Levene's test did not reject the null hypothesis of equal population variances for confidence performing a depression screening ($F[2,80] = 2.544, p = .085$) so equal variances were assumed. The association between the interaction of pharmacist interactions with patients using psychotropics and previous use of the PHQ-9 was not able to be calculated due to there being less than 2 cases in one group.

Simple main effects analysis showed that neither interaction with patients on psychotropics nor previous use of the PHQ-9 had a statistically significant association on confidence towards implementing a depression screening service.

A two-way ANOVA was performed to analyze the association between experience with patients on psychotropics and the use of the PHQ-9 on confidence using the PHQ-9 (Table 4.1.13). Levene's test did not reject the null hypothesis of equal population variances for confidence using the PHQ-9 ($F[1,81] = .001, p = .975$) so equal variances were assumed. The association between pharmacist interactions with patients using psychotropics and previous use of the PHQ-9 was not able to be calculated due to there being less than 2 cases in one group. Simple main effects analysis showed that interaction with patients on psychotropics did not have a statistically significant association on confidence using the PHQ-9. Alternatively, simple main effects analysis showed that previous use of the PHQ-9 **did** have a statistically significant association on confidence towards using the PHQ-9. The Bonferroni post hoc analysis showed that pharmacists who had used the PHQ-9 before were statistically significantly more likely to have increased confidence in using the PHQ-9 when compared to pharmacists who had not used the PHQ-9 before or were unsure if they had used the PHQ-9 before (Table 4.1.14).

Table 4.1.13: Experience with PHQ-9 & psychotropics * confidence

Item	Confidence performing depression screenings		Confidence using the PHQ-9	
	<i>F</i>	<i>p-value</i>	<i>F</i>	<i>p-value</i>
<i>Interacted with patients on psychotropics</i>	.074	.786	.048	.827
<i>Used PHQ-9 before</i>	1.200	.307	11.722	<.001**
<i>Interacted*Used</i>	-	-	-	-

**Significant ($\alpha < .05$)

Table 4.1.14: Bonferroni post hoc analysis: Familiarity with PHQ-9 * Confidence performing depression screenings

Mean Confidence Scores for Use of the PHQ-9		
Item	Mean (SD)	
<i>Have used PHQ-9</i>	3.21 (.98)	
<i>Have not used the PHQ-9</i>	1.80 (.85)	
<i>Unsure</i>	2.79 (.53)	
Change in confidence between groups		
Interaction	Mean difference (SE)	p-value
<i>Used*Not used</i>	1.408 (.32)	<.001**
<i>Used* Unsure</i>	.312 (.56)	1.00
<i>Not used*Unsure</i>	-1.095 (.49)	.081

**Significant ($\alpha < .05$)

4.1.4 Barriers/Facilitators

Pharmacist barriers to implementing a depression screening service were assessed in two different ways: 1) pharmacists were given Likert type questions and asked to rate their agreement with each barrier/facilitator statement 2) pharmacists were asked to rank their top three barriers from a pre-identified list.

4.1.4.1 LIKERT TYPE BARRIER/FACILITATOR STATEMENT

Each of nine Likert-type items were averaged (on a scale of 1-5 with 1 being “Strongly disagree” and 5 being “Strongly agree”). Table 4.1.15 shows a

breakdown of each statement. The top four barriers were: 1) Pharmacists did not have enough time to add depression screening services to their responsibilities (3.67 [SD=1.11]); 2) Pharmacists wanted to be reimbursed for offering these services (3.67 [SD=1.02]); 3) Pharmacists did not have the required support staff (3.43 [SD=1.12]); and 4) Pharmacists' support staff did not have the required knowledge/skills to offer these services (3.31 [SD=0.98]). The lowest scored barrier was pharmacists did not have a private counseling area (2.60 [SD=1.30]).

Table 4.1.15: Likert type Barrier Statements

Barrier	M (SD)
<i>The pharmacy I work at does not have a private counseling area</i>	2.60 (1.30)
<i>The physicians I work with are not supportive of pharmacies referring patients from depression screenings</i>	2.99 (0.94)
<i>I do not have the knowledge or skills to deliver a depression screening</i>	3.01 (1.06)
<i>It is difficult to perform a depression screening</i>	3.04 (0.92)
<i>The patients at my pharmacy are not willing to participate in a depression screening service</i>	3.10 (.85)
<i>Legal liability may be a problem if my pharmacy offers a depression screening service</i>	3.14 (0.93)
<i>The staff at our pharmacy do not have the knowledge and skills to participate in a depression screening service</i>	3.31 (0.98)
<i>I have the support staff necessary to offer a depression screening service**</i>	3.43 (1.12)
<i>I must be reimbursed to offer a depression screening</i>	3.67 (1.02)
<i>I do not have enough time to offer a depression screening service to all of my patients</i>	3.67 (1.11)

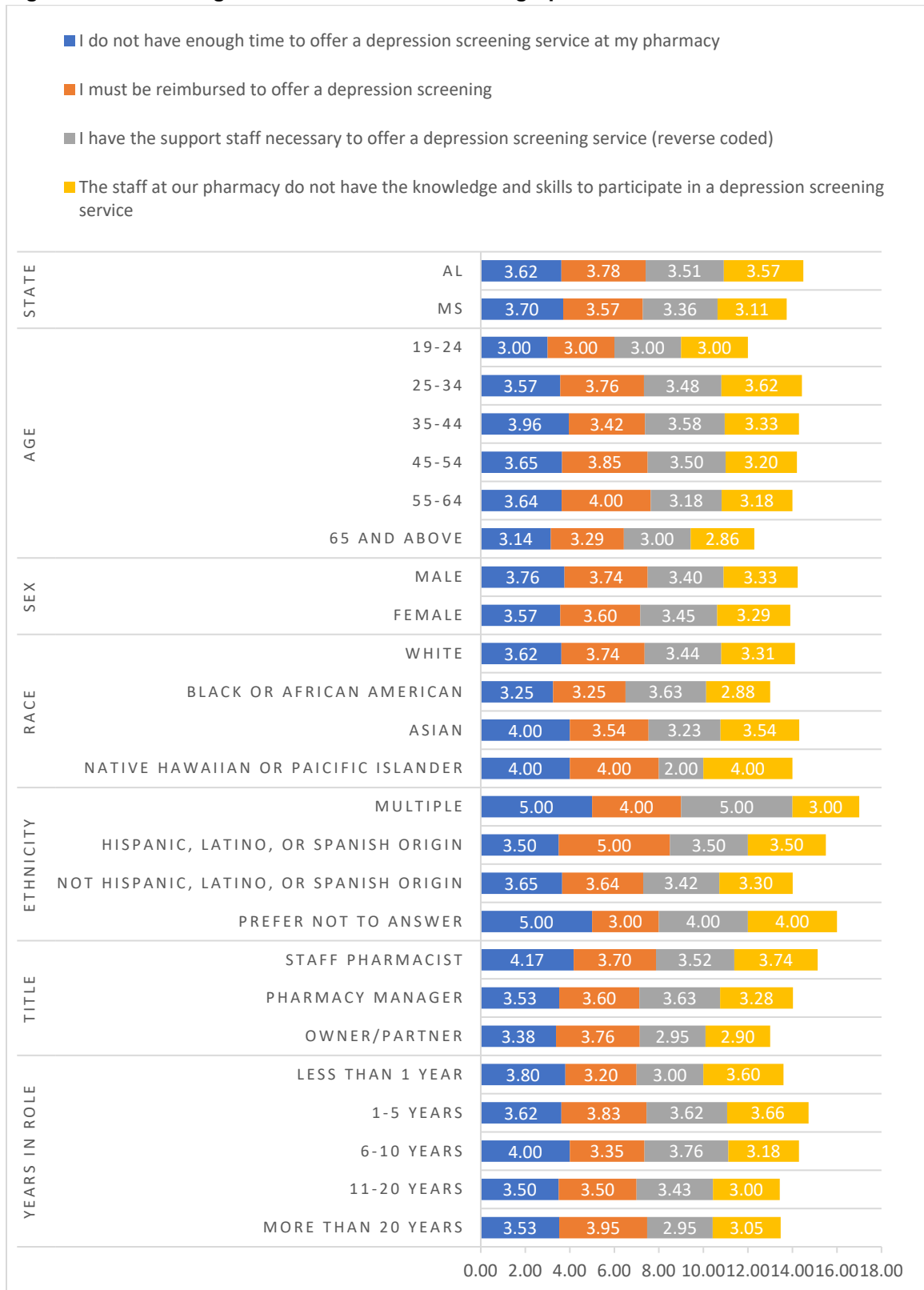
** Reverse coded

Visual inspection of the distribution of the four highest scored responses (M>3.25) across demographic subgroups revealed little variation in the rating of barriers (Figure 4.1.1). The largest variation occurred for pharmacists who selected multiple races, or were Hispanic, Latino, or Spanish. However, the

number of pharmacists who indicated these demographic categories were small (n= 1, n=3 respectively).

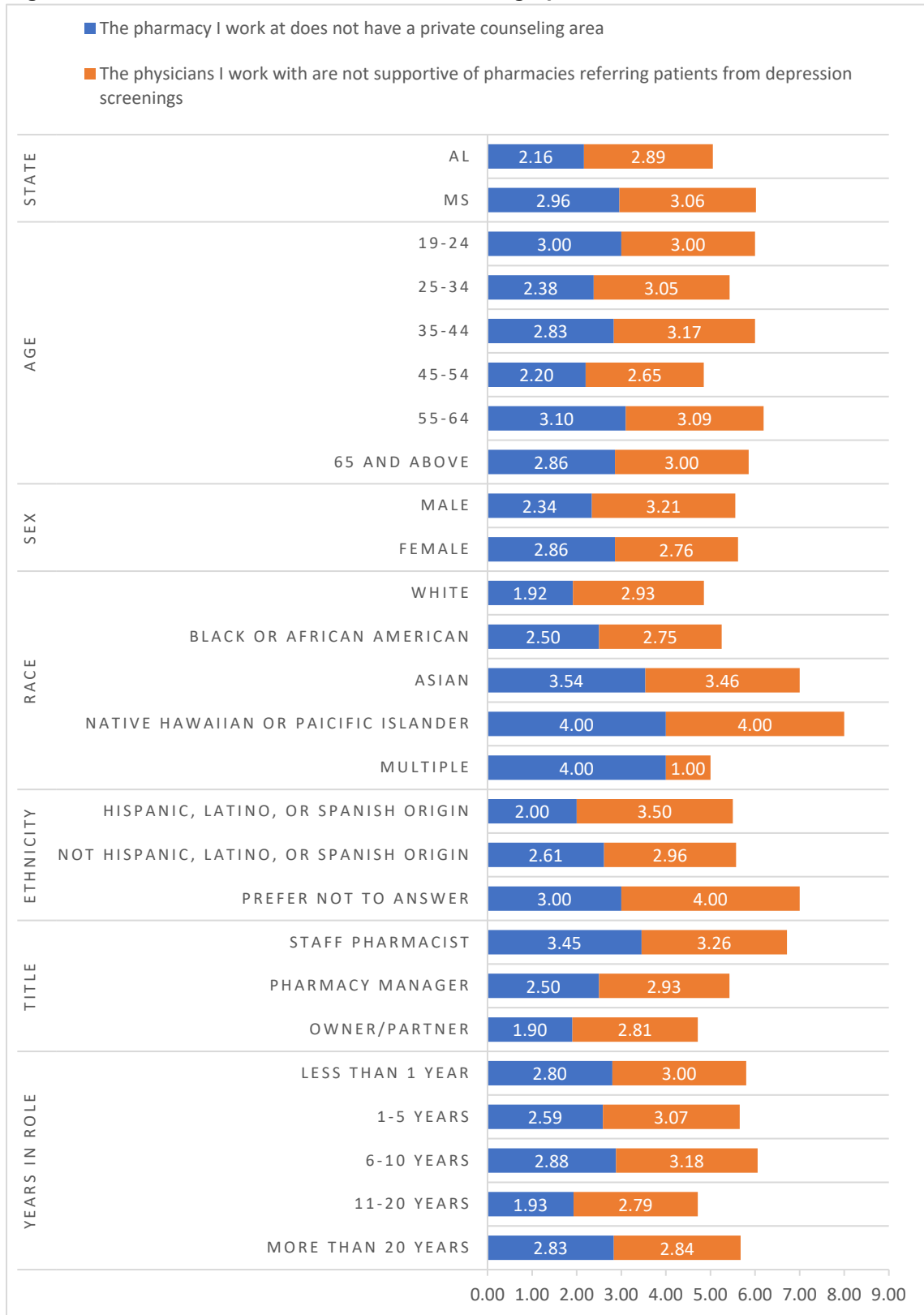
The distribution of the two lowest scored responses (M< 3.00) were visually inspected (Figure 4.1.2). Pharmacists in Mississippi reported a higher score for not having a private counseling area than pharmacists in Alabama. Likewise, pharmacists who were a race other than white, had higher scores for their pharmacy not having a private counseling area.

Figure 4.1.1: Four Highest Scored Barriers * Demographics^a



^a Numbers in white are mean responses on a scale from 1=strongly disagree to 5=strongly agree

Figure 4.1.2: Two Lowest Scored Barriers * Demographics^a



^a Numbers in white are mean responses on a scale from 1=strongly disagree to 5=strongly agree

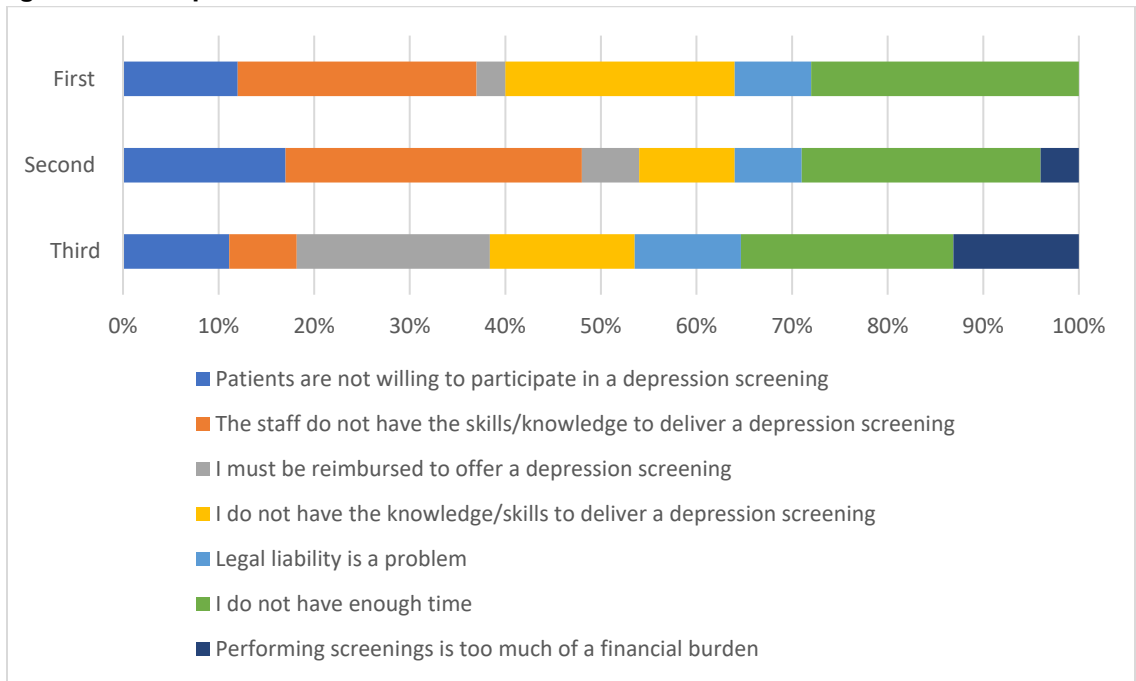
4.1.4.2 RANKED BARRIER ASSESSMENT

When asked to rank their top three barriers to implementing a depression screening service 28% of pharmacists said that their first most important barrier was not having enough time, followed by staff not having the skills/knowledge (25%), and pharmacists themselves not having the skills/knowledge (24%) (Table 4.1.16). For the second most important barrier, 25% of pharmacists said their staff do not have the knowledge/skills, 20% said they do not have enough time, and 14% said patients are not willing to participate (14%). For the third most important barrier, 14% of pharmacists said they did not have enough time, 13% wanted to be reimbursed, and 10% indicated that they did not have the skills/knowledge. No pharmacist ranked physicians not being supportive or their pharmacy not having a private counseling area as a top 3 barrier. A further breakdown of how pharmacists ranked their 1st, 2nd, and 3rd most important barrier is in Figure 4.1.3.

Table 4.1.16: Ranked barriers

Barrier	1st barrier	2nd barrier	3rd barrier
<i>I do not have enough time</i>	20	17	12
<i>The staff do not have the skills/ knowledge</i>	18	21	4
<i>I do not have the skills/ knowledge</i>	17	7	8
<i>Patients are not willing to participate</i>	9	12	6
<i>Legal liability is a problem</i>	6	5	6
<i>I must be reimbursed</i>	2	4	11
<i>Too much of a financial burden</i>	0	3	7
<i>Physicians are not supportive</i>	0	0	0
<i>Pharmacy does not have a private counseling area</i>	0	0	0

Figure 4.1.3: Top Three Ranked Barriers

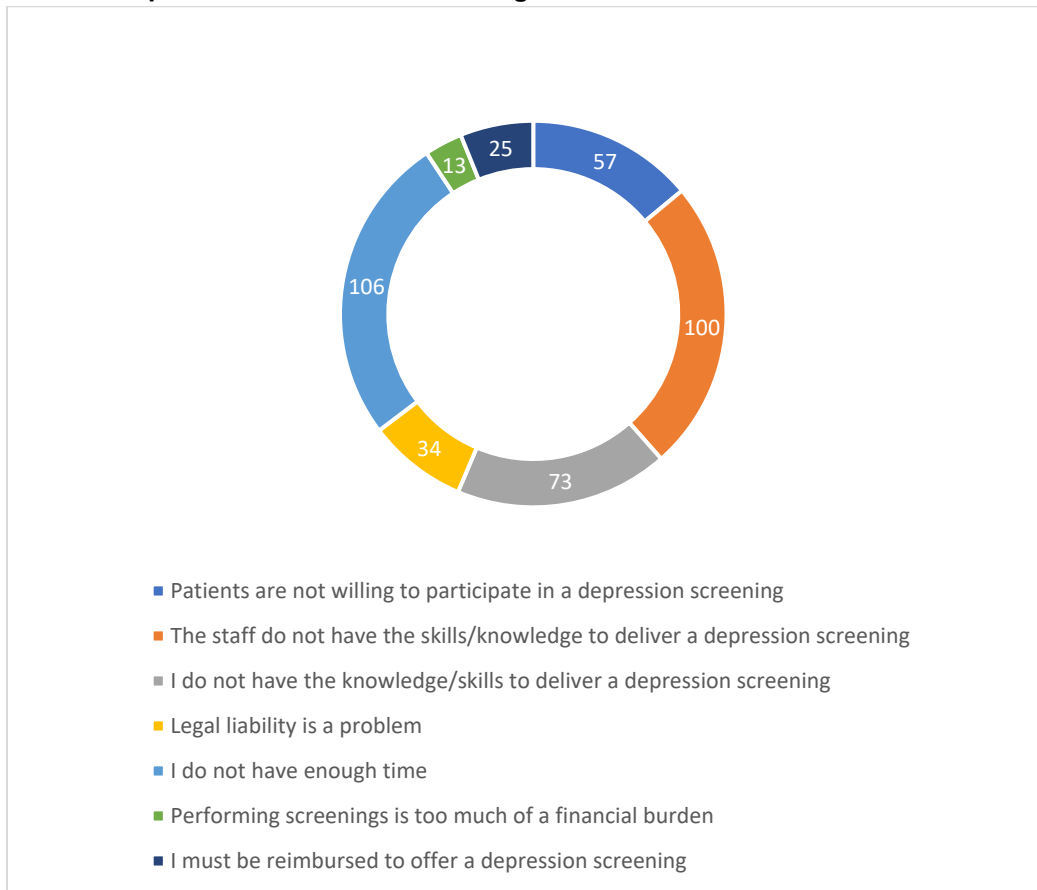


When the ranked barrier question was weighted, not having enough time was the largest barrier (n=106), followed by staff not having the knowledge/skills (n=100) (Table 4.1.17). The lowest ranked barrier was the financial burden caused by screenings (n=13). Two barriers were not ranked at all: 1) physicians are not supportive and 2) not having a private counseling area (Figure 4.1.4).

Table 4.1.17: Weighted ranked barriers

Barrier	Weighted score
<i>I do not have enough time</i>	106
<i>The staff do not have the skills/ knowledge</i>	100
<i>I do not have the skills/ knowledge</i>	73
<i>Patients are not willing to participate</i>	57
<i>Legal liability is a problem</i>	34
<i>I must be reimbursed</i>	25
<i>Too much of a financial burden</i>	13
<i>Physicians are not supportive</i>	0
<i>Pharmacy does not have a private counseling area</i>	0

Figure 4.1.4: Top Three Ranked Barriers Weighted Score



Each barrier's weighted score was analyzed visually with demographics which are reported below (Figure 4.1.5).

Patients are not willing to participate. Pharmacists who selected the age range ">65" and the "<1" or "6-10" years in current role ranked this barrier lower than younger age ranges. Alternatively, pharmacists whose selected role was "Staff pharmacist" and "Manager" had higher scores than pharmacists in owner roles (Figure 4.1.5).

The staff do not have the skills/knowledge. Demographic subgroups had similarly high scores across categories with minor variations. The oldest age group (“>65”) had lower scores than the other age groups.

I do not have the skills/knowledge. Pharmacists from Alabama and females had higher scores than pharmacists from Mississippi and males. Pharmacists in younger age groups (“25-34”, “35-44”) had lower scores for this barrier than older age groups. Similarly, racialized black pharmacists and pharmacists who were owners had lower scores than racialized white or Asian pharmacists. Finally, owner and staff pharmacist roles had lower scores than the manager role.

Legal liability is a problem. Pharmacists from Mississippi and males had higher scores compared to pharmacists from Alabama and females. Similarly, pharmacists who selected their role as “Owner”, had higher scores than “Staff” and “Manager” roles. Alternatively, Pharmacists who had a lower number of years in their current role (“<1”, “1-5”) had lower scores than pharmacists who were in their current role for longer.

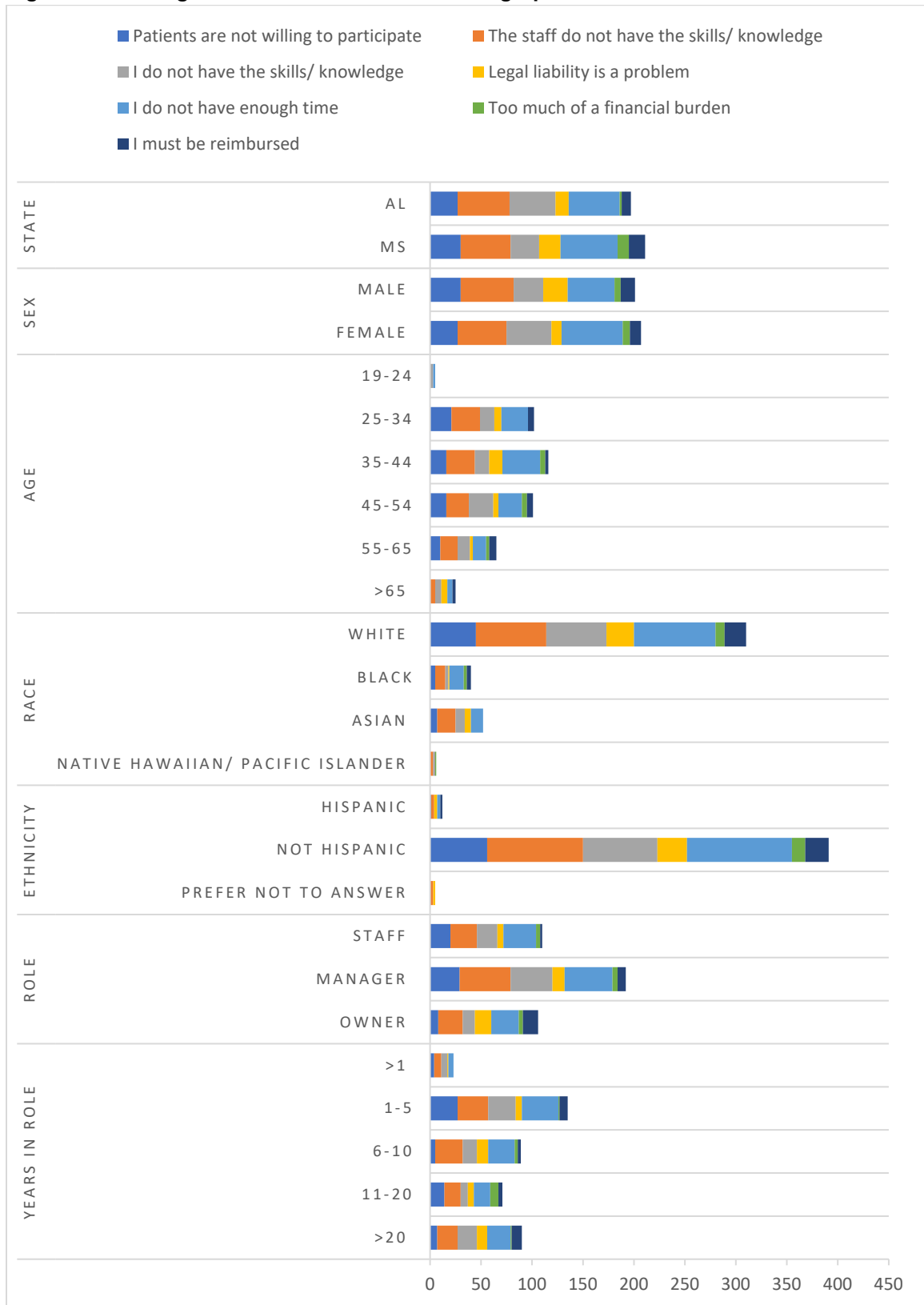
I do not have enough time. Weighted scores were similarly high for all demographics with minor variations. Females had higher scores than males and younger age categories (“25-34”, “35-44”) had higher scores than older age categories.

Too much of a financial burden. Weighted scores were consistent throughout demographics with one exception. Pharmacists who selected the “11-

20" year category in their current role had higher scores than other years in role categories.

I must be reimbursed. Pharmacists in Mississippi, in the age category "55-64", owners, and in their current role over 20 years, had higher scores than other demographics.

Figure 4.1.5: Weighted Ranked Barriers vs Demographics



4.1.5 Stigma

Exploratory factor analysis (EFA) with principal components showed the Perceived Devaluation and Discrimination (PDD) scale loaded on 2 factors that explained 57% of the variance (Table 4.1.18). Bartlett's test of sphericity was significant, $\chi^2(66) = 458.503$ ($p < .001$), which indicates the scale's suitability for factor analysis. The Kaiser–Meyer–Olkin measure of sampling adequacy (MSA) was above .800 ($n = .829$), so the data was considered appropriate for factor analysis. Two positive items loaded onto the negative perceptions dimension and one negative item loaded onto the positive perception dimension. The PDD had high internal consistency (Cronbach's $\alpha = .889$).

Table 4.1.18: Exploratory factor analysis rotated component matrix

		Factor 1	Factor 2
Positive perceptions	<i>Most people would accept a person who has been in a mental hospital as a close friend</i>		.530
	<i>Most people believe that a person who has been hospitalized for mental illness is just as trustworthy as the average citizen</i>		.786
	<i>Most people would accept a person who has fully recovered from mental illness as a teacher of young children in a public school</i>		.783
	<i>Most people would be willing to marry someone who has been a patient in a mental hospital</i>		.790
	<i>Most employers will hire a person who has been hospitalized for mental illness if he or she is qualified for the job</i>	.612*	.360
	<i>Most people in my community would treat a person who has been hospitalized for mental illness just as they would treat anyone</i>	.602*	.311
	<i>Most people believe that someone who has been hospitalized for mental illness is dangerous</i>	.476*	.498
Negative perceptions	<i>Most employers will not hire a person who has been hospitalized for mental illness</i>	.519	
	<i>Most people believe that entering a psychiatric hospital is a sign of personal failure</i>	.816	

<i>Most people think less of a person after he/she has been hospitalized for a mental illness</i>	.907
<i>Most people will not hire a person who has been hospitalized for serious mental illness to take care of their children, even if he or she had been well for some time</i>	.617
<i>Most young people would be reluctant to date someone who has been hospitalized for a serious mental illness</i>	.532

*loaded onto different dimension than expected

The mean PDD score was 2.9 (SD= 0.564) (on a scale of 1-5 with 1 being higher stigma and 5 being lower stigma). Table 4.1.19 shows a breakdown of the mean of each PDD statement.

Table 4.1.19: Mental Health Stigma

Number	Statement	M (SD)
1	Most people believe that a person who has been hospitalized for mental illness is just as trustworthy as the average citizen	2.7 (0.77)
2	Most people would be willing to marry someone who has been a patient in a mental hospital	2.74 (0.72)
3	Most people would accept a person who has fully recovered from mental illness as a teacher of young children in a public school	2.87 (0.91)
4**	Most people believe that entering a psychiatric hospital is a sign of personal failure	2.98 (0.99)
5	Most people in my community would treat a person who has been hospitalized for mental illness just as they would treat anyone	3.04 (0.89)
6**	Most employers will not hire a person who has been hospitalized for mental illness	3.06 (0.79)
7**	Most people think less of a person after he/she has been hospitalized for a mental illness	3.11 (0.9)
8	Most people would accept a person who has been in a mental hospital as a close friend	3.13 (0.83)
9**	Most people believe that someone who has been hospitalized for mental illness is dangerous	3.17 (0.83)
10**	Most young people would be reluctant to date someone who has been hospitalized for a serious mental illness	3.33 (0.78)
11**	Most people will not hire a person who has been hospitalized for serious mental illness to take care of their children, even if he or she had been well for some time	3.33 (0.87)
12	Most employers will hire a person who has been hospitalized for mental illness if he or she is qualified for the job	3.35 (0.78)
Average Stigma		2.90 (0.56)

**Reverse coded

4.1.5.1 STIGMA VS DEMOGRAPHICS

A two-sample t-test was performed to analyze the association between location (i.e. Alabama or Mississippi), sex (i.e male or female), and ethnicity (i.e. non-Hispanic or Hispanic) on stigma (Table 4.1.20). There was not a significant difference in stigma between Alabama and Mississippi pharmacists. Likewise, there was not a significant difference in stigma between male and female pharmacists. Finally, there was not a significant difference in stigma between non-Hispanic, Latino, or Spanish and Hispanic, Latino, or Spanish pharmacists.

Table 4.1.20: Confidence performing a depression screening * Demographics

Mean PDD scores for each demographic			
Location	M(SD)		
<i>Alabama</i>	3.02 (.24)		
<i>Mississippi</i>	3.10 (.24)		
Gender	M(SD)		
<i>Male</i>	3.05 (.21)		
<i>Female</i>	3.08 (.28)		
Ethnicity	M(SD)		
<i>Hispanic, Latino, or Spanish</i>	2.83 (-)*		
<i>Non-Hispanic, Latino, or Spanish</i>	3.07(.24)		
Perceived Devaluation and Discrimination Scores			
	<i>df</i>	<i>t</i>	<i>p-value</i>
<i>Location</i>	80	-1.53	.13
<i>Gender</i>	8	-.47	.64
<i>Ethnicity</i>	79	-.96	.34

*No SD, n=1

A two-way ANOVA was performed to analyze the effect of age and race on stigma towards patients with mental health conditions. Levene's test rejected the null hypothesis of equal population variances for stigma towards patients with

mental health conditions ($F[9,69] = 2.173, p = .034$) so equal variances were not assumed and the Welch statistic was run. Age and race did not have a statistically significant effect on stigma towards patients with mental health conditions, (Age: $F_{\text{Welch}}(4,23.67) = .391, p = .813$; Race: $F_{\text{Welch}}(3,4.25) = .723, p = .586$).

A two-way ANOVA was performed to analyze the effect of the role of the pharmacist and the years in their current role on stigma towards patients with mental health conditions. Levene's test did not reject the null hypothesis of equal population variances for stigma towards patients with mental health conditions ($F[12,68] = 1.148, p = .338$) so equal variances were assumed. The two-way ANOVA revealed that there was not a statistically significant interaction between the effects of the role of the pharmacist and the years in their current role ($F(7, 68) = 1.068, p = .394$). Simple main effects analysis showed that neither pharmacist's role nor years in that role did not have a statistically significant effect on stigma ($p = .674, .394$).

4.1.5.2 STIGMA VS MENTAL HEALTH EXPERIENCE

A two-way ANOVA was performed to analyze the effect of experience with patients with mental health conditions and currently offering depression screening services on stigma towards patients with mental health conditions. Levene's test did not reject the null hypothesis of equal population variances for stigma ($F[3,77] = 1.109, p = .351$) so equal variances were assumed. Interactions with patients with mental health conditions, currently offering a depression

screening service, and the interaction between the two groups did not have a statistically significant effect on pharmacists' stigma (Table. 4.1.21).

A two-way ANOVA was performed to analyze the effect of experience with patients on psychotropics and previous use of the PHQ-9 on stigma towards patients with mental health conditions (Table 4.1.21). Levene's test did not reject the null hypothesis of equal population variances for stigma ($F[2,78] = .826, p = .441$) so equal variances were assumed. The effect of the interaction of pharmacist interactions with patients using psychotropics and previous use of the PHQ-9 was not able to be calculated due to there being less than 2 cases in one group. Simple main effects analysis showed that interaction with patients on psychotropics did not have a statistically significant effect on stigma and previous use of the PHQ-9 also did not have a statistically significant effect on stigma.

Table 4.1.21: Stigma vs Mental Health Experience

Stigma towards patients with mental health conditions		
	<i>F</i>	<i>p-value</i>
<i>Interacted with patients with MHC</i>	.576	.450
<i>Currently offer depression screenings</i>	1.989	.144
<i>Interacted*Currently offer</i>	.181	.672
<i>Interactions with patients on psychotropic medications</i>	.205	.652
<i>Previous use of the PHQ-9</i>	.171	.843
<i>Interactions*PHQ-9</i>	-	-

4.1.6 Preferred Implementation Strategies

Each Likert-type item was averaged (on a scale of 1-5 with 1 being “Not at all helpful” and 5 being “Extremely helpful”). Table 4.1.22 shows a breakdown of

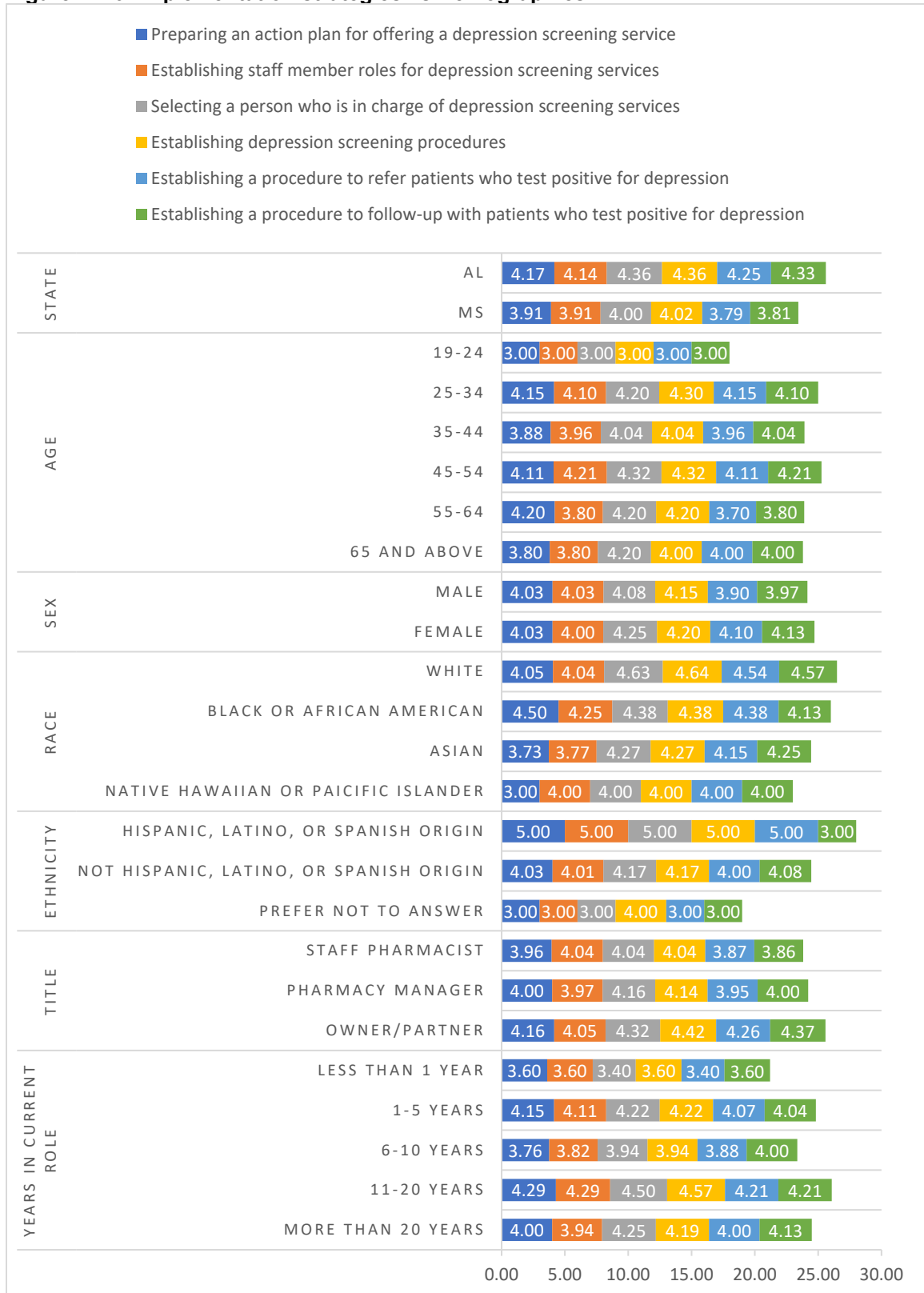
the mean of each statement. All strategies had a mean over 3, however, the top three strategies were 1) Selecting a person who is in charge of the service (M=4.16), 2) Establishing procedures (M=4.18), and 3) Establishing procedures to follow up with patients (M=4.05).

Table 4.1.22: Implementation Strategies

Implementation Strategies	M (SD)
Adjusting prescription dispensing workflow	3.75 (1.06)
Approaching management, corporate, or owners to gain support	3.81 (1.05)
Arranging staff schedules	3.86 (0.96)
Establishing procedures to identify patients	3.91 (0.89)
Establishing a plan to continuously evaluate and improve services	3.94 (0.87)
Preparing an outreach/marketing plan	3.95 (0.89)
Developing a budget	3.96 (0.87)
Setting a goal or objective	3.96 (0.91)
Establishing procedures to refer patients	4.00 (0.88)
Establishing staff member roles	4.01 (0.84)
Preparing an action plan	4.03 (0.89)
Establishing procedure to follow-up with patients	4.05 (0.87)
Selecting a person who is in charge of service	4.16 (0.87)
Establishing procedures	4.18 (0.86)

Each strategy which had an average score ≥ 4 (n=6) was analyzed with demographics which are reported below (Figure 4.1.6). Means were uniform across demographics with little variation.

Figure 4.1.6: Implementation strategies vs Demographics^a



^a Numbers in white are mean responses on a scale from 1=strongly disagree to 5=strongly agree

4.1.7 Confidence * Stigma

A Pearson correlation coefficient was computed to assess the linear relationship between a pharmacist's' confidence implementing a depression screening service and their stigma towards patients with mental health conditions. There was no correlation between the two variables, $r(80) = .051$, $p = .325$.

A second Pearson correlation coefficient was computed to assess the linear relationship between a pharmacist's' confidence using the PHQ-9 and their stigma towards patients with mental health conditions. There was no correlation between the two variables, $r(80) = .038$, $p = .368$.

4.1.8 Qualitative Analysis

Thematic qualitative analysis was performed on open ended questions using inductive coding. While the open-ended questions asked pharmacists about different aspects of a depression screening service, six themes emerged across questions: 1) lack of time, 2) trained staff and pharmacists, 3) financial concerns, 4) patient considerations, 5) employer buy-in, and 6) other healthcare providers (Table 4.1.23).

Table 4.1.23: Overall themes identified in Aim 1 survey

Theme	n^a	Quotes
<i>Financial concerns</i>	78	"Qualitative and quantitative data [is needed] that shows it is beneficial and worthwhile and can also make profit" "If the pharmacy is reimbursed at a fair rate, then lots of services can be implemented and possibly more staff hired. Reimbursement is the

		main reason most pharmacies cannot offer certain services. We are not reimbursed for services we provide.” “Reimbursement”
<i>Trained Staff & Pharmacists</i>	57	“Besides the lack of staff - the lack of available trainers in the pharmacy. My pharmacist manager is not familiar with the screenings.” “We would need to be trained on how to administer the depression screening.” “Staffing is the main concern, as we are already overburdened with the tight staffing our company enforces.”
<i>Lack of time</i>	37	“The work load is difficult to handle as it is without adding more tasks and less help.” “Time is the main barrier.” “We already have so many tasks to do each day, it would be very difficult to do.”
<i>Patient considerations</i>	22	“In retail pharmacy we would need to be staffed adequately and most customers would not take the time to talk to us” “... as well as having an environment to make the patient comfortable enough to freely answer assessment questions.” “Population study if patients who are on depression meds actually for depression”
<i>Employer buy-in</i>	9	“I think HCPCS codes or proof of billing and reimbursements would help owners to establish depression screening services.” “Pharmacists would likely be on board as is. However, financial benefit would be need to be demonstrated to get owners/corporate leaders on board.” “not prepared or confident at all due to corporate”
<i>Other Healthcare providers</i>	7	“If tied in to local community prescribers and psychiatric services offered at our local hospital [implementing a depression screening service] could be positive.” “We have a mental health facility in town that may frown upon us doing that” “The patient would still need an office visit to the physician's office to obtain appropriate medication prescription”

^afrequency with which the theme was coded across questions

When asked what evidence they would need to see before implementing a depression screening service, several themes emerged including: cost considerations, staffing considerations, effectiveness/impact, patient considerations, and workflow outcomes (Table 4.1.24). The evidence

pharmacists reported wanting to see the most was effectiveness/impact and cost-effectiveness studies.

Table 4.1.24: What evidence is needed about depression screenings?

Theme	n^a	Quotes
<i>Effectiveness/Impact</i>	19	“Qualitative and quantitative data that shows it is beneficial and worthwhile that can also make profit” “We would need to see outcomes-based data from such a program as well as financial data.” “Effective workflow especially in retail pharmacies.”
<i>Cost considerations</i>	18	“I think HCPCS codes or proof of billing and reimbursements would help owners to establish depression screening services.” “Teaching pharmacists how to address and prescribe, data showing benefits, patient input if they would feel comfortable, billing/reimbursement breakdowns “
<i>Patient considerations</i>	8	“patient input if they would feel comfortable”
<i>Workflow outcomes</i>	6	“Results from high volume retail and independent pharmacies on workflow and time management”
<i>None needed</i>	5	“I don't think most pharmacists would require evidence.”
<i>Staffing considerations</i>	3	“More help of techs are needed”

^afrequency with which the theme was coded

4.1.9 Non-Response Bias

Response was not significantly different by demographics except for state (Table 4.1.25). Response was also not significantly different by confidence or stigma (Table 4.1.26).

Table 4.1.25: Demographics by Response Time

Demographics (n=17)	Early respondents	Late respondents	t-test		
	n (%)		df	t	p- value
State					
Alabama	17 (100)	0 (0)			
Mississippi	0 (0)	17 (100)	--	--	--
Gender					
Female	8 (47)	9 (53)	32	-.333	.74
Male	9 (53)	8 (47)			
Age					
19-24	0 (0)	0 (0)	32	1.037	.31
25-34	3 (18)	2 (11)			
35-44	6 (35)	4 (24)			
45-54	3 (18)	3 (18)			
55-64	3 (18)	5 (29)			
65 and above	2 (11)	3 (18)			
Race					
White	16 (94)	13 (76)	32	-.976	.34
Asian	1 (6)	2 (12)			
African American	0 (0)	2 (12)			
Native Hawaiian or Pacific Islander	0 (0)	0 (0)			
Multiple	0 (0)	0 (0)			
Ethnicity^a					
Non-Hispanic, Latino, or Spanish	17 (100)	16 (94)	16	1.000	.332
Hispanic, Latino, or Spanish	0 (0)	1 (6)			
Prefer not to answer	0 (0)	0 (0)			
Pharmacist Role					
Staff pharmacist	3 (18)	5 (29)	32	1.204	.24
Pharmacy manager	8 (47)	9 (53)			
Owner/partner	6 (35)	3 (18)			
Years in Current Role					
Less than 1	1 (6)	0 (0)	32	1.584	.12
1-5	6 (35)	3 (18)			
6-10	3 (18)	3 (18)			
11-20	2 (12)	3 (18)			
More than 20	5 (29)	8 (46)			
Current Offer Depression Screenings					
Yes	0 (0)	0 (0)	--	--	--
No	17 (100)	17 (100)			
Had used PHQ-9 Before					
Yes	0 (0)	1 (6)	32	1.769	.09
No	17 (100)	16 (94)			
Interacted with patients with MHC					
Yes	17 (100)	17 (100)	--	--	--
No	0 (0)	0 (0)			
Interacted with patients on psychotropics					
Yes	17 (100)	17 (100)	--	--	--
No	0 (0)	0 (0)			

^aEqual variances not assumed

Table 4.1.26: Confidence & Stigma by Response Time

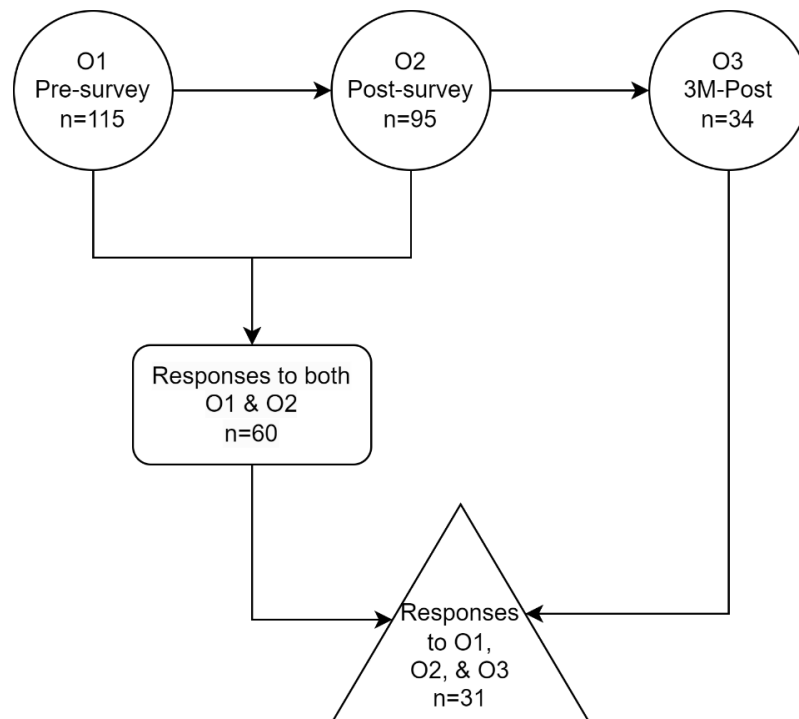
Variable (n=17)	Early respondents	Late respondents	t-test		
	<i>M (SD)</i>		<i>df</i>	<i>t</i>	<i>p-value</i>
<i>Confidence performing a depression screening</i>	2.34 (1.26)	2.74 (1.26)	32	-.925	.36
<i>Confidence using the PHQ- 9</i>	1.96 (.99)	1.73 (.93)	32	.714	.48
<i>Stigma</i>	3.06 (.28)	3.05 (.25)	30	.127	.90

4.2 Specific Aim 2

Design, deliver, and assess a training program to improve knowledge, intention, and attitudes towards implementing a depression screening service in rural pharmacists.

The number of pharmacists who took the pre-survey (O1) was $n=115$, the post survey (O2) was $n=95$, and the three-month post survey (O3) was $n=34$. The number of pharmacists who took the survey at O1 and O2 was $n=60$. The number of pharmacists who took the survey at O1, O2, and O3 was $n=31$ (Figure 4.2.1) for a 50% response rate at O3. The estimated sample size needed to reach power with a 50% attrition rate was 74 ([Ch. 3.2.2.1 Participants](#)), thus, power was not met.

Figure 4.2.1: Number of pharmacists who responded to each survey



4.2.1 Demographics

The demographic breakdown for each survey time point is reported in Table 4.2.1. The majority of respondents at all three time points were from urban areas, female, white, not-Hispanic, Latino or Spanish, and staff pharmacists. The age brackets “25-34”, “35-44”, and “45-54” had the most respondents for all three time points. Most pharmacists did not work at a pharmacy that currently offered depression screening services.

Table 4.2.1: Matched survey responses: Demographics at O1, O2, O3

Demographics	n (%)		
	O1 (n=109)	O2 (n=60)	O3 (n=31)
Rurality			
Urban (RUCA 1-3)	81 (78)	52 (87)	24 (80)
Rural (RUCA 4-10)	23 (22)	8 (13)	6 (20)
Gender			
Female	73 (67)	39 (65)	21 (70)
Male	33 (30)	20 (33)	9 (30)
Prefer not to answer	3 (3)	1 (2)	0
Age			
25-34	21 (19)	12 (20)	8 (28)
35-44	35 (32)	18 (30)	9 (30)
45-54	22 (20)	12 (20)	5 (16)
55-64	14 (13)	8 (13)	2 (6)
65 and above	17 (16)	10 (17)	6 (20)
Race			
White	92 (86)	50 (83)	29 (97)
African American	10 (9)	6 (10)	0
Asian	2 (2)	2 (3)	1 (3.3)
Other	3 (3)	1 (2)	0
Ethnicity			
Non-Hispanic, Latino, or Spanish	104 (95)	58 (97)	29 (97)
Hispanic, Latino, or Spanish	1 (1)	1 (1.5)	1 (3)
Prefer not to answer	4 (4)	1(1.5)	0
Pharmacist Role^a			
Staff pharmacist	71 (54)	44 (73)	22 (73)
Pharmacy manager	25 (22)	12 (20)	7 (23)
Owner/partner	11 (10)	3 (3)	1 (4)
Other	6 (21)	3 (5)	0
Currently offer screening services			
Yes	4 (4)	1 (2)	1 (3)
No	105 (96)	58 (97)	29 (97)

^aRespondents selected all that apply

4.2.2 Knowledge

Hypothesis 1 stated that knowledge on implementing a depression screening service would increase from pre-training to post-training. Hypothesis 2 stated that knowledge would continue to be increased from pre-training to 3-months post training. Internal consistency at O1 and O2 and test-retest consistency was low (Table 4.2.2). Internal consistency at O3 was moderate.

Table 4.2.2: Knowledge reliability analysis

Internal consistency				
<i>Cronbach's α</i>				
O1	.018			
O2	.425			
O3	.582			
Test-retest consistency				
	<i>r</i>	<i>p-value</i>	<i>Strength</i>	<i>Direction</i>
O2*O3	.229	<.01	Low	+

Knowledge was assessed at O1, O2, and O3 by taking the frequency of selecting the correct response at each time point (Table 4.2.3). Visual inspection revealed that knowledge increased from O1 to O2 and from O1 to O3; knowledge decreased from O2 to O3.

Table 4.2.3: Unmatched survey responses: Number of correct knowledge answers at O1, O2, and O3

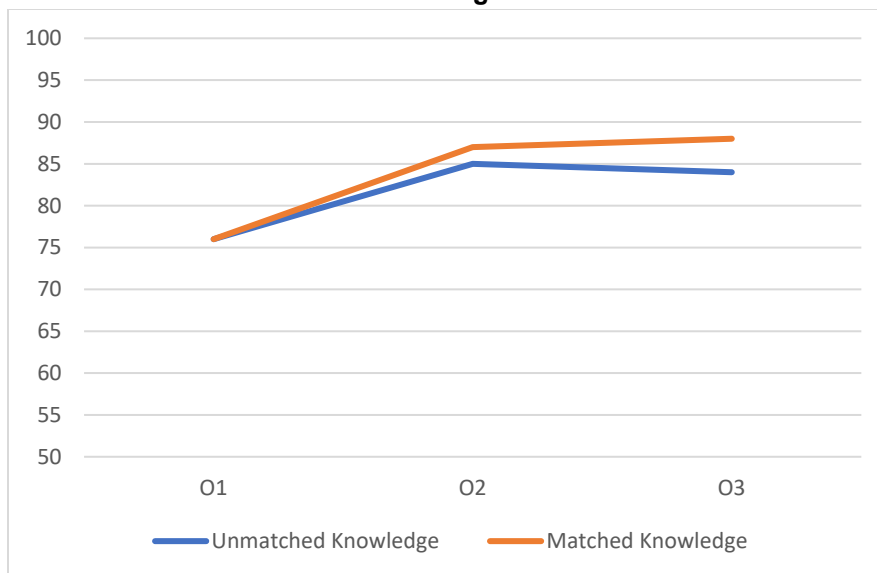
Question	Selected correct response n (%)		
	O1 (n=115)	O2 (n=95)	O3 (n=34)
Who does the US Preventative Task Force recommend to be screened for depression? <i>Correct response: All individuals aged 12 and over</i>	62 (53.9)	76 (80)	24 (71)
A patient with depression may present with which of the following symptoms? <i>Correct response: All of the above</i>	112 (97.4)	94 (98.9)	31 (91)
What is the Patient Health Questionnaire (PHQ-9) used for? <i>Correct response: Both A and B</i>	53 (46.1)	58 (61.1)	20 (59)
If someone scores between 10-19 on the PHQ-9, and denies suicidal ideation, what should your next step be? <i>Correct response: Refer them to their primary care physician or mental healthcare professional</i>	106 (92.2)	89 (93.7)	30 (88)
A patient has an initial score of 15 on the PHQ-9. When asked, the patient says they have never been diagnosed or treated for depression. What is your next step? <i>The patient has scored positive for depression and should be referred to a PCP for follow up</i>	93 (80.9)	85 (89.5)	33 (97)
What resources are available to locate mental health treatment for patients with a positive score for depression? <i>Correct response: Both A and B</i>	101 (87.8)	85 (89.5)	30 (88)
Averaged score out of a 100%	76	85	84

After matching responses, knowledge was calculated based on frequency of correct responses (Table 4.2.4). Visual inspection revealed knowledge scores increased from O1 to O2, from O1 to O3, and from O2-O3. A comparison of unmatched and matched knowledge scores is in Figure 4.2.2.

Table 4.2.4: Matched survey responses: Number of correct knowledge questions

Question	Selected correct response n (%)		
	O1 (n= 60)	O2 (n=60)	O3 (n=30)
Who does the US Preventative Task Force recommend to be screened for depression? <i>Correct response: All individuals aged 12 and over</i>	32 (53)	50 (83)	21 (70)
A patient with depression may present with which of the following symptoms? <i>Correct response: All of the above</i>	59 (98)	60 (100)	30 (100)
What is the Patient Health Questionnaire (PHQ-9) used for? <i>Correct response: Both A and B</i>	29 (48)	38 (63)	19 (63)
If someone scores between 10-19 on the PHQ-9, and denies suicidal ideation, what should your next step be? <i>Correct response: Refer them to their primary care physician or mental healthcare professional</i>	53 (88)	57 (95)	29 (97)
A patient has an initial score of 15 on the PHQ-9. When asked, the patient says they have never been diagnosed or treated for depression. What is your next step? <i>The patient has scored positive for depression and should be referred to a PCP for follow up</i>	48 (88)	55 (92)	30 (100)
What resources are available to locate mental health treatment for patients with a positive score for depression? <i>Correct response: Both A and B</i>	54 (90)	54 (90)	29 (97)
Averaged score out of a 100%	76	87	88

Figure 4.2.2: Unmatched and Matched Knowledge Scores



When using an ANOVA with repeated measures, the average knowledge scores were statistically significantly different ($F(2,58)= 11.23, p<.001$). Post knowledge scores were statistically significantly higher than pre knowledge scores and 3-month post knowledge scores were statistically significantly higher than pre knowledge scores. Post and 3-month post knowledge scores were not statistically significantly different (Table 4.2.5).

Table 4.2.5: Bonferroni post hoc analysis: Repeated measures ANOVA for knowledge

Mean knowledge scores at each time point			
Time point	Mean (SD)		
<i>O1 Pre-survey</i>	77.22 (17.77)		
<i>O2 Post-survey</i>	89.44 (11.14)		
<i>O3 3-month Post survey</i>	87.78 (11.52)		
Difference in knowledge between groups			
Interaction	Mean difference (SE)	p-value	95% CI
<i>O1-O2</i>	-12.22 (2.64)	<.001**	-18.94, -5.51
<i>O1-O3</i>	-10.56(3.14)	.007**	-18.55, -2.57
<i>O2-O3</i>	1.67 (2.57)	1.00	-4.87, 8.20

**Significant ($\alpha < .05$)

Hypothesis 1 stated that knowledge would improve after a training webinar and Hypothesis 2 stated that knowledge would continue to be improved at three months post intervention. Both null hypotheses were rejected, concluding that the training webinar had an effect on pharmacist knowledge.

4.2.3 Confidence performing a depression screening

Hypothesis 1 stated that pharmacists' confidence toward performing a depression screening service would increase from pre-training to post-training.

Hypothesis 2 stated that confidence would continue to be increased pre-training to 3-months post training. The confidence scale internal consistency was excellent and test-retest consistency was high (Table 4.2.6).

Table 4.2.6: Confidence reliability analysis

Internal Consistency				
	<i>Cronbach's α</i>			
<i>O1 Pre-survey</i>	.940			
<i>O2 Post-survey</i>	.945			
<i>O3 3-month post survey</i>	.924			
Test-retest consistency				
	<i>r</i>	<i>p-value</i>	<i>Strength</i>	<i>Direction</i>
O2-O3	.787	<.01	High	+

Confidence was assessed at O1, O2, and O3 by averaging Likert questions at each time point (Table 4.2.7). Visual inspection revealed that confidence increased from O1 to O2 and from O1 to O3; scores decreased from O2 to O3.

Table 4.2.7: Confidence scores at O1, O2, and O3

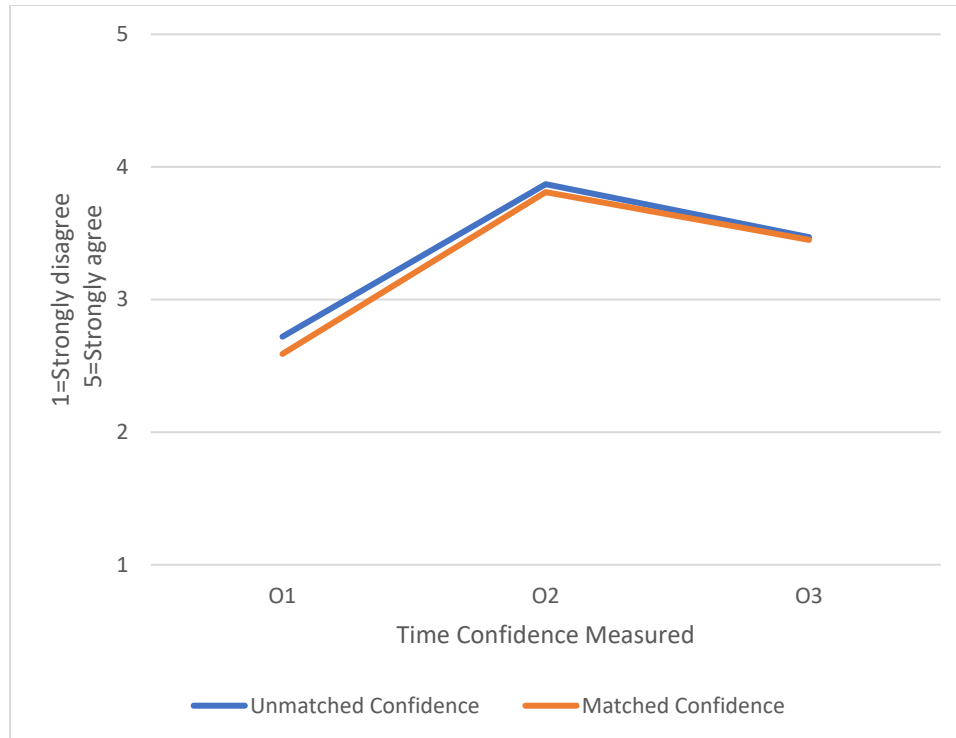
Question	Mean (SD)		
	<i>O1 (n=115)</i>	<i>O2 (n=95)</i>	<i>O3 (n=34)</i>
<i>Obtain an accurate patient mental health history</i>	2.71 (1.07)	3.81 (.82)	3.58 (.90)
<i>Identify patients who qualify to receive a depression screening</i>	2.68 (1.05)	3.84 (.83)	3.48 (.83)
<i>Initiate conversations with a patient about receiving a depression screening</i>	2.75 (1.13)	3.82 (.86)	3.44 (.93)
<i>Administer a depression screening</i>	2.76 (1.21)	3.97 (.82)	3.52 (.91)
<i>Answer questions about a depression screening</i>	2.71 (1.14)	3.93 (.80)	3.35 (.88)
Average confidence scores	2.72 (1.01)	3.87 (.75)	3.47 (.77)

After matching responses, confidence was assessed (Table 4.2.8). Visual inspection revealed similar results as unmatched surveys: scores increased from O1 to O2 and from O1 to O3; scores decreased from O2 to O3. A comparison of unmatched and matched confidence scores is in Figure 4.2.3.

Table 4.2.8: Matched survey responses: Confidence scores

Question	Mean (SD)		
	O1 (n= 60)	O2 (n=60)	O3 (n=30)
<i>Obtain an accurate patient mental health history</i>	2.60 (1.92)	3.77 (.79)	3.60 (.86)
<i>Identify patients who qualify to receive a depression screening</i>	2.63 (1.09)	3.77 (.87)	3.43 (.86)
<i>Initiate conversations with a patient about receiving a depression screening</i>	2.65 (1.15)	3.80 (.84)	3.47 (.94)
<i>Administer a depression screening</i>	2.55 (1.21)	3.88 (.80)	3.50 (.90)
<i>Answer questions about a depression screening</i>	2.52 (1.14)	3.85 (.82)	3.27 (.87)
Average confidence scores	2.59 (1.04)	3.81 (.74)	3.45 (.79)

Figure 4.2.3: Unmatched and Matched Confidence Scores



When using an ANOVA with repeated measures, with a Greenhouse-Geisser correction for lack of sphericity, the average confidence scores were statistically significantly different ($F(1.57,45.64)= 45.44, p<.001$). Post confidence and 3-month post confidence scores were statistically significantly higher than pre confidence scores. Post confidence scores were also statistically higher than 3-month post confidence scores (Table 4.2.9). Confidence significantly increased from baseline to post intervention and from baseline to 3 months post intervention. However, confidence significantly decreased from post intervention to 3 months post intervention.

Table 4.2.9: Bonferroni post hoc analysis: Repeated measures ANOVA with Greenhouse-Geisser correction for confidence

Mean confidence scores at each time point			
Time point	Mean (SD)		
<i>O1 Pre-survey</i>	2.59 (1.10)		
<i>O2 Post-survey</i>	3.78 (.72)		
<i>O3 3-month Post survey</i>	3.45 (.79)		
Difference in confidence between groups			
Interaction	Mean difference (SE)	p-value	95% CI
<i>O1-O2</i>	-1.19 (.14)	<.001**	-1.54, -.84
<i>O1-O3</i>	-.86 (.15)	<.001**	-1.24, -.48
<i>O2-O3</i>	.327 (.09)	.004**	.10, .56

**Significant ($\alpha < .05$)

Hypothesis 1 stated that confidence would improve after a training webinar and Hypothesis 2 stated that confidence would continue to be increased at three months post intervention. Both null hypotheses were rejected, concluding that the training webinar influenced pharmacist confidence.

4.2.4 Intention to implement a depression screening service

Hypothesis 1 stated that pharmacists' intention to implement a depression screening service would increase from pre-training to post-training. Intention was assessed at O1 and O2 (Table 4.2.10). Visual inspection revealed that intention to implement depression screening services increased among pharmacists from O1 to O2.

Table 4.2.10: Intention to implement a depression screening service

Do you intend to screen patients in your pharmacy?	n(%)	
	O1 (n= 60)	O2 (n=60)
<i>Yes, in the next 3 months</i>	5 (8.3)	7 (11.7)
<i>Yes, in the future, but not in the next 3 months</i>	12 (20.0)	14 (23.3)
<i>No</i>	16 (26.7)	13 (21.7)
<i>Unsure</i>	27 (45.0)	26 (43.3)
<i>Yes total</i>	17 (28.3)	21 (35.0)
<i>No total</i>	43 (71.7)	39 (65.0)

A generalized estimating equations (GEE) repeated measures analysis was performed to assess the change in intention over time. The GEE repeated measures model was not statistically significant, $F(1,59) = 2.034$, $p = .159$.

Hypothesis 1 stated that intention would improve after a training webinar. The null hypothesis was not rejected, concluding that the training webinar did not have an effect on pharmacist intention.

4.2.5 Beliefs

4.2.5.1 ATTITUDE

Hypothesis 1 stated that pharmacists' attitudes toward performing a depression screening service would increase from pre-training to post-training. Hypothesis 2 stated that attitudes would continue to be increased from pre-training to 3-months post training. Exploratory factor analysis (EFA) showed scale items loaded on 1 factor with eigenvalues ≥ 1 that explained 56% of the variance (Table 4.2.11). Bartlett's test of sphericity was significant, $\chi^2(6) = 139.264$ ($p < .001$), which indicates the scale's suitability for factor analysis. However, the Kaiser–Meyer–Olkin measure of sampling adequacy (MSA) was less than .800 ($n = .571$), which indicates the data was inappropriate for factor analysis. Internal consistency was high and test-retest consistency was low (Table 4.2.12).

Table 4.2.11: Exploratory factor analysis rotated component matrix

	Factor 1
Attitude	
Harmful – Beneficial	.867
Good – Bad**	.561
Pleasant – Unpleasant**	.682
Worthless – Useful	.851

**Reverse coded

Table 4.2.12: Attitude reliability analysis

Internal consistency				
<i>Cronbach's α</i>				
O1				.708
O2				.809
O3				.866
Test-retest consistency				
	<i>r</i>	<i>p-value</i>	<i>Strength</i>	<i>Direction</i>
O2*O3	.591	<.01	High	+

Attitude was assessed at O1, O2, and O3 by averaging Likert questions at each time point (Table 4.2.13). Visual inspection revealed that attitude increased from O1 to O2, from O1 to O3, and from O2 to O3.

Table 4.2.13: Attitude scores at O1, O2, and O3

Implementing a depression screening service is...	Mean (SD)		
	O1 (n=115)	O2 (n=95)	O3 (n=34)
<i>Harmful - Beneficial</i>	7.10 (1.94)	7.85 (2.15)	8.06 (1.66)
<i>Good - Bad**</i>	6.30 (2.71)	7.13 (2.66)	7.28 (2.53)
<i>Pleasant - Unpleasant**</i>	5.06 (2.02)	5.69 (2.38)	5.91 (2.28)
<i>Worthless - Useful</i>	7.14 (2.01)	7.93 (1.91)	8.19 (1.62)
Average attitude scores	6.49 (1.69)	7.26 (1.90)	7.36 (1.74)

**Reverse coded

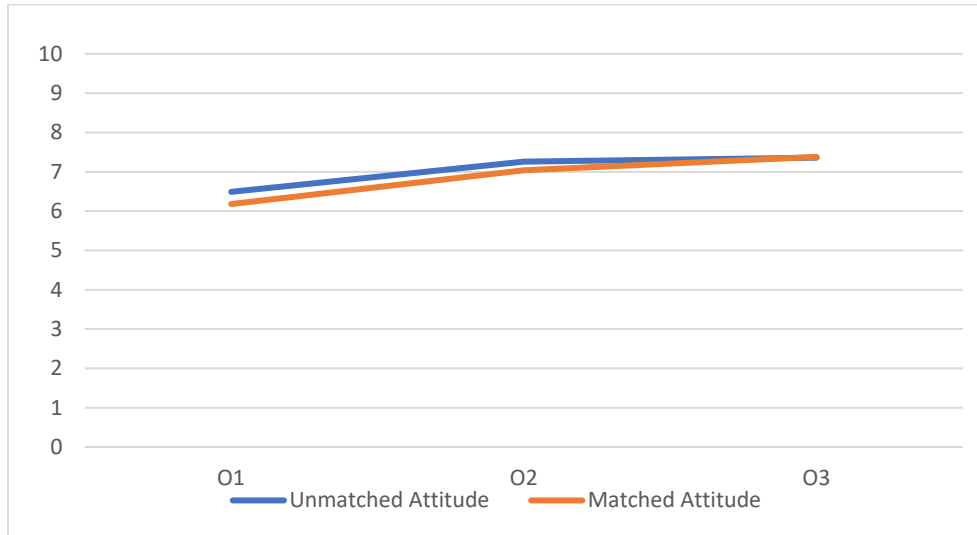
Attitude survey responses were matched and assessed (Table 4.2.14). Visual inspection revealed similar results as unmatched surveys: scores increased from O1 to O2, from O1 to O3, and from O2 to O3. A comparison of unmatched and matched attitude scores is in Figure 4.2.4.

Table 4.2.14: Matched responses: Attitude scores

Question (scored from 0-10)	Mean (SD)		
	O1 (n=60)	O2 (n=60)	O3 (n=30)
<i>Harmful - Beneficial</i>	6.83 (2.13)	7.76 (2.16)	8.10 (1.58)
<i>Good - Bad**</i>	5.74 (2.79)	6.66 (2.79)	7.30 (2.56)
<i>Pleasant - Unpleasant**</i>	4.79 (2.18)	5.38 (2.13)	5.87 (2.32)
<i>Worthless - Useful</i>	6.93 (2.20)	7.78 (1.93)	8.23 (1.52)
Average attitude scores	6.18 (1.82)	7.04 (1.82)	7.38 (1.71)

**Reverse coded

Figure 4.2.4: Unmatched and Matched Attitude Scores



When using an ANOVA with repeated measures, the average attitude scores were statistically significantly different ($F(2,56)= 12.07, p<.001$). Post attitude and 3-month post attitude scores were statistically significantly higher than pre attitude scores. Post attitude scores were also statistically significantly higher than 3-month post attitude scores (Table 4.2.15).

Table 4.2.15: Bonferroni post hoc analysis: Repeated measures ANOVA for attitude

Mean attitude scores at each time point			
Time point	Mean (SD)		
O1 Pre-survey	5.98 (1.98)		
O2 Post-survey	7.20 (1.79)		
O3 3-month Post survey	7.46 (1.68)		
Difference in attitude between groups			
Interaction	Mean difference (SE)	p-value	95% CI
O1-O2	-1.21 (.27)	<.001**	-1.90, -.52
O1-O3	-1.47 (.38)	.002**	-2.43, -.512
O2-O3	-.26 (.30)	1.00	-.51, 1.03

**Significant ($\alpha < .05$)

Hypothesis 1 stated that attitude would improve after a training webinar and Hypothesis 2 stated attitude would continue to be increased at three months post intervention. Both null hypotheses were rejected, concluding that the training webinar influenced pharmacist attitudes.

4.2.5.2 SUBJECTIVE NORM

Hypothesis 1 stated that pharmacists' subjective norms toward performing a depression screening service would increase from pre-training to post-training. Hypothesis 2 stated that subjective norms would continue to be increased from pre-training to 3-months post training. Exploratory factor analysis (EFA) showed scale items loaded on 2 factor with eigenvalues ≥ 1 . Three items were deleted with a factor loading < 0.3 (Offering a depression screening is something positive for patients; It causes a lot of worry and concern for the patient if they are found to have depression; Other pharmacists do not screen patients for depression). The remaining three factors loaded onto 1 factor with eigenvalues ≥ 1 which explained 58% of variance (Table 4.2.16). Bartlett's test of sphericity was significant, $\chi^2(3) = 44.665$ ($p < .001$), which indicates the scale's suitability for factor analysis. However, the Kaiser–Meyer–Olkin measure of sampling adequacy (MSA) was less than .800 ($n = .629$), which indicates the data was inappropriate for factor analysis. Internal consistency was moderate and test-retest consistency was low (Table 4.2.17).

Table 4.2.16: Exploratory factor analysis rotated component matrix

		Factor 1
Subjective norms	Patients who come into the pharmacy think I should screen them for depression	.684
	Mental health professionals would approve of my screening patients for depression	.803
	The physicians in my area would approve of me referring patients who screen positive for depression to them	.800

**Reverse coded

Table 4.2.17: Subjective norm reliability analysis

Internal consistency				
<i>Cronbach's α</i>				
O1	.638			
O2	.697			
O3	.665			
Test-retest consistency				
	<i>r</i>	<i>p-value</i>	<i>Strength</i>	<i>Direction</i>
O2*O3	.547	<.01	High	+

Subjective norms were assessed at O1, O2, and O3 by averaging Likert questions at each time point (Table 4.2.18). Visual inspection revealed that subjective norms increased (became more positive) from O1 to O2 and decreased (became less positive) from O1 to O3 and O2 to O3.

Table 4.2.18: Unmatched subjective norm scores at O1, O2, and O3

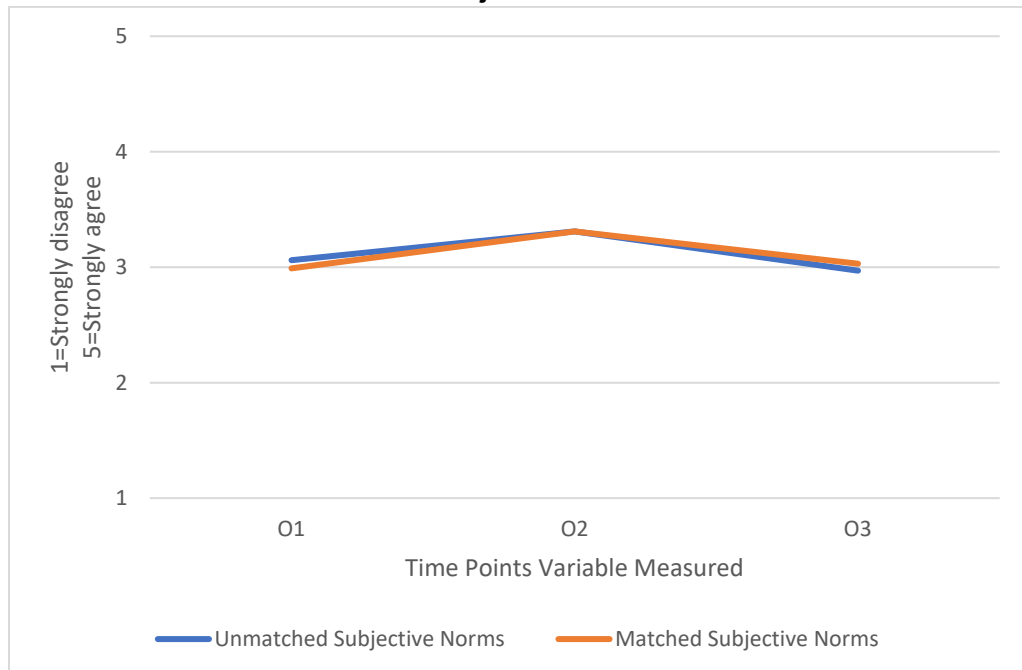
Statement	Mean (SD)		
	O1 (n=115)	O2 (n=95)	O3 (n=34)
<i>Patients who come into the pharmacy think I should screen them for depression</i>	2.52 (.88)	2.78 (.81)	2.44 (.75)
<i>Mental health professionals would approve of my screening patients for depression</i>	3.16 (.86)	3.48 (.78)	3.18 (.81)
<i>The physicians in my area would approve of me referring patients who screen positive for depression to them</i>	3.49 (.80)	3.70 (.77)	3.42 (.79)
Average Subjective norm scores	3.06 (.65)	3.31 (.63)	2.97 (.68)

After matching responses, confidence was assessed at O1, O2, and O3 (Table 4.2.19). Visual inspection revealed subjective norm scores increased (became more positive) from O1 to O2 and from O1 to O3; scores decreased (became less positive) from O2 to O3. A comparison of unmatched and matched subjective norm scores is in Figure 4.2.5.

Table 4.2.19: Matched responses: Subjective norm scores

Statement	Mean (SD)		
	O1 (n= 60)	O2 (n=60)	O3 (n=30)
<i>Patients who come into the pharmacy think I should screen them for depression</i>	2.55 (.85)	2.87 (.81)	2.47 (.68)
<i>Mental health professionals would approve of my screening patients for depression</i>	3.12 (.90)	3.48 (.75)	3.23 (.82)
<i>The physicians in my area would approve of me referring patients who screen positive for depression to them</i>	3.32 (.83)	3.59 (.75)	3.40 (.81)
Average Subjective norm scores	2.99 (.71)	3.31 (.64)	3.03 (.60)

Figure 4.2.5: Unmatched and Matched Subjective Norm Scores



When using an ANOVA with repeated measures, the average subjective norm scores were statistically significantly different ($F(2,58)= 4.52, p=.015$). Post subjective norm scores were statistically significantly higher than pre subjective norm scores (Table 4.2.20).

Table 4.2.20: Bonferroni post hoc analysis: Repeated measures ANOVA for subjective norms

Mean subjective norm scores at each time point			
Time point	Mean (SD)		
<i>O1 Pre-survey</i>	2.99 (.71)		
<i>O2 Post-survey</i>	3.31 (.64)		
<i>O3 3-month Post survey</i>	3.03 (.60)		
Difference in subjective norms between groups			
Interaction	Mean difference (SE)	p-value	95% CI
<i>O1-O2</i>	-.33 (.10)	.006**	-.58, -.09
<i>O1-O3</i>	-.13 (.12)	.866	-.45, .18
<i>O2-O3</i>	-.20 (.11)	.258	-.49, .09

**Significant ($\alpha < .05$)

Hypothesis 1 stated that subjective norms would improve after a training webinar and hypothesis 2 stated that subjective norms would continue to be increased at three months post intervention. The null hypothesis 1 was rejected from baseline to post intervention concluding that the training webinar influenced pharmacist subjective norms after a training webinar. The null hypothesis 2 was not rejected from baseline to three-month post intervention, concluding that the effects of the training webinar on subjective norms were not maintained after three months.

4.2.5.3 PERCEIVED BEHAVIORAL CONTROL

Hypothesis 1 stated that pharmacists' perceived behavioral control (PBC) toward performing a depression screening service would increase from pre-training to post-training. Hypothesis 2 stated that PBC would continue to be increased from pre-training to 3-months post training. Exploratory factor analysis (EFA) showed scale items loaded on 1 factor with eigenvalues ≥ 1 that explained 50% of the variance (Table 4.2.21). Bartlett's test of sphericity was significant, $\chi^2(3) = 22.580$ ($p < .001$), which indicates the scale's suitability for factor analysis. However, the Kaiser–Meyer–Olkin measure of sampling adequacy (MSA) was less than .800 ($n = .565$), which indicates the data was inappropriate for factor analysis. The PBC scale had moderate internal consistency at O3 and low test-retest consistency (Table 4.2.22).

Table 4.2.21: Exploratory factor analysis rotated component matrix

		Factor 1
Perceived behavioral control	If I offer depression screenings, I will detect problems at an early stage	.555
	I do not have enough time to offer a depression screening service at my pharmacy**	.791
	I do not have the skills or knowledge to offer a depression screening service**	.758

**Reverse coded

Table 4.2.22: Perceived behavioral control reliability analysis

Consistency (Cronbach's α)				
<i>Unmatched</i>				
O1	.093			
O2	.424			
O3	.594			
Matched test-retest Pearson Correlation - 2-tailed				
	<i>r</i>	<i>p-value</i>	<i>Strength</i>	<i>Direction</i>
O2*O3	.515	<.01	High	+

PBC was assessed at O1, O2, and O3 by averaging Likert questions at each time point (Table 4.2.23). Visual inspection revealed that PBC increased from O1 to O2, from O1 to O3, and from O2 to O3.

Table 4.2.23: Unmatched perceived behavioral control scores at O1, O2, and O3

Statement	Mean (SD)		
	O1 (n=115)	O2 (n=95)	O3 (n=34)
<i>If I offer depression screenings, I will detect problems at an early stage</i>	3.72 (.69)	3.85 (.60)	3.85 (.82)
<i>I do not have enough time to offer a depression screening service at my pharmacy**</i>	2.73 (.91)	2.6 (.92)	2.71 (.91)
<i>I do not have the skills or knowledge to offer a depression screening service**</i>	2.88 (.98)	3.51 (1.03)	3.50 (.93)
Average perceived behavioral control scores	3.11 (.52)	3.32 (.59)	3.35 (.47)

**Reverse coded

After matching responses to O1, O2, and O3 surveys, PBC was assessed. Visual inspection revealed similar results as unmatched surveys: scores increased (became more positive) from O1 to O2 and from O1 to O3; scores marginally increased from O2 to O3 (Table 4.2.24). A comparison of unmatched and matched PBC scores is in Figure 4.2.6.

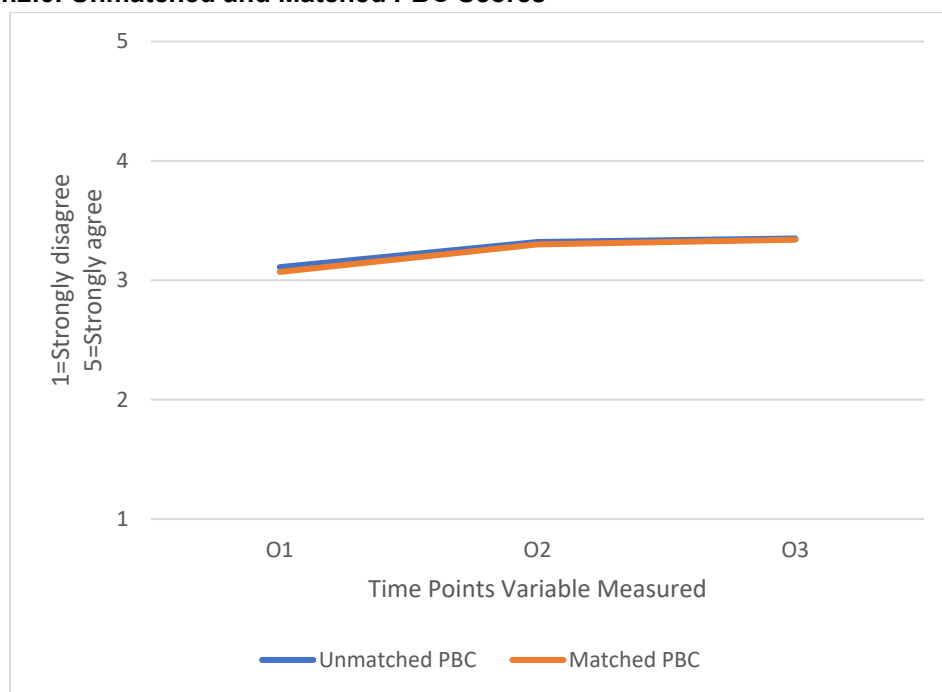
Table 4.2.24: Matched responses: PBC scores

Statement	Mean (SD)		
	O1 (n= 60)	O2 (n=60)	O3 (n=30)
<i>If I offer depression screenings, I will detect problems at an early stage</i>	3.72 (.72)	3.87 (.57)	3.97 (.62)
<i>I do not have enough time to offer a depression screening service at my pharmacy**</i>	2.67 (.84)	2.59 (.87)	2.60 (.81)
<i>I do not have the skills or knowledge to offer a depression screening service**</i>	2.82 (.85)	3.43 (.98)	3.47 (.90)

Average perceived behavioral control scores	3.07 (.51)	3.30 (.53)	3.34 (.48)
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**Reverse coded

Figure 4.2.6: Unmatched and Matched PBC Scores



When using an ANOVA with repeated measures, the average PBC scores were statistically significantly different ($F(2,58) = 6.44, p = .003$). Post PBC and 3-month post PBC scores were statistically significantly higher than pre PBC scores (Table 4.2.25).

Table 4.2.25: Bonferroni post hoc analysis: Repeated measures ANOVA for PBC

Mean PBC scores at each time point			
Time point	Mean (SD)		
O1 Pre-survey	3.07 (.53)		
O2 Post-survey	3.38 (.53)		
O3 3-month Post survey	3.34 (.48)		
Difference in PBC between groups			
Interaction	Mean difference (SE)	p-value	95% CI
O1-O2	-.311 (.09)	.008**	-.56, -.07
O1-O3	-.28 (.10)	.028**	-.53, -.02

O2-O3	.03 (.09)	1.00	-.26, .20
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**Significant ($\alpha < .05$)

Hypothesis 1 stated that PBC would improve after a training webinar and hypothesis 2 stated that PBC would continue to be increased at three months post intervention. Both null hypotheses were rejected, concluding that the training webinar had an effect on pharmacist PBC.

4.2.6 Implementing a depression screening service

Hypothesis 3 stated that pharmacists' implementation of depression screening services would increase from pre-training to 3-months post training. Implementation of depression screening services was assessed at O1 and O3 (Table 4.2.26). Of the 30 participants who completed both the pre and 3-month post survey, one participant implemented a depression screening service within the three months after the training webinar.

Table 4.2.26: Implementation of a depression screening service

Does your pharmacy currently screen for depression?	N(%)	
	O1 (n= 30)	O3 (n=30)
Yes	0 (0.0)	1 (3.3)
No	30 (100)	29 (96.7)

A generalized estimating equations (GEE) repeated measures analysis was performed to assess the change in implementation over time. The GEE

repeated measures model was not statistically significant, $F(1,28) = 1.000$, $p = .326$.

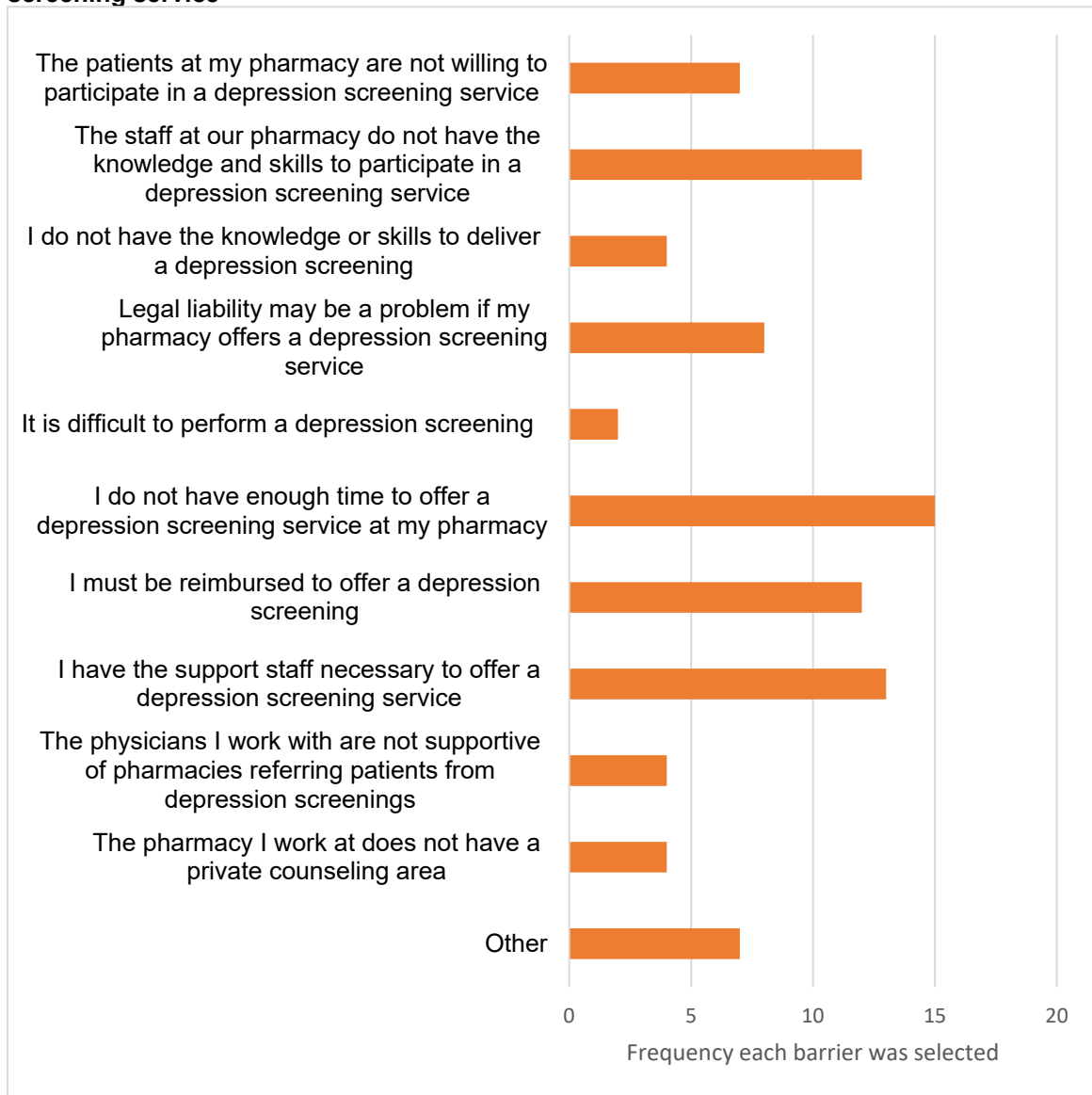
Hypothesis 3 stated that implementation would increase after a training webinar and be maintained at three months post intervention. The null hypothesis was not rejected, concluding that the training webinar did not have an effect on pharmacist implementation of depression screening services.

4.2.6.1 BARRIERS TO IMPLEMENTING A DEPRESSION SCREENING SERVICE

Barriers selected by pharmacists who did not implement a depression screening service were primarily not having enough time ($n=15$), not having support staff ($n=13$), needing to be reimbursed ($n=12$), and the pharmacy staff not having depression screening knowledge/skills ($n=12$) (Figure 4.2.7).

The “Other” barriers listed by pharmacists included not owning the pharmacy, not actively practicing pharmacy, not directly providing care to patients, and the time involved in writing policy and billing patient’s medical insurance. Finally, one participant wrote, “The easiest way to implement this for ease would be as part of a wellness screening. This allows time for a depression screening”.

Figure 4.2.7: Barriers selected by pharmacists who did not implement a depression screening service



When asked to explain any other reasons that pharmacists did not implement a depression screening, pharmacists (n=14) wrote down a variety of reasons with the majority still relating to time and resources (Table 4.2.27). Other barriers included not being able to make a decision about implementing a service due to not being the owner or it not being feasible to implement at their place of

employment (e.g. not working at a pharmacy). Pharmacists also used this question to report facilitators they thought would help them implement a depression screening in their pharmacy and current processes their clinics/pharmacies already performed.

Table 4.2.27: Barriers & facilitators reported by pharmacists who did not implement a depression screening service

Barrier	Quotes
Time & resources	<p>“I need the questionnaire”</p> <p>“It does not involve just the time to do the screening, but the time to write the policy and successfully bill claims to the patient’s medical insurance.”</p> <p>“I work in a small independent pharmacy with limited staffing. This makes it difficult to allocate the time offering depression screenings would require.”</p>
Patients	“Patients have not been assessed for readiness”
Patients: Facilitator	“I believe I have a good rapport with our customers and trustworthy reputation and could be a benefit in this area”
Employment	<p>“Not employed in a pharmacy”</p> <p>“[Not applicable] to my current place of employment”</p>
Not able to make decision	<p>“I have not spoke to the owner about reimbursement possibilities”</p> <p>“I am not the owner of the company, so ultimately not my decision to offer the screening”</p>
Current process	“I work in a transplant clinical setting... and can ask a couple of questions to see if they are mildly depressed and prescribe a mild antidepressant.”

Results of the participant (n=1) who reported implementing a depression screening service are included in Table 4.2.28.

Table 4.2.28: Results of implementing a depression screening service

Question	Result
# screened	5
Populations screened	<ul style="list-style-type: none"> • Adult patients • Patients with prescription for antidepressants • Patients with chronic diseases (Type II diabetes, COPD, hypertension, hypothyroidism)
Relevant aspects of service	“I work at a non-profit free clinic and we have a psych nurse practitioner on staff so we can refer patients with depression concerns immediately to her. We usually screen patients if they express depression symptoms, new patients, and any patients with substance abuse.”

	My other work place is a free clinic/pharmacy but I have not had time to establish a depression screening service yet."
Referral process	"In house referral to our nurse practitioner or a fax referral to our local mental health facility"
Facilitators	Establishing a procedure to follow-up with patients who test positive for depression
Barriers	Time

4.2.7 Rural vs Urban

Descriptive statistics are included in Table 4.2.29. When using an ANOVA with repeated measures, there was no significant difference between rurality and knowledge, confidence, attitude, subjective norms, nor PBC over all three time points.

Table 4.2.29: Rural & Urban Mean Scores for Survey Outcomes

Variable	O1 (n=60) M (SD)		O2 (n=60) M (SD)		O3 (n=30) M (SD)	
	Rural (n=8)	Urban (n=52)	Rural (n=8)	Urban (n=52)	Rural (n=6)	Urban (n=24)
Knowledge	75.00(15.43)	76.60(15.22)	87.50(7.72)	87.18(14.24)	86.11(16.39)	88.19(10.40)
Confidence	2.18(.65)	2.65(1.08)	3.40(.74)	3.88(.73)	2.97(.77)	3.58(.76)
Attitude	5.54(2.35)	6.27(1.75)	6.50(2.17)	7.12(1.77)	5.92(1.11)	7.74(1.65)
Subjective Norms	2.63(.52)	3.05(.72)	2.92(.71)	3.37(.62)	2.50(.51)	3.17(.56)
PBC	3.00(.64)	3.08(.50)	3.13(.62)	3.33(.52)	3.28(.44)	3.36(.49)

4.2.7 Correlations

A two-tailed Pearson correlation coefficient was computed to assess the linear relationship between a pharmacist's' intention to implement a depression screening service and their knowledge, confidence, and belief scores at time

point O2 (Table 4.2.30). Attitude and Subjective norms had a low negative association with intention. PBC had a low positive association with knowledge. Subjective norms had a low positive association with confidence. Finally, subjective norms and PBC had a low positive association with attitude.

Table 4.2.30: Correlations for Intention, Knowledge, Confidence, Beliefs at O2

Variable (n=60)	1	2	3	4	5	6
1. <i>Intention</i>	—					
2. <i>Knowledge</i>	-.07	—				
3. <i>Confidence</i>	-.02	-.10	—			
Beliefs						
4. <i>Attitude</i>	-.22*	-.12	.11	—		
5. <i>Subjective Norms</i>	-.34**	-.16	.41**	.39**	—	
6. <i>PBC</i>	.05	.28*	.19	.42**	-.10	—

*<. 5 **<.01

A second 1-tailed Pearson correlation coefficient was computed to assess the linear relationship between a pharmacist's intention at timepoint O2 and their knowledge, confidence, and belief scores at timepoint O3 (Table 4.2.31). There were no significant associations with intention, however, attitude had a low to moderate association with subjective norms and PBC.

Table 4.2.31: Correlations for Intention, Knowledge, Confidence, Beliefs at O3

Variable	n	1	2	3	4	5	6
1. <i>Intention</i>	60 ^a	—					
2. <i>Knowledge</i>	30 ^b	-.165	—				
3. <i>Confidence</i>	30 ^b	-.029	.30	—			
Beliefs							
4. <i>Attitude</i>	30 ^b	-.25	.07	.27	—		
5. <i>Subjective Norms</i>	30 ^b	-.18	-.11	.22	.36*	—	
6. <i>PBC</i>	30 ^b	-.11	.17	.24	.51**	.09	—

^aO2 survey results

^bO3 survey results

*<. 5 **<.01

4.2.8 Logistic Regressions

4.2.8.1 INTENTION VS DEMOGRAPHICS

A logistic regression was performed to ascertain the effects of rurality, gender, age, race, ethnicity, and pharmacist role on the likelihood that participants intended to implement a depression screening service pre and post training. The logistic regression model for intention at O1 was not statistically significant, $\chi^2(13) = 20.908$, $p = .075$. The model explained 42.7% (Nagelkerke R^2) of the variance in intention and correctly classified 76.3% of cases. The logistic regression model for intention at O2 was not statistically significant, $\chi^2(13) = 19.687$, $p = .103$. The model explained 39.3% (Nagelkerke R^2) of the variance in intention and correctly classified 79.7% of cases.

4.2.8.2 INTENTION VS KNOWLEDGE, CONFIDENCE, ATTITUDE, SUBJECTIVE NORMS, AND PERCEIVED BEHAVIORAL CONTROL

A logistic regression was performed to ascertain the effects of post training knowledge, confidence, attitude, subjective norms, and perceived behavioral control on the likelihood that participants intended to implement a depression screening service. The logistic regression model was not statistically significant, $\chi^2(5) = 10.361$, $p = .066$. The model explained 21.8% (Nagelkerke R^2) of the variance in intention and correctly classified 76.7% of cases.

Chapter 5: Discussion

Summary

This study revealed several perceived barriers to the implementation of depression screening services among community pharmacists. The most frequently reported barriers were lack of time, knowledge among staff and pharmacists, and lack of reimbursement. Additionally, pharmacists' confidence in their ability to implement a service was generally low among respondents. An educational training webinar intervention improved pharmacist knowledge, confidence, and beliefs towards implementing a depression screening service, and many of these increases were maintained at three months post-webinar. However, intention to implement a service was not impacted, nor was actual implementation at follow-up. Barriers related to low implementation were similar to findings in Aim 1 and included the lack of time, not having enough trained support staff, and needing to be reimbursed. This low intention and behavior change suggests there may be systematic barriers in place that need to be addressed before advanced care services like depression screenings can be implemented.

5.1 Aim 1 Summary and Implications

The survey reached the power needed with a final number of 85 respondents. However, the survey had to be opened up to pharmacists in

Mississippi since not enough pharmacists in Alabama responded. In fact, more Mississippi pharmacists responded than Alabama pharmacists. This could be due to the timing recruitment materials were sent out. Alabama pharmacists received postcards over the holiday season. While allowances were made to attempt to send postcards out in between holidays, this may not have been adequate to recruit pharmacists from Alabama. Meanwhile, Mississippi pharmacists were only recruited after not reaching the required sample size with Alabama pharmacists. Hence, recruitment materials were sent out several months after the holiday season, meaning that Mississippi pharmacists were more likely to be at the pharmacy when recruitment materials were sent, potentially leading to the increased number of Mississippi pharmacist responses.

Most pharmacists had interacted with patients with mental health conditions (MHC) and psychotropic medications. The one pharmacist who did report not having interacted with patients on psychotropics reported working in a pharmacy for less than one year. While there is data that supports that pharmacists interact with patients with MHC and on psychotropics (e.g. the number of people who have depression in the U.S.,⁶⁰ the number of people who have depression in Alabama, and the number of people with depression in Mississippi), this “fact” must still be extrapolated since data measuring how often pharmacists interact with this population is scarce and could only be found in research with claims data.^{74–77,179,180} Research often cites that pharmacists being well placed is a reason for increasing advanced care services.^{49,84,87,88,90,91,138}

However, very little is quantifiably known about how often pharmacists interact with patients with MHC much less patients with depression.

This study revealed that even though the majority of pharmacists had interacted with patients with MHCs and who were on psychotropics, very few (only five) pharmacists reported currently offering a depression screening service in their pharmacy. Therefore, it was not surprising that most pharmacists reported having low confidence towards performing a depression screening service. This finding echoes the literature that shows pharmacists are less comfortable counseling patients with MHCs than patients with more common conditions like hypertension while also having increased levels of stigma towards patients with mental health conditions.^{90,138} Therefore, including education on mental health stigma in training for pharmacists implementing depression screening services is necessary,^{181–183} which was included in Aim 2's training webinar.

There were few differences in confidence among demographic subgroups with few exceptions. Notably, the pharmacist's role, specifically owners/partners, and previous use of the PHQ-9 were associated with an increase in confidence towards performing a depression screening. Being an owner of a pharmacy and having increased confidence is consistent with previous research, namely that higher income levels predicts higher levels of confidence.⁹⁸ It also stands to reason that pharmacists who are familiar with the PHQ-9, a depression screening tool,^{184–186} would be more confident with performing a depression screening.

Lack of time was the highest rated barrier for pharmacists of all demographics regardless of how the question was asked. Research has been devoted to categorizing pharmacists time in “time and motion” studies: studies that use pre-defined categories to categorize what a pharmacist is doing every set number of minutes.¹⁸⁵ Findings show that a pharmacist's time is mostly spent on dispensing, supply, and management activities that leave little room for advanced care services.¹⁸⁴ Negaard et al. theorized that there are areas of a pharmacist's time that could be made more efficient or delegated to a pharmacy technician,¹⁰⁴ however these changes in structure and workflow still need to be implemented and these implementations would also take time.

With time being such an important barrier, it is interesting to note that of the 10 studies identified in a systematic literature review of depression screenings in pharmacies,^{88,187} only two studies mentioned “time” as a barrier that needed to be addressed.^{87,188,189} This disparity showcases the need for continued and thorough needs assessments in implementing depression screenings in pharmacies. Other literature on pharmacist-led screening services for other chronic health conditions do show that time is a barrier to implementing screenings.¹⁹⁰ These studies have also found that a way to offset the time barrier is by making screening services revenue generating.

Coincidentally, the barrier “I must be reimbursed” was tied with the “I do not have enough time” as the most agreed with Likert statement. Financial concerns, which included reimbursement, was also the theme with the highest frequency of codes. However, pharmacists did not rank reimbursement highly

(putting it as the third highest barrier if they ranked it at all). This suggests that while reimbursement is an important barrier that necessitates addressing, other structural barriers, like time and lack of staffing, must be addressed first before pharmacists can begin thinking about more granular steps to implementing a service. Indeed the current three day pharmacist walk-outs at CVS and Walgreens illustrate just how dire this situation has become.¹⁰⁴

Similarly, pharmacists expressed the need for cost benefit analyses on implementing depression screening services before implementing these services themselves. While no cost effectiveness studies have been performed on depression screenings in pharmacies^{191–195} screenings for other disease states (e.g. diabetes, cardiovascular disease, asthma) have been shown to be cost effective.¹⁸² Future cost effectiveness studies on the implication of depression screenings would be beneficial in convincing pharmacists and pharmacy corporations to implement these services in their own pharmacies.

Younger pharmacists and staff pharmacists ranked patients not willing to participate in a depression screening as a higher barrier than older pharmacists and pharmacists in an owner role. This may be because of the lower confidence younger, thus lower paid, pharmacists may have.^{184,185,196} It may also be due to younger pharmacists coming into the present day working conditions which leave them less time to get to know their patients than older generations.^{90,197,198} Couple this with pharmacist stigma towards patients with MHC and there is a recipe for younger pharmacists believing that patients would not want them to offer depression screening services.^{29,78,79,87} In actuality, qualitative data from

community members in this dissertation were overwhelmingly positive towards pharmacists screening patients for depression. Even when patients thought there may be an initial discomfort, they were still accepting of pharmacists screening for depression and had multiple ideas of how to overcome this potential discomfort. Patients having positive attitudes towards pharmacists performing screening services is well supported in the literature.¹⁹⁹

Previous research has found that patients may have concerns about being forced to share results of a depression screening with their physicians before they were ready.²⁰⁰ While having a referral process in place is extremely important due to the risk of suicide,¹⁹⁹ there are other options that can be pursued rather than immediately contacting patients' physicians when there is a positive depression score. Levkoff found that sending the patient home with a resource list and making a follow-up call the next day to discuss referral was more preferable to some patients.^{71,72} Although, adding more steps to a depression screening service increases the time the screening will take, which, as already discussed, is a limiting factor in pharmacy settings.

One main difference among demographics and barriers was that minority pharmacists and pharmacists in Mississippi rated "not having a private counseling area" a higher barrier than their white and Alabamian counterparts. This makes sense as lower socioeconomic and more rural areas may not have the funds to create a private counseling area. Over half the population of Mississippi lives in a rural community compared to only 1 in 5 people in Alabama living in rural areas.²⁰¹ Similarly, Mississippi has a higher minority population with

only 59% of residents racialized white compared to 69% of Alabamians.²⁰¹

Mississippi also has a lower socioeconomic status than Alabama with a lower median household income, lower per capita income, and a higher poverty rate.²⁰²

Research has shown that pharmacies in low income countries often offer poor quality service to their population;²⁰³ however, there is scant research on the differences of pharmacies in lower income vs higher income counties in the U.S.²⁰⁴

Even though there was a difference between location and race demographics, not having a private counseling area was still rated as the lowest barrier in the Likert question and not selected at all in the ranking question. This indicates that this is a barrier that should be addressed when relevant but does not seem to be a limiting factor for many pharmacies. The federal requirement under the Omnibus budget reconciliation act of 1990 (OBRA '90) required pharmacists to offer counseling to Medicaid patients.^{46,205-210} Due to this, it seems most pharmacies have some private space they can counsel in.

When asked to rate how helpful individual implementation strategies would be when implementing a depression screening service, all strategies were rated at similar levels of how helpful they would be, namely very helpful. The highest scored strategies (“Establishing procedures”, “Selecting a person to be in charge of service”, and “Establishing procedures to follow-up with patients”) indicate that having a procedure guideline to follow would be the most beneficial implementation strategy to help pharmacists initiate a depression screening service.^{115,211,212} Correspondingly, pharmacists reported needing to see process

guidelines in the literature before being able to implement a depression screening service themselves.

How helpful each implementation strategy was varied little across demographics, indicating similar strategies would be helpful for all people regardless of location. Yet, it seems unlikely that every implementation strategy would be as helpful for all people across all locations since tailoring and refining strategies is so important for successful implementation of services.²¹² This similarity in scores may be due to pharmacists not having implemented a service like this and not knowing what would be the most helpful for their specific pharmacy. Perhaps, pharmacists perceive a depression screening service needing the same implementation strategies regardless of demographic or locale. Alternatively, the implementation strategy scale may not have been specific enough to capture the differences in what pharmacists preferred implementation strategies are.²¹³ Future research would need to perform process evaluations on depression screening services to determine which strategies are most effective for pharmacies in different locations.

5.2 Aim 2 Summary and Implications

While the number of pharmacists who individually participated in the training webinar and took the pre and post surveys was over the required number to reach power, the actual number of pharmacists who were able to be matched in the pre-post surveys did not reach power by the absence of one participant. Due to this, null results must be interpreted with caution.^{214,215}

After the training webinar, knowledge, confidence, and beliefs significantly increased and were largely maintained after three months. Knowledge is a critical component of behavior change; if the participant does not know how to perform the new behavior, they cannot change their behavior.^{214,216-218} Therefore, measuring knowledge is an important first step in measuring the success of any training program. Even so, it has also long been known that increasing knowledge by itself is not enough to implement change.^{209,219,220} This is of course why behavioral theories like the Theory of Planned Behavior (TPB) and the Consolidated Framework for Implementation Research (CFIR) were developed and subsequently used in the development of this dissertation research.^{88,221-224}

Due to this and the findings of pharmacist low confidence in Aim 1, self-efficacy/confidence, a factor of the CFIR, was assessed and shown to have a sustained increase after the training webinar. Pharmacists' confidence towards discussing mental health issues has previously been identified as an issue to be addressed when implementing advanced care services,^{84,85,87} specifically depression screening services.²²⁵⁻²²⁷ Therefore, it was heartening to see that a sustained increase in confidence was seen after the training webinar. Indeed, training is one of the primary ways used to improve confidence.^{108,118} Confidence is a core tenant of CFIR's "characteristics of individuals" domain and increased confidence has been shown to be associated with an increase of implementation.²²⁸⁻²³¹ In addition to confidence, beliefs about the behavior in question are also important to address.

Beliefs also saw a largely sustained improvement after the training webinar. Attitudes and perceived behavior control (PBC) increased and were sustained after three months while subjective norms increased but were not sustained after three months. Increases in positive TPB beliefs after an educational program have been well documented in the literature.^{134,136,137,219}

However, contrary to findings from other studies and the TPB,^{148,232} no associations were found between any of the belief domains and intention to implement a depression screening service. This lack of association suggests there may be other factors driving pharmacists' intention to implement a depression screening service.^{221,233,234} One reason for this belief-intention gap may be pharmacists who attended the training webinar were not the primary decision makers at their pharmacy. Several pharmacists reported that they would need approval from corporate or the owner of the pharmacy to implement any new service. Not being the decision maker would make implementation of a service difficult regardless of how their confidence and beliefs about a depression screening service increased.^{190,196} Attempts were made to curtail this problem by including a question that asked pharmacists to select their title in the pharmacy. Several pharmacists selected "Other" and wrote in different roles, however this was not enough information to identify pharmacists who were not the decision makers. Future research should work to identify decision makers by asking an explicit question to the effect of "would you be able to decide to implement a screening service at your place of employment" and a follow-up question of why or why not. Additionally, assessment may need to occur more than three months

after the intervention which would give decision makers time to make bureaucratic decisions that alter the organizational structures of their pharmacies.

Trust that decision makers would make this change may also be low among pharmacists which may impact intention. This low trust is evidenced by pharmacists reporting they need more staff and time with patients to their state boards and the media to no avail.²³⁵ This is only accentuated by the limited involvement of leadership when implementing new services.^{236–238} While trust among patients and pharmacists has been extensively reported on,²³⁶ pharmacist trust toward their own organizations remains largely unresearched. Furthermore, when patient trust toward pharmacists is studied, trust-diminishing factors are in areas that pharmacists do not have control over (e.g., transparency in how they are remunerated and regulated) but that their leadership does control.²³⁹ Pharmacists have reported there are few upward career mobility options which could lead to a culture of non-pharmacists in management and corporate positions that do not understand the barriers of current staff pharmacists.¹⁹⁰ These factors may contribute to pharmacists having lower trust towards pharmacy institutions. Indeed, the CVS and Walgreens walkouts exemplifies the lack of trust pharmacists have in corporate pharmacy to fix systemic issues.^{86–89,235} Future research in this area may be beneficial in understanding trust levels of pharmacists towards pharmacy corporations and finding potential solutions.

At the beginning of this study, it seemed that barriers like lack of time and staffing were surmountable. This was supported by qualitative interviews with pharmacists who stated that while time may be a barrier, pharmacists were able to find time to implement the services they wanted to implement. However, the dearth of pharmacists who implemented a depression screening service accentuates the number of barriers pharmacists face when implementing new services and the difficulty in implementing evidence-based procedures in pharmacy.¹⁹⁰ At this point, with pharmacists performing walkouts at CVS and Walgreens locations,²³⁹ the high rates of burnout and stress,¹⁹⁶ and articles revealing just how overworked pharmacists are,¹⁴⁷ it seems clear that there are systematic barriers in place for many pharmacists that would be difficult to overcome with a training webinar.

5.3 Limitations

Pharmacists were not initially interviewed before creating the Aim 1 survey. Thus, the list of barriers and implementation strategies selected in the survey were drawn from the literature instead of rural pharmacist stakeholders. Therefore, it is uncertain whether the barriers and strategies in the survey were ones that affected rural pharmacists. There could also have been barriers or strategies that were not included in the survey.

One participant in the Aim 1 survey responded over 15 times. The respondent selected the “Not a pharmacist” option so those responses could be easily removed. However, this was a strong reminder to put safeguards in place

so that the population in question are the ones who are responding. This also highlighted the importance of making sure to select the option that prevents multiple submissions. In Qualtrics this works by placing a cookie on the browser that Qualtrics will see and prevent users from taking the survey again.²⁴⁰ This will not prevent savvy internet users from taking the survey again, but will prevent most users from taking the survey multiple times. This process was put in place for Aim 2's assessment surveys.

While this research was focused on rural pharmacists, the Aim 2 training webinar had to be opened up to both rural and urban pharmacists to reach power. Therefore, the analyses cannot be extrapolated to rural pharmacists specifically and the ability of the study to detect "true" effects is limited.^{241,242} Additionally, since the webinar included both urban and rural pharmacists, the response rate for the pre-survey was low at 12%. Some researchers posit that minimal response rates should be 75%²⁴³ and other researchers state that response rates of 50% are adequate.²⁴⁴ Some journals routinely publish manuscripts with response rates less than 60%²⁴⁵ and others will not publish a manuscript with a response rate less than 60%.²⁴¹ While there does not seem to be an agreed upon acceptable response rate the general consensus is that response rates should be above 50% so that the findings can be credibly generalized to the population as a whole.^{246,247} Therefore, response bias or self-report bias (the tendency for participants to respond inaccurately) is a limitation in this study.²⁴⁸ Nonresponse error (received responses are not representative of the population of study due to participants not responding to the survey as a

whole or individual questions) is recognized as a bias, however, a non-response calculation was performed that showed no significant differences.

Likewise, the attrition rate between the post and 3-month post surveys was 50%. While this was high, it was not unexpected.¹⁷¹ One factor that may have contributed to the high attrition rate was the difficulty in linking responses in the three assessment surveys. This was partially due to some pharmacists not filling out their name and email which used to link each survey. Since the information used to link the surveys was identifiable in nature, future research may want to use a less identifiable linker which may help respondents feel more comfortable providing their information. Another factor that may have contributed was the way the surveys were delivered. Links to the pre survey were provided in initial recruitment materials, however some pharmacists may have taken the survey and then not participated in the webinar. Other pharmacists may have been late to the webinar and then not taken the pre survey but did take the post survey which was provided at the end.

Efforts were made to clearly deliver instructions to webinar participants that they needed to take both the pre and post surveys to receive the incentive of continuing education (CE) credit. However, the CE office was not able to track which participants responded to each survey and this may have resulted in participants gaining CE credit before completing either the pre or post survey. Finally, several respondents filled out the three-month post survey but did not want to receive the monetary incentive and so did not provide their personal information. The survey was reorganized to make it clear that their name was

needed to link the surveys and their email address was needed for the incentive payment. After this change, all pharmacists filled out their name and their surveys were able to be linked.

The study was designed to recruit only community pharmacists by faxing recruitment materials to pharmacies listed in the Hayes directory. However, since the CE office also recruited through their listserv, other pharmacists inevitably were incentivized to attend the training webinar and complete the 3-month post survey which may have generated results that were not indicative of the community pharmacy population.

While intention to implement was correlated with attitude and subjective norms, all correlations were low and perceived behavioral control was not correlated with intention at all. The break in theory could be associated with the development of the questions for each domain. While a TPB question guide¹⁷⁶ was followed and questions were also adapted from literature,¹³⁸ the fact remains that the developed questions may not have accurately measured the domains in question. In future, a pilot test of the survey should be conducted in order to test reliability before dissemination of the survey. Additionally, it would have been beneficial to measure intention in the 3-month post survey. This would have informed researchers of any further changes in intention after three months regardless of behavior change.

Exploratory factor analysis (EFA) had two positive items loaded onto the negative perceptions dimension and one negative item loaded onto the positive perception dimension. The change to a 5 response scale instead of the original 4

may have contributed to this issue, however, previous research did not show this discrepancy.¹³⁸ However, no significant associations were found between pharmacist demographics, current practices and mental health experiences, or confidence and stigma. This may also have been due to pharmacists having an average score, that at $n=2.9$, was almost exactly in the middle of the 1-5 scale. The decision was made to include a neutral choice which in previous research worked well.^{249,250} Inclusion of a midpoint also lets pharmacists who truly feel neutral about a topic show that. When a neutral choice is not included, these same respondents are forced to either choose a positive or negative option, which causes the inclusion of incorrect data, or they may not respond at all, which causes missing data.²⁵¹ However, in this instance, removing the neutral choice may have increased the sensitivity of this scale by forcing participants to choose a positive or negative position for each statement.

Logistic regression typically requires a large sample size and the sample size in this study was small. Since five to six independent variables were included in the model, a minimum sample size of 500 ($10*5 / .10$) was needed.^{104,252,253}

The primary researcher's own bias, that pharmacists would want to implement a depression screening, may have influenced their interpretation of qualitative research in Aim 1's survey and Aim 2's interviews. While efforts were made to identify biases and curtail them, it seems likely that these efforts may not have been sufficient since the strong influence of reported structural barriers was not fully understood until the end of this project. Of course, this could also have

been an issue with not asking the correct questions or not talking to enough pharmacists. However, the fact remains that this research was performed with the understanding that pharmacists were able to overcome the barriers listed in Aim 1's survey. In future, having a second coder to confirm code placement and theme identification as well as interpretation of qualitative analysis would be beneficial to maintain rigor and accurate analysis. Also, while member checking did occur, future research would do well to include more diverse stakeholders in member checks to enhance the credibility of results.

5.4 Impact and Future Research

There is a recognition of a need for well-designed studies to determine the effect of pharmacist-led care for patients with MHC.^{179,254} While research has been performed in Canada and Australia to this effect,²⁵⁵ none has been performed in the U.S. While this study focused on research to implement a depression screening service, future research needs to focus on assessing the impact of a depression screening service in the pharmacy, including assessment of clinical and economic outcomes. Moreover, this study exemplifies that research on clinical and economic outcomes is desired by pharmacists so they can make decisions on whether or not to implement this service in their pharmacies.

The largest barrier was time, in both the Likert type scale and the ranked barriers. A systematic review/meta-analysis on pharmacists' time in a pharmacy would help shed light on where pharmacists' time is going as well as potential

clues on how to implement future services. Initial review of the literature shows there are some gaps in this research that could be filled by ethnographic or time and movement studies on pharmacists' time. Since there was a significant number of pharmacists who intended to implement a depression screening service but were not able to due to various barriers (primarily time), this research could be beneficial to breakdown what part of the depression screening service pharmacists believe takes up the most time and solutions to make those parts more streamlined.

There seems to be an abyss between pharmacy researchers and retail pharmacists. Even in academic departments who have practicing pharmacists as instructors, many of these pharmacists practice in clinical or hospital settings. For example, Auburn University's Harrison College of Pharmacy lists having a residency and clinical or hospital experience as a requirement for hiring in their Department of Pharmacy Practice job listings, and so to a great extent, the retail pharmacist perspective is lost. Of course, it is evident that retail pharmacists do not have time to spare to participate in instructor roles in academia.

Nevertheless, this gap must be overcome in the future so that retail pharmacists can make sure they are having their voices heard in the research and academic setting. This would allow pharmacy researchers to have a clear understanding of what pharmacists struggle with and be able to tailor their research accordingly as well as permitting instructors to prepare their student pharmacists with an accurate view of the retail setting.

5.5 Conclusions

While the interventional educational webinar increased pharmacists' knowledge, confidence, and attitudes towards depression screening services, intention to implement as well as actual implementation of these services remained low to non-existent. Further research should be undertaken to gain a better understanding of systematic barriers pharmacists face when implementing depression screening services so that potential solutions may be found.

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Appendix

Appendix A: Perceived Devaluation and Discrimination (PDD) Scale²⁵⁴

Table S1: Perceived Devaluation Discrimination Scale: Item Wording, Frequency Distributions, Item and Scale Statistics

	Strongly Agree (3) % (N)	Agree (2) % (N)	Disagree (1) % (N)	Strongly Disagree (0) % (N)	Item Mean ³	Standard Deviation ³
Scale: Perceived Devaluation Discrimination ² Scale Mean 1.48, ³ Scale Standard Deviation .38, ⁴ Alpha .79						
Most people would accept a person who has been in a mental hospital as a close friend. ^R	8 (5)	61 (38)	21 (13)	10 (6)	1.67	.75
Most people believe that someone who has been hospitalized for mental illness is dangerous.	6 (4)	44 (28)	48 (31)	2 (1)	1.55	.64
Most people believe that a person who has been hospitalized for mental illness is just as trustworthy as the average citizen. ^R	5 (3)	48 (31)	38 (24)	9 (6)	1.48	.73
Most people would accept a person who has fully recovered from mental illness as a teacher of young children in a public school. ^R	10 (6)	35 (22)	48 (30)	10 (6)	1.61	.74
Most employers will not hire a person who has been hospitalized for mental illness	5 (3)	55 (34)	35 (22)	5 (3)	1.59	.65
Most people think less of a person after he/she has been hospitalized for a mental illness.	11 (7)	41 (26)	38 (24)	11 (7)	1.52	.83
Most people would be willing to marry someone who has been a patient in a mental hospital. ^R	8 (5)	42 (26)	48 (30)	2 (1)	1.56	.65
Most employers will hire a person who has been hospitalized for mental illness if he or she is qualified for the job. ^R	11 (7)	65 (42)	22 (14)	3 (2)	1.83	.65
Most people believe that entering a psychiatric hospital is a sign of personal failure.	11 (7)	44 (28)	42 (27)	3 (2)	1.38	.72
Most people will not hire a person who has been hospitalized for serious mental illness to take care of their children, even if he or she	12 (8)	58 (38)	26 (17)	3 (2)	1.80	.69

had been well for some time.

Most people in my community would treat a person who has been hospitalized for mental illness just as they would treat anyone. ^R	5 (3)	58 (37)	34 (22)	5 (3)	1.64	.62
Most young people would be reluctant to date someone who has been hospitalized for a serious mental illness.	5 (3)	63 (40)	30 (19)	2 (1)	1.71	.57

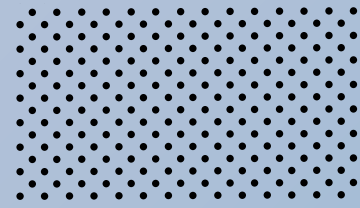
^R Indicates that the item in question is reversed scored for scale construction.

¹Items referring to “psychiatric hospitalization” can be changed as necessary to developing a “mental illness” keeping in mind that some people in psychiatric hospitals do believe they have a mental illness

² The scale is scored by adding scores on each item (after indicated reverse scoring) and dividing by the number of items (12).

³ Scale mean and standard deviation are from scale scored as described in footnote 2.

⁴ Item means and standard deviations are from the variables before reverse coding.



OPPORTUNITY TO PARTICIPATE IN RESEARCH

▶▶ RURAL PHARMACISTS NEEDED TO PARTICIPATE IN A PANEL TO PROVIDE YOUR OPINIONS

Responsibilities:

1. All online. No in person meetings
2. Give feedback on a survey
3. Receive \$100 for completion

Implementing
depression
screening services
in rural pharmacies



Email brd0001@auburn.edu or scan QR link to learn more




OPPORTUNITY TO PARTICIPATE IN RESEARCH



▶▶ COMMUNITY MEMBERS NEEDED TO PARTICIPATE IN A PANEL TO PROVIDE YOUR OPINIONS

Responsibilities:

1. All online. No in person meetings
 2. Give feedback on a survey
 3. Receive \$100 for completion
- 

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OPPORTUNITY TO PARTICIPATE IN RESEARCH

►► MENTAL HEALTH PROVIDERS NEEDED TO PARTICIPATE IN A PANEL TO PROVIDE YOUR OPINIONS

Responsibilities:

1. All online. No in person meetings
2. Give feedback on a survey
3. Receive \$100 for completion

Implementing
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in rural pharmacies



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Appendix C: Qualtrics Pre-Survey Round 1 & Round 2

Round 1

Dissertation Survey - Content validity

Start of Block: Consent form

Thank you for agreeing to help me with my dissertation. The goal of my project is to determine pharmacists' perceptions of depression screenings being implemented in rural pharmacies, and to use that information to develop a training program for pharmacists. The first stage of the project includes a survey that will be conducted among rural pharmacists in Alabama. This survey will assess pharmacists' knowledge of depression screenings, barriers and facilitators to implementing a depression screening service, and preferred implementation strategies. You were selected as a possible participant because you are a rural community member, a rural pharmacist, or a mental health provider.

What I am requesting from you at this point is your feedback on this survey so that I can refine it before launching the final version. Throughout the survey are questions that ask about the clarity, quality, and appropriateness of the draft pharmacist survey (these questions are in red). After you complete and submit the survey, I will review your responses and make any changes based on the feedback given. The survey will then be sent back out to you to give your feedback on the revised draft. This will happen a max of 3 times, or until consensus among stakeholder members is reached. Your total time commitment will be approximately 45 minutes to an hour for each round. The survey will be completed through Qualtrics and will not include any identifiable information. After you give your feedback on the 3rd round, you will be compensated \$100.

The risk associated with participating in this study is breach of confidentiality. To minimize this risk, your responses will be password protected and all study information will be stored in a secure environment located through Qualtrics and Auburn University. If you change your mind about participating, you can withdraw at any time during the study by closing your internet browser. Your participation is completely voluntary. If you wish to withdraw from the study, email Brandy Davis at BRD0001@auburn.edu and she will remove your information. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, Harrison School of Pharmacy, the Department of Health Outcomes Research and Policy. Your privacy will be protected. Any information obtained in connection with this study will remain confidential. Information obtained through your participation may be reported in aggregate and published in a professional journal and presented at professional meetings. If you have questions about this study, please contact Brandy Davis at BRD0001@auburn.edu. If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334)-844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

By choosing "I accept" you acknowledge that you have read and understand the information given above, and agree to proceed with the questionnaire.

- I accept
- I do not wish to continue

Skip To: End of Survey If By choosing "I accept" you acknowledge that you have read and understand the information given ab... = I do not wish to continue

End of Block: Consent form

Start of Block: Demographics

Thank you for agreeing to take this survey! Your thoughtful responses are important to us. In this first section, please tell us a bit about yourself by marking the corresponding answer.

Please indicate your age.

- 19-24
 - 25-34
 - 35-44
 - 45-54
 - 55-64
 - 65 and above
-

Please indicate your gender.

- Male
 - Female
 - Non-binary
 - Other _____
 - Prefer not to answer
-

How would you describe your race? Select all that apply.

- White
 - Black or African American
 - American Indian or Alaska Native
 - Asian
 - Native Hawaiian or Pacific Islander
 - Other
-

3. Are you of Hispanic, Latino, or Spanish origin?

- Yes
 - No
 - Prefer not to answer
-

Please indicate your thoughts on the above questions by rating your level of agreement to the below statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The questions were easy to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to easily answer the questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to see the questions clearly on my device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem reasonable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem applicable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please include any other thoughts you may have about the above questions.

End of Block: Demographics

Start of Block: Block 1

In this section, please tell us a bit about your professional and personal experiences with mental health conditions.

How many years have you been in your current role?

- Less than 1 year
- 1-5 years
- 6-10 years
- 11-20 years
- More than 20 years

In your role as a practicing pharmacist, have you interacted with patients who have mental health conditions?

- Yes
 - No
 - Not sure
-

In your role as a practicing pharmacist, have you interacted with patients who are on psychotropic medications? Psychotropic medications are defined as those that affect the mind, emotions, and behavior. They are used to treat mental illnesses such as depression and anxiety. Examples include (but are not limited to) Prozac, Adderall, Xanax, and Abilify.

- Yes
 - No
 - Not sure
-

Please indicate your thoughts on the above questions by rating your level of agreement to the below statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The questions were easy to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to easily answer the questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to see the questions clearly on my device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem reasonable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem applicable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please include any other thoughts you may have about the above questions.

End of Block: Block 1

Start of Block: Current practices

Please answer the following questions about your primary work location. If you work in more than one pharmacy, choose one that represents the location where you work the majority of the time.

Does the pharmacy you work for offer depression screening services?

- Yes
 - No
 - I am not sure
-

Please describe the depression screening services offered by the pharmacy if applicable.

With regard to a depression screening service, how confident are you that you can do each of the following?

	Not at all confident 1	2	3	4	Very confident 5
Obtain an accurate patient mental health history	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify patients who qualify to receive a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Initiate conversations with a patient about receiving a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administer a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Answer questions about a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The Patient Health Questionnaire (PHQ-9) is often used as the tool with which to deliver a depression screening to patients. With regard to using the PHQ-9, please rate your agreement with each of the below statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I have used the PHQ-9 before	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know how to talk to patients about the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know how to score the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident in my ability to administer the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am comfortable using the PHQ-9 as a depression screening tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident in my ability to answer questions about the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate your thoughts on the above questions by rating your level of agreement to each of the following.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The questions were easy to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to easily answer the questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to see the questions clearly on my device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem reasonable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem applicable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please include any other thoughts you may have about the above questions.

Start of Block: Barriers

The following questions ask about your personal views on barriers your pharmacy would face to implementing a depression screening service.

Please rank the following barriers towards implementing a depression screening service in your pharmacy in order of most importance with 1 being the most important and 8 being the least important.

- _____ Patients are not willing to participate in a depression screening
 - _____ The staff at our pharmacy do not have the knowledge and skills to deliver a depression screening
 - _____ I do not have the knowledge or skills to deliver a depression screening
 - _____ Legal liability is a problem
 - _____ I do not have enough time to deliver a depression screening at my pharmacy
 - _____ I must be reimbursed to offer a depression screening
 - _____ The will not be able to refer patients who screen positive for depression to the physicians in my area
 - _____ The pharmacy I work at does not have a private area I could deliver depression screenings to patients
-

Please rate your agreement with the following statements.

	Strongly disagree 1	Disagree 2	Neither disagree or agree 3	Agree 4	Strongly agree 5
The patients at my pharmacy will be willing to participate in a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The staff at our pharmacy have the knowledge and skills to participate in a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident in my abilities to perform a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Legal liability may be a problem if my pharmacy offers a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I have enough time to offer a depression screening service to all of my patients

I will only offer a depression screening service if I am reimbursed for it

I have the support staff necessary to offer a depression screening service

The physicians I work with are supportive of pharmacies offering depression screening services

My pharmacy has an area where a patient could fill out a depression screener.

- Yes
 - No
 - I am not sure
-

The area where patients can fill out depression screeners is private.

- Yes
 - No
 - I am not sure
-

Please indicate your thoughts on the above questions by rating your level of agreement to following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The questions were easy to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to easily answer the questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to see the questions clearly on my device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem reasonable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem applicable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please include any other thoughts you may have about the above questions.

End of Block: Barriers

Start of Block: Block 7

Please rate your agreement with the following statements.

	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly agree 5
Most people would accept a person who has been in a mental hospital as a close friend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people believe that someone who has been hospitalized for mental illness is dangerous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people believe that a person who has been hospitalized for mental illness is just as trustworthy as the average citizen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Most people would accept a person who has fully recovered from mental illness as a teacher of young children in a public school.

Most employers will not hire a person who has been hospitalized for mental illness

Most people would be willing to marry someone who has been a patient in a mental hospital

Please rate your agreement with the following statements.

	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly agree 5
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most employers will hire a person who has been hospitalized for mental illness if he or she is qualified for the job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people believe that entering a psychiatric hospital is a sign of personal failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people think less of a person after he/she has been hospitalized for a mental illness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Most people will not hire a person who has been hospitalized for serious mental illness to take care of their children, even if he or she had been well for some time



Most people in my community would treat a person who has been hospitalized for mental illness just as they would treat anyone



Most young people would be reluctant to date someone who has been hospitalized for a serious mental illness



Please indicate your thoughts on the above questions by rating your level of agreement to the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The questions were easy to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to easily answer the questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to see the questions clearly on my device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem reasonable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem applicable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please include any other thoughts you may have about the above questions.

End of Block: Block 7

Start of Block: Barriers/facilitators/Implementation strategies

In this last section, these questions ask you about your views on barriers and strategies to help you implement a depression screening service in your pharmacy.

What would make it difficult for the pharmacy you work at to implement a depression screening service?

What would make it easier for the pharmacy you work at to implement a depression screening service?

What kind of evidence, if any, is needed about the benefits of a depression screening service to get pharmacists on board?

How prepared are you to implement a depression screening service?

How do you feel about a depression screening service being implemented in your pharmacy?

What would help you implement a depression screening service in your pharmacy?

What kinds of incentives would you use to help your staff implement a depression screening service?

What costs do you foresee will be incurred to implement a depression screening service in your pharmacy?

Please indicate your thoughts on the above questions by rating your level of agreement to the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The questions were easy to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to easily answer the questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to see the questions clearly on my device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem reasonable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem applicable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please include any other thoughts you may have about the above questions.

These last questions ask about your overall impressions of the survey.

What are your thoughts on the length of the survey. (About how long did it take you to complete? Was it too long or short?)

Overall, was the survey understandable to you? In your opinion, will it be understandable to other people? Please explain.

Was any question or line confusing? Please explain.

End of Block: Block 7

Round 2

Dissertation Survey - Content validity - Second round

Start of Block: Consent form

Thank you for agreeing to help me with my dissertation. The goal of my project is to determine pharmacists' perceptions of depression screenings being implemented in rural pharmacies, and to use that information to develop a training program for pharmacists. The first stage of the project includes a survey that will be conducted among rural pharmacists in Alabama. This survey will assess pharmacists' knowledge of depression screenings, barriers and facilitators to implementing a depression screening service, and preferred implementation strategies. You were selected as a possible participant because you are a rural community member, a rural pharmacist, or a mental health provider.

What I am requesting from you at this point is your feedback on this survey so that I can refine it before launching the final version. Throughout the survey are questions that ask about the clarity, quality, and appropriateness of the draft pharmacist survey (these questions are in red). After you complete and submit the survey, I will review your responses and make any changes based on the feedback given. The survey will then be sent back out to you to give your feedback on the revised draft. This will happen a max of 3 times, or until consensus among stakeholder members is reached. Your total time commitment will be approximately 45 minutes to an hour for each round. The survey will be completed through Qualtrics and will not include any identifiable information. After you give your feedback on the 3rd round, you will be compensated \$100.

The risk associated with participating in this study is breach of confidentiality. To minimize this risk, your responses will be password protected and all study information will be stored in a secure environment located through Qualtrics and Auburn University. If you change your mind about participating, you can withdraw at any time during the study by closing your internet browser. Your participation is completely voluntary. If you wish to withdraw from the study, email Brandy Davis at BRD0001@auburn.edu and she will remove your information. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, Harrison School of Pharmacy, the Department of Health Outcomes Research and Policy. Your privacy will be protected. Any information obtained in connection with this study will remain confidential. Information obtained through your participation may be reported in aggregate and published in a professional journal and presented at professional meetings. If you have questions about this study, please contact Brandy Davis at BRD0001@auburn.edu. If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334)-844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

By choosing "I accept" you acknowledge that you have read and understand the information given above, and agree to proceed with the questionnaire.

- I accept
- I do not wish to continue

Skip To: End of Survey If By choosing "I accept" you acknowledge that you have read and understand the information given ab... = I do not wish to continue

End of Block: Consent form

Start of Block: Demographics

Thank you for agreeing to take this survey! Your thoughtful responses are important to us. In this first section, please tell us a bit about yourself by marking the corresponding answer.

Please indicate your age.

- 19-24
 - 25-34
 - 35-44
 - 45-54
 - 55-64
 - 65 and above
-

Please indicate your gender.

- Male
 - Female
 - Non-binary
 - Other _____
 - Prefer not to answer
-

How would you describe your race? Select all that apply.

- White
 - Black or African American
 - American Indian or Alaska Native
 - Asian
 - Native Hawaiian or Pacific Islander
 - Other
-

3. Are you of Hispanic, Latino, or Spanish origin?

- Yes
 - No
 - Prefer not to answer
-

Please indicate your title (select all that apply):

- Staff pharmacist
 - Pharmacy manager
 - Owner/partner
 - Other (please specify):

-

Please include any feedback you may have about the above questions.

End of Block: Demographics

Start of Block: Block 1

In this section, please tell us a bit about your professional and personal experiences with mental health conditions(e.g. depression, anxiety, etc)

How many years have you been in your current role?

- Less than 1 year
 - 1-5 years
 - 6-10 years
 - 11-20 years
 - More than 20 years
-

In your role as a practicing pharmacist, have you interacted with patients who have mental health conditions?

- Yes
 - No
 - Not sure
-

In your role as a practicing pharmacist, have you interacted with or cared for patients who are on psychotropic medications (e.g. Prozac, Adderall, Xanax, etc)?

- Yes
 - No
 - Not sure
-

Please include any feedback you may have about the above questions.

End of Block: Block 1

Start of Block: Current practices

Please answer the following questions about your primary work location. If you work in more than one pharmacy, choose one that represents the location where you work the majority of the time.

Does the pharmacy you work at offer depression screening services?

- Yes
- No
- I am not sure

Please describe the depression screening services offered by the pharmacy if applicable.

With regard to a depression screening service, how confident are you that you can do each of the following?

	Not at all confident 1	2	3	4	Very confident 5
Obtain an accurate patient mental health history	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify patients who qualify to receive a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Initiate conversations with a patient about receiving a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administer a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Answer questions about a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The Patient Health Questionnaire (PHQ-9) is often used as the tool with which to deliver a depression screening to patients. Have you used the PHQ-9 before?

- Yes
 - No
 - Not sure
-

With regard to using the PHQ-9, please rate your agreement with each of the below statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I am familiar with the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know how to talk to patients about the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know how to score the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident in my ability to administer the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am comfortable using the PHQ-9 as a depression screening tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident in my ability to answer patient or caregiver questions about the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please include any feedback you may have about the above questions.

End of Block: Current practices

Start of Block: Barriers

The following questions ask about your personal views on barriers your pharmacy would face to implementing a depression screening service.

Please rate your agreement with the following statements.

	Strongly disagree 1	Disagree 2	Neither disagree or agree 3	Agree 4	Strongly agree 5
The patients at my pharmacy are not willing to participate in a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The staff at our pharmacy do not have the knowledge and skills to participate in a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not have the knowledge or skills to deliver a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident in my abilities to perform a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Legal liability
may be a
problem if
my
pharmacy
offers a
depression
screening
service

It is difficult
to perform a
depression
screening

I do not have
enough time
to offer a
depression
screening
service at my
pharmacy

Performing
depression
screenings is
too much of
a financial
burden

I must be
reimbursed
to offer a
depression
screening

I have the
support staff
necessary to
offer a
depression
screening
service

The physicians I work with are not supportive of pharmacies referring patients from depression screenings

The pharmacy I work at does not have a private counseling area

Please rank your top 3 barriers towards implementing a depression screening service in your pharmacy in order of most importance by dragging and dropping into the boxes on the right.

Most important barrier	Second most important barrier	Third most important barrier
<input type="text"/> Patients are not willing to participate in a depression screening	<input type="text"/> Patients are not willing to participate in a depression screening	<input type="text"/> Patients are not willing to participate in a depression screening
<input type="text"/> The staff at our pharmacy do not have the knowledge and skills to deliver a depression screening	<input type="text"/> The staff at our pharmacy do not have the knowledge and skills to deliver a depression screening	<input type="text"/> The staff at our pharmacy do not have the knowledge and skills to deliver a depression screening
<input type="text"/> I do not have the knowledge or skills to deliver a depression screening	<input type="text"/> I do not have the knowledge or skills to deliver a depression screening	<input type="text"/> I do not have the knowledge or skills to deliver a depression screening

_____ Legal liability is a problem

_____ I do not have enough time to deliver a depression screening at my pharmacy

_____ Performing depression screenings is too much of a financial burden

_____ I must be reimbursed to offer a depression screening

_____ The physicians I work with are not supportive of pharmacies referring patients from depression screenings

_____ The pharmacy I work at does not have a private counseling area

_____ Legal liability is a problem

_____ I do not have enough time to deliver a depression screening at my pharmacy

_____ Performing depression screenings is too much of a financial burden

_____ I must be reimbursed to offer a depression screening

_____ The physicians I work with are not supportive of pharmacies referring patients from depression screenings

_____ The pharmacy I work at does not have a private counseling area

_____ Legal liability is a problem

_____ I do not have enough time to deliver a depression screening at my pharmacy

_____ Performing depression screenings is too much of a financial burden

_____ I must be reimbursed to offer a depression screening

_____ The physicians I work with are not supportive of pharmacies referring patients from depression screenings

_____ The pharmacy I work at does not have a private counseling area

What additional barriers would make it difficult for the pharmacy you work at to implement a depression screening service?

Please indicate your thoughts on the above questions by rating your level of agreement to the below statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The questions were easy to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to easily answer the questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to see the questions clearly on my device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem reasonable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem applicable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please include any other feedback you may have about the above questions.

End of Block: Barriers

Start of Block: Block 7

Based on your own opinions, please rate your agreement with the following statements.

	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly agree 5
Most people would accept a person who has been in a mental hospital as a close friend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people believe that someone who has been hospitalized for mental illness is dangerous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people believe that a person who has been hospitalized for mental illness is just as trustworthy as the average citizen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Most people would accept a person who has fully recovered from mental illness as a teacher of young children in a public school.



Most employers will not hire a person who has been hospitalized for mental illness



Most people would be willing to marry someone who has been a patient in a mental hospital



Based on your own opinions, please rate your agreement with the following statements.

	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly agree 5
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most employers will hire a person who has been hospitalized for mental illness if he or she is qualified for the job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people believe that entering a psychiatric hospital is a sign of personal failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people think less of a person after he/she has been hospitalized for a mental illness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Most people will not hire a person who has been hospitalized for serious mental illness to take care of their children, even if he or she had been well for some time



Most people in my community would treat a person who has been hospitalized for mental illness just as they would treat anyone



Most young people would be reluctant to date someone who has been hospitalized for a serious mental illness



Please include any feedback you may have about the above questions.

End of Block: Block 7

Start of Block: Barriers/facilitators/Implementation strategies

In this last section, these questions ask you about your views on barriers and strategies to help you implement a depression screening service in your pharmacy.

Please rate your agreement with how helpful the following implementation strategies would be when implementing a depression screening service in your pharmacy.

	Strongly disagree 1	Disagree 2	Neither agree nor disagree 3	Agree 4	Strongly agree 5
Preparing an action plan for offering a depression screening service would help me implement this service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Establishing staff member roles for depression screening services would help me implement this service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selecting a person who is in charge of depression screening services would help me implement this service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Approaching management, corporate, or owners to gain support would help me implement this service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preparing an outreach/marketing plan for depression screenings would help me implement this service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Establishing depression screening procedures would help me implement this service

Setting a goal or objective for depression screening services would help me implement this service

Adjusting prescription dispensing workflow to allow for greater depression screening activity would help me implement this service

Arranging staff schedules to accommodate depression screening services would help me implement this service

Establishing a procedure to identify patients who would benefit from a depression screening would help me implement this service

Establishing a procedure to refer patients who test positive for depression would help me implement this service

Establishing a procedure to follow-up with patients who test positive for depression would help me implement this service

Developing a budget for depression screening services would help me implement this service

Establishing a plan to continuously evaluate and improve the pharmacy's depression screening services would help me implement this service



What kind of evidence, if any, is needed about the benefits of a depression screening service to get pharmacists on board?

How prepared are you to implement a depression screening service?

How do you feel about a depression screening service being implemented in your pharmacy?

What kinds of incentives would you use to help your staff implement a depression screening service?

What costs do you foresee will be incurred to implement a depression screening service in your pharmacy?

Please indicate your thoughts on the above questions by rating your level of agreement to the below statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The questions were easy to understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to easily answer the questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to see the questions clearly on my device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem reasonable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
These questions seem applicable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please include any other feedback you may have about the above questions.

These last questions ask about your overall impressions of the survey.

What are your thoughts on the length of the survey. (About how long did it take you to complete? Was it too long or short?)

Did anything need to be added or taken out?

Was any question or line confusing? Please explain.

Please share any other feedback you may have.

End of Block: Block 7

Appendix D: Open-Ended Responses for Pre-Survey Round 1 and Round 2

Abbreviations:

- MHP – Mental Health Provider
- Pharm – Rural Pharmacist
- CM – Rural Community Member

Aim 1 Pre-Survey Round 1 Open-Ended Responses		
Domain	Participant	Quote
Demographics	MHP	“I recommend including gender non-binary option in demographics gender item, and an "other" option so someone can write their gender identity if it is not included in the options.” “You could include examples after mental health conditions, much like you did in the last question.”
	Pharm2	---
	Pharm1	“Standard demographic inquiries. No issues here.” “Q2.) Would it be reasonable or necessary to define what we mean by Mental Health Condition? Some people may consider being an Auburn fan a mental health condition. It might be worth at least notating if there is something that we are specifically not considering a mental health condition. Q3.) Should we use generic names or both? “
	CM1	“I don't see how these identifying questions have any application for depression screening.” “You might more clearly define "interaction" in the second question. Would this be drug counseling when someone picks up a prescription? or general conversation?”
	CM2	---
	Confidence	MHP
Pharm2		---
Pharm1		“No Issues.”
CM1		“Maybe consider moving the last question (the 6th question about the PHQ-9) up to the 3rd position (?) - if it is indeed asking about the pharmacist's ability to answer questions the patient has. If it's a question about the pharmacist's ability to answer questions for a mental health professional that the client has been referred to - maybe specify that.”
CM2		---
Barriers	MHP	---
	Pharm2	---

	Pharm1	“Q1.) Huh? "The will not be able to refer patients who screen positive for depression to the physicians in my area.”
		Q4.) What is considered private? (consultation booth vs. isolated room)”
	CM1	“The ranking and then the questions seem repetitive. Maybe consider switching the order or eliminating the ranking section - OR tweaking it to ask the pharmacist to rank his/ her top 3 hindrances/ barriers. 1-8 is a lot for a busy person and you get in the weeds a little for ranking 6-8 I think.
		Just grammatically - on top ranking. question 7 i missing a word (The ---- will etc.) and consider adding a word after are - IN WHICH or THAT”
	CM2	---
Stigma	MHP	“I would just make sure this is a validated questionnaire (I am not familiar with the scale, but it seems to be measuring mental health stigma)”
	Pharm2	“on the first section, I would change the wording of the 5th question, "most employers will not hire..." to "most employers will hire..." to match the flow of the other questions. I had to re-read it to make sure I chose the answer I wanted.”
	Pharm1	“No issues.”
	CM1	“I am uncertain about the purpose of these questions. If the answers are affirmative (those experiencing mental illness will be ostracized), I think pharmacists would be reticent to start tat labeling process. If we are trying to normalize mental illness - make it something that is common, treatable and not stigmatized, these are curious questions. You might also consider adding : most people "in my geographical area" or Most "clients of my pharmacy" -- Also these questions need to clearly state that they are opinion questions. Maybe even, "In my opinion, most people... etc." I don't know how much weight you want these to carry and again I am confused about the questions purpose.”
	CM2	---
CFIR Open-ended questions	MHP	“These are easy to understand and most of my feedback may be unsolicited but I would consider making these questions on a Likert scale (for the ones that make sense to do that) OR have multiple boxes they could check with foreseeable barriers/facilitators you can think of PLUS a write in option. Hope this makes sense.”
	Pharm2	---
	Pharm1	“In general, it might be beneficial to differentiate when the question is asking about the "Pharmacy" or the "Individual Pharmacist" by underlining or bolding the text.”
	CM1	“Great questions”
	CM2	---
Global Feedback		
Length/Time	MHP	“I think it is just right.”
	Pharm2	“appropriate length. did not take long to take.”
	Pharm1	“Just right; though that last part might benefit from per-filled options instead of blank text boxes (but then you might miss out on a unique reason we have not thought of.)”

Understandability	CM1	"I am not a pharmacist, so the survey did not take me very long. I just have the main comment about the ranking question which I think busy professionals might be inclined to skip because it requires reading 8 items and then ranking them. I don't think you will get enough valuable material from that section and I think it will cause people to tune out."
	CM2	"It took about 10 minutes to take survey. It is a good survey that isn't too long or too little info."
	MHP	"Yes, I think it will be [understandable to other people]."
	Pharm2	"Yes, the questions were easy to understand. I think other people would be able to understand the questions. I was unable to answer some (i.e. incentives for pharmacy staff) because I'm not really sure what I would do, but I understood the question."
	Pharm1	"There was a few questions that might need some clarification, but as is I don't think anyone would struggle."
Confusing	CM1	"Yes - clear. I do have a question about the purpose of the "most people" section. Again, I think considering the far-reaching effects of the stigma of mental illness would make health professionals reticent to address mental health issues. Maybe a follow up section or question is needed to emphasize the importance of mental health care - AND then education for the public."
	CM2	"Yes, easy questions and much needed info to determine the mind set of people."
	MHP	"The mental health stigma questions were a bit cumbersome. If there is another questionnaire that is validated and less cumbersome to read, you may consider replacing it. But overall it was understandable."
	Pharm2	"No. Questions were easy to understand."
	Pharm1	"Second page I believe had a typo."
	CM1	---
	CM2	"No"

Aim 1 Pre-Survey Round 2 Open-Ended Responses

Domain	Participant^a	Quote
Demographics	MHP	"No feedback. Looks great." "I suppose for q12 you could put examples after "mental health conditions" (e.g., depression, bipolar disorder, anxiety)."
	Pharm1	"Q5: We are health professionals; there are only two genders. That's basic biology 101. Anything else is a mental illness (that should be addressed not humored.) If we are going to compromise on such a simple point, why bother doing any research....just go with whatever you feel or whatever is popular. The correct options are: Male, Female, or Prefer Not to Answer. Anyone suggesting anything else, is not a serious scientific mind."

		"No recommendations."
	CM1	---
	CM2	---
Confidence	MHP	"Q18. With regard to a depression screening service, how confident are you that you can do each of the following?"
		(I can see pharmacists having trouble with this one---maybe they *CAN* in terms of knowledge, but CAN'T in terms of time, should you define that a bit more for them in the question?"
	Pharm1	"No recommendations."
	CM1	"Q 18 - Put the first question last? obtain an accurate mental health history seems like the most involved or complex task and maybe should be listed last
		q - 20 consider re-ordering these as well: 1st: familiar with 2nd: comfortable with using as screening tool 3rd: know how to talk to patients about the PHQ-9 4th: confident in ability to administer 5th: know how to score 6th: confident in ability to answer questions (in current order, they don't seem like logical sequential steps)"
	CM2	---
Barriers	MHP	"q26 has the option to select more than one option. I would limit it to one option to be selected.
		q23 items make sense; I do wonder if you shortened the items to brief phrases rather than sentences, would pharmacists be more attentive for this item and the barrier ranking item. might make it easier."
	Pharm1	"Q24: Format Issue; If selecting an option further down the list some browsers may not let you scroll up while holding your text (I was able to get around this with my mouse wheel, but others may have issues.)"
	CM1	"Q 23 : sentences 3 and 4 and sentences 8 and 9 are similar in that they ask the same questions - just once in a positive light and again in a negative. Do these seem redundant? Keep one from each pair?"
		Q 24 - I like the drag and drop! and not ranking all 9 items -- good change -- see again note for 23 - do you want to whittle down the redundant statements (financial burden/ reimbursement) leaving 8 items instead of 9?"
	CM2	---
Stigma	MHP	"might be my computer but the strongly agree option is hidden somehow? again might be a tech glitch on my end."
	Pharm1	"No recommendations."
	CM1	"Thank you for the explanation about the inclusion of these questions: makes total sense."
	CM2	---
Implementation Strategies	MHP	"Q32. Please rate your agreement with how helpful the following implementation strategies would be when implementing a depression screening service in your pharmacy.
		I would change the likert scale to range from "not at all helpful" to "very helpful" rather than agree, it

		simplifies the thinking that goes into answer the questions. The change the item content to "Please rate how helpful the following...." (makes it simpler).
		I hope this helps!"
	Pharm1	"No recommendations."
	CM1	---
	CM2	---
Global Feedback		
Length/Time	MHP	"not too short. I don't think it's terribly long either."
	Pharm1	"Just Right."
	CM1	---
	CM2	"Good length and important questions that should be asked of individuals and maybe get some help for them, especially some may feel mor comfortable talking with pharmacist instead of doctor, who they may think is judging them."
Additions or deletions	MHP	"No"
	Pharm1	"Seemed comprehensive to me."
	CM1	---
	CM2	---
Understandability	MHP	"see my prior comments"
	Pharm1	---
	CM1	---
	CM2	"Everything was clear and easy to understand."

^aPharm 2 did not respond to the survey

Appendix E: Aim 1 Stakeholder Panel Incentive Payments

Activity	Amount	Participants	Date sent	Notes
Aim 1.1 Stakeholder Panel				
Complete pre survey (max of 3) and provide feedback on survey content	\$100 Check	MC1	9/24/2021	
		RC1	9/24/2021	
		RC2	9/24/2021	
		Pharm1	9/24/2021	
		Pharm2	N/A	Did not complete pre survey
Aim 1.2 Survey				
Complete survey	\$25 gift card	AL rural pharmacists	11/29/2021 – 1/25/2022	Sent postcards 3 times to rural pharmacists on AL Hayes directory
		MS rural pharmacists	2/22/2022 – 4/4/2022	Sent postcards 3 times to rural pharmacists on MS Hayes directory
Aim 2.1 Webinar Development (date feedback received from panelists)				
Complete Focus group/interview	\$50 gift card	MC2	12/9/2022	
		RC1	1/13/2023	
		RC3	12/9/2022	
		Pharm1	1/13/2023	
		Pharm3	1/19/2023	
Provide feedback on webinar slide deck	\$50 gift card	MC1	3/26/2023	
		RC1	3/14/2023	
		RC3	3/14/2021	
		Pharm1	3/22/2023	
		Pharm3	N/A	Did not provide feedback
Aim 2.2 Webinar CE credit				
Attended Webinar and completed pre and post surveys	Live CE credit	May 16 th @7 PM attendees	5/16/2023	
		May 17 th @ 12 PM attendees	5/17/2023	
	Non live CE credit	Webinar recording attendees	5/19/2023	
	Live CE credit	July 15 th @7 pm attendees	7/15/2023	
		July 16 th @ 12 pm attendees	7/16/2023	
	Non live CE credit	Webinar recording attendees	7/19/20203	
Aim 2.2 3-Month Post Survey				
Complete 3-month post survey	\$20 gift card	Pharmacists who attended May webinars	7/13/2023	Did not include pharmacists who asked to not be contacted again or pharmacists who had already completed the survey
			9/18/2023	
			9/25/2023	
	\$20 gift card	Pharmacists who attended July webinars or recorded webinars	9/18/2023	
9/25/2023				

Dissertation Survey - Final

Start of Block: Consent form

You are invited to participate in a research study about current practices, perceptions, and preferences of implementing a depression screening service in rural pharmacies. The study is titled “Current practices, barriers and facilitators, and preferred implementation strategies survey of rural pharmacists”. The study is being conducted by Brandy Davis, PharmD, under the direction of Kimberly Garza, PharmD, MBA, PhD, in the Auburn University Department of Health Outcomes Research and Policy. You were selected as a possible participant because you are a pharmacy manager, owner/partner, etc. who works in a rural pharmacy.

What will be involved if you participate? If you decide to participate in this research study, you will be asked to complete a survey about your pharmacy's current practices, perceptions, and preferences for implementing a depression screening service in rural pharmacies. Your total time commitment will be approximately 10-20 minutes. The survey will be completed through Qualtrics and will not include any identifiable information. At the end of the survey you will be asked to fill out a separate Qualtrics survey to provide contact information to receive your \$25 Amazon gift card. This is completely voluntary and will in no way impact or be linked to the information gathered in the main survey.

Are there any risks or discomforts? The risk associated with participating in this study is breach of confidentiality. To minimize this risk, the survey will remain anonymous, and all study information will be stored in a secure environment located through Qualtrics. If you change your mind about participating, you can withdraw at any time during the study by closing your internet browser. Your participation is completely voluntary. If you wish to withdraw from the study, do not submit your completed survey. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, Harrison School of Pharmacy, the Department of Health Outcomes Research and Policy. Your privacy will be protected.

Any information obtained in connection with this study will remain confidential. Information obtained through your participation may be reported in aggregate and published in a professional journal and presented at a professional meeting.

If you have questions about this study, please contact Brandy Davis at BRD0001@auburn.edu or Kimberly Garza at KBL0005@auburn.edu. If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334)-844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

If you prefer a paper survey, please email Brandy Davis at BRD0001@auburn.edu.

By choosing "I accept" you acknowledge that you have read and understand the information given above, and agree to proceed with the questionnaire.

- I accept
- I do not wish to continue

Skip To: End of Survey If By choosing "I accept" you acknowledge that you have read and understand the information given ab... = I do not wish to continue

End of Block: Consent form

Start of Block: Demographics

Thank you for agreeing to take this survey! Your thoughtful responses are important to us. In this first section, please tell us a bit about yourself by marking the corresponding answer.

Please indicate your age.

- 19-24
 - 25-34
 - 35-44
 - 45-54
 - 55-64
 - 65 and above
-

Please indicate your gender.

- Male
 - Female
 - Non-binary
 - Other _____
 - Prefer not to answer
-

How would you describe your race? Select all that apply.

- White
 - Black or African American
 - American Indian or Alaska Native
 - Asian
 - Native Hawaiian or Pacific Islander
 - Other
-

3. Are you of Hispanic, Latino, or Spanish origin?

- Yes
 - No
 - Prefer not to answer
-

Please indicate your title (select all that apply):

- Staff pharmacist
 - Pharmacy manager
 - Owner/partner
 - Other (please specify):
-

End of Block: Demographics

Start of Block: Block 1

In this section, please tell us a bit about your professional and personal experiences with mental health conditions (e.g. depression, anxiety, etc.).

How many years have you been in your current role?

- Less than 1 year
 - 1-5 years
 - 6-10 years
 - 11-20 years
 - More than 20 years
-

In your role as a practicing pharmacist, have you interacted with patients who have mental health conditions?

- Yes
 - No
 - Not sure
-

In your role as a practicing pharmacist, have you interacted with or cared for patients who are on psychotropic medications (e.g. Prozac, Adderall, Xanax, etc)?

- Yes
- No
- Not sure

End of Block: Block 1

Start of Block: Current practices

Please answer the following questions about your primary work location. If you work in more than one pharmacy, choose one that represents the location where you work the majority of the time.

Does the pharmacy you work at offer depression screening services?

- Yes
- No
- I am not sure

Please describe the depression screening services offered by the pharmacy if applicable.

With regard to a depression screening service, how confident are you that you can do each of the following?

	Not at all confident 1	2	3	4	Very confident 5
Obtain an accurate patient mental health history	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify patients who qualify to receive a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Initiate conversations with a patient about receiving a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administer a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Answer questions about a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The Patient Health Questionnaire (PHQ-9) is often used as the tool with which to deliver a depression screening to patients. Have you used the PHQ-9 before?

Yes

No

Not sure

With regard to using the PHQ-9, please rate your agreement with each of the below statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
I am familiar with the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know how to talk to patients about the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know how to score the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident in my ability to administer the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am comfortable using the PHQ-9 as a depression screening tool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident in my ability to answer patient or caregiver questions about the PHQ-9	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Start of Block: Barriers

The following questions ask about your personal views on barriers your pharmacy would face to implementing a depression screening service.

Please rate your agreement with the following statements.

	Strongly disagree 1	Disagree 2	Neither disagree or agree 3	Agree 4	Strongly agree 5
The patients at my pharmacy are not willing to participate in a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The staff at our pharmacy do not have the knowledge and skills to participate in a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not have the knowledge or skills to deliver a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Legal liability may be a problem if my pharmacy offers a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

It is difficult to perform a depression screening

I do not have enough time to offer a depression screening service at my pharmacy

I must be reimbursed to offer a depression screening

I have the support staff necessary to offer a depression screening service

The physicians I work with are not supportive of pharmacies referring patients from depression screenings

The pharmacy I work at does not have a private counseling area



Please rank your top 3 barriers towards implementing a depression screening service in your pharmacy in order of most importance by dragging and dropping into the boxes on the right. Only choose one barrier per box.

Most important barrier (only one barrier per box)	Second most important barrier (only one barrier per box)	Third most important barrier (only one barrier per box)
_____ Patients are not willing to participate in a depression screening	_____ Patients are not willing to participate in a depression screening	_____ Patients are not willing to participate in a depression screening
_____ The staff at our pharmacy do not have the knowledge and skills to deliver a depression screening	_____ The staff at our pharmacy do not have the knowledge and skills to deliver a depression screening	_____ The staff at our pharmacy do not have the knowledge and skills to deliver a depression screening
_____ I do not have the knowledge or skills to deliver a depression screening	_____ I do not have the knowledge or skills to deliver a depression screening	_____ I do not have the knowledge or skills to deliver a depression screening
_____ Legal liability is a problem	_____ Legal liability is a problem	_____ Legal liability is a problem
_____ I do not have enough time to deliver a depression screening at my pharmacy	_____ I do not have enough time to deliver a depression screening at my pharmacy	_____ I do not have enough time to deliver a depression screening at my pharmacy
_____ Performing depression screenings is too much of a financial burden	_____ Performing depression screenings is too much of a financial burden	_____ Performing depression screenings is too much of a financial burden

_____ I must be reimbursed to offer a depression screening

_____ I must be reimbursed to offer a depression screening

_____ I must be reimbursed to offer a depression screening

_____ The physicians I work with are not supportive of pharmacies referring patients from depression screenings

_____ The physicians I work with are not supportive of pharmacies referring patients from depression screenings

_____ The physicians I work with are not supportive of pharmacies referring patients from depression screenings

_____ The pharmacy I work at does not have a private counseling area

_____ The pharmacy I work at does not have a private counseling area

_____ The pharmacy I work at does not have a private counseling area

What additional barriers would make it difficult for the pharmacy you work at to implement a depression screening service?

End of Block: Barriers

Start of Block: Block 7

Based on your own opinions, please rate your agreement with the following statements.

	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly agree 5
Most people would accept a person who has been in a mental hospital as a close friend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people believe that someone who has been hospitalized for mental illness is dangerous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people believe that a person who has been hospitalized for mental illness is just as trustworthy as the average citizen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Most people would accept a person who has fully recovered from mental illness as a teacher of young children in a public school.



Most employers will not hire a person who has been hospitalized for mental illness



Most people would be willing to marry someone who has been a patient in a mental hospital



Based on your own opinions, please rate your agreement with the following statements.

	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly agree 5
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most employers will hire a person who has been hospitalized for mental illness if he or she is qualified for the job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people believe that entering a psychiatric hospital is a sign of personal failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people think less of a person after he/she has been hospitalized for a mental illness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Most people will not hire a person who has been hospitalized for serious mental illness to take care of their children, even if he or she had been well for some time



Most people in my community would treat a person who has been hospitalized for mental illness just as they would treat anyone



Most young people would be reluctant to date someone who has been hospitalized for a serious mental illness



Start of Block: Barriers/facilitators/Implementation strategies

In this last section, these questions ask you about your views on barriers and strategies to help you implement a depression screening service in your pharmacy.

Please rate how helpful the following implementation strategies would be when implementing a depression screening service in your pharmacy.

	Not at all helpful 1	Slightly helpful 2	Somewhat helpful 3	Very helpful 4	Extremely helpful 5
Preparing an action plan for offering a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Establishing staff member roles for depression screening services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selecting a person who is in charge of depression screening services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Approaching management, corporate, or owners to gain support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preparing an outreach/marketing plan for depression screenings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Establishing depression screening procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Setting a goal or objective for depression screening services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adjusting prescription dispensing workflow to allow for greater depression screening activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Arranging staff schedules to accommodate depression screening services

Establishing a procedure to identify patients who would benefit from a depression screening

Establishing a procedure to refer patients who test positive for depression

Establishing a procedure to follow-up with patients who test positive for depression

Developing a budget for depression screening services

Establishing a plan to continuously evaluate and improve the pharmacy's depression screening services

What kind of evidence, if any, is needed about the benefits of a depression screening service to get pharmacists on board?

How prepared are you to implement a depression screening service?

How do you feel about a depression screening service being implemented in your pharmacy?

What kinds of incentives would you use to help your staff implement a depression screening service?



What costs do you foresee will be incurred to implement a depression screening service in your pharmacy?

End of Block: Barriers/facilitators/Implementation strategies

Appendix G: Focus group/Interview Procedures and Questions

Aim 2.1 Focus Group Procedures

Participants will be emailed the information letter to review before the focus group.

Participants will be asked if they have any questions about the information letter/project in general. If any participant chooses to not participate at this time, they will be free to leave the Zoom meeting. If they stay, that will be taken as consent.

Participants will be asked for consent to be recorded.

If yes, Dr. Davis will begin recording and the focus group will begin.

Survey data will be presented to the focus group and the following questions will be asked.

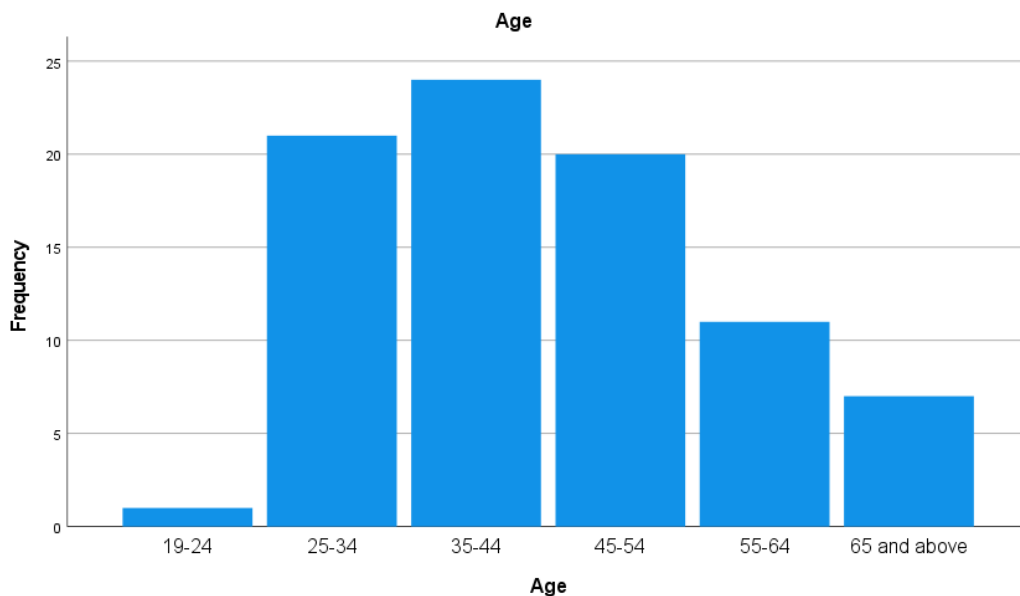
Results of Survey & Potential Items to Include in Training

Some initial questions first:

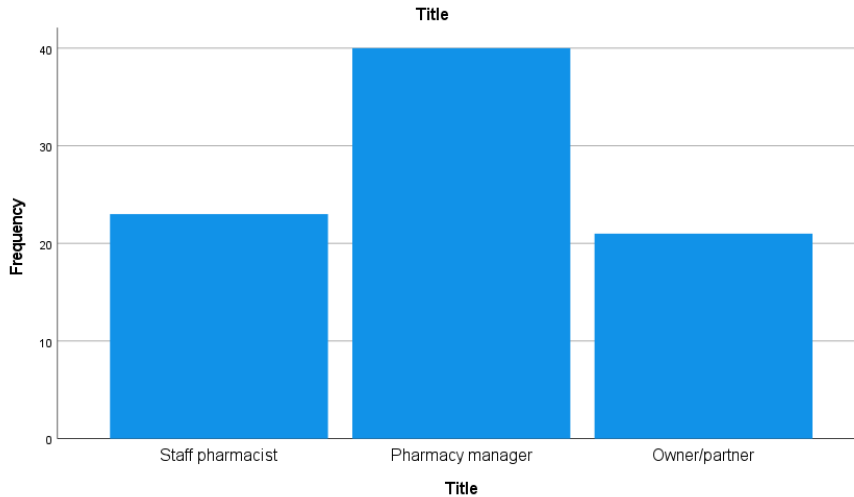
1. *What format should training be? What format would you like to receive training in and why? (Live vs recorded)*
2. *How long would you prefer a training program on implementing a depression screening service to be?*

What are our rural pharmacists like?

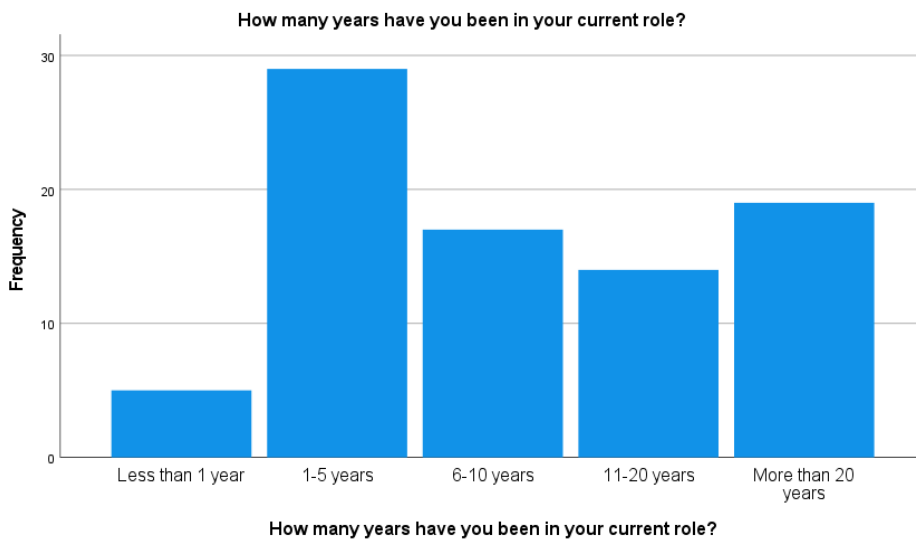
- Located in rural areas in Alabama and Mississippi
 - 85 total respondents
 - 44% from AL and 56% from Mississippi
- 50% were female and 50% were male
- Most were between 25-54 years old



- Primarily white (73%) with Asian being second most common (16%) and black being third (8%)
- Mainly non-Hispanic, Latino, or Spanish (96%)
- Pharmacist role



- Years in current role



- Most pharmacists had interacted with patients with mental health conditions and patients on psychotropics (99%)
- Most pharmacies did NOT offer depression screening services (92%)
- Most pharmacists had NOT used PHQ-9 before (85%)

Pharmacists' confidence to offer depression screenings?

Most pharmacists had a low confidence in being able to do the steps of a depression screening including:

- Obtaining mental health history
- Identifying patients who qualify to receive depression screenings
- Initiating conversations about depression screenings
- Administering depression screenings
- Answering questions about depression screenings

There was even lower confidence and knowledge regarding the use of the PHQ-9.

3. *What do you think would be helpful to include in a training program to increase pharmacists' confidence in delivering a depression screening?*
 - a. *Knowledge of screening tools*
 - b. *How to refer patients who screen positive for depression*
 - c. *How to initiate conversations with patients about depression screenings*

Barriers/facilitators to offering depression screenings?

When asked to rank their top three barriers to implementing a depression screening service:

- First barrier:
 - I do not have enough time (24%)
 - Staff do not have the skills/knowledge (21%)
 - I do not have the skills/knowledge (20%)
 - Patients are not willing to participate (11%)
 - Legal liability is a problem (7%)
 - I must be reimbursed (3%)

When asked to rate their agreement with barriers/facilitators to offering depression screening services, most pharmacists were ambivalent about most items except for a few outlined below:

Barriers

- Pharmacists said they did not have enough time to add depression screening services to their responsibilities
- Pharmacists wanted to be reimbursed for offering these services
- Pharmacists said they did not have the required support staff to offer these services

Facilitators

- Most pharmacists DID have a private counseling area

4. *Looking over the included barriers, what are your thoughts? What information (if any) should be included to overcome these barriers?*
 - a. *What would your thoughts/feelings be if a pharmacist asked you to fill out a depression screener?*

Stigma

Pharmacist stigma towards patients with mental health conditions. Used the Perceived Devaluation Discrimination (PDD) scale.

	1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly Agree
Most people would accept a person who has been in a mental hospital as a close friend					
Most people believe that someone who has been hospitalized for mental illness is dangerous					
Most people believe that a person who has been hospitalized for mental illness is just as trustworthy as the average citizen					
Most people would accept a person who has fully recovered from mental illness as a teacher of young children in a public school					
Most employers will not hire a person who has been hospitalized for mental illness					

Most people think less of a person after he/she has been hospitalized for a mental illness					
Most people would be willing to marry someone who has been a patient in a mental hospital					
Most employers will hire a person who has been hospitalized for mental illness if he or she is qualified for the job					
Most people believe that entering a psychiatric hospital is a sign of personal failure					
Most people will not hire a person who has been hospitalized for serious mental illness to take care of their children, even if he or she had been well for some time					
Most people in my community would treat a person who has been hospitalized for mental illness just as they would treat anyone					
Most young people would be reluctant to date someone who has been hospitalized for a serious mental illness					

Pharmacists were asked to rate their agreement with questions asking about stigma towards patients with mental health conditions (MHC)

- On a scale from 1-5 with 1 being Strongly Disagree and 5 being Strongly Agree
- The lower the score, the more stigma towards patients with MHC
- Mean score was 2.9 with a SD of 0.564

5. *Rural pharmacists seemed ambivalent when it came to stigma surrounding patients with mental health conditions. In your opinion, do you think there should be a portion on stigma pertaining to mental health? If so, what do you think that should look like? How much time should be spent on this topic?*

Final thoughts:

6. *After reviewing and discussing the data, what elements should be included in the training program? Examples: administration and scoring of PHQ-9, communicating results to patient, referring patient.*
7. *What format should training be? What format would you like to receive training in and why? (Live vs recorded)*
8. *How long would you prefer a training program on implementing a depression screening service to be?*
9. *Any other thoughts about depression screenings in pharmacies?*

Appendix H: Aim 2 Training Webinar Slide Deck

AUBURN UNIVERSITY
Harrison College of Pharmacy

SCREENING FOR DEPRESSION IN COMMUNITY PHARMACIES: TOOLS TO GET YOU STARTED

BRANDY DAVIS, PHARM.D.
KIMBERLY GARZA, PHARM.D., PH.D.

PLEASE TAKE THE PRE-SURVEY IF YOU HAVE NOT ALREADY COMPLETED IT.
SURVEY COMPLETION IS REQUIRED TO OBTAIN CE CREDIT


[BIT.LY/9Kfz3of](https://bit.ly/9Kfz3of)



AUBURN UNIVERSITY
Harrison College of Pharmacy

FACULTY DISCLOSURE/CONFLICT OF INTEREST


I, Brandy Davis, have no actual or potential conflict of interest in relation to this program.



AUBURN UNIVERSITY
Harrison College of Pharmacy

OBJECTIVES



- Identify patients who need to be screened for depression
- Explain what the PHQ-9 is for and how to use it
- Determine whether a patient needs to be referred for mental health care and explain steps to refer them
- List resources that can be used to refer patients for mental health care
- List tips for implementing a depression screening in your pharmacy



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PRE SURVEY QR CODE/LINK

- Please complete the post-survey
- Scan the QR code below or type in the short link URL into your browser
- bit.ly/9Kfz3of



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RESOURCE LINK

- <https://auburn.box.com/v/DepressionScreening>

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DEPRESSION

DEPRESSION IS SERIOUS

- Depression is the leading cause of disability in persons over 15 years old¹
- Suicide is ranked as the 11th leading cause of death as of 2018 in Alabama²
- Only 33-50% of people seek and receive treatment for their depression^{3,4}
- Inadequate treatment has sweeping negative effects^{4,6}
 - Decreased work productivity
 - School dropouts
 - Suicide
- Depression alone causes annual losses in productivity that cost the U.S. upwards of \$31 billion⁷
- The US Preventive Task Force recommends all patients aged 12 and over be screened for depression⁸

WHAT DEPRESSION CAN LOOK LIKE

■ Major Depressive Disorder²⁵

- Symptoms must be present for two weeks
- Must interfere with ability to work, sleep, study, and/or eat
- Persistent sad, anxious, or "empty" mood
- Feelings of hopelessness, or pessimism
- Feelings of irritability, frustration, or restlessness
- Feelings of guilt, worthlessness, or helplessness
- Loss of interest or pleasure in hobbies and activities
- Decreased energy, fatigue, or feeling "slowed down"
- Difficulty concentrating, remembering, or making decisions
- Difficulty sleeping, early morning awakening, or oversleeping
- Changes in appetite or unplanned weight changes
- Thoughts of death or suicide, or suicide attempts
- Aches or pains, headaches, cramps, or digestive problems without a clear physical cause that do not ease even with treatment
- Suicide attempts or thoughts of death or suicide

PHARMACISTS ARE NEEDED

- Under-diagnosis of depression and under-utilization of treatments are common⁹⁻¹²
- The "mental healthcare gap" is the serious shortage of mental health care providers especially in rural communities of the U.S.¹³⁻¹⁵
- Leading health organizations have called on all health professionals, especially pharmacists, to fill these gaps¹⁶⁻¹⁸

RESEARCH SUPPORTS PHARMACIST INTERVENTION

- Depression screening services in pharmacies have been shown to:¹⁹⁻²³
 - Be feasible and effective
 - Increase screening of patients
 - Improve medication therapy
 - Maintain patient satisfaction
- However, uptake of pharmacy-based depression screening services has been slow²⁴

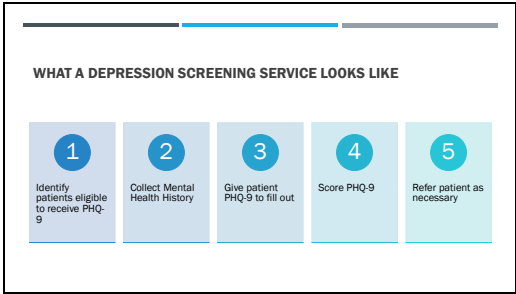
BARRIERS TO IMPLEMENTATION IN PHARMACIES

- Staff do not have the skills/knowledge
- Pharmacists do not have the skills/knowledge
- Not enough time
- Patients are not willing to participate
- Pharmacists want to be reimbursed for services they offer

STIGMA

- "An attribute that is deeply discrediting and that reduces the bearer from a whole and usual person to a tainted, discounted one."²⁶
- Stigma towards patients with mental health conditions is problematic²⁷
 - Can cause patients to choose not to access treatment
 - Can cause patients to not take medications
 - Can cause healthcare providers to not give patients the treatment they need
- To counter stigma:
 - Educate yourself
 - Remember to use "person first" language

DEPRESSION SCREENING SERVICE



- ### 1. IDENTIFYING ELIGIBLE PATIENTS
- General population screening**
 - Mental Health Day: screen patients for depression one day a month or year
 - All patients 12 and over screened for depression
 - Targeted screening**
 - Patients who are currently on antidepressants
 - Patients who are diagnosed with depression
 - Patients with high-risk disease state
 - Have technician flag when antidepressant is filled for follow up by pharmacist

- ### 2. MENTAL HEALTH TREATMENT HISTORY
- Collect data on when diagnosed (if diagnosed)
 - Length of diagnosis
 - Current medications for depression
 - Drugs tried in the past
 - What worked/did not work
 - Adherence

- ### 3. GIVE THE PHQ-9
- Ways to use the PHQ-9**
 - A tool to diagnose Major Depressive Disorder
 - Check for depression severity and changes in severity over time
 - Can be used to check the efficacy of medications used for depression

PHQ-9

Over the last 2 weeks, how often have you been bothered by any of the following?

	Not at all	Several days	More than half the days	Nearly every day
a. Little interest or pleasure in doing things?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Feeling down, depressed, or hopeless?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Trouble falling or staying asleep, or sleeping too much?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Feeling tired or having little energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Poor appetite or overeating?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Feeling bad about yourself—or that you are a failure or have let yourself or your family down?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Trouble concentrating on things, such as reading the newspaper or watching television?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Moving or speaking so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have been noticed a lot more than usual?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Thoughts that you would be better off dead or of hurting yourself in some way?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

	Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PHQ-9: LAST QUESTION

- How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?
 - Not used in calculating score or diagnosis
 - May be used in decisions regarding initiation or adjustment of treatment
 - May be used as a measure of impairment and health-related quality of life

4. SCORE THE PHQ-9

Over the last 2 weeks, how often have you been bothered by any of the following?

	Not at all	Several days	More than half the days	Nearly every day
a. Little interest or pleasure in doing things?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Feeling down, depressed, or hopeless?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Trouble falling or staying asleep, or sleeping too much?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Feeling tired or having little energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Poor appetite or overeating?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Feeling bad about yourself—or that you are a failure or have let yourself or your family down?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Trouble concentrating on things, such as reading the newspaper or watching television?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Moving or speaking so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have been noticed a lot more than usual?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Thoughts that you would be better off dead or of hurting yourself in some way?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

For Major Depressive Disorder Diagnosis

- Must have question "a" checked "nearly every day"
- Must have 5 items checked that are "more than half the days" or "nearly every day"
 - Includes first question "a"
 - If question "f" (suicidal ideation) is checked in any box besides the "not at all" box, it is counted
- A Mental Health Provider or Physician must still diagnose
 - A positive score does not necessarily mean patient has depression and vice versa
 - Must refer to PCP or MHP

SCORE THE PHQ-9

For checking depression severity

- Assign scores noted below and add together
 - 0 - "not at all"
 - 1 - "Several days"
 - 2 - "more than half the days"
 - 3 - "nearly every day"
- Score meanings
 - 5-9: Mild depression
 - 10-14: Moderate depression
 - 15-19: Moderately Severe depression
 - 20-27: Severe depression

PROPOSED TREATMENT ACTIONS

PHQ-9 Score	Depression Severity	Proposed Treatment Actions
0-4	None-minimal	None
5-9	Mild	Watchful waiting; repeat PHQ-9 at follow-up
10-14	Moderate	Treatment plan, considering counseling, follow-up and/or pharmacotherapy
15-19	Moderately Severe	Active treatment with pharmacotherapy and/or psychotherapy
20-27	Severe	Immediate initiation of pharmacotherapy and, if severe impairment or poor response to therapy, expedited referral to a mental health specialist for psychotherapy and/or collaborative management

* From Koonike K, Spitzer RL. Psychiatric Annals 2002;32:509-521

5. REFERRAL

WHEN TO REFER

Positive score for depression based on previous criteria

Increase in depression severity or no change in severity within 4-6 weeks of beginning treatment/treatment change

Suicidal ideation

WHO TO REFER TO

Refer to primary care physician

Refer to mental health care provider

Other resources in your area

EMERGENCY REFERRAL RESOURCES

- Emergency mental health crisis
 - Call 911
 - Call 988
 - National Suicide and Crisis Lifeline

REFERRAL RESOURCES

- SAMHSA (Substance Abuse and Mental Health Services Administration)
 - National Helpline
 - 1-800-662-HELP (4357)
 - Provides referrals and information
 - <https://www.samhsa.gov/find-help/national-helpline>
 - <https://findtreatment.gov/locator>
 - Finds treatment centers in your location

OTHER RESOURCES

- Alabama Department of Mental Health
 - Connect Alabama App
 - Functional even without internet/data
 - <https://mh.alabama.gov/connect-alabama-app/>
- QPR training
 - Suicide Prevention Training
 - <https://qprinstitute.com/>

IMPLEMENTATION TIPS

HELPFUL IMPLEMENTATION TIPS

- Select pharmacist to be in charge of depression screenings
- Make sure relevant staff is trained in depression screenings
- Establish your pharmacy's depression screening procedures
 - Who will you screen?
 - When will you screen?
 - Where will you screen?
 - What happens when patient has suicidal ideation?
 - What happens when patient needs referral?
- How will you follow up with the patient?
- Collaborate with physicians and mental health providers in your area

HELPFUL MARKETING TIPS

- Bag stuffers
- Brochures/flyers on-site, direct mail, or in other businesses
- Phone on-hold messages
- Signage – interior, exterior, billboards
- Media (radio, TV)
- Website and social media
- Charity and civic events/fundraisers
- Mental Health Day
- Health topic lectures free to public
- Educational kiosk

EXAMPLES

EXAMPLE 1

Jesse comes in asking for help with feeling down and with low energy all the time. They say they constantly feel tired and have trouble concentrating on everything. You give the patient the PHQ-9 to fill out. What would your assessment and recommendation be?

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems? (For "a" to indicate your answer)

	Not at all	Several days	More than several days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or waking too soon	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite – being so fidgety or restless that you have been constantly moving or fidgeting	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

PHQ-9 (Total Score) _____ of 27

EXAMPLE 2

Your pharmacy is having a Mental Health Awareness Day. You have information on depression and free screenings available. You give the PHQ-9 to Kim who returns it filled out. What would your assessment and recommendation be for them?

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems? (For "a" to indicate your answer)

	Not at all	Several days	More than several days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or waking too soon	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite – being so fidgety or restless that you have been constantly moving or fidgeting	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

PHQ-9 (Total Score) _____ of 27

EXAMPLE 3

Alex comes into your pharmacy with a new prescription for Fluoxetine 10 mg. Upon inquiry, they have started this medication for Major Depressive Disorder. What do you do?

EXAMPLE 4

You decide to give Alex a PHQ-9 so you can help monitor their treatment. The first score is a 16. Two months later Alex comes back in for a refill. You have them fill out the PHQ-9 again. What would the score be? What would your recommendation be for Alex after calculating the new score?

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)


Over the past 7 days, how often have you been bothered by any of the following problems?

	Not at all	Several days	More than several days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or waking too soon	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as watching television or reading the newspaper	0	1	2	3
8. Moves or speaks so slowly that other people could have noticed? Or the opposite — so fast that other people could have noticed?	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

Please circle your score _____ of 27.

POST SURVEY QR CODE/LINK

- Please finish the pre-survey at this time if you have not already completed it
- Survey completion is required to obtain CE credit
 - Scan the QR code below or type in the short link URL into your browser
 - bit.ly/41W8bc3



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Pre- and Post- Survey

Start of Block: Consent form

INFORMATION LETTER For a research study entitled: “Screening for Depression in Community Pharmacies: Tools to get you started”

You are invited to participate in a research study titled, “Screening for Depression in Community Pharmacies: Tools to get you started” to help research pharmacists’ knowledge, attitudes, and intention towards implementing a depression screening service in rural pharmacies. The research team will use information gathered in this study to inform the development of future training programs for rural pharmacists to increase access to depression screenings for community members. The study is being conducted by Brandy Davis, PharmD, under the direction of Kimberly Garza, PharmD, MBA, PhD, in the Auburn University Department of Health Outcomes Research and Policy.

You were selected as a possible participant because you are a pharmacist. In order to be eligible for the study, you must be 19 years of age or older to participate and be a pharmacist.

What will be involved if you participate? If you decide to participate in this research study, you will be asked to do two activities: 1) participate in an hour long webinar 2) complete three surveys (one before the webinar, one after the webinar, and one 3 months after the webinar). Your total time commitment will be approximately 90 minutes. The webinar will be completed through Zoom. A recording of the webinar will be made.

Are there any risks or discomforts? The risks associated with participating in this study are minimal. Confidentiality of information may be a concern; thus, all survey responses will be kept confidential. All identifying information will be deleted before data analysis begins.

Are there any benefits to yourself or others? You will receive training on implementing a depression screening service in your pharmacy.

Will you receive compensation for participating? To compensate you for your time, panelists will each receive one hour of Continuing Education (CE) credit after completing the pre survey, the webinar, and the 1st post survey. The participants will receive a \$20 gift card after completion of the 3-month post survey. The gift card will be sent by email within a week after the 3-month post survey is completed.

Are there any costs? There will be no financial costs to you for participating in the study.

If you change your mind about participating, you can withdraw at any time during the study by alerting Dr. Davis. Your participation is completely voluntary. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, Harrison College of Pharmacy, the Department of Health Outcomes Research and Policy.

Any information obtained in connection with this study will remain confidential. Your survey data will be stored on a secure server approved by Auburn University with password-protected access granted only to researchers involved in the study. Information obtained through your participation may be used in a dissertation, published in a professional journal, or presented at a professional meeting.

If you have questions about this study, please contact Brandy Davis at BRD0001@auburn.edu or Kimberly Garza at KBL0005@auburn.edu.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334)-844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO.

By choosing "I accept" you acknowledge that you have read and understand the information given above, and agree to be a part of the study. If you do not want to be in the study, hit "I do not wish to participate" and your information will not be used. You must still complete the survey for CE credit.

I accept

I do wish to participate

End of Block: Consent form

Start of Block: Knowledge questions

Who does the US Preventative Task Force recommend to be screened for depression?

- a. All individuals aged 12 and over
 - b. Adults who have chronic diseases
 - c. Children and adults who have chronic diseases
 - d. Everyone who comes to a pharmacy
-

A patient with depression may present with which of the following symptoms?

- a. Fatigue
 - b. Trouble staying asleep
 - c. Loss of appetite
 - d. Thoughts you would be better off dead
 - e. All of the above
-

What is the Patient Health Questionnaire (PHQ-9) used for?

- a. Diagnosing depression
 - b. Monitoring treatment for depression
 - c. Improving depression symptoms
 - d. Both A and B
 - e. All of the above
-

If someone scores between 10-19 on the PHQ-9, and denies suicidal ideation, what should your next step be?

- a. Send them home with a resource list
 - b. Call 911
 - c. Refer them to their primary care physician or mental healthcare professional
 - d. Tell the patient they have depression
-

A patient has an initial score of 15 on the PHQ-9. When asked, the patient says they have never been diagnosed or treated for depression. What is your next step?

- a. The patient has scored positive for depression and should be referred to a PCP for follow up
 - b. The patient has moderate-severe depression; Keep score for future analysis
 - c. Send the patient home with a resource list of PCPs
 - d. Fill the patient's medication and nothing more
-

What resources are available to locate mental health treatment for patients with a positive score for depression?

- a. SAMHSA Helpline
- b. Connect Alabama App
- c. 988
- d. Both A and B

End of Block: Knowledge questions

Start of Block: Confidence

With regard to a depression screening service, how confident are you that you can do each of the following?

	Not at all confident 1	2	3	4	Very confident 5
Obtain an accurate patient mental health history	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify patients who qualify to receive a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Initiate conversations with a patient about receiving a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administer a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Answer questions about a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Confidence

Start of Block: Attitude questions

Please rate your agreement on a scale of 1-5 with 1 being "Strongly disagree" and 5 being "Strongly agree" with the following statements regarding implementing a depression screening service.

	1. Strongly disagree	2. Disagree	3. Neither agree nor disagree	4. Agree	5. Strongly agree
Offering a depression screening service is something positive for patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It causes a lot of worry and concern for the patient if they are found to have depression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I offer depression screenings, I will detect problems at an early stage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not have enough time to offer a depression screening service at my pharmacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not have the skills or knowledge to offer a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Patients who
come into
the
pharmacy
think I should
screen them
for
depression

Mental
health
professionals
would
approve of
my screening
patients for
depression

Other
pharmacists
do not screen
patients for
depression

The
physicians in
my area
would
approve of
me referring
patients who
screen
positive for
depression to
them

End of Block: Attitude questions

Start of Block: Attitude 2

Implementing a depression screening service in the pharmacy is:

Harmful

Beneficial

0 1 2 3 4 5 6 7 8 9 10

Slide slider to select choice



Implementing a depression screening service in the pharmacy is:

Good

Bad

0 1 2 3 4 5 6 7 8 9 10

Slide slider to select choice



Implementing a depression screening service in the pharmacy is:

Pleasant (for me)

Unpleasant (for me)

0 1 2 3 4 5 6 7 8 9 10

Slide slider to select choice



Implementing a depression screening service in the pharmacy is:

Worthless

Useful

0 1 2 3 4 5 6 7 8 9 10

Slide slider to select choice



End of Block: Attitude 2

Start of Block: Pre-post Intention question only

Do you intend to screen patients for depression in your pharmacy?

- Yes, in the next 3 months
- Yes, in the future, but not in the next 3 months
- No
- Unsure

End of Block: Pre-post Intention question only

Start of Block: Demographics

In this section, please tell us a bit about yourself.

First name?

Last name?

What is your email address?

What is the zip code of the city of the pharmacy you primarily work at?

End of Block: Demographics

3M Post-Survey

Start of Block: Consent form

INFORMATION LETTER For a research study entitled: “Screening for Depression in Community Pharmacies: Tools to get you started”

You are invited to participate in a research study titled, “Screening for Depression in Community Pharmacies: Tools to get you started” to help research pharmacists’ knowledge, attitudes, and intention towards implementing a depression screening service in rural pharmacies. The research team will use information gathered in this study to inform the development of future training programs for rural pharmacists to increase access to depression screenings for community members. The study is being conducted by Brandy Davis, PharmD, under the direction of Kimberly Garza, PharmD, MBA, PhD, in the Auburn University Department of Health Outcomes Research and Policy.

You were selected as a possible participant because you are a pharmacist. In order to be eligible for the study, you must be 19 years of age or older to participate and be a pharmacist.

What will be involved if you participate? If you decide to participate in this research study, you will be asked to do two activities: 1) participate in a hour long webinar 2) complete three surveys (one before the webinar, one after the webinar, and one 3 months after the webinar. Your total time commitment will be approximately 90 minutes. The webinar will be completed through Zoom. A recording of the webinar will be made.

Are there any risks or discomforts? The risks associated with participating in this study are minimal. Confidentiality of information may be a concern; thus, all focus survey responses will be kept confidential. All identifying information will be deleted before data analysis begins.

Are there any benefits to yourself or others? You will receive training on implementing a depression screening service in your pharmacy.

Will you receive compensation for participating? To compensate you for your time, panelists will each receive one hour of Continuing Education (CE) credit after completing the pre survey, the webinar, and the 1st post survey. The participants will receive a \$20 gift card after completion of the 3-month post survey. The gift card will be sent by email within a week after the 3-month post survey is completed.

Are there any costs? There will be no financial costs to you for participating in the study.

If you change your mind about participating, you can withdraw at any time during the

study by alerting the focus group moderator (Dr. Davis). Your participation is completely voluntary. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, Harrison College of Pharmacy, the Department of Health Outcomes Research and Policy.

Any information obtained in connection with this study will remain confidential. Your survey data will be stored on a secure server approved by Auburn University with password-protected access granted only to researchers involved in the study. Information obtained through your participation may be used in a dissertation, published in a professional journal, or presented at a professional meeting.\

If you have questions about this study, please contact Brandy Davis at BRD0001@auburn.edu or Kimberly Garza at KBL0005@auburn.edu.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334)-844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO.

By choosing "I accept" you acknowledge that you have read and understand the information given above, and agree to be a part of the study. If you do not want to be in the study, hit "I do not wish to participate".

- I accept
- I do not wish to participate

End of Block: Consent form

Start of Block: Knowledge questions

Who does the US Preventative Task Force recommend to be screened for depression?

- All individuals aged 12 and over
 - Adults who have chronic diseases
 - Children and adults who have chronic diseases
 - Everyone who comes to a pharmacy
-

A patient with depression may present with which of the following symptoms?

- Fatigue
 - Trouble staying asleep
 - Loss of appetite
 - Thoughts you would be better off dead
 - All of the above
-

What is the Patient Health Questionnaire (PHQ-9) used for?

- Diagnosing depression
 - Monitoring treatment for depression
 - Improving depression symptoms
 - Both A and B
 - All of the above
-

If someone scores between 10-19 on the PHQ-9, and denies suicidal ideation, what should your next step be?

- Send them home with a resource list
 - Call 911
 - Refer them to their primary care physician or mental healthcare professional
 - Tell the patient they have depression
-

A patient has an initial score of 15 on the PHQ-9. When asked, the patient says they have never been diagnosed or treated for depression. What is your next step?

- The patient has scored positive for depression and should be referred to a PCP for follow up
 - The patient has moderate-severe depression; Keep score for future analysis
 - Send the patient home with a resource list of PCPs
 - Fill the patient's medication and nothing more
-

What resources are available to locate mental health treatment for patients with a positive score for depression?

- SAMHSA Helpline
- Connect Alabama App
- 988
- Both A and B

End of Block: Knowledge questions

Start of Block: Confidence

Q17 With regard to a depression screening service, how confident are you that you can do each of the following?

	Not at all confident 1 (1)	2 (2)	3 (3)	4 (4)	Very confident 5 (5)
Obtain an accurate patient mental health history	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify patients who qualify to receive a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Initiate conversations with a patient about receiving a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Administer a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Answer questions about a depression screening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Confidence

Start of Block: Attitude questions

Please rate your agreement on a scale of 1-5 with 1 being "Strongly disagree" and 5 being "Strongly agree" with the following statements regarding implementing a depression screening service.

	1. Strongly disagree (1)	2. Disagree (2)	3. Neither agree nor disagree (3)	4. Agree (4)	5. Strongly agree (5)
Offering a depression screening service is something positive for patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It causes a lot of worry and concern for the patient if they are found to have depression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I offer depression screenings, I will detect problems at an early stage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not have enough time to offer a depression screening service at my pharmacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not have the skills or knowledge to offer a depression screening service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Patients who
come into
the
pharmacy
think I should
screen them
for
depression

Mental
health
professionals
would
approve of
my screening
patients for
depression

Other
pharmacists
do not screen
patients for
depression

The
physicians in
my area
would
approve of
me referring
patients who
screen
positive for
depression to
them

Page Break

End of Block: Attitude questions

Start of Block: Attitude Questions 2

Implementing a depression screening service is...

Harmful

Beneficial

0 1 2 3 4 5 6 7 8 9 10

Slide slider to select choice ()



Implementing a depression screening service is...

Good

Bad

0 1 2 3 4 5 6 7 8 9 10

Slide slider to select choice ()



Implementing a depression screening service is...

Pleasant (for me)

Unpleasant (for me)

0 1 2 3 4 5 6 7 8 9 10

Slide slider to select choice ()



Implementing a depression screening service is...

Worthless

Useful

0 1 2 3 4 5 6 7 8 9 10

Slide slider to select choice ()



End of Block: Attitude Questions 2

Start of Block: 3 M post question only

Have you screened any patients in your pharmacy for depression in the past 3 months?

Yes

No

End of Block: 3 M post question only

Start of Block: No block

Please select what barriers you faced. Select all that apply.

- The patients at my pharmacy are not willing to participate in a depression screening service
- The staff at our pharmacy do not have the knowledge and skills to participate in a depression screening service
- I do not have the knowledge or skills to deliver a depression screening
- Legal liability may be a problem if my pharmacy offers a depression screening service
- It is difficult to perform a depression screening
- I do not have enough time to offer a depression screening service at my pharmacy
- I must be reimbursed to offer a depression screening
- I have the support staff necessary to offer a depression screening service
- The physicians I work with are not supportive of pharmacies referring patients from depression screenings
- The pharmacy I work at does not have a private counseling area

Please explain any other reasons why you did not implement a depression screening service in the space below.

End of Block: No block

Start of Block: Yes block

How many patients have you screened in the past 3 months? An estimate is fine.

What groups of patients are you screening? Select all that apply.

- Patients over 12
 - Adult patients (over 18)
 - Patients with a chronic disease. Please write which chronic disease(s) you chose in the space provided.
-

- Patients with a prescription for antidepressants
 - Other. Please explain in the space provided.
-

Please explain the aspects of your service in the space below. Please provide any details about patients (e.g. age groups, disease states, etc).



Please select what factors helped you implement your service. Select all that apply.

- Preparing an action plan for offering a depression screening service
 - Establishing staff member roles for depression screening services
 - Selecting a person who is in charge of depression screening services
 - Approaching management, corporate, or owners to gain support
 - Preparing an outreach/marketing plan for depression screenings
 - Establishing depression screening procedures
 - Setting a goal or objective for depression screening services
 - Adjusting prescription dispensing workflow to allow for greater depression screening activity
 - Arranging staff schedules to accommodate depression screening services
 - Establishing a procedure to identify patients who would benefit from a depression screening
 - Establishing a procedure to refer patients who test positive for depression
 - Establishing a procedure to follow-up with patients who test positive for depression
 - Developing a budget for depression screening services
 - Establishing a plan to continuously evaluate and improve the pharmacy's depression screening services
-

Please explain any other factors that helped in implementing a depression screening service in your pharmacy.

End of Block: Yes block

Start of Block: Demographics

Q4

In this section, please fill out the information below in order to receive your \$20 gift card.

First name?

Last name?

What is your email address?

Confirm your your email address. You will not receive your \$20 gift card if your email is incorrect.

What is the zip code of the city of the pharmacy you primarily work at?

End of Block: Demographics
