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The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Assistant Dean for MSN and DNP Studies, on behalf of the program; we verify that this is the final, approved version of the student's DNP Project including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

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Dr. Nancy S. Kloha, Advisor

DNP Final Project Report

Assessment of the Need for Provider Education on Screening
for Depression in Patients with Select Dermatologic Problems.

Sarah B. Zerhusen, BS, BSN, RN

University of Kentucky

College of Nursing

Spring, 2018

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NEED FOR PROVIDER EDUCATION ON SCREENING FOR DEPRESSION

Dedication

This manuscript and my DNP project is dedicated to my husband, who has always given me love and support, especially when I have felt discouraged by the demands of this program. This is for everything he has selflessly put on hold in his professional career in order for me to achieve my dream of being a nurse practitioner. This is for my children, Jack and Evelyn, who push me every day to be the best that I can be for them and give me more strength than they will ever know. This is for my parents who instilled in me the importance of education and hard work and have been my biggest cheerleaders my entire life. This is for my sister who just understands me and is always there for a good vent session. This is for my father-in-law, mother-in-law, and sister-in-law who have given countless hours of their time to cooking, cleaning, and free babysitting so I could escape and get some work done. This is for my friends who have been there for the entire ride and always know when I need a night out. This is for my fellow classmates, especially Emily, Katherine, and Kandace. Your words of support, encouragement, and humor kept me going through the most challenging points of this program. This is for all the working mommas out there who dream of higher education. With a little hard work and determination you can achieve your goal.

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Abstract

PURPOSE: The purpose of this project is to evaluate the knowledge, attitudes, perceptions, skills, and self-efficacy of dermatology providers' assessment of depression in patients with chronic skin disease to determine the need for continuing education programs.

METHODS: This is a single practice, multi site, quantitative correlational design study to assess provider use, comfort, and proficiency of screening and discussion of depression in patients suffering from plaque psoriasis and atopic dermatitis. Data was collected through the use of a questionnaire dispensed in January of 2018. The sample consisted of 23 dermatology providers in a dermatology practice with clinics in Louisville, Lebanon, Leitchfield, and Shelbyville, Kentucky as well as New Albany, Indiana.

RESULTS: No statistical differences were seen in demographics, attitudes, perceived behavioral control, confidence, and barriers between providers who screen and those who do not screen. However, the 12 providers in the screening group and the 5 providers in the non-screening group showed significant difference in intention ($p=.02$) as well as subjective norms ($p=.04$) scores in the assessment of the theory of planned behavior. In addition, all 17 providers who participated in the study indicated the lack of training in the screening for and discussion of depression in the dermatology setting

CONCLUSION: Insight into the factors that influence the practice of screening for depression in patients with skin disease can lead to understanding the educational needs of the dermatology provider. In the future, additional research needs to be completed to better understand what topics should be included in educational programs. The primary goal of this research is to increase the number of dermatology patients who benefit from a more holistic method of care.

Introduction

Dermatological disorders can affect a patient's appearance, social interactions, emotions and day-to-day life more negatively than many other chronic diseases (Safikhani, Sundaram, Bao, Mulani, & Revicki, 2013; Chren, Lasek, Quinn, Mostow, & Zyzanski, 1996). Patients with skin disease can have low self-esteem, impaired self-image, embarrassment, sexual dysfunction and impaired coping practices due to obvious changes in physical appearance (Kemmerling, 2013). In addition, certain symptoms of chronic skin disease may also lead to depression and/or decreased quality of life (QOL; Ando et al., 2006). Symptoms of skin disease can include severe dryness, pruritus (severe itching), sensitivity and pain caused by irritated lesions (National Institute of Arthritis and Musculoskeletal and Skin Diseases, 2015; Peters, 2016). The National Psoriasis Foundation (NPF; 2015) estimates that 7.5 million Americans endure psoriasis while the National Eczema Association (NEA; 2014) approximates 31.6 million Americans have chronic dry skin, also known as atopic dermatitis and/or eczema. Collectively, these numbers account for almost 12.5% of the American population that suffer from eczema and psoriasis alone.

Researchers have discovered that the prevalence of depression in the general United States population is 6-8% while the frequency of depression in patients with skin disease can range from 21% to as high as 62% (Picardi et al, 2004; Esposito, Saraceno, Giunta, Maccarone, & Chimenti, 2006). However, there is speculation that dermatology providers are not consistent in their analysis and detection of depression in patients with skin disease (Sampogna, Picardi, Melchi, Pasquini, & Abeni, 2003). In a study comparing dermatology providers' opinions of the prevalence of psychological co-morbidity in their patient population compared to the actual data

collected from the patient, Sampogna et al. (2003) found that dermatologists believe depression and decreased QOL are less frequent in patients with skin disorders than is actual.

To address possible inconsistencies in screening for and treating depression in patients with plaque psoriasis and atopic dermatitis, an evaluation of the current state of mental health assessment by dermatology providers must first be completed. Using a screening questionnaire, this project evaluates the provider use, comfort, and proficiency in screening for and discussion of depression in a dermatology practice with clinics in Louisville, Lebanon, Leitchfield, and Shelbyville Kentucky as well as New Albany Indiana. The result of this assessment will provide information concerning the ability of the clinic providers to screen for and intervene in depression in patients with plaque psoriasis and atopic dermatitis. It will also determine if provider education is needed as a means to improve patient care.

Background

According to the American Psychological Association (APA), depression is defined as, “More than just sadness. People with depression may experience a lack of interest and pleasure in daily activities, significant weight loss or gain, insomnia or excessive sleeping, lack of energy, inability to concentrate, feelings of worthlessness or excessive guilt and recurrent thoughts of death or suicide.” (APA, 2015). The World Health Organization (WHO) states depression accounts for 4.3% of the global burden of disease and is the largest cause of disability worldwide (WHO, 2013). According to the CDC, the economic impact of depression in the U.S., which includes workplace costs, direct costs, and suicide, was \$210.5 billion in 2010 (CDC, 2016). In addition, depression is also known to coincide with serious medical illnesses such as cancer, diabetes and skin disease (The National Institute of Mental Health (NIMH), 2016).

It is estimated that between 35%-50% of patients with depression receive no treatment due to poor screening practices and insufficient referral to mental health providers (WHO, 2013). In January 2016, the United States Preventive Services Task Force (USPSTF) released an official recommendation stating the need for all adult patients to be screened for depression in the primary care setting (USPSTF, 2016). The document states that screening should be performed in order to “ensure accurate diagnosis, effective treatment, and appropriate follow up” (USPSTF, 2016, p. 380). Therefore, it may be important that patients suffering from skin disease are assessed for depression in the dermatology setting; especially since a dermatology provider is the first and perhaps only medical professional many of these patients see on a regular basis (Peters, 2016).

Psoriasis and atopic dermatitis are considered psychodermatological disorders because they are triggered and exacerbated by psychological stress (Koo & Lee, 2003; Jefferany, 2011; Peters, 2016). The relationship between skin disease and depression can be characterized as bidirectional due to the fact that depression activates a lesion flare and the presence of skin lesions exacerbates feelings of depression (Pietrzak et al, 2017). Both psoriasis and atopic dermatitis are caused by the immune-mediated release of inflammatory cytokines in the epidermal layer of the skin initiating the development of skin lesions (NPF, 2015; NEA, 2015; Tohid, Aleem, & Jackson, 2016; Peters, 2016). Psoriatic lesions are frequently located on the elbows, knees, scalp, or lower back and are characterized by raised, red patches covered with silver/white “scales” or dead skin cells (NPF, 2015). Atopic dermatitis lesions are red, dry patches most often located on the arms, legs, and cheeks (NEA, 2015). Patients who suffer from these skin diseases experience impaired self –image, social embarrassment, and severe itching, also known as pruritus, which can lead to cracking, bleeding, pain, and insomnia (Kemmerling,

2013; NEA, 2015; NPF, 2015). A vicious cycle is created when depression and stress perpetuate skin disease, leading to itching, insomnia, and social isolation, which ultimately triggers increased severity of skin lesions through continued exacerbation of stress pathways (Gupta & Gupta, 2003; Jefferany, 2011; Gordon-Elliot & Muskin, 2013; Peters, 2016; Pietrzak et al, 2017).

Early detection and diagnosis of depression is not only important to proper management of the skin disease (Bashir, Dar, & Rao, 2010; Jefferany, 2011; Peters, 2016), but it is also important to the management of other possible comorbidities (Egeberg, Khalid, Hilmar Gislason, Mallbris, Skov, & Riis Hansen, 2016). In a case-control study, Egeberg et al (2016) found that untreated depression in patients with psoriasis can be associated with an increased risk of myocardial infarction, stroke, and cardiovascular death. Therefore, proper detection of depression can be important to prompt discussion or early referral to a provider that can treat depression, leading to timely treatment of psychological co-morbidities (Richards, Fortune, Weidmann, Sweeney, & Griffiths, 2004). Effective treatment by a trained primary care or mental health provider paired with successful care by a certified dermatology physician or advanced practice provider (APP) can eventually lead to a more holistic, successful, and cost-effective treatment of skin disease and may therefore lead to decreased cardiovascular risk (Egeberg et al, 2016; Richards et al, 2004; NIMH, 2016; Peters, 2016). In a randomized control trial, Schmitt et al (2014) discovered that patients suffering from psoriasis and depression benefitted from interdisciplinary care when compared to those that received dermatological care alone, as indicated by increased QOL scores.

Nevertheless, depression in patients with skin disease goes unrecognized due to improper screening measures (Picardi et al, 2004; Peters, 2016), inaccurate perception of psychiatric morbidity (Sampogna et al, 2003), and the dermatology provider's assumption that the severity

of disease indicates the level of depression risk (Gupta & Gupta, 2003; Cohen, Martires, & Ho, 2015). Furthermore, although the psychocutaneous aspects of psoriasis and atopic dermatitis are becoming more accepted in the academic world, many dermatology providers still hold the misconception that successful treatment of the skin disease indicates successful treatment of the psychological co-morbidity (Richards et al, 2004; Kemmerling, 2013). For example, Richards et al (2004) discovered that when dermatology providers identified patients as being depressed it was only addressed during the visit in 1/3 of the cases and a referral was made to a mental health service in only one of the cases examined. In this study, the providers suggested the belief that if they controlled the patient's psoriasis properly the depression symptoms would also disappear (Richards et al, 2004). Other barriers to appropriate screening practices include time restraints during the clinic visit, fear of stigmatizing patients, and difficulties with patient-provider communication of depression (Richards et al, 2004).

For the past twenty years, research to address this problem has focused on methods for quick and accurate detection of depression in the patient with skin disease through the use of screening tools. Tools such as the General Health Questionnaire (GHQ-12), Primary Care Screener for Affective Disorders (PC-SAD), Patient Health Questionnaire (PHQ), Psychosomatic Scale for Atopic Dermatitis; PSS-AD, ShortForm36, and Skindex, have all been used to help assess level of depression in patients with skin disease. However, consensus on a gold standard screening tool has not been accomplished so clinical practice guidelines for the screening of depression in patients with skin disease have not been created. In addition, there is concern that if a gold standard screening tool were selected, many dermatology providers may not use such a tool because they may lack the proper training to discuss depression with their patients (Richards et al., 2004; Johnson et al., 2014; Kemmerling, 2013). Therefore, an

evaluation of the knowledge, attitudes, perceptions, skills, and self-efficacy of depression and QOL will be important to understand dermatology providers' perceptions on whether they are properly equipped to screen for and engage in discussions about depression with their patients. The results of this evaluation are expected to determine if provider education focused on proper screening for and discussion of depression is warranted in the treatment of patients with plaque psoriasis and atopic dermatitis in the dermatology setting.

Purpose

The purpose of this project is to evaluate the knowledge, attitudes, perceptions, skills, and self-efficacy in assessing for depression among patients by dermatology providers in a dermatology practice with clinics in Louisville, Lebanon, Leitchfield, and Shelbyville, Kentucky as well as New Albany, Indiana in order to determine the need for continuing education programs.

Proper screening of depression by dermatology providers is important to achieving holistic care of patients suffering from plaque psoriasis and atopic dermatitis. By evaluating the knowledge, attitudes, perceptions, skills, and self-efficacy of depression screening in dermatology providers, the need for provider education can be determined. Specifically this project has two objectives. The first objective is to determine if there is relationship between provider demographic data and practice of screening for depression in patients with chronic skin disease. Demographic measures assessed in the survey include age, gender, ethnicity, job title, and work tenure. Understanding the association between demographic data and screening practices may open the door to understanding what age, gender, ethnicity, discipline, or level of experience is comfortable with screening for depression while also determining those levels that may benefit from education in the future.

The second objective of this project is to determine how provider behavioral intention, provider attitude, subjective norms, perceived behavioral control, use of SBIRT (Screening, Brief Intervention, and Referral to Treatment), provider confidence, and performance barriers can affect the practice of screening for depression in patients with chronic skin disease by dermatology providers. It is the hope that understanding these variables' effects on screening for depression in patients with skin disease can help guide the development of educational courses on screening for depression.

Methods

This is a single practice, multi site, quantitative correlational design study to assess provider use, comfort, and proficiency of screening for and discussion of depression in patients suffering from plaque psoriasis and atopic dermatitis. Data was collected through the use of a questionnaire assessing knowledge, attitudes, perceptions, skills, and self-efficacy of screening for depression. The questionnaire was dispensed in January 2018 to twenty-three providers currently practicing at a dermatology clinic with locations in Louisville, Lebanon, Leitchfield, and Shelbyville, Kentucky as well as New Albany, Indiana. Questionnaires were reviewed and data analysis was completed using the SPSS statistical software in February of 2018.

Setting

The study site is comprised of seven clinic locations with three in Louisville, Kentucky, one in Lebanon, Kentucky, one in Leitchfield, Kentucky, one in Shelbyville, Kentucky, and one location in New Albany, Indiana. The providers include sixteen physicians, three nurse practitioners, and four physicians assistants. Services provided by the practice include general dermatology, cosmetic dermatology, and Mohs micrographic surgery. The mission of the practice "encompasses three arenas of excellence and advancement in the provision of

dermatologic care in Louisville, Kentucky and it's surrounding regions: Service to patients, Education, and Leadership" (AID, 2017).

Sample

The convenience sample participants for this evaluation are current providers of services at the practice. There are now 23 providers in the practice with ages ranging from approximately 30-65 years of age. Of the current providers there are five male and eighteen female providers. Inclusion criteria for participation in this study included; providers who give care at any of the seven locations in Kentucky and Indiana, board certified physicians, advanced practice nurse practitioners (APRNs), and certified physician assistants (PA-C). Exclusion criteria blocking participation in this study included; medical students, nurse practitioner students, research physicians, dermatologists, registered nurses, and medical assistants.

Questionnaire

A questionnaire assessing the knowledge, attitudes, perceptions, skills, and self efficacy of depression screening was developed for data collection (Figure 1). This questionnaire was adapted from an already existing document used in a previous study to assess primary care providers' knowledge, attitudes, perceptions, skills, and self-efficacy of discussing smoking cessation with patients in the clinical setting (Okoli, Otachi, Kaewbua, Woods, and Robertson, 2017). The questionnaire was developed based on Icek Ajzen's (2011) work on how to construct a questionnaire based on the theory of planned behavior. With Okoli et al.'s approval, their questionnaire was used as a template for the construction of the questionnaire for this study. Changes were made in order to fit the study topic of screening for depression in patients with chronic skin disease. The paper survey consists of a total of 48 questions; 45 assessment questions and 3 survey evaluation questions. The questionnaire obtains knowledge through

inquiries assessing participant demographic information, the theory of planned behavior, use of screening, brief intervention, and referral to treatment (SBIRT), provider confidence, and opinions about possible barriers to intervention.

Demographics. Demographic variables are assessed through five questions that include gender, ethnicity, age, job title and work tenure. These questions will be used to determine if there is a correlation between demographic data and the practice of screening for depression in patients with skin disease.

Theory of Planned Behavior. The theory of planned behavior has been used to predict and justify behaviors in the healthcare field. According to this theory developed by Icek Ajzen, there is strong correlation between one's beliefs and one's decision to participate in a certain behavior (Ajzen, 1991; 2011). This questionnaire contains fifteen questions assessing the four components of the theory of planned behavior; behavioral intention, attitude, subjective norms, and perceived behavioral control. Questions assessing behavioral intention are to determine the provider's readiness to perform the screening process. Those assessing attitude are observing the participant's positive or negative evaluation of screening for depression in patients with skin disease. Subjective norms are obtained through questions assessing the providers perception of significant others and/or colleagues approval or disapproval of the screening process. Lastly, perceived behavioral control is assessed through questions assessing the provider's perception on the ease or difficulty of screening for depression in patients with skin disease. The answers to these questions will be used to determine if the provider's beliefs about screening for depression affect the decision to practice screening in the clinic setting.

SBIRT. Screening, brief intervention, and referral to treatment (SBIRT) was first developed as a public health model to provide effective screening, secondary prevention, early

recognition and treatment for patients suffering from unhealthy alcohol use in the primary health care setting (SAMHSA, 2011). A 2011 report released by the Substance Abuse and Mental Health Services Administration (SAMHSA) stated that SBIRT could be successfully implemented in the diagnosis and treatment of depression. In addition, a study by Dwinnells (2015) found that SBIRT is effective in the assessment of patients at risk for depression in the primary care setting. The questions focused on SBIRT assess the providers use of this evidence based method through three questions asking about how often they screen for depression, perform behavioral interventions, and refer patients to behavioral health.

This portion of the questionnaire also evaluates provider confidence in their skills to perform SBIRT through four questions evaluating confidence in screening for and discussing depression in the dermatology setting. Assessing use of this method by the dermatology providers in this study will help in the prioritization of future provider education on proper methods of screening for depression in the dermatology setting. SBIRT replaces Okoli et al.'s (2017) use of the 5 A's (ask, advise, assess, assist arrange) of smoking cessation. The 5 A's assessment tool is specific to smoking cessation, therefore the tool had to be replaced by SBIRT in order to make the assessment relevant to depression screening practices.

Barriers to Intervention. Delay of depression intervention and treatment in the dermatology setting can be due to patient specific, provider specific and organizational specific barriers to performing depression screening. The questionnaire used in this study includes 21 questions evaluating possible barriers to screening and discussion of depression in patients with chronic skin disease. Possible barriers include provider views on realm of practice, confidence, knowledge of the referral process, patient ideas about discussion of depression in the dermatology setting, time constraints, protocol availability, training, and resource availability.

Data Collection

Approvals from the University of Kentucky Institutional Review Board (IRB), practice Chief Administrative Officer and practice physician in charge of research activities were obtained prior to the collection of data. This study is based on results from a 48-question survey dispensed in January of 2018. All current providers were contacted during a practice wide provider staff meeting on January 17th, 2018. All providers were given a copy of the cover letter and questionnaire. A formal informed consent process was waived per IRB approval and replaced with the inclusion of a cover letter describing the study activities. Participants who have read the cover letter and completed the questionnaire are granting consent that data may be used in the analysis of the research question. Participants were given two weeks to complete and return the survey, with a final due date of January 31, 2018. Questionnaires were collected and reviewed in February of 2018. Variables reviewed included demographic data (age, ethnicity, gender, job title, and work tenure) and outcomes variables (behavioral intention, attitude, subjective norms, perceived behavioral control, SBIRT in practice, confidence, and barriers (Table 1).

Data Analysis

Data analysis was completed using the IBM SPSS statistical software version 22. The demographic characteristics of the sample were described using frequencies and percentages for nominal and ordinal variables (gender, ethnicity, job title) while means and standard deviations were used for interval/ratio variables (age and work tenure). Data to describe results for knowledge, attitudes, perceptions, skills, self-efficacy, and barriers were scored on a Likert scale to create interval/ratio levels of measurement. Analysis of this data was completed using means

and standard deviations with t-test and chi-square tests to determine variance. Level of significance will be determined using $p < 0.05$.

This study is assessing how provider demographic characteristics and personal beliefs affect screening for depression in practice. Therefore, outcome variables were analyzed based on the providers' answer to Section C: SBIRT in practice/role, question 1 of the questionnaire, which assesses for the frequency of screening for depression. The question asks, "In your practice/role, how often do you screen for depression in patients with chronic skin disease during clinic visits?" The possible answers to this question are never, seldom, occasionally, and very often. In order to properly examine the effect of demographic and outcome variables on screening practice, the SBIRT data was recoded from four possible answers to two answers to decrease the number of values for improved analysis. Those who answered seldom or never were categorized as not screening for depression (0 = no) and those who answered occasionally or very often were categorized as participating in screening practices (1 = yes). Please refer to Table 1 for a full description of study measures and statistical analysis techniques.

Lastly, provider feelings toward the need for future educational programs on the proper practice of screening for depression in patients with skin disease was determined through the assessment of questions 8, 17, and 18 in Section D: Barriers to intervening with patients who suffer from depression. Section D, question 8 asks, "Many clinicians are willing, but are not properly equipped to engage in advice and/or intervention when it comes to depression." In addition, question 19 states, "There is a lack of training for clinicians to engage in discussion about depression in patients with skin disease" Finally, Section D, questions 18 states "There is a need for written protocols to document clinician responsibilities for providing discussion about depression in patients with skin disease." The possible answers to these questions are Never,

Seldom, Occasionally, and Very Often. In order to properly examine the answers to these questions, the data was recoded for improved analysis from four possible answers to two answers. Those who answered seldom or never were categorized as answering no (0 = no) and those who answered occasionally or very often were categorized as answering yes (1 = yes).

Results

Sample Characteristics

At the time of data collection there were 23 providers practicing at the seven clinic locations. Three of the providers were excluded from the sample since they practice as certified dermatologists and do not see patients. Another three providers chose not to participate in the study. At the time of collection, a total of 17 providers submitted a completed questionnaire for data analysis. Of the providers that participated, 5 were male (29.4%) and 12 were female (70.6%), with the majority identifying as White, non-Hispanic (88.2%). Most of the participants were board certified physicians (64.7%) with the remainder being advanced practice providers (APPs), such as advanced practice nurses or physician assistants (35.2%). The mean age of participants is 44.6 years old with a mean practice experience of 14.2 years. Please refer to Table 2 for a full breakdown of demographic characteristics.

SBIRT in Practice

After recoding the data, it was found that of the 17 providers that participated in the study 12 (70.6%) practice screening for depression in patients with skin disease while 5 (29.4%) providers do not practice screening for depression. Of the 12 providers that screen, only 3(25%) perform behavioral interventions. In order to assess for variance between performing behavioral interventions and not performing behavioral interventions in those providers who screen, a chi-square test of independence was performed. It was found that this association was not

statistically significant with a p value of .52 (Fisher's exact test). In addition, 8(66.7%) of the screening group of providers claim they will refer patients to mental health providers if they screen positive for depression. A chi-square test of independence showed no statistical difference between referral and non-referral in those providers who admit to screening for depression; $p=.59$, Fisher's exact test. Lastly, it was discovered that only 2 (11.8%) of the providers that practice screening for depression implement both behavioral interventions and referral to mental health, completing the SBIRT process.

Demographic effect on screening practices

It was hypothesized that provider demographic characteristics may have an affect on their practice of screening for depression in the dermatology clinic. In order to assess this hypothesis, data was analyzed through t-test and chi-square test calculations. Two separate independent samples t-tests were conducted to compare provider age and years of experience to screening and non-screening conditions. For age there was no significant difference in the scores for screening ($M=43.4$, $SD=10.7$) and non-screening ($M=48.0$, $SD=7.3$) conditions; $p = .38$. In years of practice there was also no significant difference seen between screening ($M= 13.1$, $SD=10.6$) and non-screening ($M=16.8$, $SD=8.9$) conditions; $p=.51$.

Furthermore, three separate Chi-square tests of independence were performed to determine relation between gender, race, and type of providers in screening practices. A higher percentage of women (75%) screened for depression than men (60%), however this value was not statistically significant; $p=.60$, Fisher's exact test. In addition, 80% of white providers and 0% of Asian providers screen for depression, yet the relation between these variables was not significant; $p=.07$, Fisher's exact test. Lastly, 63.6% of physicians, 66.7% of APRNs, and 100% of PAs regularly screen for depression. The chi-square test of independence confirmed that the

relation between provider type and screening practice was also not significant; $p=.76$, Fisher's exact test. Overall, there was no significant data to explain an association between provider demographics and screening practices. Please refer to Table 3 for all data obtained from the statistical analysis.

Intentions, Attitudes, Social Norms, and Perceived Behavioral Control

In order to assess if provider beliefs do in fact determine practice of screening for depression in the dermatology clinic, independent sample t-tests were used to evaluate provider intention, attitudes, social norms and behavioral control to screening and non-screening practices (Table 4). There was no statistical significance in attitudes of the screening group ($M=5.2$, $SD=1.3$) and non-screening group ($M=3.2$, $SD=2.3$); $p=.30$. Also, there was no significant difference between perceived behavioral control of providers who practice screening ($M=4.7$, $SD=0.75$) and those who do not screen ($M=4.2$, $SD=0.89$); $p=.23$. However, statistical significance was seen in the evaluation of provider intention and perception of importance of screening of depression through subjective norms. The 12 providers in the screening group ($M=5.5$, $SD=1.3$) and the 5 providers in the non-screening group ($M=3.2$, $SD=2.3$) showed significant difference in intention scores with a p value of $.02$. In addition, those providers who practice screening for depression ($M=3.9$, $SD=1.1$) versus those who do not screen ($M=2.4$, $SD=1.8$) had significant difference in subjective norms scores; $p=.04$. These results suggest that intention and subjective norms scores are higher for those providers who screen for depression in their current practice.

Confidence

It was hypothesized that provider confidence in discussing and treating depression could have an effect on screening practices. Those who screen for depression did have a higher mean

confidence score (6.8) than those providers who do not screen (4.1). An independent samples t-test was conducted to compare confidence in screening for depression and non-screening for depression conditions. There was no significant difference in scores for screening ($M=6.8$, $SD=1.1$) and non-screening ($M=4.1$, $SD=4.1$) conditions; $p=.21$. These results suggest that confidence in screening for depression of the dermatology provider may not have an effect on actual screening practice. Please refer to Table 4 for data.

In addition, the association between mean confidence score and performance of the remaining SBIRT steps, behavioral interventions and referral to a mental health provider, were assessed. An independent sample t-test was performed to assess confidence in performing behavioral interventions ($M=8.0$, $SD=.66$) and not performing behavioral interventions ($M=5.5$, $SD=2.7$). This analysis did not show significance between these variables; $p=.14$. Lastly, an independent samples t-test was done to compare confidence in providers who refer patients to mental health providers and those who do not refer to mental health providers. There was no significant difference in confidence scores for those who refer ($M=6.7$, $SD=1.9$) and those who do not refer ($M=4.2$, $SD=3.2$); $p=.17$. Although mean confidence scores are higher in providers who practice behavioral interventions and those who refer patients to mental health providers, this data does not show a significant association between these variables.

Barriers to intervention

Lastly, it is thought that the existence of specific barriers in practice may determine if depression screening is performed by dermatology providers. In order to analyze this hypothesis separate independent sample t-tests were completed to compare provider barriers, patient barriers and system/organization barriers in screening and non-screening conditions (Table 4). There was no significant difference in data for provider barriers ($p=.38$), patient barriers ($p=.17$), and

system/organization barriers ($p=.96$). Please refer to table 4 for patient, provider, and system/organization barrier means and standard deviations. These results indicate that possible barriers to practice may not directly have an effect on the provider's habit of screening for depression.

In order to assess for provider thoughts on need for education in screening for and discussion of depression in patients with skin disease Section D: Barriers to intervening with patients who suffer from depression questions 8, 17, and 18 were evaluated. Of the participants, 11(64.7%) indicated they feel as if clinicians are willing but are not properly equipped to engage in advice and or intervention when it comes to depression. In addition, 13 (76.4%) of participants indicated the need for written protocols for screening for and discussion of depression in patients with skin disease. Lastly, all 17 providers indicated that they believe there is a lack of training for dermatology clinicians to properly engage in discussion about depression with the patients suffering from skin disease. These results indicate current providers feel that more provider education may be warranted in this subject matter.

Evaluation of the Survey

Participants were asked to evaluate the questionnaire based on length of the survey, understanding of the questions, and interest in participating in this topic of research in the future. Many of the participants felt the questionnaire length was too long (52.9%) while the remaining felt it was the right amount of questions (47.1%). The majority of the providers (82.4%) did not have a problem understanding the questions. When it came to future participation in research on screening for depression in patients with skin disease, 47.1% said no to future involvement while 52.9% said yes they would be interested in contributing if needed. In addition, 3 of the 17 participants wrote comments about their thoughts on the questionnaire. These three participants

mentioned confusion of switching from negative to positive scales versus positive to negative scales in some of the questions.

Discussion

This study aims to better understand how demographic characteristics, provider beliefs, confidence, and possible barriers to practice affect provider habit of screening for depression in the dermatology setting. Current literature suggests that screening for depression in patients with chronic skin disease can lead to more holistic care of the patient. Unfortunately, the literature also shows that dermatology providers are not consistently screening for depression in their current practice. This study is the first to assess provider knowledge, attitudes, perceptions, skills, and self-efficacy as a way to understand how we can improve rates of screening in the future. Overall, the study results and analysis do not demonstrate strong data to associate provider demographic characteristics, confidence, and practice barriers in the decision to screen for depression. However, there was statistical significance in the association between provider behavioral intention and subjective norms in screening practice. In other words, the data shows that providers who screen feel they have a professional commitment to perform a depression assessment. In addition, the data illustrates that providers who screen feel a level of social pressure to engage in screening for depression in patients with skin disease.

SBIRT in practice

SBIRT was first developed as a tool to increase the rates of early screening, brief intervention and referral to treatment of patients suffering from alcohol dependence and abuse in the primary care setting (SAMHSA, 2011). In 2011, SAMHSA released a statement explaining that this method could also be implemented in the assessment of patients at risk for depression in the primary care setting. In this study, 70.6% of the participants admit they do screen for

depression in patients with chronic skin disease in their current practice. While 66.7% of the providers who screen state they will refer patients positive for depression to a provider who can properly treat depression, only 25% say they perform behavioral interventions during the clinic visit. Although it has been found that SBIRT has been successfully utilized to provide more holistic care in patients at risk for depression (Dwinnells, 2015), the participants in this study who actively screen for depression in patients with skin disease are not using this evidence based practice method to its full potential. In order to insure that all three aspects of the SBIRT model are performed in patients with depression in the dermatology setting an educational program should be developed and implemented.

In addition, it was seen that the mean confidence score of those who screen for depression was higher than the mean confidence score of those who do not screen. Confidence was evaluated through questions concerning the assessment for depression, discussing depression with patients, recommending therapy for depression, and explaining the effects of depression on skin health. Although the confidence data obtained from this study is not statistically significant, it may help point to areas of future research on this topic. It is possible that education programs focused on screening for and discussion of depression in patients with skin disease could increase provider confidence in the topic and therefore increase the rate of depression screening in their practice.

Demographic affect on screening practices

It was hypothesized that the provider's demographic characteristics may have an effect on depression screening practices in the clinical setting and therefore determine the focus of provider education. When it comes to age, sex, ethnicity/race, discipline, and years of practice compared to screening practice the data obtained in this study was not statistically significant.

This indicates that there is no association between provider demographics and decision to screen in practice. However, it was seen that while 63.6% of physicians screen for depression in patients with skin disease as high as 83.3% of APPs (APRNs and PAs) screen for depression in their current practice. It is interesting that such a high percentage of APP's already screen for depression in the dermatology setting. Although this data is not significant, it may help point to topics of future research. Perhaps understanding the differences between MD versus APRN/PA training, goals of care, or methods of practice in the dermatology setting could assist in the development of future educational programs on screening for depression in patients with skin disease.

Intentions, Attitudes, Social Norms, and Perceived Behavioral Control

The theory of planned behavior is used to predict and justify behaviors in the healthcare field based on the idea that there is correlation between one's beliefs and decision to participate in a certain behavior (Ajzen, 1991; 2001). There are four components of this theory; behavioral intention, attitude, subjective norms, and perceived behavioral control (Ajzen, 1991; 2001). According to Ajzen (1991), high intention scores usually lead to the performance of the behavior. However, there are circumstantial limitations or barriers that stop the evolution from high intention to implementation of the specific behavior (Ajzen, 1991; 2001). In the case of provider practice of screening for depression in patients with skin disease, perhaps lack of knowledge, skills, confidence, and self-efficacy acts as a circumstantial limitation to the performance of the screening behavior. Therefore, provider education on proper SBIRT practices and initiating discussion about depression could serve as a method to reduce the barriers to performing screening for depression in patients with skin disease. Please refer to Figure 1 for a visual description of the Theory of Planned Behavior.

In this study, there was significant association between behavioral intention and subjective norms scores in a provider's decision whether or not to screen for depression in patients with skin disease. The providers' mean behavioral intention score, or readiness to perform depression screening in the dermatology setting, was significantly higher in participants who currently screen for depression. In addition, the mean subjective norms score, or the provider's perception of their significant others/colleagues approval of the screening process, was significantly higher in the screening group than the non-screening group. These figures indicate that those who have a strong professional commitment and feel social pressure from significant others and colleagues are more likely to screen for depression. Attitude and perceived behavioral control scores were also higher in the providers who screen for depression, however this data was not significant.

The data obtained from this study is in accordance with the ideas of Ajzen's Theory of Planned Behavior. In the theory, high levels of attitude, subjective norms and perceived behavioral control cause high intention. Subsequently, high intention scores lead to performance of the behavior. This data could be used to demonstrate the importance of using the Theory of Planned Behavior to guide the development of future educational programs on how to screen for and discuss depression in the dermatology setting. Educational programs can be used as a method to decrease circumstantial barriers through an increase in provider knowledge, skills, confidence, and self-efficacy.

Barriers to intervention

Barriers to screening and intervention in patients with skin disease who suffer from depression can be caused by provider, patient and system/organization specific causes. Some of these barriers include provider comfort, visit time constraints, fear of stigmatizing patients,

available resources, and difficulties engaging in patient/provider education (Richards et al, 2004). In this study, mean scores for provider, patient and system/organization barriers were nearly identical between groups. In addition, there was no significant data to indicate that possible barriers have an effect on a provider's practice of screening for depression in patients with skin disease.

However, this section of the questionnaire did provide insight to provider thoughts about the need for educational programs and practice guidelines when it comes to screening for depression in the clinical setting. The majority of the study participants indicated the belief that clinicians are not properly equipped to engage in discussion about depression. Furthermore, 94.1% of participants specified the need for written protocols and/or clinical practice guidelines when it comes to screening for and discussion of depression in patients with skin disease. And most importantly, all 17 providers indicated the lack of training in the screening for and discussion of depression in the dermatology setting. This data illustrates that providers who participated in this study may be open to not only receiving education on screening for and discussion of depression in patients with skin disease but also to using protocols to guide screening, referral and treatment of these patients.

Limitations

Several limitations were identified in the design of this study. The sample size was small (n=17) making it difficult to ensure a representative distribution of the findings. In addition, although the data was collected from multiple sites, it was representative of a single clinical practice, further limiting the generalization of the results. Also, a possible limitation is imbalanced interpretation of inquiries in the questionnaire by the research participants. For example, the majority of questions were asked on a Likert scale with the lower score indicating

the negative answer while the higher score indicated the positive. In section B of the questionnaire there are two questions reversing the scale, which may have caused some confusion and therefore inaccurate answers. The length of the questionnaire (48 questions) can also serve as a limitation due to the possibility that the participants hurried to answer all the questions in order to return to their normal duties. Lastly, data collected via questionnaire is self-reported data, which is infrequently independently verified and can contain sources of responder bias.

Recommendations for future studies

Recommendations for future studies include continued assessment of provider knowledge, attitudes, perceptions, skills, and self-efficacy of screening for depression in the dermatology setting using a larger sample size in order to better capture the impact of these variables on actual screening practice. Once stronger data is collected, educational programs on screening for and discussion of depression in patients with skin disease can be created with the goal of improving provider confidence in caring for these patients. In addition, this data could aid in the development of clinical practice guidelines on screening, discussion, and referral of patients with chronic skin disease who also suffer from depression. Finally, pre-test/post-test studies should be performed after proper education and or guideline implementation. It has already been discovered that early detection of depression as a comorbidity and prompt interdisciplinary care by the dermatology and mental health provider signifies improved QOL in patients with skin disease. Future research should be focused on how dermatology provider screening and referral practice can be expanded in order to increase the number of patients who are properly treated for their concurrent skin disease and depression.

Conclusion

This study is the first to assess provider knowledge, attitudes, perceptions, skills, and self-efficacy as a way to understand how we can improve rates of screening for depression in the future. Data obtained from this analysis was used to determine what additional provider education is needed in order to increase the incidence of screening for and discussion of depression in the dermatology setting. The majority of participants (70.6%) do actively screen for depression in their daily practice. However, the data suggests that many of the providers are not utilizing all aspects of the SBIRT model in the assessment of patients with possible depression. Unfortunately, no statistical significance was found to associate provider demographic characteristics, confidence, and practice barriers in the decision to screen for depression. Yet, there was statistical significance in the association between provider behavioral intention and subjective norms in screening practice. In addition, all 17 providers indicated the need for education on screening for depression in the dermatology setting. Therefore, the data obtained from this study concerning SBIRT, the theory of planned behavior, and provider thoughts on the lack of instructional programs demonstrates the need for continuing education on depression screening for dermatology providers. In the future, additional research needs to be completed in order to better understand what topics should be included in educational programs. The primary goal of this research is to increase the number of dermatology patients who benefit from a more holistic method of care.

Table 1. *Table of Study Measures*

| <i>Table of Study Measures</i> | | | | |
|--------------------------------|---|----------------------|-------------------------|---------------|
| Measures | Description | Level of Measurement | Analysis | Data Source |
| <i>Demographics</i> | | | | |
| Gender | Male vs. Female | Nominal | Frequencies, Chi-square | Questionnaire |
| Ethnicity | White, Black, Hispanic, Indian, Native American, Middle Eastern, Mixed Race, Asian, Other | Nominal | Frequencies, Chi-square | Questionnaire |
| Job title | MD, APRN, or PA | Nominal | Frequencies, Chi-square | Questionnaire |
| Age | Age in years | Interval/ratio | Means (SD), t-tests | Questionnaire |
| Work tenure | Length of time at job in years | Interval/ratio | Means (SD), t-tests | Questionnaire |
| <i>Outcome</i> | | | | |
| Intention | Provider intent to perform depression screening in patients with skin disease is assessed by assessing if the expect to screen, want to screen and intent to screen | Interval/Ratio | Mean (SD), t-tests | Questionnaire |
| Attitude | Providers are asked on a scale of 1 to 7 if screening for depression is 1) harmful-beneficial 2) good-bad 3) Pleasant for you-Unpleasant for you 4) worthless-useful to their practice. | Interval/Ratio | Mean (SD), t-tests | Questionnaire |
| Subjective Norms | Providers are asked if 1) people important to them 2) it is expected of them 3) under social pressure 4) expected from peers to perform screening on patients with skin disease. | Interval/Ratio | Mean (SD), t-tests | Questionnaire |
| Perceived Behavioral Control | Providers are asked perceived behavioral control of the performance of depression screening in patients with skin disease based on 1) Level of confidence in performing the task, 2) difficulty of providing screening, 3) believe decision beyond their control, and 4) believe the decision to provide screening is in their control. | Interval/Ratio | Mean (SD), t-tests | Questionnaire |
| SBIRT in Practice | Providers are asked how often (never, seldom, often, always) they perform the following tasks in their practice role 1) Screening for depression 2) Behavioral Intervention for those with depression 3) Referral to Behavioral Health Treatment | Interval/Ratio | Mean (SD) | Questionnaire |
| Confidence | Providers asked on scale of 1-10 rate confidence of current skills to 1) determine degree of depression in patients 2) Discuss depression with patients 3) Recommend therapy for depression 4) Explain effects of depression on skin health | Interval/Ratio | Mean (SD), t-tests | Questionnaire |
| Barriers | Provider asked if they completely disagree, somewhat disagree, somewhat agree, or completely agree with listed provider specific, patient specific and system specific barriers to depression screening in the dermatology setting. | Interval/Ratio | Mean (SD), t-tests | Questionnaire |

Table 2. Demographic Characteristics

| <i>Demographic Characteristics</i> | |
|---|--------------|
| <i>Characteristic</i> | <i>n (%)</i> |
| <i>Age, years Mean (SD)</i> | 44.6 (9.8) |
| <i>Sex</i> | |
| <i>Male</i> | 5 (29.4%) |
| <i>Female</i> | 12 (70.6%) |
| <i>Ethnicity/Race</i> | |
| <i>White, non-Hispanic</i> | 15 (88.2%) |
| <i>Black, non-Hispanic</i> | 0 (0%) |
| <i>Hispanic</i> | 0 (0%) |
| <i>Asian, Pacific Islander</i> | 2 (11.8%) |
| <i>Discipline</i> | |
| <i>Physician (MD)</i> | 11 (64.7%) |
| <i>Physician (DO)</i> | 0 (0%) |
| <i>Advanced Practice Nurse (APRN/CNS)</i> | 3 (17.6%) |
| <i>Physician Assistant (PA)</i> | 3 (17.6%) |
| <i>Years of practice, mean (SD)</i> | 14.2 (10.04) |
| <i>Notes: Standard Deviation (SD)</i> | |

Table 3. Associations among demographic characteristics and screening for depression

| <i>Demographic Characteristic</i> | <i>Yes (n=12)</i> | <i>No (n=5)</i> | <i>p</i> |
|---|---------------------------|---------------------------|----------|
| | <i>Mean (SD) or n (%)</i> | <i>Mean (SD) or n (%)</i> | |
| <i>Age</i> | 43.3 (10.7) | 48.0 (7.3) | .38 |
| <i>Gender</i> | | | |
| <i>Male</i> | 3 (60.0%) | 2 (40.0%) | .60 |
| <i>Female</i> | 9 (75.0%) | 3 (25.0%) | |
| <i>Race</i> | | | |
| <i>White</i> | 12 (80%) | 3 (20%) | .07 |
| <i>Asian</i> | 0 (0.0%) | 2 (100%) | |
| <i>Type of provider</i> | | | |
| <i>MD</i> | 7 (63.6%) | 4 (36.4%) | .76 |
| <i>APRN</i> | 2(66.7%) | 1 (33.3%) | |
| <i>PA</i> | 3 (100%) | 0 (0.0%) | |
| <i>Years of experience</i> | 13.1 (10.6) | 16.8 (8.9) | .51 |
| <i>Notes: Standard Deviation (SD), Physician (MD), Advanced Practice Nurse (APRN), Physician Assistant (PA)</i> | | | |

Table 4. Association among provider knowledge, attitudes, perceptions, skills, and self-efficacy and screening for depression

| | <i>Yes (n=12)</i> | <i>No (n=5)</i> | <i>p</i> |
|-------------------------------------|-------------------|------------------|----------|
| | <i>Mean (SD)</i> | <i>Mean (SD)</i> | |
| <i>Intention</i> | 5.5 (1.3) | 3.2 (2.3) | .02 |
| <i>Attitudes</i> | 5.2 (1.1) | 4.5 (1.6) | .30 |
| <i>Subjective Norms</i> | 3.9 (1.1) | 2.4 (1.8) | .04 |
| <i>Perceived Behavioral Control</i> | 4.7 (0.75) | 4.2 (0.89) | .23 |
| <i>Confidence</i> | 6.8 (1.1) | 4.1 (4.1) | .21 |
| <i>Provider Barriers</i> | 2.2 (.44) | 2.4 (.52) | .38 |
| <i>Patient Barriers</i> | 2.4 (.40) | 3.1 (.82) | .17 |
| <i>System/Organization Barriers</i> | 3.3 (.33) | 3.3 (.56) | .96 |

Figure 1. *The Theory of Planned Behavior*

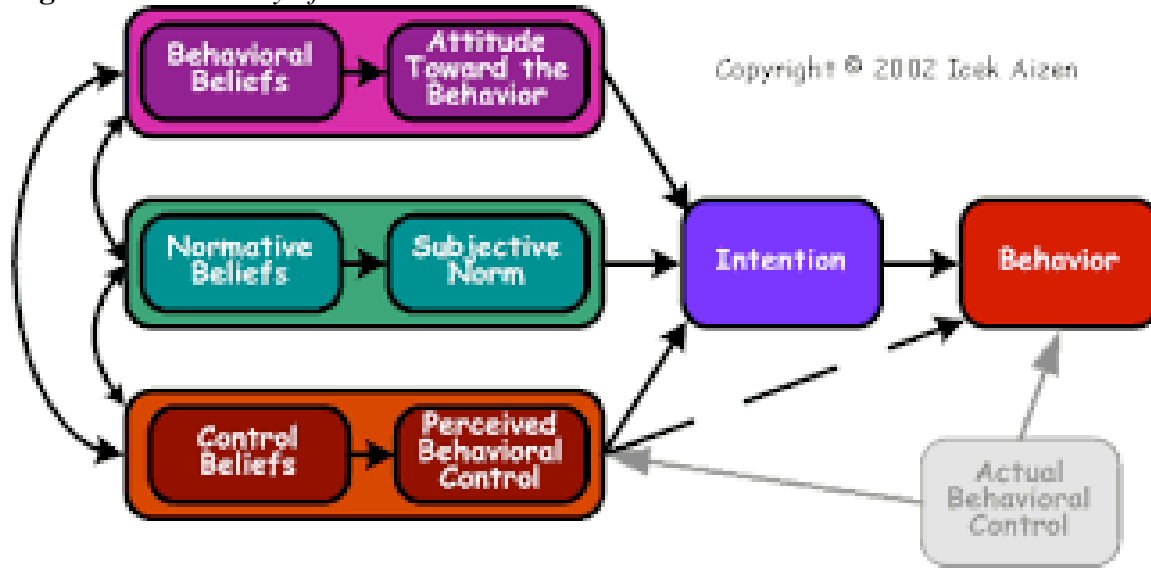



Figure 2. *Survey for Clinicians*



SURVEY FOR CLINICIANS


INSTRUCTIONS FOR USE:

1. Please follow the instructions.
2. Answer all the questions in each SECTION
3. Please read each question slowly and carefully.
4. Please mark responses using either or . You do not need to fill in the entire circle.

FOR EXAMPLE:
What is your current employment status?

- Employed for wages
- Self-employed
- Out of work for less than one year
- Out of work for more than one year
- Homemaker
- Volunteer
- Student
- Retired
- Disabled/unable to work


5. If you change your mind please ERASE your initial response so that we can be completely sure of your desired response.
6. If you would like to leave comments about a response, please do so. You can write in the margins or leave a note on page 8. This is particularly helpful if you choose to not answer a question or insert an additional response option.
7. When finished, please make sure you have answered all of the appropriate sections.



: Please record the current time.

Hour Minute

Code:

Page 1
Please Continue to the Next Page 

SURVEY FOR CLINICIANS

SECTION A. DEMOGRAPHIC INFORMATION

A1. What year were you born? _____

A2. Are you?

1. Male 2. Female

A3. What is your ethnicity/race?

1. White, non Hispanic
2. Black, non Hispanic
3. Hispanic
4. Asian, Pacific Islander
5. Other _____ (please specify)

A4. What is your disciplinary background or job role? Are you a:

1. Physician (MD)
2. Physician (DO)
3. Advanced Practice Nurse (APRN/CNS)
4. Physician Assistant (PA)

A5: For how many months/years have you worked at your place of employment? ____Months ____Years

SURVEY FOR CLINICIANS

SECTION C. SBIRT in practice/role

Please indicate how often you do the following activities based on the following scale:

1 = Never 2 = Seldom 3 = Occasionally 4 = Very often

| In your practice/role, how often do you | | 1 | 2 | 3 | 4 |
|---|--|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. | SCREEN for depression in patient's with chronic skin disease during clinic visits? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. | Perform BEHAVIORAL INTERVENTIONS for patients who screen positive for depression? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. | REFER patients who screen positive for depression to TREATMENT? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

4: On a scale of 0-10 with 0 being "not at all confident" and 10 being "Very confident", how would you respond to, "I feel confident with my current skills to ... "

| | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|----|
| A. Determine the degree of depression in my patients with skin disease | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| B. Discuss depression with my patients | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| C. Recommend therapy for depression | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| D. Explain the effects of depression on skin health | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

SURVEY FOR CLINICIANS

Section D: Barriers to intervening with patients who suffer from depression

To what extent do you agree or disagree with the following statements regarding intervening with your patients who suffer from depression

Provider specific barriers

1= Completely disagree 2 = somewhat disagree 3 = Somewhat agree 4= Completely agree

| | 1 | 2 | 3 | 4 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. Clinicians/staff can do little to influence the behavior of patients | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. Brief interventions for depression are ineffective | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. Existing depression treatment programs for patients with skin disease are ineffective | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4. Depression therapy should be provided for patients with skin disease who want help controlling their depression | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5. It is not part of my job to engage patients with skin disease in their level of depression | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 6. It is not the role of clinicians/staff to initiate conversations regarding depression in patients with skin disease | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 7. Advising patients on treatment for depression may negatively affect a clinicians or staffs relationship with the patient | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 8. Many clinicians/staff are willing, but are not properly equipped to engage in advice and/or intervention when it comes to depression | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 9. A patient needs to be motivated before he/she can be assisted in the treatment of depression | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 10. I do not have confidence in my personal depression intervention skills | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 11. After advising and assisting patients, I do not know where to refer them for depression treatment | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Patient Specific Barriers

| | 1 | 2 | 3 | 4 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| 12. Advising patients with depression may make them feel embarrassed | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13. Continuously asking about depression will cause patients to stop being honest with their clinician | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 14. Patients with skin disease may be caught off guard by their dermatology provider assessing their mental health | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 15. Patients with skin disease do not expect advice for depression treatment from their dermatology providers | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

System/Organizational Barriers

| | 1 | 2 | 3 | 4 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| 16. There is a lack of materials on depression (such as pamphlets, brochures, and manuals) for patients with skin disease | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 17. There is a lack of training for clinicians to engage in discussion about depression in patients with skin disease | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 18. There is the need for written protocols to document clinician responsibilities for providing discussion about depression in patients with skin disease | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 19. There is limited time to sufficiently engage in a discussion about depression with the patient | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 20. There needs to be re-imburement for screening for and discussion about depression in the dermatology setting | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 21. There is a lack of access to resources to help patients with depression in the dermatology field | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

SURVEY FOR CLINICIANS

E1: How did you find the length of this questionnaire?

- ~~much~~, too long
- a bit too long
- about right
- a bit too short
- ~~much~~, too short

E2: Did you have difficulty understanding any of the questions?

- ~~no~~, I understood all the questions
- ~~yes~~, I had difficulty understanding a few questions
- ~~yes~~, I had difficulty understanding many of the questions

E3: Would you be interested in participating in future research on this topic?

- No
- Yes

Do you have any comments about this survey. Are there any topics you think should have been included or excluded, or was there anything you liked or did not like about the survey.

Please record the current time:

□□ : □□ (For example, 10:30)

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