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Examination of the depression screening patterns of nurse practitioners, medical doctors, and physician assistants in primary care

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EXAMINATION OF THE DEPRESSION SCREENING PATTERNS OF NURSE
PRACTITIONERS, MEDICAL DOCTORS, AND PHYSICIAN ASSISTANTS IN
PRIMARY CARE

by

Leslie Erin Feth RN, BSN

Bachelor of Science in Nursing
University of Alberta
2005

A thesis submitted in partial fulfillment
of the requirements for the

**Masters of Science Degree in Nursing
School of Nursing
Division of Health Sciences**

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MASTERS OF SCIENCE DEGREE IN NURSING

Examination Committee Chair

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ABSTRACT

Examination of the Depression Screening Patterns of Nurse Practitioners, Medical Doctors, and Physician Assistants

by

Leslie Erin Feth

Dr. Michele Clark, Examination Committee Chair
Assistant Professor of Nursing
University of Nevada, Las Vegas

Depression continues to be a major global issue with devastating and potentially fatal implications. Inherent to the role of the nurse practitioner are depression recognition, diagnosis, and screening behaviors. Since psychology theorist Bandura considers self-efficacy vital for the ability to master behaviors, it is imperative nurse practitioners possess self-efficacy when managing depression in the adult patient.

The purpose of this study was to compare the practice patterns of nurse practitioners (NPs), physician assistants (PAs), and medical doctors (MDs) related to their depression recognition, diagnosing, training, screening, and self-efficacy. The sample consisted of 65 NPs, 16 PAs, and 14 MDs practicing in the state of Nevada. When primary care providers (PCP) were asked to identify perceived barriers to recognizing depression MDs indicated “lack of time” ($U=119.5$, $p=0.018$) and “culture” ($U= 69.00$, $p=0.011$) significantly more than NPs. No significant differences were found between the three PCP types with regards to diagnosis barriers, informal/formal training, screening practices, and self-efficacy with managing depression.

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CHAPTER 1

INTRODUCTION

Depression is a global epidemic and affects 5-10% of the world's population at any given time (World Health Organization, 2008). Depression was the fourth leading burden of disease worldwide in 1990 and is projected to be the second leading cause of disability by the year 2020, due to the growing prevalence in both developing and developed countries (WHO, 2008). Consequences of under diagnosed and untreated depression include poor quality of life due to lack of motivation and interest in life, loss of job, isolation, suicide, and risk for the development of Alzheimer's type dementia in the later years of life (WHO, 2008; Modrego & Ferrandez, 2004).

Successful management of depression includes overcoming both recognition and diagnosis barriers. These two types of barriers can be grouped into patient barriers, primary care provider (PCP) barriers, and clinic barriers (Goldman, Neilson, Champion, 1999; Docherty, 1997). Studies show despite efforts to implement programs to overcome the barriers to depression recognition and diagnosis through improving screening practices of PCPs, depression continues to go under diagnosed (Taleb, Rouillon, Hegerl, Hamdani, and Gorwood, 2006; Harter, M., Bermejo, I., Ollenshlager, G., Schneider, F., Gaebel, W., Hergel, U., Niebling, W., Berger, M., 2005).

When applying Bandura's theory of self-efficacy to depression screening patterns, the theory suggests that PCPs training correlates with their level of confidence. In other words, the more depression training a PCP receives the more confident the PCP will be when screening for depression. This correlation will be considered and tested when evaluating PCP confidence with depression screening. To increase appropriate management of depression in primary care offices in Nevada, further studies assessing PCP screening practices, confidence with screening, perceived barriers to depression recognition and diagnosis, and level of depression training are needed.

Problem Statement

According to the World Health Organization, 20% of the American population carries the risk for developing depression in their life time due to genetics or life circumstance (WHO, 2008). As well, 50% of older adult patients with depression will develop chronic or reoccurring depression (Alexopoulos & Chester, 1992). In the United States, the total cost of depression is estimated to be \$44 billion annually (Stewart, Ricci, Chee, Hahn, & Morganstein, 2003). However, costs from short- and long-term disability are not included in these estimates. Direct medical costs account for 31% of the total cost of depression, with the remainder of the costs due to impaired productivity in the workplace and death (Greenberg, et al., 2003). Of the \$31 billion in lost productivity from depressed patients, 81% is due to low job performance (Greenberg, et al., 2003).

The first problem faced in the management of depression is the barrier to recognizing depression. Barriers to recognition are the factors which prevent the patient from accepting depression and PCPs from acknowledging depression exists in the patient.

Patient recognition barriers include: stigma; unwillingness to seek help, shame; being unaware they are experiencing depression symptoms; the attitude that depression is not a real diagnosis; lack of interest in mental health; and lack of recognizing patient cues. Research shows only 50% of patients with depression are recognized in primary care (Simon and VonKorff, 1995; Saver, Van-Nguyen, Keppel, & Doescher, 2007). In other words, a large portion of patients are not even acknowledged, aware, or accepted as having this devastating disorder because of these barriers.

Diagnosing depression is the second problem faced in depression management. Depression diagnosis includes those activities a PCP uses to assess and make the diagnosis of depression (Gilbody, House, & Sheldon, 2005). Unfortunately, the difficulties with diagnosing depression is not a new phenomena. Literature dating back to at least the 1950's shows the challenges with diagnosing depression (Danziger, 1952). There have been programs developed attempting to improve screening practices and accurate diagnosis of depression in various parts of the world (Taleb, Rouillon, Hegerl, Hamdani, & Gorwood, 2006; Harter, M., Bermejo, I., Ollenshlager, G., Schneider, F., Gaebel, W., Hergel, U., Niebling, W., & Berger, M., 2005), yet depression continues to go under diagnosed.

Approximately 75% of patients with depression are seen by their PCP, rather than a mental health specialist (Goldman, Nielson, & Champion, 1999). Of those patients with depression symptoms, only half are diagnosed with depression (Williams, Mulrow, Kroneke, et al., 1999; Klinkman, 2003). In addition, even with the patients whom are diagnosed with depression, the care of depressed patients is inadequate. Saver, et al. (2007) states treatment does not commence in many depressed patients for unstated

reasons, and for those who do start treatment many do not receive the preferred drug or they do not complete the necessary treatment course. These statistics lend support that depression management and treatment needs improvement. Since PCPs are seeing depressed patients more than other types of medical professionals, their screening practices for depression are vital for the successful management of depression.

Under diagnosed depression is a concern because the consequences are devastating. Depression is an extremely incapacitating disorder and can lead to debilitating effects. Poor quality of life is a major effect of unmanaged depression. People who suffer major depression often end up taking more sick days at work, are less productive, isolate themselves from family and friends, have lower quality of life, and have less economic stability (WHO, 2006). In some circumstances, the persistent despair leads an individual to suicide. In fact, depression and substance abuse account for 90% of all suicides (WHO, 2008). Goldsmith, et al. (2002) found 1 in every 4 elderly patients attempt suicide, and the WHO (2008) states 15% of young adults with depression commit suicide. The remaining percent of suicides are accounted for by the middle aged (WHO, 2008). Newer research has found a consistent link between untreated depression and dementia development in later life. Modrego and Ferrandez's (2004) study concluded mild cognitive impairment and depression doubles the risk for developing Alzheimer's type dementia when compared to patients without depression.

Background and Significance

Depression is defined by the WHO (2008) as “a common mental disorder characterized by sadness, loss of interest in activities and by decreased energy”. Current guidelines suggest a depression diagnosis is made through a careful interview, mental status exam, physical exam, and lab tests, if necessary. The DSM-IV criteria for diagnosing depression are considered the standard diagnostic approach (Institute of Clinical Systems Improvement, 2007). Depression screening for adults in primary care settings should be completed when mechanisms are in place for accurate diagnosis, and appropriate treatment and follow-up (ICSI, 2007).

Mechanisms enabling accurate diagnosis of depression include screening tools such as the Zung Depression Scale, General Health Questionnaire, the Beck Depression Inventory, the Symptom Checklist, and the Inventory of Depression Symptoms (Goldman, Neilsen, and Champion, 1999; ICSI, 2007). These screening tools, in particular, have sensitivity to depression diagnosis in 70%-85% of clients suffering from this mood disorder (Goldman, 1997). Although they are sensitive, the guidelines do not limit screening to the use of these tools only. Other screening methods may be used as well, such as unstructured interview of the patient and/or family members.

When examining the guidelines for depression, the diagnosis of depression appears to be a fairly uncomplicated and rather straight forward process. Unfortunately, as will be discussed further in chapter two, diagnosing depression goes beyond simply handing a patient a screening tool to complete. The PCP must understand the criteria for depression, be able to identify a patient whom appears depressed, be willing to initiate the conversation about depression, and follow through with an accurate assessment and

treatment plan. In this process lies many opportunities to miss the chance to appropriately diagnose depression, and, unfortunately, has led to 30% of depressed individuals globally going without proper depression treatment (WHO, 2008).

The significance of this particular issue to the role of the nurse practitioner (NP) is considerable. Depression screening, diagnosing, and treating are inherent responsibilities of nurse practitioners; therefore, it is imperative they understand and be capable of accurately and effectively diagnosing patients with depression. Although it is the responsibility of all nurses at every level to be cognizant of depression symptoms in the patients they care for, it is ultimately the role of the nurse practitioner to diagnose, prescribe care, and provide the necessary follow up for a client suffering from depression.

Purpose of Study

The purpose of the study is to compare the practice patterns of nurse practitioners (NPs), physician assistants (PAs), and medical doctors (MDs) related to depression management. This study will look specifically at screening practices, identified barriers to depression recognition and diagnosis, perceived formal and actual informal training in depression, and self-efficacy of depression screening. As well, the examination of relationships between informal/formal training and self-efficacy, and self-efficacy and screening practices will be assessed. The following research question is important to the study of depression management and will be evaluated in this study: Does the amount of training and type of screening practices of primary care providers related to depression predict their level of self-efficacy?

CHAPTER 2

REVIEW OF RELATED LITERATURE

Thirty five articles related to depression and screening practices from disciplines of the health sciences were reviewed. The following topics were examined: PCP, patient, and clinic barriers to depression recognition and diagnosis of adults in primary care settings; PCP attitudes, training, knowledge and screening practices related to depression in adults; as well as, self-efficacy with screening abilities. Due to the absence of studies examining the difference between NP's, PA's, and MD's practices of depression screening patterns, literature comparing the three PCP types regarding these practices is not possible at this time.

Patient Barriers

A major barrier to depression recognition is the patient's unwillingness to seek help for their symptoms. Kaplan, Adamek, and Calderon's (1999) supports this when their sample of 300 MDs vocalized the greatest patient barrier to depression recognition was their "unwillingness to seek help". Similarly, Nasir and Al-Qutob's (2005) qualitative study in Jordan interviewed 50 MDs who identified patient's lack of acceptance of depression diagnosis as a major barrier.

For example, one of the MDs in Nasir and Al-Qutobs (2005) study compared hypertension with depression, stating patients just accept they have hypertension without question, while there is much reluctance to accept a depression diagnosis.

A cause for a patient's unwillingness to seek and accept help varies depending on such factors as age, culture, upbringing, and belief systems, etc. Saver, Van-Nguyen, Keppel, and Doescher (2007) found that participants in their qualitative study were unwilling to share their concerns with their PCP due to feelings of shame. Other participants in this study stated they were "just good at hiding it" and simply wanted to "continue to hide it", for unnamed reasons (Nguyen, et al., 2007). Findings from this study demonstrated that shame, feelings of guilt and embarrassment about discussing depression inhibit patients from discussing their depressed mood.

Stigma may be the underlying cause of the negative feelings of shame and guilt. Stigma remains an issue with psychological illnesses, particularly with the elderly population, and prevents patients from admitting to themselves and to their PCPs they are experiencing depression symptoms. Rost, Smith, Mathews, and Guise (1994) found stigmatization as one of the two greatest causes for reluctance to admit a depression diagnosis. Nasir and Al-Qutob (2005) also found women in Jordan were more likely to state stigma as a barrier because they felt depression would decrease their chances of marrying.

In addition, patients may be uncomfortable with discussing personal issues such as mental health concerns. Wood, Pill, Prior, and Lewis (2002) found elderly women were concerned about confidentiality and felt the survey administered regarding their

perceptions of depression was intrusive. For these women, sensitive information was expected to be kept to oneself.

More fundamentally, many patients are not familiar with the presentation of depression. They may not be aware they have depression or may not be aware depression is a medical diagnosis. Saver, Van-Nguyen, Keppel and Doescher (2007) found several participants did not understand the diagnosis of depression or their treatment regimen. In this study, a few patients diagnosed with depression stated they received verbal information related to depression diagnosis from their PCP, while most were referred to other resources such as the library for further information about depression (Saver, et al., 2007). Docherty (1997) found patients may also minimize their symptoms given their stressful current life circumstance, and believe their “will” has failed or the symptoms are due to personal flaws in character. This article also states patients may simply feel depression is not the primary care provider’s scope of practice or there is a lack of interest in the patient’s emotional concerns by the PCP (Docherty, 1997).

Provider Care Provider Barriers

Examination of several studies highlighted numerous factors influencing PCP recognition and diagnosis of depression. PCP attitude is one important *recognition* barrier producing deficits in screening. Some MDs believe depression is not a “real” illness. Rather, they believe depression is a personal flaw or occurs as a result of an individual’s lazy character, and if the patients use their will power, effort, and positive thinking they would overcome depressive symptoms (Docherty, 1997; Goldman, 1997). Doubts about depression as a real diagnosis appear to exist partly due to the absence of laboratory and

diagnostic tests to confirm or deny the presence of the illness. As a result, inquiry about depression symptoms occurs less frequently in primary care providers with this belief (Docherty, 1997).

PCP appraisal of patient's attitude appears to interfere with their depression screening practices, as well. Goldman, et al. (1999), states PCPs may fear offending a patient by making a diagnosis of depression, or feel unwilling to compromise patient confidentiality by discussing depression symptoms. By observing behaviors which indicate a patient is unwilling to accept a mental illness diagnosis, such as defensiveness to inquiring questions, PCPs may defer the issue and take a more medical approach to their patient's complaints.

PCPs interest in psychosocial health also may play a role in how often patients are screened, how apt PCPs are with recognizing depression, and how accurate they are at diagnosing depression. Robbins, et al. (1994) found MDs who were sensitive to their patients presentation of affect and verbal cues made more accurate mental illness diagnoses than MDs who tended to blame the patients for their depression symptoms. Likewise, PCP beliefs about the burden and discomfort experienced by patients with depression are significantly associated with whether PCPs believed depression was an important and common problem in primary care (Main, Lutz, Barrett, Matthew, Miller, 1993). Cohen-Cole (1991) found PCPs may not all share the same comfort with addressing mental health issues; therefore, PCPs may guide the interview into more manageable topics and avoid those topics which are unfamiliar or undesirable. It can be concluded that PCPs who are interested in mental illness may be more apt to learn about

mental illnesses, thus may be more accurate with diagnosing and perhaps screen more often.

It is possible for a PCP to lack skill in appropriately screening a patient for depression, even if positive attitudes, beliefs, and an interest in depression exist. Cohen-Cole (1991) suggests MDs may utilize an interview technique consisting of closed-ended questions, which limits the patient from discussing psychosocial issues in depth, versus open-ended questions which provide more detail. An MD's deficiency with asking follow-up questions and lack of recognizing nonverbal cues, when distress is expressed by the patient, may also contribute to an incomplete and inaccurate history (1991). As well, PCPs may not offer enough empathy or support during the visit, and may actually be sending cues, either intentionally or unintentionally, that they are uninterested in discussing psychosocial complaints with the patient (1991).

For a PCP to diagnose any illness they need to understand the illness and what the diagnostic criteria are. Unfortunately, PCPs may not fully understand how depression differs from other diagnoses with similar symptoms, such as transient sadness, bereavement, dementia, and various non-psychiatric conditions (Goldman, Nielsen, & Champion, 1999; Docherty, 1997). On the other hand, PCPs may understand the diagnostic criteria but may not take a thorough history because they misunderstand the disease process. Beliefs such as depression symptoms will resolve spontaneously, the symptoms do not appear to be significantly distressing to the patient, or depression symptoms are understandable given the patient's life circumstances are errors in perception made by PCPs lack of understanding of how to diagnose depression (Simon and Vonkorff, 1995; Untzer, 2000; Miller & McCrone, 2005).

Furthermore, complicated patients with multiple comorbidities can make accurate diagnosis of depression extremely difficult. If a patient has coexisting conditions there is a challenge with determining if the symptoms are from the coexisting diseases or if the patient is demonstrating symptoms of clinical depression. For example, diabetes mellitus, hypothyroidism, and Cushing's disease can produce symptoms which resemble depression (Goroll and Mulley, 2006). Depression induced by prescription drug use is an issue common with the elderly population, and it is not uncommon for side effects of one or multiple medications to manifest as depression. For example, alpha-methyldopa, anti-arrhythmics, benzodiazepines, barbiturates, beta-blockers, cholinergic drugs, corticosteroids, and histamine 2 receptor blockers are a few common medications which may create depressive-like symptoms (Goroll and Mulley, 2006).

Although the above section addressed how the lack of PCP knowledge about depression criteria influences their ability to screen for depression, there appears to be discrepancies about whether the DSM- IV criteria is useful in all medical settings. The DSM-IV criteria, as discussed previously, may not appear relevant to PCPs in primary care practice. This may be due to the DSM-IV originally being designed for use by mental health specialists (Goldman, Nielsen, & Champion, 1999). One issue for PCPs using the DSM-IV criteria is some patients meet only some of the criteria making a depression diagnosis more difficult to ascertain. A study by Wittchen, Hofler, and Meister (2001) found in their sample of 20,421 patients, 11% of patients experiencing depression symptoms were diagnosed with depression by their MDs but did not completely meet the DSM-IV criteria. Kirmayer, Robbins, Dworkind, and Yaffe's (1993) study shows accurate diagnosis of depression is related to the extent patients somatize

their symptoms. In addition, 52% of patients in primary care present with at least one psychosocial symptom (Docherty, 1997). Therefore, if a PCP is looking mainly for emotional complaints, rather than somaticized symptoms, a depression diagnosis may be missed.

Lastly, medicalization of patient complaints is a common occurrence with respect to depression *diagnosis*. Patients may hope that a physical illness is the cause for the symptoms and that a cure for the symptoms will be found (Goldman, 1997.) From the PCP perspective, Thomas-MacLean and Stoppard's (2005) study demonstrated that MDs tend to over medicalize the cause and description of depression, and they conclude this medicalization does not allow the recognition of depression in a social context. The result is the PCP avoids the patient's psychological complaints, leaving the diagnosis of symptoms to be based on a biomedical rather than a biopsychological diagnosis (2005).

Clinic Barriers

Barriers to recognizing depression exist not only from the patient and PCP, but also at the clinic or institution level. Limitation of time on patient visits is a major deterrent to recognizing depression. In the United States, more and more PCP patient panels are operating at overcapacity due to the low numbers of PCPs and the growing volumes of patients (Hamric, Spross, and Hanson, 2005). The pressure on PCPs to be efficient, and see as many patients as possible in a given work day, is evident by the seemingly rushed visits and long wait times. As a result, time frames for patient visits are limited and rarely allow patients to discuss all their physical and emotional concerns. According to the National Guideline Clearinghouse, depression diagnosis requires precise

interviewing, use of a diagnostic method, choice of an appropriate medication, and referral for psychotherapy (ICSI, 2007). Unfortunately, to meet the criteria of precise interviewing, patients may end up discussing the root of their emotional distress which may end up in lengthy stories. In addition, PCPs may have to assess and manage other ongoing medical issues the patient has, provide teaching, and complete charting in the span of that visit's time frame. This process can take much more time to complete than the 15 minute patient visit allows.

The lack of performance standards for depression in some primary care settings restricts feedback to PCPs, administrators, and purchasers of health care on how depression is being managed (Goldman, Nielsen, Champion, 1999). Performance standards provide information on health care deficits, and without them, these deficits are left unresolved.

As well, cost is an influential barrier for diagnosing depression. For example, patients who have little or no third party coverage may not be evaluated for depression due to their inability to pay or because they may be unable to obtain the necessary care and follow up once diagnosed (Goldman, Nielsen, Champion, 1999). Therefore, PCPs may diagnosis a depressed patient with insomnia, fatigue, pain, or obesity, instead of clinical depression because these symptoms are covered by insurance companies and do not require the same intense follow up by the PCP (Rost, Smith, Mathews, 1994).

Self-Efficacy and Training

The lack of self-efficacy (confidence) and training for depression screening are both barriers to the diagnosis of depression. Since both have very different origins than the previous barriers discussed, they will be discussed together but separate from the other barriers.

Adamek and Kaplan (2000) evaluated PCP perceptions of their training to diagnose and treat depression and found a significant difference between the 166 MDs and 340 NPs. Thirty four percent of MDs rated themselves “poor” or “exceptionally poor”, while only 12% of NPs had similar findings. This data indicates training in identifying and treating depression can be improved. There are many differences in the educational pathways that NPs, MDs, and PAs complete, including length of training and philosophies of care. Hence, we could infer their training would differ somewhat in regards to how they manage depression, and that perhaps one of these three PCPs may receive better training in treating and managing depression than another. However, there is no literature to substitute this claim.

Further more, a PCPs practice may influence the amount of informal training they receive once they enter practice. Larger organizations may provide frequent in-services on depression management and treatment to PCPs, where as, private offices may not offer any in-services, leaving the responsibility of staying current with practice up to each PCP. For PCPs practicing in small private practices this may be a barrier due to the lack of accessibility and the inconvenience of having to find the in-services on their own. However, every PCP has to complete a certain number of continuing medical education (CME) courses to renew their professional license, and often the organizations certified

to provide CMEs offer similar education seminars. Therefore, all PCP types have access to the same type and amount of CMEs despite their practice location. Unfortunately, there has been a lack of literature examining PCPs *informal* education in relation to depression screening.

It is argued, if PCPs are adequately trained, they will be more confident in screening and will screen more appropriately. In fact, Main, Lutz, Barrett, Mathews, and Miller (1993) found PCP training and self-efficacy with managing depression were significantly related to PCPs perceptions of the importance of depression and frequency of depression seen in primary care. Specifically, the study found PCPs who had more training and more confidence with diagnosing depression were significantly more likely to perceive depression as important and state depression occurs more frequently in primary care, then those whom had less training and confidence (Main, Lutz, Barrett, Mathews, and Miller, 1993). Docherty's (1997) and Gerrity et al. (1997) found a relationship between effectiveness of screening practice and self-efficacy; in particular, poor recognition and diagnosis of depression was associated with lower levels of confidence in effective treatment. In addition, Richards, Ryan, McCabe, Groom, and Hickie (2004) found MDs who had incomplete knowledge of depression diagnostic criteria, assessment methods, and treatment plans, also experienced discomfort when discussing psychological issues. The authors assumed to be due to a lack of training, which led to a lack of confidence in the PCPs depression management skills.

Primary Care Provider Screening Practices

Literature examining the screening practices of NPs, PAs, and MDs found that there are differences between the diagnostic and treatment practices when addressing various diseases/disorders; unfortunately there is no available research comparing the three PCPs with respect to screening practices for depression. Only one valid research study compared depression screening practices of NPs versus MDs (Adamek and Kaplan, 2000). Also, articles were found examining MDs and NPs screening practices for depression separately, but articles studying only PAs depression screening practices alone were not found.

Groh and Hoes (2003) studied NPs (n=1647) competence in assessing and diagnosing depression disorders. They found NPs assessment of depression was consistent with the AHCRP guidelines and the protocols used by psychiatrists and primary practice physicians (2003). They found a majority of NPs used a variety of diagnostic tools to assess depression. Eighty four percent of NPs used a complete history and physical exam along with a thyroid function test and complete blood count. Fifty four percent used a depression screening tool/instrument to screen for depression symptoms, and 44% referred their depressed patients to mental health specialist for diagnosis. The Beck Depression Inventory was used most frequently (33%), followed by of the Zung Depression Rating Scale (21%). Similarly, the study by Burman, MaCabe, and Pepper (2005) showed 43% of NPs (n=52) used depression screening tools. As well, NPs used unstructured interviewing with screening tools 90% of the time, while 60% of these same NPs asked about exercise, alcohol consumption, illicit drug use, pain levels, and alternative and complementary treatments for depression (2005). Unfortunately, only

50% of respondents asked important questions such as appetite changes, anhedonia, and sleep disturbance, which are main indicators of depression (2005).

With respect to MD screening practices, a study conducted by Collins, Wolfe, Fisman, DePace, and Steele (2006) examined depression practice patterns of 163 MDs in London, Canada. Forty percent of MDs routinely screened all adults for depression, 60% reported screening only the patients whom presented a risk for depression, and 86% of MDs screened for depression using interview alone rather than using a depression screening tool (Collins, et al., 2006).

Adamek and Kaplan (2000) compared MDs (n=340) and NPs (n=166) screening practices in the US. The results showed NPs and MDs differed in 5 of the 7 types of assessment procedures used. Of most importance, eighty six percent of NPs used medical work-ups compared to 66% of MDs, and 50% of NPs used depression scales/instruments to assess for depression versus 28% of MDs (Adamek and Kaplan, 2000). Their sample of NPs reported having staff interview family members less often.

In summary, there are several barriers to depression screening in the primary care setting from the PCP, patient, and clinic level; however, self-efficacy and formal/informal training have not been as extensively studied in relation to PCP screening practices for depression. There is also a lack of literature that compares the depression screening practices of the three PCP types. This information could provide deeper insight into if type of training program better assists PCPs recognition and diagnosis of depression and screening practices. Furthermore, this literature review provides evidence that MDs may screen less frequently for depression than do NPs, although this literature demonstrates both NPs and MDs may not adequately screen for depression. This study will build from

the literature reviewed to further study the screening practices, barriers to depression recognition and diagnosis, in/formal training, and self-efficacy of PCPs related to depression management.

CHAPTER 3

CONCEPTUAL FRAME WORK

Bandura's social learning theory is rooted in the discipline of psychology and aims to explain human behavior. The fundamental belief of Bandura's theory is that behavior is learned through direct experience and vicariously through observing others' behaviors. Learning new behaviors is also influenced by the expectations of an individual's cognition (Bandura, 1998). If we learned through trial and error (1998) alone, depending on the type of behavior, it would take a very long time and potentially be a dangerous process. However, we can learn vicariously, which takes place by observing behaviors first before attempting them, thus eliminating the need for trial and error (1998). In order for an individual to observe and process the behavior and the consequences or outcomes of these behaviors, cognition must be intact to analyze and dissect what is being observed so that the behavior can be effectively replicated.

Learning and performing a behavior not only requires the role of cognition, but also the influence of response consequences. Response consequences are the positive or negative effects exhibited as a result of performing a behavior (Bandura, 1998). As thinking human beings, it takes the understanding that behavioral response consequences motivate and regulate the behaviors performed in the future (1998).

That is, positive consequences will motivate repetition of the behavior to continue to achieve the positive outcome, while negative consequences will deter an individual from repeating the behavior.

Response consequences function in three ways. Firstly, the *informative function* of response consequences explain that behaviors are not performed blindly, rather the human mind allows individuals to notice what response is being produced by a particular behavior (Bandura, 1998). Essentially, observing the various outcomes or responses each behavior brings enables an individual to form hypotheses about which responses will occur in which settings and with which behaviors (1998). Ultimately, this function provides information to the individual to help determine the behaviors which produce positive responses and which produce negative ones.

Motivational function is the incentive or reward individuals receive by the anticipation of the hypothesized response consequence (Bandura, 1998). After information has been received about which responses occur with which behaviors, individuals begin to anticipate that if X behavior is performed then Y response will likely occur. By foreseeing future consequences, either positive or negative, individuals are motivated to behave in ways that will produce the desired effects (1998). For example, an individual does not necessarily have to cut himself to prompt him to be careful when handling a knife. At this level the *incentive value* of the theory develops. The incentive value is the motivation to continue performing a particular behavior if the result of the behavior is desirable (1998). Like wise, there is incentive to avoid a behavior if the response is undesirable.

Last and most importantly is the *reinforcement function*. Reinforcement is when an individual is provided with verification that their hypothesis, i.e. X behavior leads to Y response is true (Bandura, 1998). This reaffirms an individual will continue to behave in the manner that provides rewarding responses and avoid unrewarded behavior, because the repeated observations has engrained the sequence creating the response (1998).

Learning through Modeling

The process of learning a behavior is an important piece when understanding Bandura's social learning theory; therefore, the theory of modeling will be explored here. Modeling is a form of observational learning where an individual watches the behaviors of another (model), forms ideas about the behavior, encodes it in the brain, and uses it as a guide for performing the behavior at a later time (Bandura, 1998).

The first step in the modeling process begins with the *attentional process*. The attentional process includes what an individual observes when exposed to various people and their behaviors (Bandura, 1998). Generally, individuals tend to learn behaviors of those they are drawn to or who they are in contact with regularly (1998). How the models are chosen depends on varying factors. Models may be chosen because they possess qualities that are appreciated such as charisma, leadership, and authority, or because the model is an expert in the individual's field of interest (1998).

Retention process is the second step in the behavior learning. In this stage, coding and memorization of the behavior takes place (Bandura, 1998). If an individual is to perform a behavior at a later time, when the model is no longer present, the individual must be able to memorize the various aspects of the behavior with symbols (1998). Since

the brain is able to more effectively memorize behaviors in symbolic form, observers are able to learn a majority of a behavior through observation when symbolic encoding is present (1998).

One symbolic system is imagery. When an individual watches a behavior repeatedly, the mind produces visual images as the symbol that is retained in memory (1998). When the behavior is recalled, either through someone mentioning the behavior or from active recall of the event, the observer is able to see the images of the behavior in their mind (1998). For example, when there is great association of a person with a particular name, it is difficult for an individual not to see a visual image of that person in his or her mind.

The second symbolic system is verbalization. Verbalization accounts for the speedy retention of information associated with observational learning, and it is the cognitive process most used in retention (Bandura, 1998). Although an image presents itself in the mind almost automatically in response to stimuli, verbalized coding of the visualized behavior will produce more accurate recollection of the behavior than would the memorized image alone (1998). For example, if a road trip was taken, there will be more accurate recall of the path traveled through the turns taken (i.e. left, right, left, right, right), than by visualizing the land marks on the route alone (1998).

In addition, Bandura (1998) suggests that rehearsal of the observer performing the memorized behavior vastly increases proficiency and retention. He explains when individuals rehearse mentally or physically perform an observed behavior, they are more likely to remember the behavior than if they do not think about the behavior after it is observed (1998). Since there are situations when immediate physical rehearsal may not

be possible, mental rehearsal alone plays a very effective alternative to learning a behavior that will be performed at a later time (1998). Either way, rehearsal in combination with symbolic or verbal coding proves to be essential in the process of learning a behavior (1998).

Once retention of information has occurred, the next step involves *motor reproduction* of the observed behavior. To understand this process fully, it is best to analyze it in three phases (Bandura, 1998). The initial phase consists of selecting a response and organizing it in the mind. This step relies highly on the information retained (1998). If information was not retained accurately or completely from the previous steps, then the organization of the behavior in the mind will be difficult and the reproduction of the behavior will be erroneous (1998). If error with reproducing the behavior exists, it is essential that the basic skills to enact the behavior (as in the previous step) be first developed before progression to the next phase of motor reproduction (1998).

In the second phase, the focus is to match the performed behavior to the behavior observed. Almost always, a behavior is not completed accurately in the first attempt (1998). At this point, the initial performance of the behavior is corrected to create a more accurate likeness of the observed behavior. The challenge is that responses cannot be fully observed (i.e. golf). Achieving even a somewhat accurate match between the observed behavior and the performed behavior is difficult when the behaviors can be only partially observed (1998). This is because identifying the corrections necessary to fix the errors of a partially observed behavior by oneself is difficult. Therefore, adjusting performance by feel of the behavior or by the verbal comments of others is the method used to match this kind of behavior (1998).

Lastly, motor reproduction cannot be mastered through direct experience or by observation alone (Bandura, 1998). It is in this step where the two come together to enable the closest representation of the behavior possible. To master the behavior an individual must continue modeling the behavior, and must refine their skills through self-correction (1998). Self-correction in this phase is made based on feedback provided by others and from demonstrations of others that focus on the aspects of the behavior which were only partially learned previously (1998).

The fourth and final process in modeling is the *motivational process*. This phase, as discussed briefly earlier, suggests that individuals are more apt to adopt a behavior which produces outcomes of value rather than a behavior producing unrewarding or unfavorable results (1998). Determining which behaviors are valuable is subject to the individual, whom will express learned behavior which appeals to him or herself and reject those that do not. This occurs simply because individuals do not perform every behavior they observe or learn, thus acquisition and performance of a behavior do not occur simultaneously (1998). Acquisition of behavior may occur, but the individual has the choice if they want to perform the behavior (1998).

The four phases of learning through modeling are fully dependent on the previous stage (Bandura, 1998). If one phase is not fully learned or perfected, the next stage will have errors. This will result in an inaccurate and defective behavior and response (1998). One factor that causes error is lack of instruction and explanation by the model (1998). If an individual views a model that does not explain a behavior, provide rationale, or is not inspiring, etc, the behavior may not be learned in the most valuable or effective way (1998). Hence, although the behavior is interesting to learn by the individual, there will

be a lack of data that will fully encourage the accurate expression of the behavior (1998). In addition, if the observer is not mature or experienced with performing a particular behavior then the behavior will be flawed (1998). For example, a gross exaggeration of this would be a pilot trying to teach a 5 year old child how to fly a plane (1998).

In summary, modeling is learning through observation, but entails sub-functions to be operating maximally for an accurate and efficient behavior to be learned (Bandura, 1998). Choice of which behavior will be learned is determined by the individual's perception of what is valuable and rewarding (1998). The expression of the behavior is finally determined by motivation and reinforcement, but all phases of modeling must be completed properly for the learned behavior to produce the desired outcome.

Self-Efficacy

Self-efficacy is an example of an antecedent determinant which is a key concept in this study. Bandura's theory of social learning believes that cognitive processes arbitrate change, but cognitive processes are changed by an individual mastering a behavior. In addition, cognitive processes of the mind can transform expectations of one's own efficacy, and can be understood by distinguishing between outcome expectations and efficacy expectations (Bandura, 1998). An *outcome expectation* is the belief that a certain outcome is produced when a particular behavior is performed (1998). An *efficacy expectation* is the confidence an individual has in their ability to perform the desired behavior successfully and achieve the analogous outcome (1998). If the two definitions are plotted into the person-behavior-outcome sequence, efficacy expectation would fall between person and behavior, and outcome expectation would fall between

behavior and outcome (1998). For example, a PCP may understand and believe that screening for depression will lead to various health benefits, but may lack the confidence he or she can effectively perform the necessary screening behavior to achieve the desired outcome.

It can be concluded that the degree to which an individual will try to manage difficult situations is determined by the degree to which an individual is committed to perform the behavior effectively (Bandura, 1998). When individuals avoid particular situations, it is partly due to the belief they cannot manage it, but they demonstrated self confidence in situations they believe they can manage (1998). Essentially, an individual's perception of self-efficacy is a very powerful motivator for performing a behavior.

Self-efficacy not only eliminates fears that may be anticipated, it also influences an individual's ability to cope through their expectation to be successful (1998). That is, when an individual is more confident or has a stronger sense of mastery with a behavior, the more active they will be in overcoming obstacles. Those who are low in confidence will be incapacitated by fear, which will result in less effort to overcome obstacles, and result in less success with achieving the outcome (1998). Therefore, the more confident PCPs are in their ability to screen for depression the more they will be able to overcome screening related obstacles and be more successful with screening.

Research Questions

Based on Albert Bandura's theory of social learning (1998), the purpose of this study is to answer the following questions:

1. What are the perceived barriers to the recognition and diagnosis of depression in primary care?
2. Is there a difference between the perceived barriers to depression recognition and diagnosis between nurse practitioners, physician assistants, and medical doctors in primary care?
3. Is there a difference in depression screening practices between nurse practitioners, physician assistants, and medical doctors?
4. Is there a difference in the perceived formal and actual informal training between nurse practitioners, physician assistants, and medical doctors received regarding depression diagnosis and screening?
5. How self-efficacious are primary care providers in their ability to screen for depression?
6. Is there a relationship between formal and informal training and self-efficacy?
7. Is there a relationship between self-efficacy and screening practices of providers?

Definitions

Terms that will be explained are introduced in quotations:

“Self-efficacy” is conceptually defined as the confidence or conviction an individual has in their ability to complete an activity or behavior (Bandura, 1978).

Operationally self-efficacy is defined as the degree a provider feels they are confident in their ability to screen patients for depression, and will be measured using an adapted version of the New General Self-Efficacy Scale (Chen, Gully, and Eden, 2001).

“Formal training” is defined in this study conceptually as the learning about depression recognition, diagnosis, and screening from a post secondary institution program that a provider attends to receive certification as a licensed medical professional in primary care. Operationally, formal training is defined as the rating the PCP gives regarding their informal training, during the duration of study at the post-secondary level, on a scale from exceptionally poor to exceptionally good.

The conceptual definition of “informal training” is characterized as the education acquired about depression informally or outside of the post-secondary institution level, such as continuing medical education (CME) and in-services. Operationally, “informal training” is defined as the reported number of hours of CME’s or in-services completed in the last 2 years related to depression recognition, diagnosis, and screening.

Conceptually, “depression screening practice” is defined as the provider’s activity of performing an assessment on a patient complaining of depressive symptoms. This may include the use of structured screening tools, an unstructured interview of the patient, and medical work-ups. The operational definition is measured by the reported percent of the time a provider uses each screening method when screening a patient with depression.

The “barriers to depression recognition” conceptually is defined as the circumstances which prevents an individual suffering from depression from being acknowledged or accepted as having depression symptoms. Operationally, barriers to depression recognition will be measured by the PCPs ranking in order from 1 to 4 which barriers are most common. Recognition barriers include: Lack of time; patient unwillingness to seek help due to stigma, guilt, and shame; my attitude, values, and beliefs related to depression; lack of recognizing patient cues indicating depression, medicalization of symptoms, discomfort with addressing issues, limitations on reimbursement, and culture barriers.

The “barriers to depression diagnosis” conceptually is defined as the perceived or actual triggers or circumstances which inhibits the ability to screen or diagnose depression. The barriers to depression screening will be measured by the participants checking which off the barriers to depression diagnosis apply to them in their practice setting. Diagnosis barriers include: fear of offending the patient, the depression diagnostic criteria are inappropriate for primary care, complex cases impede accurate diagnosis, no third party billing, minimal confidence, minimal training.

Assumptions

For the purpose of this study the following statements are assumed to be correct:

1. Depression can be correctly diagnosed by the Primary Care Provider through appropriate screening practices.
2. Depression screening is a standard of practice for all provider types.
3. Study participants will answer questions truthfully.

CHAPTER 4

METHODOLOGY

This descriptive study examines the depression screening practices of PCPs in the state of Nevada. After endorsement by the Thesis Committee members on March 11, 2008, and approval by the University of Nevada, Las Vegas Institutional Review Board (IRB) Behavioral Sciences Committee on May 7, 2008 was granted, data collection commenced.

Setting and Design

A descriptive survey design was used for this study. A descriptive design depicts a situation in its natural environment, without manipulation of variables, which is an element involved in determining causal relationships (Burns & Grove, 2001). If this descriptive study determined training is not congruent with self-efficacy for depression, other barriers would need to be further explored for causality. Since this design is non-experimental, the survey was an appropriate non-invasive means of acquiring information about primary care providers screening practices, confidence, training, barriers with recognizing and diagnosing depression, and depression screening behaviors.

The study took place in two phases. The first phase included dispersing postal mailings of the study material to the PCPs mailing addresses in the state of Nevada. The

second phase took place through one large managed care organization (MCO) serving the Clark County area. The MCO utilized in this study has 14 main locations with several primary care clinics within each location. These primary care clinics, in addition to the PCPs whom responded to the mailed survey, are the focus for which the sample of PCPs was drawn.

Sample

A convenience sample of 160 total participants was sought based on the F test power analysis calculation performed with effect size = 0.25, alpha = 0.05, 1-beta = 0.80, and number of groups = 3 (Faul, Erdfelder, Lang, Buchner, 2007). According to Burns and Grove (2001), 0.80 is the minimal acceptable level of power needed to reject the null hypothesis correctly; therefore, this minimum acceptable value was used in the power analysis. The final sample size attained for this study was determined by the actual participants meeting the criteria and agreeing to partake in the study. All participants who met the follow criteria were asked to participate.

Inclusion criteria:

- A. Male or female Medical Doctor, Nurse Practitioner, Physician Assistant who has completed the course of study of the said title and has obtained licensure for the state of Nevada for the stated profession.
- B. All participants must hold current Nevada professional license.
- C. All providers must be in training to practice (mentorship) or be practicing in primary care in a per diem, part time, or full time position with the designated institution.

- D. Willing to agree to the consent form.
- E. Literate in English.

Exclusion criteria:

- A. Nurse Practitioner students, Physician Assistance Students, and Physician Students.
- B. Registered Nurses, Licensed Practical Nurses, and Medical Assistances.
- C. Providers who have worked for the institution and are currently retired, resigned, laid-off, or have been promoted out of primary care.
- D. Providers working in the practice specialty of in-patient or out-patient mental health.

Procedure

The first phase of the study consisted of dispersing seven hundred envelopes containing the consent and survey using postal mail to a random selection of participants drawn from the MD, NP, and PA mailing lists. The participants were contacted at the addresses provided on the mailing lists purchased from the corresponding Nevada professional medical organizations. The postal mailings were divided into 125 to physician assistants, 275 to medical doctors, and 300 to nurse practitioners. The mailings took place over the course of 3 weeks with 300 mailings going out the first week, and the remaining 400 going out the second week. Participants were directed to complete the survey by typing in the web address provided into their internet search engine via the Survey Monkey system, or by faxing the survey to the designated facsimile number. A

sample of 85 participants was acquired through facsimile, postal mailings back to the SI, and completion of the survey using the Survey Monkey online system during this first phase of the data collection.

The second phase of the study included contacting the Chief Nursing Officer of the MCO in Nevada and providing her with an email containing the Survey Monkey link to the study, and to distribute via email to the MCOs internal network of PCPs. Two follow up emails were sent to the PCPs each after one week to encourage those who had not participated in the study to complete the survey. A total of 13 PCPs completed the study after data collection through this second phase was completed 3 weeks later. Data analysis took place after 6 weeks of data collection, at which time an exhausted attempt to achieve an appropriate sample size had been undertaken.

Survey Monkey

Survey Monkey is an online survey technology enabling participants in a study to complete a survey using the internet. When the participant receives the web address linking to the corresponding study on the Survey Monkey website, they either click on the link or type the link into the website search engine. Once the participant enters into the Survey Monkey website, a consent form and survey immediately appears. If the participant agrees to participate in the study, they are directed to click the “next” button on the bottom of the screen. If they choose not to complete the survey they may click the “exit this survey” button on the top right side of the screen. When the participant has agreed to the consent form and has completed the survey either by clicking the answers that apply to them or by typing words into the spaces provided, the participant is

prompted to click the “done” button. Once the “done” button is clicked, the participant is rerouted out of the Survey Monkey system concluding their participation in the study. In addition, after the participant clicks “done”, the online forms automatically upload into the Survey Monkey system and saved for later analysis by the investigators. Survey Monkey only allows each participant to complete the survey once. The participant is able to exit the survey at any time without consequence, again by clicking the “exit this survey” button.

Identifiers such as name, and location of practice office were not required on the paper or online Survey Monkey consent and survey material distributed to the potential participants. In addition, no signature was required on the consent forms as the consent was approved for exemption of consent. The surveys completed through Survey Monkey were printed to provide a paper copy. The online surveys were deleted from the Survey Monkey system after 6 weeks once all the data was collected and paper copies were printed. Only the Principle Investigator (PI) and the Student Investigator (SI) had access to the paper consent forms and surveys. All paper copies of the survey will be locked in a designated office at the University of Nevada, Las Vegas School of Nursing department. After three years, the paper documents will be shredded.

Instrument

The participants were asked to complete a 19 question self administered email/postal mail questionnaire, which inquired about PCP characteristics and their professional practice habits related to depression screening. The survey included; demographic information, perceived barriers to depression recognition and diagnosis,

self-efficacy, perceived informal and actual formal training, and screening practices used for depression. This instrument was developed based on the 8 item New General Self Efficacy Scale (NGSES) (Chen et al., 2001) and the Patient Care Survey (PCS) (Adamek and Kaplan, 2000), which are discussed below.

The 8 item New General Self-Efficacy Scale (NGSES) (Chen et al., 2001) was adapted to measure self-efficacy with depression screening. The NGSES consists of 8 questions measured at the ordinal level on a 4 point Likert scale, and ranges from strongly agree (4) to strongly disagree (1). Reliability estimates for the NGSES were reported to range from 0.85 to 0.88 (Chen et al., 2001). Validity was high, as determined by a panel of 8 graduate and 14 undergraduate psychology students.

The PCS is a 20 question survey developed and utilized in Adamek and Kaplan's (2000) study. The PCS was adapted for this study to assess the demographics, barriers to depression recognition and diagnosis of depression, actual informal and perceived formal training, and screening practices of PCPs. Only applicable questions were modified and implemented in this study's questionnaire.

The PCS was designed specifically for use in the study conducted by Adamek and Kaplan (2000), and does not appear to be based on any previous scale. Reliability testing for the PCS was not available through the literature. Focus groups, including NPs and MD's, were utilized to develop the questions on the PCS instrument which demonstrated content validity.

In the survey used in this study, the PCPs were asked to rank the barriers to recognizing depression in practice from 1 to 4, i.e. the barrier in practice perceived to be the least (1), second least (2), second most (3), and the most (4). Measuring the barriers to

diagnosing depression required the participants to check off which of the barriers listed they experience in practice. Formal training was measured with the PCP rating from exceptionally poor to exceptionally good, in relation to how well they felt their post-secondary training prepared them to assess and screen for depression. The measurement level of informal training was presented in a ratio. The PCP wrote in the space provided the number of hours (over the last 2 years) they spent learning about assessing and diagnosing depression in adults, for both in-services and CMEs. To measure PCP screening practices, the participants were asked to write the percentage of the time they utilized each method of screening on a ratio scale (i.e. 0%, 10% 20%, 30%, etc). Self-efficacy was measured by the participant indicating on the 5 likert scale, ranging from strongly agree to strongly disagree (with the inclusion of a “neutral” option) the degree to which the statement applied to them.

Data Analysis

All data retrieved from the survey was entered using SPSS 15.0 (SPSS, Inc., 2007) for Windows software. A variety of statistical tests were used to measure the data. Descriptive statistics were used to analyze the demographic information and research question 1. The remaining statistical tests used in this study are depicted in Table 1. The use of Mann Whitney's analysis was used to determine between which groups the statistically significant difference occurred with respect to the recognition barriers. In addition, a Cronbach Alpha was used to test the reliability of the self-efficacy scale adapted for this study.

Table 1 Level of Measurement and Statistical Tests for Each Variable

Variable	Measurement	Test
Barriers to recognizing depression	Ordinal	Kruskal Wallis
Barriers to diagnosing depression	Nominal	Kruskal Wallis
Formal Training	Ordinal	Kruskal Wallis
Informal Training (CME's, in-services)	Ratio	ANOVA
Screening practices	Ratio	ANOVA
Self-Efficacy	Interval	ANOVA

Three relationships were analyzed using the correlations listed in Table 2. It is suggested by Burns and Grove (2005) that interval/ratio level data can be transferred to ordinal/nominal level data, with the reverse being untrue. In the correlation between formal training and self-efficacy, formal training was measured at the ordinal level; therefore, self-efficacy was transferred from interval level data to ordinal level data for the purpose of this analysis.

Table 2 Correlation Test

Variables	Measurement level	Correlation
Informal Training/Self-efficacy	Ratio/Interval	Pearson's R
Formal Training/Self-efficacy	Ordinal/Interval	Spearman's
Screening Practices/Self-Efficacy	Ratio/Ratio	Pearson's R

Human Subjects

The human subject's rights were protected by submitting the Human Subject's Rights Protocol Form for approval to the Department of Nursing Human Subjects Rights Committee and the UNLV Institutional Review Board (IRB). Initiation of the study occurred upon final approval from the appropriate committees. The consent form was approved by the Research Involving Human Subjects on May 6, 2008. The consent form was included with the survey to each participant and insured confidentiality and provision of information, as well as, whom at the university to contact with questions. Reassurance was provided to each participant explaining they could withdraw from the study at anytime without penalty.

CHAPTER 5

FINDINGS

This chapter summarizes the findings of this study's results on depression screening patterns of MDs, NPs, and PAs in primary care.

The demographics of the sample participants are described followed by the findings of each of the seven research questions. The reliability analysis of the 8 item self-efficacy scale adapted for this study will then be discussed.

Sample Description

A total of 98 surveys were returned to the student investigator through facsimile, postal mailings back to the SI, and through the Survey Monkey administration of the questionnaire between the dates of May 8th, 2008 and June 20th, 2008. Two of the 98 surveys were removed from the sample due to the participants practicing in a mental health setting; therefore, meeting one of the exclusion criteria. One participant was excluded from the data because he chose not to identify his level of practice and much of his information was not completed. The total number of valid surveys which are reflected in the results is ninety five (n= 95), with NPs (n=65), PAs (n=16), and MDs (n=14).

All survey data included in the study are primary care providers currently working in family practice (65%, n=62), internal medicine (19%, n=18), or another non-mental health specialty (16%, n=15). Fourteen medical doctors, 65 nurse practitioners, and 16 physician assistants participated in the study, of which 77 were board certified and 15 were not. The age range of the participants is 27 to 70 with the mean = 47.02, median = 47.00, and mode = 37, and the ratio of males to females is 16:74. A majority of participants identified themselves as Caucasian (81%, n=77), while 4% (n=4) were Filipino, 4% (n=4) were Hispanic, and 1% (n=1) each of American Indian, Black, Chinese, East Indian/Pakistani, Japanese, and Other. The participant indicating other as his choice identified himself as “human” in the comment field.

Results

The following are the results of the statistical analyses for each research questions.

Research Question 1

“Identify the perceived barriers to the recognition and diagnosis of depression in primary care.”

Of the total sample (n=95) in this study, “lack of time” was rated the most common barrier to depression recognition with a frequency of 27 participants. Twenty five participants (n=25) rated “patient unwillingness to seek help due to stigma, guilt, and shame” as the second *most* common barrier to depression recognition. The second *least* common barrier identified by the participants with a frequency of twenty six (n=26), was “medicalization of presenting symptoms”. Finally, “my attitude, values, and beliefs

related to depression” was reported as the *least* common barrier to recognizing depression (n=28) by all groups of PCPs.

The most common barrier to diagnosing depression by a large frequency majority (n=62) is “complex cases impede accurate depression diagnosis”. The barrier “fear of offending the patient by diagnosing depression” and “the depression criteria are inappropriate for primary care” tied for second most common barrier for depression diagnosis with 13 participants each stating they identify these variables as barriers. A very close frequency of 12 marks the third barrier of “minimal knowledge/training about diagnosing depression”, followed by “patient does not have third party coverage” with 8, and “minimal confidence in my abilities” with 2 participants identifying these variables as barriers.

Research Question 2

“Is there a difference between the perceived barriers to depression recognition and diagnosis between nurse practitioners, physician assistants, and medical doctors in primary care?”

Of the eight barriers to depression recognition studied, two barriers were found to be statistically significantly different between the 3 PCP groups. The Kruskal Wallis statistical test found the barrier “culture” ($\chi^2 = 6.240$, $p = 0.04$), and “lack of time” ($\chi^2 = 6.538$, $p = 0.04$) between one of the three groups of providers to be statistically different. Three Mann-Whitney tests were conducted to determine between which groups the statistically significant difference exists. The mean ranks between group 1 and 2 (MDs and NPs) were $M = 37.55$ and $M = 25.22$ for “time” ($U = 119.5$, $p = 0.018$) and $M = 12.67$ and $M = 24.47$ for “culture” ($U = 69.00$, $p = 0.011$). No other statistically significant differences

were found between the groups (see Table 3). These statistics indicate MDs report “time” and “culture” as barriers significantly more than NPs.

Table 3 Kruskal Wallis Results for Recognition Barriers

Variable	χ^2	df	p
Time	6.24	2	0.04*
Patient unwillingness	2.78	2	0.25
My attitude	0.13	2	0.94
Lack of identified cues	0.63	2	0.73
Medicalization	3.96	2	0.14
Discomfort discussing	2.73	2	0.26
No reimbursement	4.57	2	0.10
Culture	6.54	2	0.04*

* $p < .05$.

Five barriers to diagnosing depression were analyzed to determine if statistically significant differences between the three PCP types existed. No statistically significant differences were found (see Table 4).

Table 4 Kruskal Wallis Results for Diagnosis Barriers

<i>Variable</i>	<i>x²</i>	<i>df</i>	<i>p</i>
Fear Offending	1.45	2	0.49
Inappropriate Criteria	0.68	2	0.71
Complex Cases Impede Diagnosis	0.45	2	0.80
No Insurance	1.95	2	0.38
Minimal Confidence	0.93	2	0.63
Minimal Knowledge	3.74	2	0.15

Research Question 3

“Is there a difference in depression screening practices between nurse practitioners, physician assistants, and medical doctors?”

The ANOVA test was used to analyze screening practice differences between provider types. When ANOVA was used to analyze the use of unstructured interview, screening tool, medical work up, and other screening methods, no statistically significant differences were detected between these interval/ratio level data and the three provider types (see Table 5).

For percent each PCP used unstructured interview was 66:67:56 (MD:NP:PA). Like wise, percentages used for screening tool and medical work up was 19:13:24 (MD:NP:PA), and 19:12:18 (MD:NP:PA).

Table 5 **ANOVA Results for Screening Practices**

Stats	<i>Unstructured interview</i>	<i>Structured interview/tool</i>	<i>Medical work up</i>	<i>Other screening method</i>
<i>F</i>	0.66	1.35	1.5	1.7
<i>df</i>	2	2	2	2
<i>p</i>	0.52	0.27	0.24	0.20

Research Question 4

“Is there a difference in the perceived formal and actual informal training nurse practitioners, physician assistants, and medical doctors received regarding depression diagnosis and screening?”

The ordinal level variable “formal training” was statistically analyzed using the Kruskal-Wallis test. Between the three provider groups there was no statistically significant difference ($\chi^2 = 5.177$, $df = 2$, $p = 0.075$) with regards to the PCPs rating of how well their medical education prepared them to diagnose depression.

With regards to the “informal training” variable, there was also no statistically significant differences between the three provider types relating to continuing medical education ($F = 0.174$, $df = 2$, $p = 0.840$) and in-services ($F = 1.894$, $df = 2$, $p = 0.158$). For CME’s and in-services, the mean hours for each PCP type was 11:10:13 (NP:MD:PA), and 4:3:5 (NP:MD:PA).

Research Question 5

“How self-efficacious are primary care providers in their ability to screen for depression?”

When analyzing for statistically significance differences in self-efficacy with depression screening practices between the PCP types, two ANOVA tests were conducted. One of the ANOVA tests compared each of the 8 self-efficacy scale item individually with PCP type, while the second ANOVA analysis compared the summative score of the self-efficacy scale with PCP type. This was conducted to verify the results of the ANOVA analysis. Both ANOVA tests showed no statistical difference in the primary care provider's confidence with depression screening (see Table 6). Average self-efficacy sum of PCPs in this sample was 31:33:34 (MD:NP:PA).

Table 6 **ANOVA Results for Self-Efficacy Scale Individually and Sum**

	#1	#2	#3	#4	#5	#6	#7	#8	Sum
<i>F</i>	1.60	0.87	1.94	0.69	0.98	1.25	0.10	0.10	0.95
<i>df</i>	2	2	2	2	2	2	2	2	2
<i>P</i>	0.20	0.43	0.15	0.51	0.38	0.29	0.90	0.90	0.39

Research Question 6

“Is there a relationship between formal and informal training and self-efficacy?”

The informal training variable number of hours performing CMEs is found to be positively correlated with the self-efficacy of the PCP ($r = 0.41$, $p < 0.01$). Number of in-service hours completed was also positively correlated with PCP rating of self-efficacy ($r = 0.33$, $p = 0.005$). Likewise, self-efficacy is found to be positively correlated with formal training ($r_s = 0.35$, $p = 0.001$).

Research Question 7

“Is there a relationship between self-efficacy and screening practices of providers?”

Pearson’s product moment was utilized to determine the degree to which correlations may exist between self-efficacy and the variables unstructured interview, screening tool, medical work up, and other screening methods. As shown in Table 7, there is no significant positive or negative relationship between self-efficacy and unstructured interview, screening tool, medical work up, and other screening method.

Table 7 **Pearson’s R Results for Self-Efficacy and Screening Practices**

<i>Stats</i>	<i>Unstructured Interview</i>	<i>Structured Interview/tool</i>	<i>Medical Workup</i>	<i>Other Screening Methods</i>
<i>r</i>	-0.09	0.20	0.24	-0.17
<i>p</i>	0.43	0.11	0.84	0.40

Reliability Analysis

The self-efficacy scale used in the survey consisted of 8 items, all of which were measured on a likert scale: rating from 5 = strongly agree to 1 = strongly disagree.

Cronbach’s Alpha (an internal consistency reliability analyses) was conducted for the 8 items on the scale. The Cronbach’s Alpha coefficient was found to be 0.912, which is much higher than the acceptable minimum of 0.80 for this well developed self-efficacy instrument (Burns & Grove, 2005).

CHAPTER 6

DISCUSSION

This chapter includes discussions and interpretations of this study's results, study limitations, and recommendations for clinical practice and for future depression research.

Discussion and Interpretation of Results

Research Question 1

The first research question investigated was: "Identify the perceived barriers to the recognition and diagnosis of depression in primary care." The variable of time reported in this study was consistent with Solberg, Korsen, Oxman, Fischer, & Bartels (1999) and Glasser and Gradval's (1997) studies which found MDs to report time as the greatest barrier to *recognizing* depression. Even from the patient perspective, as in Pfaff and Almeida's (2004) study, "short consultation time" was reported by patients as being a main barrier to under-recognizing their depression complaints. This study's results support other research indicating time is one of the most prevalent PCP barriers to recognizing depression in primary care.

This study also shows unwillingness of the patient to seek help due to shame and guilt, etc., the second most common barrier to depression recognition. This was similar to Adamek and Kaplan's (2000) study. Their survey of PCPs indicated the unwillingness of the patient to seek help was the most common obstacle to recognizing depression. Yet, Shah and Scogin (2006) found that 131 patients (n=140) stated they would be willing to complete a depression screening instrument at their PCP's office if one was provided. Likewise, Davis, Moye, and Karel's (2002) study of 382 older adults showed 92% of patients would complete a depression screening tool, as well. In fact, Saver, Van-Nguyen, Keppel, and Doescher's (2007) study of 15 patients stated their MDs seemed uninterested in their nonphysical complaints (depressed mood). The patients also felt their depression related concerns were dismissed when they were brought up to their MD (2007).

The difference demonstrated in this study and Adamek and Kaplan's (2000) survey may be due to these two studies analyzing the perspectives of the PCPs and not the patients. It appears that PCPs may be inaccurate in their perspectives that patients are unwilling to seek depression related help. If this is the case, then the belief that patient unwillingness to seek help as a main barrier to recognizing depression is not true, and further investigation into the influence of patient factors on depression recognition is warranted.

The most common barriers to *diagnosing* depression found in this study were the following: "Complex cases impede accurate depression diagnosis", "fear of offending the patient by diagnosing depression", "the depression criteria are inappropriate for primary care", and "minimal knowledge/training about diagnosing depression." Of particular interest of these results is the barrier "complex cases impede accurate depression

diagnosis.” Although no literature was found ranking the barriers to diagnosing depression from most to least common, there is consistency that complexity of making a depression diagnosis is a prevalent issue in primary care. Unutzer (2001) states that differential diagnoses such as grief and bereavement, and other medical illness such as Cushing's disease, chronic fatigue syndrome, and Alzheimer's, etc. which can also cause or exacerbate depression symptoms, often make discriminating depression from these illness a challenge. The boundaries where one illness ends and another begins can become very blurred since many of the shared symptoms are psychological, which are difficult to objectively measure and assess.

Although PCPs role as generalists is to manage a wide variety of diseases: should they be expected to consistently and accurately differentiate between similarly presenting medical illnesses and depression? It is expected practice to refer any medical condition falling beyond the abilities of the PCPs, and referral to a mental health specialist in the case of a complex depression case is appropriate. So, the emphasis placed on expecting PCPs to master diagnosing depression may not be critical when referral to mental health is available for appropriate management of depressed patients. However, if a patient is referred to a mental health specialist the patient may not follow through with the referral due to feelings of stigma and shame associated with mental illness. In this case, referring and not making a depression diagnosis by the PCP may only perpetuate the problem of under diagnosed depression. None-the-less, it is evident that the complexity with making a diagnosis of depression when comorbidities exist is a prominent barrier needing to be addressed.

Research Question 2

The second research question was: “Is there a difference between the perceived barriers to depression recognition and diagnosis between nurse practitioners, physician assistants, and medical doctors in primary care?” The results of this study found that lack of time and culture were the two depression recognition barriers reported more by MDs than NPs.

These results are not consistent with Adamek and Kaplan’s (2001) study which found MDs and NPs equally likely to mention lack of time as a barrier when managing depression. Part of the difference in results could be due to this study’s small sample of MDs (n=14) and PAs (n=16). None the less, there is some suggestion that perhaps NPs do not struggle with time the same way as MDs do. Courtney and Rice (1997) suggest the NP’s model used for primary care is more comprehensive than the medical model used by MDs and PAs. Brown & Grimes (1993) study found that NPs spend more time per visit (24.9 minutes) with their patients than do MDs (16.5 minutes), which is suggested to be the result of NPs comprehensive practice model. The time difference between the PCP visits appears to occur because NPs spend more time educating, counseling, and focusing on health promotion activities as a result of their comprehensive practice model (Brown & Grimes, 1993).

In addition, the culture barrier identified significantly more by MDs may also be due to the comprehensive practice model used by NPs. Since, NPs tend to spend more time with their patients, perhaps NPs have the advantage of learning more about the population they serve. This is in contrast to MDs who have shorter visits and a different model of care. Building rapport and getting to know patients through assessment,

teaching, and counseling will, with out question, allow the PCP to learn more about cultural, societal, and economic difference. This may enable the PCP to become more aware and sensitive to their culturally different patient's needs.

Southern Nevada has a large (610,051) Hispanic or Latino population (U.S. Census Bureau, 2006). If the NP is spending more time getting to know the Hispanic patient's beliefs and concerns about depression, the NP will certainly be more proficient with picking up cues to depression, be able to approach depression in a more culturally sensitive way, and perhaps diagnose depression more accurately with her Hispanic patients. So, perhaps the comprehensive model used by NPs is preventing time and cultural barriers to exist in their practice.

Research Question 3

"Is there a difference in depression screening practices between nurse practitioners, physician assistants, and medical doctors?" was the third question presented in this study. It is interesting that of the 4 categories of screening practices (medical work up, unstructured interview, structured interview/use of scale, and other) there were no statistically significant differences found between PCP groups. This result is contrary to Adamek and Kaplan (2001) who found medical work ups, formal questionnaire/scale, and patient interviewing by staff were reported to be used differently by NPs than MDs ($p < 0.01$).

The inconsistencies seen in this study may be due to an inadequate sample size, as mentioned previously, but also may be because 6 MDs acquired in the sample worked for the large managed care organization (MCO). The MCO has specific guidelines for PCPs to use when screening for depression; therefore, these MDs may have more education and

information about screening than those in private practice. Since the total sample of MDs was already small, the 6 MDs working in the MCO may have skewed the screening practice data.

In addition, Glasser and Gravdal (1997) found 33% of PCPs stated they used screening tools/scales to screen for depression at any given time. These results are different from this study's findings which show that 66% of all PCPs surveyed used screening tools. However, care must be taken when interpreting these results since not all those who reported using a particular screening method used it 100% of the time. The average percent of time screening tools are used by all three PCP groups in this sample is $M = 22.86$. This means that of the 66% who stated they use screening tools the average amount of time they actually use the screening tool when assessing a patient for depression is approximately 23%. The inadequate sample size and the skewed presentation of MDs working in MCOs may be reason for the inconsistencies in this data, thereby preventing a valid comparison of research results.

Research Question 4

The research question, "Is there a difference in the formal and informal training nurse practitioners, physician assistants, and medical doctors received regarding depression diagnosis and screening?" revealed sixty nine percent of MDs stated their formal medical training relating to depression screening was "good" or "exceptionally good", compared to 60% of NPs and 87% of PAs. On the other hand, 7% of MDs, 8% of NPS, and 0% of PAs rated their medical training as poor to exceptionally poor.

According to these results, there is no statistically significant difference between the three PCP types. These results are inconsistent with Adamek and Kaplan's (2001) study which

found highly statistically significant differences between MDs and NPs ($t = -5.93$, $df = 497$, $p < .001$).

Although this study's desired sample size ($n=160$) was not attained, this data brings into question if differences in the medical training received by MDs, NPs, and PAs exist. MDs undergo a few more years of medical training than NPs, who receive a several more total years of medical education than PAs. Simple logistics suggest the more years of school one completes the more knowledge they would have, as well. However, focus of those years of training must be taken into consideration. NP and PA's education programs focus more on health promotion and disease prevention which is the umbrella depression screening falls beneath. However, it still must be determined if the MD program, which is longer and more directed to complex medical management, is different in its training for depression screening than NPs and PAs who have less overall years of education but are more disease prevention and health promotion focused.

Never the less, the results of this study are self-reports based on the perspectives of the PCPs and there may be inherent differences in the attitudes, values, and expectations of education between each group. So, to determine if differences exist in actual knowledge and education that each PCP type receives, it would be more accurate to represent this variable more objectively. This could be achieved through analyzing medical institution curriculums and the tests taken in medical school related to depression.

With regards to the informal training (CMEs and in-services) received by the PCP groups, there were no statistically significant differences, as well. This suggests that despite the practice setting of the PCP type, they all essentially attend the same amount of

educational sessions directed towards depression management. This consistency was expected simply because all PCPs have access to the same organizations who offer CME's. CME's are held by a certain number of organizations which hold a limited number of CME courses per year. So, despite a PCPs level of practice, there is motivation in all three groups to attend the CMEs available, which are necessary to renew their professional license.

Research Question 5

The result of the question, "How self-efficacious are primary care providers in their ability to screen for depression?" was found to be consistent with previous research analyzing PCP confidence with depression screening. Adamek and Kaplan's (2001) study was consistent with this study's results. They found no statistical difference between MDs and NPs confidence with assessing for and diagnosing depression.

Since this study found all three PCP types were similar in their training and screening practices, it is understandable they also would be similar in their confidence in screening for depression. If a positive correlation between self-efficacy and confidence does exist as Bandura explains, then it is expected these seemingly equally educated PCPs would be equally confident in their depression screening skills.

Research Question 6

The next question inquired if a correlation exists: "Is there a relationship between formal and informal training and self-efficacy?" Self-efficacy and formal and informal training were found to have a significantly positive correlation. These results suggest the more formal or informal training the PCP has with depression screening the more confident the PCP will be in his or her depression screening practices. The reverse was

also found to be true. Those PCPs rating their formal training with less satisfaction or completed fewer informal training sessions were less confident in their depression screening behaviors.

Although, there are no studies to directly compare with these results, the findings from this study support Bandura's social learning theory. Bandura's theory (1998) explains that acquisition of a behavior consist of observing, encoding and practicing the behavior (training). Confidence in performing the skill develops when the individual performs the behavior with a positive reinforcement/outcome successfully on repeated occasions. Therefore, confidence is directly related to the degree of preparation (training) taken by the individual completing the behavior.

Based on this research it is tempting to say that those PCPs who are confident in their depression screening behaviors have more training which would result in them being more effective with depression screening. In Doucherty's (1997) study, there is a relationship between PCP confidence and effective care. Unfortunately, this study did not research how effective confident PCPs are with depression screening, so this cannot be assumed from the data presented.

Research Question 7

The last research question, "Is there a relationship between self-efficacy and screening practices of PCPs?" found no significant correlation between the variables. This suggests the confidence level of the PCPs is not related to the type of screening practices used. In other words, when a PCP uses a particular screening method it does not indicate how self-efficacious they are.

No previous studies were found examining the correlation between depression screening practices and self-efficacy, so, comparisons cannot be made to other literature at this time. However, it is understood there are many different ways to perform a task or skill (i.e. suturing an incision) and be able to still attain the desired outcome. As mentioned in chapter 1, current depression guidelines do not state there is only one screening method to achieve a successful depression diagnosis.

Also, despite the method an individual uses to complete a task, confidence can exist, even if it is not the preferred technique. For example, if an individual successfully and repeatedly completes a task using the “incorrect” technique, they eventually will become confident in that skill even if the technique is not the “correct” method. According to Bandura (1998), confidence comes from repeatedly attaining the desired outcome not from completing the task accurately, although typically an accurately performed behavior will produce a positive outcome more consistently. Despite the lack of sample size, the data is consistent with the understanding that confidence can exist independently from type of screening behavior.

Limitations

The sample size (n=95) was an important limitation to this study. Each of the three PCP groups was expected to have an approximate sample size of 53.3 to make up the calculated minimum sample of 160. Due to their small sample size, the MD and PA groups were not adequately represented. Small sample size increases the probability of making a type II error, and must be taken into consideration when reviewing these results. In addition, a large portion of MD and PA data came from the MCO. The

percentage of MCO to private practice PCPs in this sample may not accurately represent the actual distribution of PCPs in Nevada. Therefore, the findings cannot be generalized to MDs and PAs in the state of Nevada.

In addition, the survey was a self-report of the PCPs practices and, due to social attractiveness, the PCPs may not accurately report their actual practices. Likewise, those who did not respond to this study may be less interested in mental health issues or may be less proficient with recognizing and diagnosing depression, consequently, may desire to complete this survey less. Unfortunately, there is a lack of information to determine if differences exist between those who did and did not respond to this study.

Another limitation to the study is present in the formatting of the postal mailing surveys. The lack of financial resources resulted in the consent and survey being photocopied double-sided to enable less expensive postage. In doing so, when the surveys were faxed back to the SI, several of the surveys were missing the middle page due to its placement on the back of the first page. Unfortunately, question 8-15, two of which were variables being analyzed (screening practice and depression recognition practices), were missing from 17 participants.

Lastly, question fifteen was answered in one of two ways by the participants. It appears some participants interpreted the question as intended, rating only 4 variables as 1, 2, 3, or 4. The alternate interpretation consequently resulted in the PCPs rating each of the 8 variables on the 1 to 4 scale. This caused some difficulty when interpreting the results; however, frequencies were used to overcome this obstacle.

Recommendations

Recommendations for Primary Care Providers and Institutions

It is evident the patient factor “patient unwillingness to seek help due to stigma, guilt and shame” is an important barrier to depression recognition. As part of their role, PCPs have a moral obligation to educate their patients on maximizing their self care. PCPs and institutions, either at the federal health or private PCP practice level, must be aware of how to optimally promote depression awareness. As health care professionals, we have the ability to educate our patients on the myths and misconceptions about depression, so the stigma and shame related to depression fades.

I recommend PCP offices have depression literature (brochures and posters) available in the reception area and clinic rooms for patients to read while they wait. As well, holding depression awareness campaigns through the month of May, which is mental health month in the United States, would enable a large number of patients to be exposed to information about depression (National Alliance of Mental Illness, 2008). One method to implement this is by providing each patient, seeing their PCP during the month of May, with a handout addressing the myths and misconceptions related to depression.

Another important barrier that is necessary to address is PCP lack of time. The challenge with short visits is the value our medical system has placed on compensation of services. In PCP practice, the more patients seen, the more patients are billed, thus, more revenue is generated. Unfortunately, this cycle can compromise the length and quality of the patient visit. PCPs and institutions need to focus on quality care, particularly when dealing with a potentially complex illness like depression. Unfortunately, this may mean seeing fewer patients, thus generating less revenue.

None-the-less, I recommend institutions give PCPs more time to see patients, even if it is only an extra couple minutes, to allow more time to address psychosocial and mental health concerns. Alternatively, to save the PCP time in the clinic room, medical assistants or administrative staff could provide patients with a depression screening tool in the waiting room. If the screening tool shows depression risk, the PCP could address depression symptom during that visit or schedule another visit to address those concerns specifically. Likewise, PCP offices could hold depression screening clinics one day a month where patients could be screened for depression by medical staff. Either increasing PCPs visit times or being more creative with depression screening programs may help overcome the lack of time barrier.

Culture's influence on mental health has shown to be a prominent barrier in this study. The United States is a very culturally diverse nation, with some states varying more culturally than others. Sensitivity to the presentation of and beliefs about depression related to cultural background is an important quality to possess for accurate recognition of depression.

Learning about the various cultural beliefs with respect to medical illnesses sounds like a very daunting task. However, there are strategies to help PCPs become more culturally cognizant. One recommendation is for PCPs to develop connected relationships with their patients. Getting to know patients will create greater insight into their individual attitudes and beliefs related to depression, enabling the PCP to better assess for mental illness. Again, clinic visits may need to be lengthened slightly to allow for casual/mental health talk. Likewise, PCPs could have patients complete demographic sheets with questions inquiring about hobbies, interests, and past times, and keep these in

the patient's chart. The PCP could use these questions to initiate conversations that encourage the process of rapport, trust, and cultural sensitization through their interaction.

Additionally, education with a focus on cultural variations related to various mental health disorders should be available, either in the formal training or informal training programs. Medical training programs are already strained by the abundance of material covered in their courses, but CME's and in-services could be offered focusing on the presentations of depression in various cultures.

Recommendations for Future Study

This study should be repeated with a larger sample size of MDs and PAs. A larger sample would allow a better representation of the PCP groups, which would afford a more valid comparison and be more generalizable to the population. Since, literature of PA depression screening practices was not found, repeating this study with a greater sample of PAs would provide new information and insight into the PAs professional practice. Also, I recommend the question pertaining to recognition of depression be reworded or studied at a different measurement level. For example, the question could request participants to rate all 8 variables on a 1 to 8 scale which would enhance ease with interpreting the question. Alternatively, the variables could be measured at the nominal level using a check off system, as the depression diagnosis barriers were quantified.

In addition, since a greater sample of participants was attained through the postal mailing procedure, I would recommend the future study conducted in Nevada to use postal mailings rather than emailing. Perhaps the reasoning for the lack of response

through emailing is due to the over saturation of information and “junk mail” gained through email, resulting in blocked emails through high grade filters. This prevents any unfamiliar email from reaching the “inbox” of the recipient. This was contrary to the SI anticipated result. None-the-less, response to the postal mailings resulted in a more than expected outcome (n=82) and may be a more favorable option to reach PCPs in this community.

On that note, the instrument dispensed through postal mailings should be single sided. Formatting the material in this manner will better ensure all data pages are returned through facsimile. Alternatively, enclosing a stamped return envelop with the survey would better ensure all data sheets are returned, thus eliminating the need to facsimile the survey back to the researcher.

Lastly, it would be interesting for future studies to examine if particular screening methods or combinations of screening methods are more effective then others. This would enable us to determine if a specific screening method is more effective then other methods. From this type of research, perhaps more specific guidelines could be developed recommending optimal screening strategies to ensure an accurate and effective depression diagnosis. In addition, a study examining how effective confident PCPs are in their depression screening practices as compared to those who are less confident would be of interest. This could verify if confident PCPs are actually more effective in their screening practices then those less confident. If this were found true, further studies testing strategies to achieve greater PCP confidence with depression screening would surely follow. However, if results suggested the opposite were true, it would lead researchers to question the importance of confidence with achieving effective care.

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