Depressive Symptom Reversal for Women in a Primary Care Setting: A Pilot Study

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Cognizant that only 20% of depressed individuals seek treatment, Healthy People 2000 has recommended a goal of increasing this figure to 45%. This flows from a recognition of depression as a serious and costly problem, with women carrying twice the risk of men. Primary care settings are the first contact a depressed woman may make with the health care system. This study piloted a collaborative model in which a Psychiatric Mental Health Advanced Practice Nurse (PMH-APN) was available on site to assist providers to recognize women with depressive symptoms and to provide intervention. Thirty three women were identified by primary care providers and referred for screening to the PMH-APN. Assessment and intervention based on the interpersonal theory of Peplau were accomplished in an average of eight sessions with the PMH-APN. Pre and postintervention descriptive data on the primary outcome (depressive symptoms) and three theoretically congruent mediating variables (performance and social self-esteem and satisfaction with interpersonal relations) were consistent with the expected outcomes of the intervention.

DEPRESSION IS A serious health problem affecting 16 million Americans each year (Henderson & Pollard, 1995; Wells, et al., 1992). With a calculated cost to the nation of $43.7 billion dollars (Greenberg, Stiglin, Finkelstein, & Berndt, 1993) and long-term associated human cost consequences, the Healthy People 2000 initiative has identified a goal that the percentage of affected individuals obtaining treatment be increased to 45% (US Department of Health and Human Services, 1996). This goal is a challenge, as only 20% of depressed individuals get help even in the face of effective interpersonal and medication approaches (Munoz & Ying, 1993). Studies of the help-seeking patterns of depressed persons have shown that the primary care facility is the first recourse (Munoz, et al., 1995). Unfortunately, depression is not always recognized as such, or the person may have depressive symptoms that are vaguely consistent with medical illnesses. In one study, the cost for every category of care (primary care, medical specialty, inpatient, pharmacy, laboratory) used by depressed persons was double that of nondepressed persons, regardless of whether they were treated for depression or not (Simon, VanDorff, & Barlow, 1995). Comorbid medical conditions explained only part of this inflated cost, suggesting that related provider time and diagnostic tests are part of the picture. Greater accuracy in recognition of depression and depressive symptoms (subclinical depression) and immediate intervention could reduce these costs.

Targeted work by the Depression/Awareness, Recognition, Treatment Program of the National Institute of Mental Health (D/ART) and the Agency for Health Care Policy and Review (AHCPR) (AHCPR, 1993) initiatives have improved the recognition of depression by lay persons and pri-

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mary care providers. The D/ART initiatives began reducing stigma by spreading the word that depression was a treatable disorder. The AHCPR guidelines were pivotal in educating primary care providers to respond to depression. The guidelines clearly favored medication as the primary treatment modality, with therapies that use interpersonal, social, and health practice strategies as adjuncts to medication. Despite convincing evidence of the efficacy of the on-site placement of mental health providers in primary care settings to provide such adjunct care (Kessler, Steinwachs, & Hankin, 1982; Hankin, Kessler, Goldberg, Steinwachs, & Starfield, 1983), this model has not been used, nor has the Psychiatric Mental Health Advanced Practice Nurse (PMH-APN) been prominent in this role. The PMH-APN could be expected to implement the diagnosis, intervention, and follow-up of persons with major depression, dysthymia, and depressive symptoms by using a wide variety of strategies (including medication) that fit into the individual's total health care. Intervention with persons who do not meet criteria for a psychiatric diagnosis but whose depressive symptoms create disability could be expected to substantially reduce the inappropriate use of medical treatments and reduce the risk of a costly episode of major depression (Broadhead, Blazer, George, & Tse, 1990; Gotlib, Lewinsohn & Seeley, 1995). Preventive intervention with these individuals who have a potential health problem is within the practice of the PMH-APN. To date, clinical trials that used nursing interventions specifically created to address depressive symptoms have been limited (Merwin, et al., 1997; Merwin & Mauck, 1995).

This pilot study tested the feasibility of a depressive symptom screening and intervention initiative in a primary care setting. Specifically, the study was conducted to establish whether women with depressive symptoms could be identified by primary care providers, to establish whether symptomatic women would participate in an intervention, and to implement a theoretically driven intervention delivered by a PMH-APN. Additionally, several standardized instruments were tested to ascertain whether they were sensitive to outcomes proposed to occur as a result of the intervention. The intervention focused on women because women are twice as vulnerable as men to depression.

PRELIMINARY STUDIES

In addition to being more vulnerable to depression, younger women (born since 1970) have shown a disproportional rise in the incidence of depression (Cross National Collaborative Group, 1992; Kessler, et al., 1994; Hays, Wells, Sherbourne, Rogers, & Spritzer, 1995; Greenberg, Stiglin, Finkelstein, & Berndt, 1993). Empirically supported factors in women's lives that have been linked to depression include life transitions, physical health problems, disrupted self-esteem, and poor interpersonal support (Lin, Dean, & Ensel, 1986). Identification of these factors offered promise for intervention because with help, a woman can change them. In preparation for this pilot intervention, two studies of young women were done to test a model of these factors in younger women. In the first study of 184 women aged 18 to 30 years, supportive interpersonal interactions that included well-placed criticism as well as empathetic responses buffered the deleterious relationship between stressful life events and depressive symptoms. The pathway through which interpersonal support worked was shown to be its protection of self-esteem acquired through performance of their social roles. These women's self-esteem acquired from efficacious action was strongly (inversely) correlated with depressive symptoms but not affected by interpersonal support. As these women's stress levels increased, the impact of low self-esteem was more damaging. It appeared from the data that merely increasing social support without an accompanying increase in self-esteem would not be as effective in the reduction of depressive symptoms (Beeber, 1998b). In a follow-up study, the element of life transition was added to the model by studying 211 women in the first 8 months following their leaving home for college. As in the first study, supportive interpersonal interactions and self-esteem mediated the relationship between stressful life events and depressive symptoms. However, in these younger women, there was no interaction between their stress levels and their self-esteem in the development of depressive symptoms. Unlike the first study, in these younger women, the derivation of self-esteem through efficacy, i.e., taking control and acting on problems and challenges, was associated with interpersonal support, primarily advice-giving. These results suggested that there might be differences according to developmental age and stage and that interventions

focused on interpersonal relations would have utility.

THEORY

The formulation of depression and the intervention were based on the theory of interpersonal relations (Peplau, 1989; 1991). In this theory, depressive symptoms arise from a complex group of changes in the self that serve to manage anxiety (Beeber, 1989; Beeber, 1996; Beeber & Caldwell, 1996; Beeber, 1998a). One source of anxiety is life transitions. These consist of planned changes, unanticipated events, and developmental challenges. Transitions change the dynamic balance between stasis and change. Anxiety is mobilized in response to the shift in this balance. The woman gauges her degree of control through her actions and acquires internal and external appraisals in the process of acting on her behalf. Self-esteem is either enhanced or diminished as a result of these appraisals. Negative appraisals increase anxiety and decrease self-esteem. Because interpersonal relations provide appraisals, problematic interpersonal relations add more negative appraisals, erode self-esteem, and thwart the acquisition of the information and support necessary to effectively manage the transition. The depressive symptoms are the result of changes in the self and relations developed to manage anxiety.

Nursing intervention consists of establishing a therapeutic relationship, assessing life transitions, investigating the role of depressive symptoms in the woman's management of anxiety, and understanding depressive symptoms in the context of self and relations. The nurse uses phenomena arising in the relationship and in the woman's life to help the woman manage anxiety differently, as well as to improve her self-esteem by taking charge of the sources of anxiety (e.g., transitions) and improving interpersonal relations. As the woman changes these dimensions, the depressive symptoms decrease (Beeber & Caldwell, 1996; Beeber, 1998a). Additional interventions to help the woman improve her health practices are added to counter the biological dimensions of depressive symptoms directly, to reduce the impact of accompanying health problems, and to promote resilience and stamina. In this study, four theoretically predicted outcomes of nursing intervention were the reduction of depressive symptoms, increased performance self-esteem, increased social self-esteem, and more satisfaction with interpersonal relations.

METHODS

The design was a pre-experimental, one-group pretest-posttest study (Campbell & Stanley, 1966). The setting was a primary care health center of a large, northeastern university. The health center served the same population in which the data for the preliminary studies were collected. This health center employed nurse practitioners, physicians, and registered nurses as the primary health providers and produced over 50,000 provider visits per year during the data collection period. The center provided triage, referral, and selected on-site services. Additional personnel included a nutritionist, a gynecologist, women's health nurse practitioners, a health educator, financial-insurance consultants, a nurse administrator, and a nurse director. The sample consisted of 33 women consecutively screened and referred to the investigator by primary care nurses, nurse practitioners, and physicians. The providers collaborated with the investigator to develop agreed-upon risk profiles consisting of clusters of symptoms and health problems that warranted further screening for depression. These risk profiles were derived from empirical studies (Costello, 1993), clinician observations, and predictions from the theory. In addition, the investigator presented ongoing education for providers, attended clinical meetings, and consulted with the providers to determine if referral was appropriate. After referral to the study, the women met the investigator and gave written consent to the protocol approved by the Institutional Review Board. The women were then screened for depressive symptoms with the Beck Depression Inventory (BDI) (Beck, Steer, & Garbin, 1988). Women scoring 10 or higher on the BDI were offered the intervention. Twenty-one of the women were given additional pre- and posttest instruments after screening. These were Describe Yourself (performance and relational self-esteem) (Stake & Orlofsky, 1981), and the Interpersonal Relationship Inventory (social support, conflict with social support, and reciprocity; Tilden & Stewart, 1985; Tilden, Nelson & May, 1990; Tilden, Hirsch, & Nelson, 1994). Ongoing collaboration between the PMH-APN and the referring primary care provider was maintained throughout the intervention. At the conclusion of the intervention, the women contin-

ued to receive care by their primary care provider. The investigator maintained clinical notes during the intervention, and the women provided a written narrative evaluation of their experience at termination.

Instruments

Reliability coefficients were calculated two ways for each instrument or subscale for data by (1) representing missing values, and (2) by imputing a series mean for missing values. The results were essentially the same, i.e., the coefficients differed by .005 for each method. Because imputed values often inflate the stability of the instrument, the coefficients reported are inclusive of the missing data.

Depressive symptoms. Depressive symptoms were measured by the BDI (Beck, Steer, & Garbin, 1988). The BDI is a self-report that uses 21 items scored from 0 to 3 with a range of 63 and a cut score of 16 and greater at which respondents are considered to have significant symptom severity. The BDI has shown coefficient alphas of .83 to .95. Cronbach's alpha for this sample was .83 (pretest) and .85 (posttest).

Self-esteem. Self-esteem was measured by the Describe Yourself inventory of self-esteem (Stake & Orlofsky, 1981). The instrument contains two subscales, Social Self-Esteem and Performance Self-Esteem. The social self-esteem subscale is a seven-item scale measuring openness, warmth, and the self-esteem gained from sustaining positive interpersonal relationships. Cronbach's alpha for the subscale in this study was .59 (pretest) and .74 (posttest). The performance self-esteem subscale is a 40-item scale measuring self-esteem derived from agency or self-efficacy. Cronbach's alpha for this study was .93 (pretest) and .89 (posttest).

Satisfaction in interpersonal relations. Satisfaction in interpersonal relations was measured by the Tilden Interpersonal Relationship Inventory (long form; IPRI) (Tilden & Stewart, 1985; Tilden, Nelson & May, 1990; Tilden, Hirsch, & Nelson, 1994). This instrument consists of an inventory of supporters and their relationship to the respondent, and 39 items concerning the respondent's perceptions of these relationships. Three 13-item subscales purport to measure social support, reciprocity, and conflict. Cronbach's alpha for the three subscales were as follows: social support: .91 pretest, .73 posttest; reciprocity .53 pretest, .47 posttest; conflict .91 pretest, .89 posttest.

Analysis

Data were entered directly from the questionnaires into SPSS 7.5 (SSPS, Inc., Chicago, IL) for Windows 95. Descriptive statistics were calculated by using SPSS.

RESULTS

Sample

The ages of the women ranged from 18 to 35, with a mean age of 23 years. Fourteen of the 33 women (41%) were African American, Asian (Mainland Chinese and Taiwanese), Latino, Caribbean American, Middle Eastern (Israeli and Lebanese), or African. All were university students, and 87% of the sample were employed at least parttime. Forty women were identified by providers. Of these, 34 agreed to be in the study after meeting with the investigator and participated in the intervention. Data from one of the women were eliminated for incompleteness, leaving a sample of 33.

Recognition of Depressive Symptoms

The women in this study initially sought care for physical disorders. Table 1 presents the primary reason the women in the sample sought care. Women who sought care for problems that were in the identified clusters of symptoms and health problem profiles thought to be related to depression were initially given routine triage and examination. However, if after physical assessment and/or provisional treatment of manifest health problems were unsuccessful, if the provider noted the presence of depressive symptoms, or if the diagnostics were

Table 1. Primary Reason(s) for Seeking Care According to Their Medical Record

Reason	*n*
Abdominal pain, bowel symptoms (e.g., constipation)	6
Headache	5
Depressive symptoms/eating disorder	4
Fatigue, sleeping problems	3
Unremitting upper respiratory infection	3
Chest pain/shortness of breath	2
Sexually transmitted disease/sexually endangering practices	2
Other (pain other than headache, rashes, diffuse physical symptoms)	4
Reason not reported/available	5

inconclusive, the provider investigated the issue of depression or stress with the woman. If the woman acknowledged the presence of symptoms or of issues, the providers described the study and offered a referral. Of the 34 women referred to the study, all scored over 10 (some degree of depressive symptoms) on the BDI on the initial screening.

Receptivity of Women to an Intervention

Thirty-four of the 40 women consented to participation in the intervention, and thirty-three reached a mutual termination point with the nurse. One participant terminated the intervention abruptly. Of the six who refused to be in the study, all stayed with their referring primary care providers and were followed on a consultation basis by the investigator. One was referred to an outside mental health provider because of discomfort about being seen in a setting where she knew people personally.

Implementation of a Theoretically Driven Intervention Delivered by a Psychiatric Mental Health-Advanced Practice Nurse

The PMH-APN used an assessment protocol that was standardized by three dimensions specified in the theory (thoughts, feelings, and actions). A fourth dimension, body, was added to represent the biological and sentient dimensions that women had reported in the two preliminary studies. However, the investigative approach specified by Peplau (1989) was used, and hence, the women controlled the direction of the assessment. Consequently, each woman emphasized these four areas differently. At the end of the first assessment session, at least one predominant problematic interpersonal theme was identified with its variations, and the woman's thoughts, feelings, actions, and body perceptions were described. In addition, her function and self-esteem were described, and issues were identified. Health practices, especially those related to depressive symptoms were identified. A problem statement was developed with specified targeted outcomes. A contract describing the roles expected of each was consensually validated by the nurse and the woman. Some women were given a journal to record between sessions their thoughts, feelings, actions, and body perceptions according to the problem statements. One woman entered the study already regulated on antimania medication, and the PMH-APN collaborated with the prescribing physician throughout the woman's participation in the study. Three other women were offered a consultation with a psychiatrist for medication at the end of the assessment. All elected to manage their symptoms without medication and to accept the consultation if the symptoms did not respond. None of these women took medication during their tenure at the facility, nor were any of the other women treated with antidepressants. The intervention was accomplished in an average of eight sessions over an average duration of 11 weeks.

Responses of the Women on Measures of the Intervention Effect

The design and small sample size limits the data to description only. Table 2 shows the pre- and posttest ranges and means on the four main response indicators (depressive symptoms, self-esteem, and satisfaction with interpersonal relations). Figures 1 through 4 present the women's scores on the four primary indicators before and after the intervention. All of the women scored above 10 on the BDI at the beginning of the study. Twenty-seven of the 33 women scored below 10 on the BDI at the conclusion of the intervention. Of the six women whose BDI remained above 10, three showed reduction of their pretest symptom severity scores by half, and three were below but still within 5 points of their original scores. There

Table 2. Mean Scores on Response Indicators Pre and Postintervention

Measure	Preintervention Range	Preintervention Mean	Postintervention Range	Postintervention Mean
Depressive symptoms (BDI)	10.00-54.00	23.33 (9.32)	1.00-33.00	7.03 (6.23)
Self-esteem (Describe Yourself)				
Efficacy Self-Esteem	117.00-217.00	166.77 (30.34)	140.00-222.00	180.53 (24.58)
Social Self-Esteem	31.00-46.00	39.09 (4.45)	28.00-45.00	39.95 (4.93)
Satisfaction with interpersonal relations (Interpersonal Relationship Inventory)	27.00-62.00	46.52 (9.76)	42.00-61.00	50.05 (5.39)

NOTE: Figures in parentheses are standard deviations.

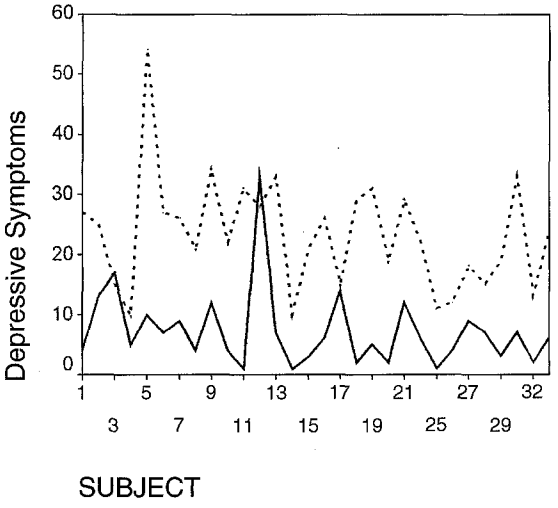

Fig 1. Depressive symptoms (pretest and posttest). Total Beck Time 1 (····); Total Beck Time 2 (—).

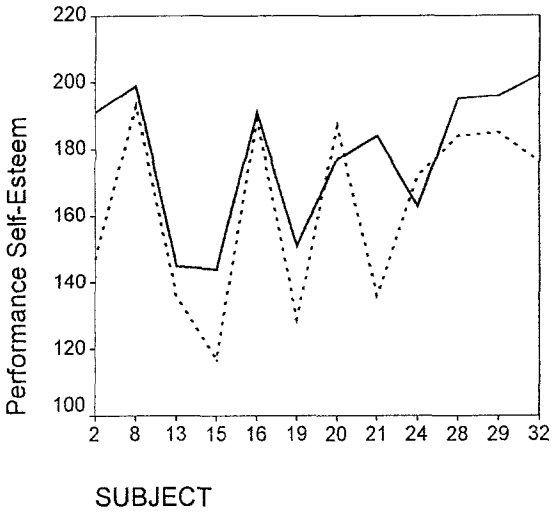

Fig 3. Performance self-esteem (pretest and posttest). Performance Self-Esteem Time 1 (····); Performance Self-Esteem Time 2 (—).

was an increase in the mean efficacy self-esteem score postintervention, but social self-esteem, and satisfaction with interpersonal relations showed little change.

A depression symptom measure given at two points in time would be expected to correlate highly if the symptoms remained stable over the sampling time frame. In these women, however, the Pearson correlation between the pre- and posttest BDI was low and unsignificant (0.22, $P = .243$), suggesting that there was little relationship between pre- and posttest BDI scores. After judging there to be little autocorrelation between measures at the two time points, a paired sample t test was performed. The test showed that there was a significant difference between pre- and postintervention BDI scores ($t = 8.765$, df $= 29$, $P = .000$). In addition, there was a significant inverse correlation between depressive symptoms at pretest and efficacy self-esteem at posttest. This was the same relationship that was present in the two preliminary studies in the same population. It is plausible that, as in the previous studies of the theoretical model, the interventions to decrease depressive symptoms worked because they occurred along with increased efficacy self-esteem.

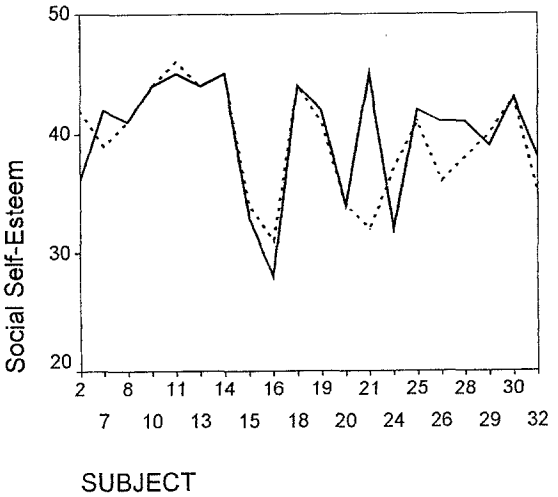

Fig 2. Social self-esteem (pretest and posttest). Social Self-Esteem Time 1 (····); Social Self-Esteem Time 2 (—).

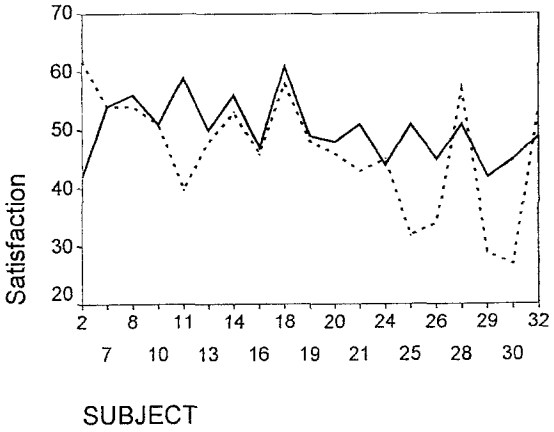

Fig 4. Satisfaction with interpersonal relationships (pretest and posttest). Satisfaction Time 1 (····); Satisfaction Time 2 (—).

CONCLUSIONS

In keeping with the limited design of this pilot study, we cannot attribute the changes in the women's depressive symptoms to the intervention because of lack of randomization and control (the pre-experimental design). Other factors can account for these changes, including history (unmeasured change-producing events), maturation (processes that vary systematically over time), and statistical regression (regression toward the mean) (Campbell & Stanley, 1966). An improved design would use randomization into experimental and regular care control groups and a sample size that allowed for adequate statistical power to detect differences in the groups. The depressive symptom scores did vary in the direction expected to result from the intervention. The other measures showed minimal variability suggesting that either these measures are not sensitive, the processes do not change during the intervention, or that the focus of the intervention (effective management of anxiety) may not decrease interpersonal tensions. Longitudinal follow-up is necessary to further establish these relationships.

This study was conducted to establish whether women with depressive symptoms could be identified, to see if women would participate in a theoretically driven intervention delivered by a PMH-APN, and to establish whether measures of the concepts in the theory were sensitive to outcomes proposed to occur as a result of the intervention. As would be expected in a facility designed for primary care provision, only 4 of the 33 women presented with depressive symptoms as their primary issue. The use of empirically supported risk profiles helped the providers to distinguish high-risk women, and the ease of referral made treatment quickly available and minimally stigmatizing. Of particular note was the overlap of diffuse physical symptoms with those of depression (50% of the sample) in the presenting picture of the women. This is supported in the data from large studies that show that depressed individuals seek treatment for diffuse physical ailments that require costly diagnostic follow-up. By having the PMH-APN on site as a consultant, the providers could discuss their findings, and treatment for depressive symptoms could be initiated during the diagnostic investigation of the physical symptoms. In several instances, the remission of symptoms as part of the depression intervention eliminated the need for immediate referral to specialists for more complex workups.

Even with the additional burden of being asked to fill out research consents and instruments, women participated readily in the intervention. Their exit interviews indicated a high degree of satisfaction with referral and intervention system. There was a mix of ethnic and cultural backgrounds, and competency in spoken English was varied, but there was no discernible difference in response according to these factors. This indicated that the theory and the intervention have promise for adaptation to women from varied backgrounds.

The continuing connection with the primary care setting and the original provider allowed care to be continued after the intervention was completed. The consultant role of the PMH-APN extended beyond the women in the study to other clients with mental health needs, suggesting that the PMH-APN could assist providers to manage a wide variety of mental health problems that occur as part of an average primary care caseload. Implementation required close work initially with the administrators of the facility to gain full support of the staff and to develop client-friendly systems for referral and scheduling. When that system was functional, the PMH-APN developed a system of continuous collaboration with the providers and related staff and provided periodic continuing education offerings. These were essential to maintaining a smooth pathway from the primary care provider to the PMH-APN.

There were many questions concerning the implementation of this model that required that this study be limited in design. Strengths of the study were its use of a theoretical model to determine both intervention strategies and to align appropriate outcome measures that were congruent with the theoretically predicted benefits of the intervention. The intervention also built on two studies of the theoretical model in the population to whom the intervention was delivered. This allowed the intervention to address empirically supported factors that explained its focused effect. These two qualities have been noted as necessary to establish validation of practice outcomes for psychiatric nursing (Merwin & Mauck, 1995). The study showed that an intervention for depressive symptoms could be feasibly carried out in a primary care setting by the PMH-APN. From a practical perspective, the focus on one type of mental health

issue—depressive symptoms—could be broadened to other types of issues common to primary care settings (e.g., anxiety disorders). This would justify the presence of such a provider as a cost-effective alternative to referral out of the primary care setting for care. Further work to establish the benefit of the PMH-APN will provide data on the full range of services potentially provided to clients in such a model.

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