Examining Differential Treatment Effects for Depression in Racial and Ethnic Minority Women: A Qualitative Systematic Review

Earlise C. Ward, PhD
Madison, Wisconsin

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Objective: To examine effectiveness of depression treatment in racial and ethnic minority women.

Review Methods: Inclusion criteria: 1) the study examined treatment of depression among racial and ethnic minority women age >17, 2) data analysis was separated by race and ethnicity, and 3) the study was conducted in the United States. Interventions considered were: psychotropic medications, psychotherapy (including cognitive-behavioral, interpersonal therapy and any type of psychotherapy adapted for minority populations) and any type of psychotherapy combined with case management or a religious focus. Individual and group psychotherapy were eligible. Each study was critically reviewed to identify treatment effectiveness specific to racial and ethnic minority women.

Results: Ten published studies met the inclusion criteria (racial and ethnic minority participants n=2,136). Seven of these were randomized clinical trials, one was a retrospective cohort study, one was a case series, and the remaining one had an indeterminate study design. Participants' age ranged from 18–74 years, with a higher proportion >40 years. Most were low income. Differences in treatment responses between African-American, Latino and white women were found. Adapted models of care, including quality improvement and collaborative care, were found to be more effective than usual care and community referral in treating depression. Although medication and psychotherapy were both effective in treating depression, low-income women generally needed case management to address other social issues.

Conclusion: Adapted models that allow patients to select the treatment of their choice (medication or psychotherapy or a combination) while providing outreach and other supportive services (case management, childcare and transportation) appear to result in optimal clinical benefits.

Key words: depression ■ minorities ■ women's health ■ systematic review

 From University of Wisconsin–Madison, School of Medicine and Public Health, Center for Women's Health Research, Madison, WI. Send correspondence and reprint requests for *J Natl Med Assoc.* 2007;99:265–274 to: Dr. Earlise C. Ward, Assistant Scientist, University of Wisconsin–Madison, School of Medicine and Public Health, Clinical Science Center, 600 Highland Ave., Room K6/117, Madison, WI 53792; phone: (608) 438-4069; fax: (608) 265-9301; e-mail: ecward@wisc.edu

An estimated 19 million people in the United States experience depression each year.[1] Women are twice as likely as men to experience depression.[2] The lifetime prevalence rate of depression among women is 12.6 compared to 6.3 among men.[3] When looking specifically at racial and ethnic minorities, African-American and Latina women are at a higher risk for depression than white women. This disparity is attributed in part to various socioeconomic factors, including poverty, lower level of education and culturally specific risk factors.[4] A recent national study conducted by the California Black Women's Health Project found that 60% of African-American women have symptoms of depression.[5]

Although minorities, particularly minority women, are overrepresented in the population of depressed individuals, their use of mental health services is low. In fact, racial and ethnic minority women are less likely to obtain care for depression than white women.[6] Low use of services has been attributed in part to access issues, including lack of health insurance, resulting in greater dependence on public health services.[7] In addition, negative perceptions and beliefs about mental illness—particularly stigma—have been identified as a significant barrier to use of mental health services among minority women.[6]

Examining minorities who have accessed outpatient services, Sue and Sue[8] found that >50% terminate counseling after their first contact with a therapist compared to 30% of white individuals. Ward[9] found that African-American clients in counseling engaged in an ongoing assessing process beginning in the first session. They assessed client–therapist match, their safety in counseling and counselor effectiveness. If the assessment was negative, clients were more likely to engage in superficial disclosing or terminate counseling. However, racial congruence in the client–therapist match increased engagement

in counseling and long-term treatment adherence.[9]

In studying use of antidepressants, Simon and colleagues[10] found that of the patients taking antidepressants 40% discontinue within a month, and only 25% receive adequate follow-up. Diaz, Woods and Rosenheck[11] identified racial differences in treatment adherence, indicating that African Americans and Latinos had lower adherence rates than whites to psychotropic medications. Ayalon, Arean and Alvidrez[12] also found that intentional nonadherence among racial and ethnic minorities was associated with concerns about side effects of antidepressant medications, perceived stigma associated with antidepressant medication and lower value placed on antidepressant medication compared to other medications.

The factors associated with intentional nonadherence for minorities are real. For instance Strickland, Stein, Lin et al.,[13] in a systematic review of psychopharmacologic treatment among African Americans, found that African Americans are "poor metabolizers" of psychopharmacologic treatment compared to whites, hence their concern about side effects. Perceived stigma is also a concern related to nonadherence. Wagner and colleagues[14] suggest that effective treatment for racial and ethnic minorities requires knowledge and attention to patient's beliefs about treatment options.

Although there is an extensive body of literature, including randomized clinical trials (RCTs), systematic reviews and meta-analyses focusing on effective treatment of depression, studies addressing effectiveness of treatment by race and ethnicity are scarce. However, more recently, there has been a small number of published studies focusing on treating depression in minority populations, particularly African-American and Latina women. Those studies are the focus of this systematic review. This paper examines and summarizes studies of depression treatment among racial and ethnic minority women to identify effective treatments, and discusses implications for treatment and research.

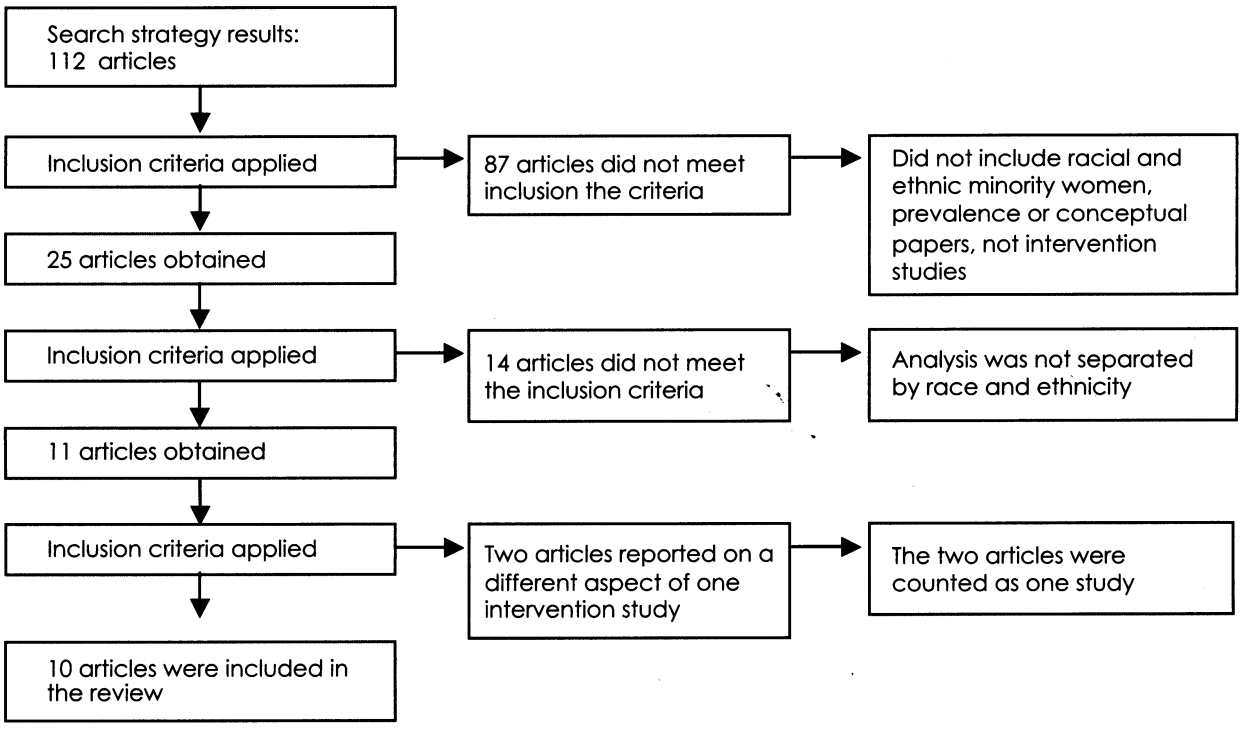
METHOD

Inclusion Criteria

Racial and ethnic minority women were defined as women who self-identify as African American, Native American, Latino or Hispanic, and Asian American (including Pacific Islanders). Eligible studies included those focused predominantly on racial and ethnic minority female populations as well as those that separated the analysis by race and ethnicity. A diagnosis of depression according to standardized *Diagnostic and Statistical Manual of Mental Disorders—DSM III* and *DSM IV*[15] criteria was necessary for inclusion. Since the *DSM IV* was published in 1994 and one study conducted before 1994 was included in this review, the *DSM III* criteria also needed to be considered.

Although RCTs were given priority in this review, other types of studies, including nonrandomized trials,

Figure 1. Flow chart of the study selection



observational studies and case series, were included due to the scarcity of research in this area. All studies included in this review were published between 1981 and 2005. No studies could be found prior to 1981 that met inclusion criteria.

Exclusion Criteria

Studies that did not separate the analysis by race and ethnicity were excluded. Additionally, studies focusing on adolescent populations were excluded due to developmental issues and differences in symptom manifestations between adults and adolescents. Clinical practice guidelines were not included because none specific to minorities and depression could be located.

Types of Treatments

The following types of interventions were considered: antidepressant medications, psychotherapy (including cognitive-behavioral, interpersonal therapy and any type of psychotherapy adapted for minority populations), or psychotherapy combined with case management or a religious intervention. Psychotherapy interventions provided in either individual or group format were eligible.

Search Strategies

An extensive literature search was conducted using the following strategies:

Electronic searching. The following electronic databases spanning 1970–2005 were searched to locate studies that examined treatment of depression among minority female populations:

1. MEDLINE
2. PsychINFO
3. PUBMED
4. Academic Search
5. Social Science citations
6. The Cochrane Depression, Anxiety and Neurosis Group Database of Trials
7. EMBASE
8. The Cochrane Controlled Trials Register
9. CINAHL
10. CRISP (to locate on going studies that may be near completion)
11. Google Scholar

Medical subject headings (MeSH) categories entered singly and in combination were: depression, depressive disorder, ethnic groups, minority groups, African Americans and depression, Latinos and depression, Hispanics and depression, Asian Americans and depression, psychotherapy and depression, depression and medications, antidepressive agents, cognitive-behavior therapy and depression, interpersonal therapy and depression.

Hand searching. Ancestral searches were used to identify references in articles found from electronic searches, and then Web of Knowledge was used to locate these articles. Titles and abstracts were searched, and articles meeting inclusion criteria were retrieved and reviewed by the first author and her student researcher. A system adapted from the Jadad criteria to reduce article selection bias was used in determining which articles met inclusion criteria.[16]

Description of Review

The search identified 112 studies focusing on depression. Twenty-five studies remained after eliminating those that were not intervention studies and those that did not focus on or include minority women. Of these 25 studies, only 11 separated the analyses by race and ethnicity (Figure 1). Two of the 11 articles reported on a different aspect of a depression intervention in the same study and were counted as one study. Thus, 10 studies met the inclusion criteria and were chosen for analysis: seven studies were randomized clinical trials, one observational retrospective design study, one case series, and one study where the design was unclear. These 10 studies included a total of 5,027 participants, of which 2,136 were racial and ethnic minorities. Based on the gender demographics provided in the 10 studies ≥50% of the 2,136 racial and ethnic minorities were women (n=1,023).

RESULTS

Patient Characteristics

All study samples included whites, African Americans, Latinos and a small number of Asians. Some studies included only women, and others included both men and women. Participants' age ranged from 18–74 years, with a higher proportion age >40. Most participants were classified as having low socioeconomic status.

Types of Intervention and Treatment Outcomes

One randomized clinical trial examined the efficacy of medication (paroxetine switched to buproprion if no response) or cognitive-behavior therapy compared to referral by a primary care physician for community mental healthcare in low-income minority women (Table 1, study 1). This study found that both medication and psychotherapy, more so than community referral, reduced symptoms of depression. Medication resulted in an improved instrumental role and social functioning, while psychotherapy improved social functioning.[17] Another randomized clinical trial examined effectiveness of medications (nortriptyline) and standardized interpersonal therapy in treating depression in whites and African Americans (Table 1, study 2). More African Americans (100%) than whites (76%) completed the interpersonal therapy treatment; however, African

Americans' completion rates of the medication regimen were quite low (35%) compared to whites (61%). Although African Americans and whites recovered at the same rate, fewer African Americans had full recovery on medication compared to interpersonal therapy.[18]

Two articles[19,20] were found using a dataset from one randomized clinical trial, however they reported on a different focus of the analyses. One article reported on an analysis examining whether practice-initiated quality improvement interventions can improve care for depressed patients compared to usual care (Table 1, study 3).[19] Quality improvement interventions included the following: 1) use of medication combined with trained nurses to provide follow-up assessments and support for treatment adherence, 2) individual and or group cognitive-behavior therapy (8–12 sessions) and a treatment manual given to patients describing depression and treatment, and 3) allowing patients to choose which treatment they preferred. The intervention decreased the likelihood that Latinos and African Americans reported probable depression at months 6 and 12, while whites did not differ from the controls. The second article reported an analysis focused on the effect of quality improvement intervention on depression at the

Table 1. Studies examining the effect of depression treatment

Study	Design	Objective	Site	Sample
1. Miranda, et al (2003)[17]	RCT, intent-to-treat, blinded follow-up	Impact of a guideline-based intervention vs. referral to community care on depressive symptoms	Washington, DC Women in WIC program and Title X family-planning clinics.	267 low-income and minority women with major depression: U.S.- born African Americans (117), Latin-American born (134), U.S.-born whites (16)
2. Brown, et al (1999)[18]	RCT, intent-to-treat, blinded follow-up	Influence of race on treatment adherence and outcomes among patients treated for depression	Patients ages 18-64 presenting at 4 urban primary care medical centers	160 adults: 68 African Americans (57 women, 11 men), 92 whites (74 women, 18 men)
3. Miranda, et al (2003b)[19] Study	RCT, intent-to-treat. Patients and MDs selected treatment.	Can practice-initiated quality improvement interventions improve care and reduce disparities for depressed patients?	46 primary care practices in 6 managed care organizations in 5 states	1,269 patients with probable depressive disorder: 398 Latinos (287 women, 111 men), 93 African Americans (74 women, 19 men), 778 whites (537 women, 241 men)
4. Wells, et al (2004)[20]	Group-level RCT, intent-to-treat, not blinded	Efficacy of medication and CBT quality improvement programs compared to usual care for depression	46 primary care practices in 6 managed care organizations in 5 states	27,332 patients screened; 991 positive for depression (706 women, 451 minorities). Exp: QI-MEDS (322) or QI-THERAPY (357). Cont: usual care (312)
5. Miranda, et al (2003a)[21]	RCT, intent-to-treat, not blinded	Impact of adding clinical case management to behavioral therapy to improve adherence and outcomes	18 primary care clinics in 8 healthcare organizations from 5 states	199 impoverished patients referred to depression clinic: Latinos (77), African Americans (46), Asians or American Indians (18). Women 134. Exp: 96, cont: 103

RCT: randomized clinical trial; CBT: cognitive-behavior therapy

five-year follow-up (Table 1, study 4).[20] The quality intervention, which included psychotherapy, improved health outcomes for Latinos and African Americans, but whites had few long-term benefits.

One randomized clinical trial examined whether cognitive-behavior therapy combined with clinical case management, compared to cognitive-behavior therapy alone, would improve clinical outcomes (Table 1, study 5). Case management services included having case managers assess patients' social concerns such as housing, employment, recreation, relationship with family and friends, and setting goals toward addressing these problems. Cognitive-behavior therapy focused on changing negative thinking, increasing pleasant activities and improving interactions with others. Cognitive-behavior therapy, combined with case management services, was found to improve clinical outcomes for Spanish-speaking patients and increased retention in mental health outpatient care. However, African-American patients who received cognitive-behavior therapy without case management showed greater improvement in depression symptoms.[21]

Another randomized clinical trial examined whether a collaborative care model was more effective than usual care in improving clinical outcomes in an elderly

Protocol	Outcomes	Follow-Up/Drop-Out	Results
Exp: medication (n=88) or psychotherapy (n=90). Cont: referral to community mental health service (n=89)	Hamilton Depression Rating Scale, Social Adjustment Scale, Short Form 36-item Health Survey	Follow-up: HDRS monthly for 6 months, SAS and SF-36 at 3 and 6 months. Drop-out in control group: 83%	Reduced symptoms in both exp groups. Medication group twice as likely to have Hamilton score of =7. Psychotherapy improved social functioning. Medication improved instrumental role and social functioning.
Standardized interpersonal psychotherapy group: 16 weekly sessions plus 4 monthly sessions. Pharmacotherapy group: nortriptyline	Hamilton Depression Rating Scale, Short Form 36-item Health Survey	Follow-up at 1, 2, 3, 4, 6 and 8 months. Rates of drop-out varied by race and phase of treatment.	No treatment or race-specific differences in symptomatic recovery when both groups were provided standardized psychotherapy or pharmacotherapy. African Americans demonstrated poorer functional outcomes than whites.
Clinics randomized to QI-MEDS (nurse assessments/medication compliance support for 6–12 months), QI-THERAPY (8–12 sessions) or usual care.	Composite International Diagnostic Interview, Mental Health Composite Score, Short Form 12-item Health Survey	Follow-up: 6 and 12 months. Of those eligible for the study only 79% enrolled. Response rate to follow-up was 83%.	QI improved appropriate care within each ethnic group, with no difference by ethnic group. QI decreased likelihood that Latinos and African Americans would report probable depression; whites did not differ from controls in reported probable depression.
Clinics randomized to QI-MEDS (nurse assessments/medication compliance support for 6–12 months), QI-THERAPY (8–12 sessions), or usual care.	Composite International Diagnostic Interview, Mental Health Composite Score, Short Form 12-item Health Survey	Follow-up: Surveys every 6 months for 24 months, phone surveys at 24 and 57 months; 27% lost to follow-up	Modest reduction in likelihood of having depressive disorder for entire sample in QI programs. QI-THERAPY improved outcomes and reduced unmet needs for care among minorities but not for whites. QI-THERAPY can reduce disparities in usual care.
Exp: Group CBT supplemented by clinical case management. Cont: Group CBT	Structured Clinical Interview for Depression, Beck Depression Inventory, Self-Rating Anxiety Scale, chronic disease score	Follow-up: 4 and 6 months. Drop-out: 30% Spanish-speaking, 36% English-speaking	Patients with case management were significantly more likely to complete 8 weeks of therapy. Only Spanish-speaking case management subjects experienced improved health outcomes.

minority sample (Table 1, study 6). The collaborative care model consisted of the following: 1) viewing a 20-minute video about depression; 2) providing written information, including psychoeducational material about depression in late life; 3) giving patients permission to select their treatment of choice (antidepressant medications or psychotherapy focusing on problem-solving); and 4) ongoing depression monitoring by a depression specialist (nurse) who supported treatment adherence. Usual care involved seeing a primary care provider or any mental health specialty provider. The collaborative care model was found to be associated with lowered depression and less health-related functional impairment compared with usual care. There were, however, differential responses to the collaborative care model: in the collaborative care model, Latinas were more likely to continue with medication and psychotherapy, while African Americans were more likely to use psychotherapy alone. In addition, African Americans seemed to benefit more from the use of counseling

Table 1. continued

Study	Design	Objective	Site	Sample
6. Arean, et al (2005)[22] Study	Multisite RCT, not blinded	Is a collaborative care model as effective in improving depression treatment and outcomes in older minorities as in nonminorities?	The University of California, San Francisco Depression Clinic at San Francisco General Hospital	1,801 adults age ≥60: 222 African Americans (153 women), 138 Latinos (65 women), other nonwhites (53)
7. Organista, et al (1994)[4]	Retrospective, not blinded	Effect of CBT on depression in low-income minorities. Predictors of outcomes and drop-out	General medical patients referred to Outpatient Depression Clinic, San Francisco	175 adults: Latinos (77), African Americans (32), Asians (5), women (131)
8. Kohn, et al, (2002)[23]	Indeterminate design. Nonblinded, nonrandom	Culturally sensitive adaptation of a manualized psychotherapy intervention for depressed black women	General medical patients referred to Outpatient Depression Clinic, San Francisco	Low-income African American women with many stressors. Exp: 12 Cont: 10
9. Comaz-Diaz (1981)[24]	Random assignment, not blinded	Compare cognitive vs. behavior therapy for depression	Puerto Rican women living in United States, receiving government financial aid, referred from local community agencies	26 Puerto Rican women
10. Feske (2001)[25]	Case series	Impact of prolonged exposure for PTSD	Patients 18–60 referred to Hill Satellite Center, a university-affiliated psychiatric outreach clinic located in an urban, economically disadvantaged area of Pittsburgh, PA.	10 low-income women: African Americans (8)

RCT: randomized clinical trial; CBT: cognitive-behavior therapy; PTSD: posttraumatic stress disorder

and meeting with a depression specialist.[22]

Three studies examined the effectiveness of cognitive-behavior therapy in treating depression. One study used a retrospective design (reviewing medical charts) to examine the effectiveness of standardized cognitive-behavior therapy in treating depression in a low-income minority sample (Table 1, study 7). Cognitive-behavior therapy consisted of 12 sessions focused on the role of thoughts, behaviors and interpersonal interactions on mood.[4] Although standardized cognitive-behavior therapy reduced symptoms of depression, scores on the Beck Depression Inventory (BDI) indicated only a reduction from severely depressed to moderately depressed.[4]

The second study compared a culturally adapted model of cognitive-behavior therapy versus standardized cognitive-behavior therapy in treating depression in low-income African-American women (Table 1, study 8). The culturally adapted model of cognitive-behavior therapy limited the treatment only to African-American women and focused on African-American culture,

Protocol	Outcomes	Follow-Up/Drop-Out	Results
Exp: Brief video, written material about late-life depression, psychoeducational materials from depression specialist, brief psychotherapy or medication, monitoring every 2 weeks during acute phase then monthly for 1 year. If no response after 4–6 weeks, additional treat-ment options or referral offered. Cont: usual care.	Structured Clinical Interview for DSM-IV, Cornell Service Use Index, Hopkins Symptom Checklist-20, Sheehan Disability Scale, satisfaction with depression care	Follow-up: 3, 6 and 12 months; 17% lost to follow-up at 12 months.	Collaborative care significantly improved rates and outcomes of depression care in all older adults. African-American and Latino intervention patients had significantly greater rates of depression care for both antidepressant medication and psychotherapy, lower depression severity and less health-related functional impairment than usual care patients.
12 therapy sessions on the role of thoughts, behaviors and interpersonal interactions on mood. Individual, group, or combination treatment.	Beck Depression Inventory, Structured Clinical Interview for DSM-IIIR Patient ed.	58% drop-out rate. BDI administered at end of treatment with no other follow-up.	Significant reductions in Beck scores but only from severe to moderate. Poorest outcomes for patients with initially high symptoms and those living alone. Higher drop-out rates for younger and minority patients and those in group therapy.
16 weekly 90-minute sessions in CBT or AACBT	Beck Depression Inventory	Follow-up: 16 weeks. Two drop-outs in exp group	Both CBT and AACBT groups showed a drop in symptom intensity, but AACBT group exhibited a larger reduction in Beck scores (5.9 vs. 12.6).
Cognitive group: n=8 Behavior group: n=8 Control group n=10	Beck Depression Inventory, Hamilton Depression Rating Scale, Depression Behavior Rating Scale	All groups assessed 1 week after treatment and therapy groups 5 weeks following treatment termination.	Significant reduction in depression for both groups. Behavior group maintained longer-term symptom reduction.
Individual prolonged exposure sessions, 90 minutes each for 9 weeks, focused on reliving traumatic event	State-Trait Anger Expression Inventory, Beck Depression Inventory	5 completed treatment and 5 dropped out at various points in treatment. No follow-up after the 9-week intervention	50% of women (5 completers) showed significant improvements in symptoms of PTSD, general anxiety and depression.

including spirituality, black identity and black family issues. Although use of adaptive cognitive-behavior group therapy was effective in reducing depression scores an average of 12.6 points pre-to-posttreatment, the posttreatment BDI scores were still in the moderate range.[23] Thus, patients were still moderately depressed after receiving 16 sessions of group therapy.

The third study was an RCT that examined the effectiveness of cognitive and behavior therapies separately in treating depression in Puerto Rican women (Table 1, study 9). Cognitive therapy focused on modification and change of cognition, while behavior therapy focused on behavioral rehearsal techniques for improving social skills and self-reinforcement.[24] Although both cognitive and behavior group therapies were found to be effective in reducing symptoms of depression, behavior therapy was more effective in maintaining symptom reduction in the long term.[24]

The final study included in this review was an uncontrolled case series, which examined use of prolonged exposure in treating posttraumatic stress (PTSD) in low-income African-American women (Table 1, study 10). This study was included because 80% of the sample had depression comorbid with PTSD. Prolonged exposure treatment involved nine weekly, 90-minute, individual sessions focusing on reliving the traumatic event based on an exposure hierarchy.[25] Prolonged exposure was effective in reducing symptoms of PTSD. Although prolonged exposure primarily focused on symptoms of PTSD, women with depression and anxiety also showed clinically significant improvement in symptoms.

Differential Response to Treatment

Differential responses to treatment among African-American, Latino and white subject groups were found in the collaborative care model, quality improvement intervention and case management adapted model. In the collaborative care model, African Americans were more likely to use psychotherapy alone and seemed to benefit more from the use of counseling and meeting with a depression specialist, while Latinos were more likely to continue with medication and psychotherapy.[22] The quality improvement intervention combined with psychotherapy improved health outcomes (reduced symptoms of depression) and reduced unmet appropriate healthcare needs for Latinos and African Americans, but provided few long-term benefits for whites.[20] Cognitive-behavior therapy combined with supplemental case management services improved clinical outcomes for Spanish-speaking patients and increased retention in mental health outpatient care. However, African-American patients who received cognitive-behavior therapy without case management showed greater improvement in depression symptoms.[21]

Differential response rates were also found in treatment adherence, functional status and recovery. African Americans showed a higher completion rate of interpersonal therapy treatment compared to whites; however, African Americans' completion of the medication treatment rates were quite low (35%) compared to whites (61%). African Americans also had lower rates of full recovery on medication and poorer functional outcomes than whites.[18]

DISCUSSION

Several conclusions can be drawn from this review of depression treatment: 1) usual care and community referral may be suboptimal for low-income minority women; 2) collaborative care models, including case management, provide significant clinical benefits for minority women; 3) there appear to be differential responses to treatment across racial and ethnic groups; 4) a patient's input into treatment selection has the potential to improve clinical benefit; 5) low-income minority women often have depression comorbid with other chronic medical conditions that must be addressed; and 6) low-income minority women experience access-related barriers such as lack of health insurance, transportation and childcare, which need to be addressed.

Missing from all of the studies was the role of stigma in treatment adherence and effectiveness of the intervention. Although some interventions provided educational material to patients, the materials did not specifically address stigma. Stigma is a major concern in the racial and ethnic minority community, and it has impeded treatment seeking and treatment adherence among this group.[27,28] Also missing was the use of religious and traditional healers to augment treatment. It is well documented that African Americans tend to use religious leaders for mental health problems,[6] while Latinos use indigenous healers.[29] Yet, even the adapted models did not utilize a multidisciplinary approach to treatment that included consulting with religious or indigenous healers.

Treatment Implications

Although in the studies reviewed, case management services and support for treatment adherence were provided mainly for patients taking medication, it seems there is also a need for case management for patients in psychotherapy due to high rates of early termination, drop-out and "no shows" among racial and ethnic minority patients with mental health problems.[9,28,30] Simon et al.[10] found that only one-third of patients with depression receive psychotherapy, 25% of them only attend one session, and only 50% attend ≥4 sessions. Thus, case management to support psychotherapy treatment adherence has the potential to increase treatment seeking while reducing the rate of drop-out among minority women. Furthermore, when patients adhere to psychotherapy treatment they are more likely to apply the techniques independently to improve their mental health.[9]

Racial and ethnic minorities, particularly African

Americans, can benefit from additional monitoring when treated with medication. Of the 17 million people with depression, only 25–30% receive an effective level of antidepressants.[10] Even more disconcerting is that of the patients taking antidepressants, 40% discontinue within one month and only 25% receive adequate levels of follow-up. African Americans are probably overrepresented in this group. Research indicates that African Americans' completion rates of medication treatment are low compared to whites, and they are more noncompliant with medication and appear to experience more side effects from the medications than whites.[12,18] Thus, additional monitoring for African Americans' prescribed medications is critically needed.

In sum, "wrap-around services" or collaborative care models with the following treatment components can provide optimal clinical benefit to racial and ethnic minority women with depression: 1) clinicians (physicians, nurses and therapists) who are trained to provide culturally appropriate care to racial and ethnic minority women; 2) use of medication combined with trained nurses to provide ongoing follow-up assessments and support for treatment adherence; 3) individual and or group psychotherapy; 4) providing education to patients about depression; 5) allowing patients to chose which treatment they prefer; and 6) case management.

Research Implications

There is a need for more clinical drug trials. In particular, trials with the following aims are critically needed to identify: 1) differential treatment effects and side effects in each racial and ethnic group, and 2) strategies to increase compliance and treatment adherence [i.e., educate patients; assign a case manager or depression specialist; increase monitoring and, if so, by whom? (nurse or primary care doctor, psychiatrist or psychologist); and feasibility of assigning depression specialist and increasing monitoring].

There is also a need for more studies focusing on treatment of depression in low-income minority women since poverty and low economic status increase the risk for depression.[4] The present review found that for low-income women who also had chronic medical problems treatment reduced symptoms, but the depression was still in the moderate range.[4,23] Thus, there is a need for studies addressing treatment dose with this population. For instance, a higher dose of the medication or long-term versus brief psychotherapy may provide more therapeutic benefit. Also needed are studies focusing on addressing medical, psychological and social issues simultaneously in these populations (wrap-around services). In addition, analyses examining the cost-benefit ratio of wrap-around services are needed to determine optimal treatment effects and the feasibility of providing such services.

Missing from the research reviewed were studies with middle-to-upper-class minority female population. What is the prevalence of depression among this population? What types of interventions are effective with this population? Are interventions developed for low-income women applicable and effective with middle-to-upper-class minority women with depression? These questions have not been addressed in the current literature, hence the need for research in this area.

Due to the cultural and social risk factors (i.e., acculturation, poverty, low income and low level of education) associated with mental illness among racial and ethnic minority women, more research is needed to determine whether the *DSM IV* depression diagnosis is appropriate for minority women. In particular, research is needed to determine whether these women's symptoms represent depression, or dysthymia or anxiety related to their social and environmental situations.

Finally, research focusing on the use of multidisciplinary teams and treatment interventions, including the use of religious and indigenous healers, primary care physicians and mental health specialists, are needed to improve the quality and effectiveness of treatment provided to racial and ethnic minority women with depression.

Limitations

Although the number of studies included in this review is small, the conclusions are based on a large number of individual minority cases (N=2,136 women and men), and ≥1,023 minority women. The number of racial and ethnic minority women (n=1,023) is an underestimate, as two of the studies did not provide gender information by race and ethnicity.

Four of the 10 studies were conducted by the same group of researchers, which may have introduced investigator bias into the findings.[17,19-21] Most of the studies were conducted in primary care settings. As a result, it is unclear whether the findings are applicable to patients at specialty mental health clinics. Also, three studies had sample sizes of <30, which raises questions about the power of these to detect differences if they were indeed present. Finally, most of the patients in the studies were low income, thus, the findings may not be applicable to middle- and upper-middle-class minority women.

CONCLUSION

Although few randomized controlled trials exist, synthesis of the existing research on the treatment of depression in minority women suggests that for depression interventions to benefit low-income minority women, they must be tailored to accommodate these women's psychological, medical as well as their socioeconomic needs. Furthermore, allowing these patients to select the treatment of their choice (medication or psychotherapy or both) while providing outreach and other supportive services (case management, childcare and transportation) will enable these women to receive optimal clinical benefits.

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