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Improving Depression Treatment for Women: Integrating a Collaborative Care Depression Intervention into OB-GYN Care

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Abstract

Background—Women have higher rates of depression and often experience depression symptoms during critical reproductive periods, including adolescence, pregnancy, postpartum, and menopause. Collaborative care intervention models for mood disorders in patients receiving care in an OB-GYN clinic setting have not been evaluated. Study design and methodology for a randomized, controlled trial of collaborative care depression management versus usual care in OB-GYN clinics and the details of the adapted collaborative care intervention and model implementation are described in this paper.

Methods—Women over age 18 years with clinically significant symptoms of depression, as measured by a Patient Health Questionnaire-9 (PHQ-9) score ≥10 and a clinical diagnosis of major depression or dysthymia, were randomized to the study intervention or to usual care and were followed for 18 months. The primary outcome assessed was change over time in the SCL-20 depression scale between baseline and 12 months.

Baseline Results—205 women were randomized: 57% white, 20% African American, 9% Asian or Pacific Islander, 7% Hispanic, and 6% Native American. Mean age was 39 years. 4.6% were pregnant and 7.5% were within 12 months postpartum. The majority were single, (52%), and 95% had at least the equivalent of a high school diploma. Almost all patients met DSM IV criteria for major depression (99%) and approximately 33% met criteria for dysthymia.

Conclusions—An OB-GYN collaborative care team including a social worker, psychiatrist and OB-GYN physician who met weekly and used an electronic tracking system for patients were essential elements of the proposed depression care treatment model described here. Further study of models that improve quality of depression care that are adapted to the unique OB-GYN setting are needed.

Keywords

depression in women; reproductive stages; collaborative care model; Obstetrics and Gynecology; postpartum; pregnancy

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INTRODUCTION

Women rely on obstetrician gynecologists (OB-GYNs) as their primary care providers [1, 2]. Recent studies show that approximately one-third of all physician visits for women 18 to 45 years old are with an OB-GYN physician [3], and that many women report OB-GYNs are their only source of routine healthcare [4, 5]. Approximately one-third of women consider their OB-GYN to be their primary care provider, often trusting them to provide primary, specialty, and preventative care during key developmental periods such as pregnancy and menopause. OB-GYN physicians also provide a disproportionate amount of care for poor and minority women [6, 7].

Increasingly, OB-GYN providers are asked to treat depression symptoms traditionally addressed in other primary care settings [8, 9]. Studies suggest that women have higher rates of major depression and dysthymia compared with men (21% versus 13% lifetime prevalence) [10] as well as double the rate of early onset (prior to age 18) major depression [10]. Women also have more recurrent episodes as well as longer episodes of depression [11]. While over half of OB-GYN providers perceive themselves as primary care providers for women, and over three quarters believe that screening for depression improves detection and outcomes, screening occurs less than half the time [9].

Recent randomized, controlled trials have shown that collaborative depression care models are associated with improved quality of care and depression outcomes, compared to usual primary care [12–14]. This paper describes the design, study intervention and implementation of a randomized, controlled trial of a collaborative depression care program that was adapted to the unique needs of patients and physicians in two OB-GYN settings. Considerations for future implementation of collaborative care in other OB-GYN settings and preliminary results are discussed.

METHODS

Study Design and Objective

The aim of this multisite randomized controlled trial, Depression Attention for Women Now (DAWN), was to compare, within two OB-GYN clinics, a collaborative care depression management model to usual care. The primary outcome was change in depression score from baseline to 12 months. The intervention was delivered over 12 months with an 18 month follow-up. Study flow is shown in Figure 1. The local institutional review board approved the study and all participants gave written informed consent.

Setting and Population

The study was conducted in two Seattle-based University of Washington OB-GYN clinics: the Harborview Women's Clinic and the Womens' Health CareCenter (WHCC) at the Roosevelt Clinic. Harborview Medical Center, the county hospital, cares for the underserved in the area, and Women's Clinic serves a racially diverse population, while the WHCC includes patients from mixed socioeconomic status. OB-GYN providers working at the 2 study sites were attending physicians, OB-GYN medical residents, and ARNPs.

Inclusions/Exclusions

Women were potentially eligible if they met criteria for major depression and/or dysthymia confirmed by a structured psychiatric interview MINI International Neuropsychiatric Interview (MINI 5.0.0) [15], had access to a phone, were English speaking, and were at least 18 years old.

They were excluded if they misused alcohol or drugs within the last three months (as confirmed by the four question CAGE-AID screen) [16], had current high suicide risk or had been hospitalized more than one time for a suicide attempt, had a prior diagnosis of bipolar disorder or schizophrenia, had current severe intimate partner violence, were homeless, or were currently seeing a psychiatrist. Women currently taking medication for depression or seeing a non-psychiatrist psychotherapist were eligible if they met other inclusion/exclusion criteria.

Recruitment

Patients were recruited from November 2009 through December 2011. Research assistants (RAs) conducted the depression screening by approaching patients after they were roomed by medical assistants (MAs) who had provided them with an informational flyer explaining goals and potential participant role at appointment check-in. For interested patients RAs verbally administered the PHQ-9 depression screen, a nine-item primary care depression screen which has also been validated to detect depression in Ob-Gyn settings as well as peripartum patients [17–19]. A positive score for clinically significant depression was ≥ 10 (range 0–27) including endorsement of one cardinal symptom of depressed mood or anhedonia. Patients with a PHQ-9 score of 10 or greater were offered a brief, same day eligibility interview with the clinic RA. To be eligible, patients had to meet criteria for major depression or dysthymia on the MINI [15].

Baseline Visit and Randomization

All eligible, interested women were scheduled for an in-person baseline assessment, consent, and randomization. Block randomization was performed through an off-site computer (stratified by clinic site and pregnant vs. nonpregnant) to: (1) usual care or (2) depression care management. We used random blocks with sizes 2 and 4 (alternated randomly) for pregnant women and random blocks with sizes 4 and 6 (alternated randomly) for non-pregnant women. Thyroid stimulating hormone and hematocrit were evaluated and treated if abnormal.

Interventions (Usual care and collaborative care model)

For patients randomized to usual care, RAs informed the OB-GYN provider of their PHQ-9 score and the potential depression diagnosis; women were asked to contact their OB-GYN for follow-up depression care. OB-GYNs either referred patients out for counseling or medication management (to psychiatry or primary care) or started treatment with an antidepressant medication.

Details of the collaborative care intervention are described below, but briefly, patients randomized to the intervention arm were referred for an engagement session and initial assessment with the Depression Care Manager. Patient autonomy was emphasized by offering an initial choice between two treatment interventions – antidepressant medication or problem-solving therapy for primary care (PST-PC) patients. Using stepped care principles, if one intervention did not show early improvement, the option to add alternative interventions was offered. Psychotherapy sessions, and/or antidepressant medication response and adherence monitoring was delivered during in-person or phone visits every 1–4 weeks. The intervention used early, frequent contact to monitor improvement and to increase intensity of care for those with persistent symptoms.

Data collection: occurred at baseline, 6, 12 and 18months. Baseline data was collected in person by the RA or depression care manager (DCM). Other time points were collected over the phone, utilizing standardized questionnaires.

The Primary Outcome was change from baseline to 12 months in the Hopkins Symptom Checklist-20 depression questionnaire (SCL-20) [20]. The SCL-20 has high reliability and validity, and has been shown to be as sensitive to change as other commonly used depression measures in several large primary care effectiveness trials [13, 14, 21]. The SCL-20 was also used to assess treatment response (≥50% reduction in SCL-20 score from baseline) and complete remission of depressive symptoms (SCL-20 score < 0.5) [22].

Secondary Outcomes included functional status, patient-rated improvement, patient and provider intervention satisfaction, medication adherence and mental health care utilization.

Functional status was assessed using 2 validated tools. The World Health Organization Disability Assessment Schedule II (WHO-DAS II) 12-item Version [23] self-report functional status measure has six activity domains. The global score sums the domain scores; a higher score indicates greater disability. The Sheehan Disability Scales (SDS) [24] are 0-to-10 point scales that measure interference with daily activity in the domains of work, family and social life. The SDS was adapted for use in depression and has shown robust differences between intervention and control patients over time [25].

Patient-Rated Improvement was assessed with the Patient-Rated Global Improvement (PGI) [26], a seven-point rating of treatment effectiveness from the patient's perspective, used successfully in multiple recent depression treatment studies [27, 28].

Patient and Provider Intervention Satisfaction were assessed at all time points using a 1–5 point Likert scale. A provider satisfaction with depression care survey was administered pre-intervention and post-intervention [29].

Adherence to antidepressants and mental health care utilization were assessed [13, 14, 22] measuring: (1) adequate dose and duration of antidepressants defined as the percent of subjects reaching adequate dosage (by AHCPR/newer medication guidelines) and duration (≥90 days) of antidepressants in each 6-month period; (2) antidepressant medication use and adherence defined as the percent of subjects on any antidepressant and the percent taking antidepressants for ≥25 of the last 30 days was assessed at baseline and follow-ups, and (3) psychotherapy use defined as the number of psychotherapy visits in each 6-month period and the percent with at least four sessions (by a mental health or social work professional) over each of the six month periods.

Additional data collected included: demographics, medical comorbidity, current panic, post-traumatic stress disorder (PTSD), and reproductive stage. Demographic information (age, marital status, race/ethnicity, insurance status) was collected at baseline. Additional information was gathered, using specific validated questionnaires for factors that could potentially confound our results. The Depression PORT Comorbidity Scale [30], a self-reported list of current illnesses was used to assess medical comorbidity. The M.I.N.I. 5.0.0 Panic Module [15] was used to identify current panic. The Post-Traumatic Stress Disorder 17-item Checklist-Civilian Version (PCL-C) [31], assessed intrusive, avoidant, and arousal post-traumatic stress disorder (PTSD) symptom clusters; correlation with the clinician-administered PTSD scale is 0.93 [31]. Reproductive stage was defined by 2007 ReSTAGE criteria [32] (reproductive, menopause transition, post-menopause); reproductive women were further classified as non-pregnant, currently pregnant or postpartum (within 12 months post- delivery).

Analyses

We plan bivariate analyses to compare demographic and clinical characteristics of the intervention and usual care groups at baseline. For each dependent variable, we will conduct

intent-to-treat longitudinal analyses. We will utilize Generalized Estimating Equations (GEE) with the appropriate links for the distributions of the dependent variables using baseline, 6-, 12-, and 18-month follow-up data. Design covariates include: study site, pregnant versus non-pregnant, and MDD +/− dysthymia versus dysthymia. In the models, we will treat time as a categorical variable and examine fixed effects for time, intervention condition and their interaction. We will also specify the covariance structure within patients using an unstructured model to account for the within-patient correlation over time. In the event of a statistically significant interaction of time and group we will perform additional analyses to examine differences in the change in outcomes for the intervention groups at each time point. In models for depression severity over time, we will perform additional analyses that will test the interaction of intervention status and time with site. Analyses will be conducted using SPSS 19.0.

Power

We estimated that 118 participants were required in the intervention and control groups (total n=236) to have a 80% chance, with a two-sided 5% significance level, of detecting an effect size of 0.57 assuming a baseline score of 1.67 SD 0.6, a 12 month score of 0.99 in the intervention group SD 0.7, and a 12 month score of 1.39 SD 0.7 in the usual care group [22] in the mean Symptom Checklist – 90 (SCL -20) score. This assumes a correlation coefficient between 0.3 and 0.5 and attrition up to 25%.

INTERVENTION DETAILS

The intervention was designed with a goal to improve treatment of depression in an OB-GYN setting by addressing: initial treatment engagement, interruptions in treatment, low adherence to antidepressants or psychotherapy referrals, and lack of individual treatment adjustment according to patient need. The DAWN Study collaborative care intervention model, like previous successful primary care-based collaborative care models—Project IMPACT [22] and PATHWAYS [27]—emphasized the core elements of population-based depression treatment and adapted them to the OB-GYN clinic setting (Table 1).

Intervention Team Roles, Training and Supervision

Two experienced and licensed MSWs (LICSWs) were the DCMs for the two study sites and were trained in the brief psychotherapy intervention by the study psychologist. Both had experience working with similar patient populations. DCMs were adept at incorporating other therapy models—such as cognitive behavioral therapy and mindfulness techniques, or social work interventions, such as advocacy and general support—to help patients with complex problems (e.g. debilitating anxiety, grief and loss, chronic pain, or issues related to poverty/access to services). Study DCMs were funded by the NIMH grant, and each worked part-time, with a combined FTE of 0.90.

A consultant psychologist with extensive experience in collaborative care trained the DCMs in the problem-solving for primary care (PST-PC) therapy [33] and provided DCM consultation for cases that were not improving. DCM PST-PC training conducted during two half-day sessions included didactic information, discussion, and role plays. Each DCM recorded at least one PST introductory session and at least one problem solving session with a practice patient before being certified as competent in the treatment model. Audio taped sessions during the study were reviewed by the psychologist to certify that the DCM had not “drifted” from the PST model [33].

A team psychiatrist and an OB-GYN physician attended weekly one-hour caseload supervision sessions with each DCM. Each patient was discussed, including a brief update of patient progress toward goals (if doing PST-PC), medication adherence (if medication

treatment), and a report of the most recent PHQ-9 score. The consulting psychiatrist recommended medication adjustments, which the DCM communicated to the patient's OB-GYN physician. DCMs reported from their depression registry - an Excel document with each patient visit (phone/in-person), PHQ-9 score, and medication history. The OB-GYN consultant provided relevant medical information and served as the liaison to communicate with staff, providers, or pharmacies. For treatment resistant cases, clinic psychiatrists provided in-person consultation. Team psychiatrists were available by pager, telephone, and email for the DCMs between supervision sessions.

Provider Education and collaborative team approach

All clinic providers received an in-service about collaborative care models and the study protocol prior to recruitment of study participants. Providers were educated about their role, including prescribing medication for patients based on psychiatrist recommendations. OB-GYNs were informed that patient progress would be communicated through electronic chart notes. Patient primary care providers (PCP)s were included in patient care if upon study entry, the patient was taking an antidepressant prescribed by their PCP, or if the patient's OB-GYN was uncomfortable with prescribing antidepressant medication—the latter of which occurred in only a few cases. All communications with outside providers were via letter or phone.

Patient Engagement and Education

A key adaptation of collaborative depression care in the OB-GYN setting was to develop an initial engagement session [34], aimed at improving patient acceptance of the depression diagnosis and choosing an evidence-based treatment to work on with the DCM.

Initially, the DCM invited the patient to tell her story of recent stress (including medical symptoms and disorders) and possible connections to depressive symptoms. The DCM used reflective statements and non-judgmental listening techniques so that the patient felt heard and comfortable. Next, DCMs explored potential barriers to attending clinic visits and how these barriers might be overcome. DCMs were trained in motivational interviewing techniques to help patients articulate potential ambivalence about engaging in treatment. DCMs were also able to identify and reflect back to the patient "change talk" —her expression of wanting her life to be different, despite her ambivalence.

During the engagement session, patients were given a copy of The Depression Helpbook [35] and a copy of the Time Life DVD entitled "Depression (Recurrent and Chronic) Self Care Companion for Better Living" in an effort to improve health literacy regarding depression diagnosis and treatment. Patients were encouraged to review these resources for basic information about depression and depression treatment. The engagement session was added to this model since it has been shown to improve adherence to psychotherapy for low income patients.[34] During engagement, DCMs elicited information about current OB-GYN symptoms and the patient's perception of how these may be linked to depression (Table 2). Treatment preference—counseling and/or medication – was elicited.

Initial Assessment

Following the engagement session, an initial depression assessment and treatment visit was scheduled. The focus of this visit was to thoroughly assess the patient's psychosocial history and depression treatment history (Table 2). Therapists were specially trained to elicit a history of or current problems with menopause or perinatal depression, premenstrual dysphoric disorder, and mood changes with hormonal contraceptives and to coordinate care with the patient's OB-GYN provider.

Patients were allowed to begin with the treatment mode—medication or counseling—they thought would be most helpful. A number of patients were averse to treatment with antidepressant medication. Some had been on sub-therapeutic doses of an antidepressant and were interested in the psychiatrist's recommendation to increase the dosage or change medication. For patients without a preference, severity of symptoms and duration of the current depression episode were considered before making a treatment recommendation. Generally, antidepressant medication was recommended for patients with greater symptom severity and longer episodes.

Problem Solving Therapy (PST-PC)

PST-PC has been shown to be equally as effective as antidepressants for treatment of major depression in primary care [36]. It is considered a brief and practical skill-building therapy that treats depression by teaching patients how to systematically solve current problems of everyday life.

The seven main steps of PST-PC are:

- identify a problem
- set a measurable goal related to the problem
- brainstorm solutions
- weigh pros and cons of each solution
- choose a solution
- identify steps to implement the solution/implement the solution
- evaluate implementation of solution at next visit

DCMs emphasized that the client should start with a problem that had a reasonable chance of success, and then continue to build on each treatment success. Patients who had a difficult time identifying a problem were encouraged to walk through the process using "increasing pleasurable activities" as the goal. This was often a positive way to start small and initiate behavioral change. At subsequent visits, the patient evaluated her satisfaction with implementing the solution and repeated the steps with another chosen problem.

Antidepressant Management

At baseline, for patients taking a sub-therapeutic dose of an antidepressant, the psychiatrist generally recommended increasing the dose of that antidepressant for optimal effect. If the patient had not previously taken antidepressants, the she was started on generic medications, e.g. either Citalopram or Bupropion SR—chosen due to low cost, few side effects, limited drug-drug interactions and mechanism of action. Patient preferences were also taken into account. Patients concerned with sexual dysfunction, wanting to focus on smoking cessation or overeating were preferentially started on Bupropion SR. Patients with comorbid anxiety disorders, such as panic or post-traumatic-stress disorder, were preferentially started on Citalopram. For pregnant and postpartum patients, the psychiatrist recommended Sertraline, due to its in utero and lactation safety profile [37]. Decisions about the use of antidepressant medication during the first trimester were assessed on a case-by-case basis and in close consultation with the patient's OB-GYN.

At approximately eight weeks, for non-pregnant/non-postpartum patients with no response to maximal dosage of Citalopram (i.e. 40mg daily), the psychiatrist recommended an alternative SSRI such as Sertraline. If the patient continued to be treatment-resistant with a second SSRI, the psychiatrist recommended Venlafaxine XR or Bupropion SR. If a patient

had a partial response to Citalopram, the psychiatrist generally recommended augmentation with Bupropion SR.

Patients struggling to achieve remission of depression symptoms with antidepressants, or antidepressants and PST-PC, during the first three to six months were referred for a psychiatric consultation—generally within the UW system. This referral was generated by the patient'sOB-GYN. The DCM facilitated these referrals and checked in with the patient about attendance atthe scheduled psychiatric appointment(s). The DCM followed the patient for medication adherence, support, and the potential addition of PST-PC.

Behavioral Activation and Increasing Pleasurable Activities

Regardless of whether the patient was engaged in PST-PC, taking antidepressant medication, or both, behavioral activation was discussed at each visit. The goal of behavioral activation was to communicate the importance of behavior change to feel better. Because depression can lead to increasing social withdrawal and physical inertia, patients were educated about the downward spiral of depression (e.g. "when I feel worse, I do less, and when I do less, I feel worse") and the upward spiral of depression (e.g. "when I do something, I feel better, when I feel better, I do more"). Patients were often encouraged to choose a self-care behavior that might contribute to feeling better. Patients were asked to focus on increasing pleasurable activities. If patients could not think of ways to do this, DCMs had a list of easy-to-implement suggestions to choose from to feel better [38].

Management of Potential Patient Self-Harm

A protocol was established for responding to self-harm risk as reported on the PHQ-9, the SCL-20, or suicidal thoughts expressed spontaneously to study staff in-person or by phone. Answering "more than half the days" or "nearly every day" to the PHQ-9 question ("Thoughts that you would be better off dead or thoughts of hurting yourself in some way") or answering "quite a bit" or "extremely" to the SCL-20 question ("Thoughts of ending your life"), along with any spontaneous expression of self-harm, was reason for further intervention by a clinician. RAs, who were non-clinicians, were trained to ask a follow-up question in these circumstances ("Do you feel these thoughts are a problem for you OR something you might act on?"). If the patient answered "yes," "don't know," or refused to answer the RA informed the patient that a clinician (DCM, team psychiatrist, clinic social worker) would contact her within 24 hours and might consult with her medical provider or clinic social worker. The RA informed the patient that she was not a trained clinician. She recommended the patient seek mental health services and offered three telephone numbers: the crisis clinic, and two local emergency room/hospitals.

Clinicians who evaluated suicidal patients responded to RA requests generally within several hours of the request and always within 24 hours. Clinician assessments included questions about the patient's access to firearms, current alcohol or drug use, and a history of patient suicide attempts. Clinicians also questioned patients concerning whether they had a specific plan to harm themselves. Patients were assessed to be of "low," "moderate," or "high" risk, with associated protocols for each level. Regardless of risk level, each assessment was discussed with the principal investigator. If any staff member had grave concerns about a patient on site, the patient was held until a qualified staff member could make an assessment and on occasion, following that assessment, the patient was escorted directly to the emergency department.

Relapse Prevention

Relapse prevention, shown to prolong depression treatment response [39] was built into the DAWN Study treatment model. At treatment completion, DCMs, with help from the

patients, filled out a Completion Plan for Relapse Prevention form detailing treatment completed during the study, and asked the patient to identify her warning signs of depression and her ways to manage stress. The form indicated which provider(s) the patient would contact, should depression symptoms return. If patients were treated with antidepressant medication, the form indicated the dosage of medication, how long this should be continued, and when to follow up with a designated provider. Patients and their OB-GYNs and/or PCP were given a copy of the completed form.

Transfer to longer term therapy

For patients who either ended the study without a full remission, or who felt they would benefit from additional therapy, DCMs assisted with referrals to therapists in the community. DCMs gave patients the names of three therapists who would likely take their insurance or who offered sliding fee if patients were uninsured. If continued medication management was required, patients were referred to the outpatient psychiatric clinic at their healthcare site.

PRELIMINARY BASELINE RESULTS

We approached 16,201 women and 6,875 agreed to prescreen; 94% completed. The pre-screen was positive in 1019 women and 369 declined or did not complete full eligibility screen; and 445 were ineligible. In total, 205 women were randomized: 57% white, 20% African American, 9% Asian or Pacific Islander, 7% Hispanic, and 6% Native American. The mean age was 39 years. Of those randomized, 4.6% were pregnant and 7.5% were within 12 months postpartum. The majority were single, (48% were married or living with a partner), and 95% had the equivalent of a high school diploma or greater level of education. Average SCL-20 and PHQ-9 scores at baseline for intervention patient and usual care patients were 2.05±0.61, 16.4±4.1, and 1.96±0.62, 15.9±4.0 respectively. There were 45 evaluations for suicidal ideation, including11 evaluations among nine randomized women (three usual care, six intervention). There were no known suicide attempts, one voluntary psychiatric admission, and one ER psychiatric evaluation.

At baseline, 50% of OB-GYN clinic providers agreed with the statement “depression screening of all of my patients will take too much time away from the patient appointment”. However, nearly 100% felt they *should* screen for depression in their practice and that treatment for depression is effective. Less than 50% of providers felt they had sufficient training to treat depression.

PROVIDER, PATIENT AND DCM PROGRAM EVALUATION

Providers

In the post-study questionnaire, providers (n=14) stated the DAWN Study program was “very helpful” (71%) and “somewhat helpful” (29%) in providing care for their depressed patients. Specific provider comments regarding program benefits:

- “My patients got better.”
- “Great follow-up and feedback to clinicians.”
- “Treatment for patient who otherwise had no access.”
- “A seamless way of offering patients treatment – counseling and/or meds. Easy communication withDCM.”

Patients and DCM Perceptions of Intervention

Appropriate Setting—Many patients remarked on how lucky they felt to participate in the study and identified that they did not recognize they had depressive symptoms. Depression had not been the problem they presented to their provider, but they knew something was wrong. Several patients discussed how this made them feel that some "greater force" was looking out for them.

Ease of Care—The majority of patients described how meaningful it was to receive care in a familiar setting where they could coordinate study visits with OB-GYN visits.

PST-PC was Well-Received in OB-GYN Settings—Patients in OB-GYN clinics were motivated to partake in PST-PC and behavioral activation. Many found this behavioral model to be practical and helpful, and discussed how focusing on pleasurable activities for themselves shifted their focus to self-care instead of caring for others (a familiar theme in many depressed female patients).

Additional Treatment Modes Helpful—The flexibility to add cognitive behavioral therapy (CBT), mindfulness, motivational interviewing, and supportive therapy when indicated to PST-PC therapy increased patient (and therapist) satisfaction. For example, mindfulness interventions were particularly helpful for patients managing anxiety symptoms alongside depression.

Social Work Interventions—Some patients benefitted significantly from social work interventions employed by the DCMs. One indigent patient experiencing grief and loss related to her mother's death learned of eligibility for social security at age 62 from her DCM. The assurance of a monthly income from social security changed the patient's outlook and helped her through her grieving process.

Benefits of Close Follow-Up—Patients articulated to DCMs that the frequent phone calls/visits made them feel well cared for. DCMs stated they sometimes felt like "telemarketers" trying to reach patients, but patients often expressed appreciation for having a provider who did not give up on them. Several expressed that they have never felt that kind of care from any medical provider. A number of patients remarked on how this changed their view of the medical system.

Coordination of Care—Several patients remarked on how positive it felt to be cared for by providers who knew each other and were coordinating their care with the end goal of improving both their mental and physical health.

The Importance of Universal Screening—At the end of treatment many patients reflected back on the day they were screened into the DAWN Study—discussing with DCMs their "luck" at having been screened on that day. Many patients stated they were feeling depressed, but would not have brought this up with their doctors had they not been specifically asked.

Close Symptom Monitoring was helpful to patients—For example one DCM was able to identify for a patient that her PHQ-9 scores worsened and became positive for depression during college finals. Knowing this, the patient was then better able to adjust her study habits and manage her anxiety during these stressful periods.

Benefit of Phone Visits—Patients - especially those patients with financial problems (i.e. cost of gas), child care challenges, inflexible work schedules, or chronic illness - remarked

on the value of being able to do phone visits instead of, or in addition to, inperson clinic visits.

Respect of Patient Autonomy regarding treatment was reinforced by the treatment model which allowed the patient to start with therapy or antidepressant medication. Patients often had a strong desire for starting one over another, and respecting this choice allowed the patient to start where they felt most comfortable. This helped establish a strong therapeutic rapport and helped the patient trust DCM's recommendations to add therapy or medication when needed.

Common Co-Occurring Conditions in OB-GYN—DCMs found that patients commonly presented with the following co-occurring problems throughout their year-long treatment: weight issues, pelvic pain, insomnia, hot flashes, anxiety attacks, uncontrolled bleeding, urinary tract infections, and incontinence. In addition to depression symptoms, several patients had difficulty managing symptoms related to chronic illness, including systemic lupus erythematosis and Wegeners granulomatosis. Problem-solving therapy often focused on these co-occurring conditions and ways to manage them, including improving communication with their OB-GYN providers regarding current symptoms, and increasing pleasurable activities, despite daily difficulty managing their conditions.

SUMMARY

While the effectiveness of the collaborative depression care model has been demonstrated in primary care settings [40], this is the first randomized, controlled trial that adapted this model to the unique aspects of the OB-GYN setting. Experience suggests high patient and provider acceptance and satisfaction with the model. Throughout the study, the team emphasized model sustainability with respective site administrators and clinicians.

High rates of depression among women, especially during times of reproductive transitions [7], provide a strong rationale for shifting to a model of care that is collaborative and preventative, as well as steeped in models of treating chronic conditions. Universal depression screening using the PHQ-9 [41] was well accepted in our study. The American Preventive Medicine task force recommends screening only when there are changes in the health care system instituted to ensure adequate treatment [42]. The DAWN Study intervention may potentially be the most cost effective and efficacious strategy for treating female depression—integrated as a routine part of women's health care in the OB-GYN setting.

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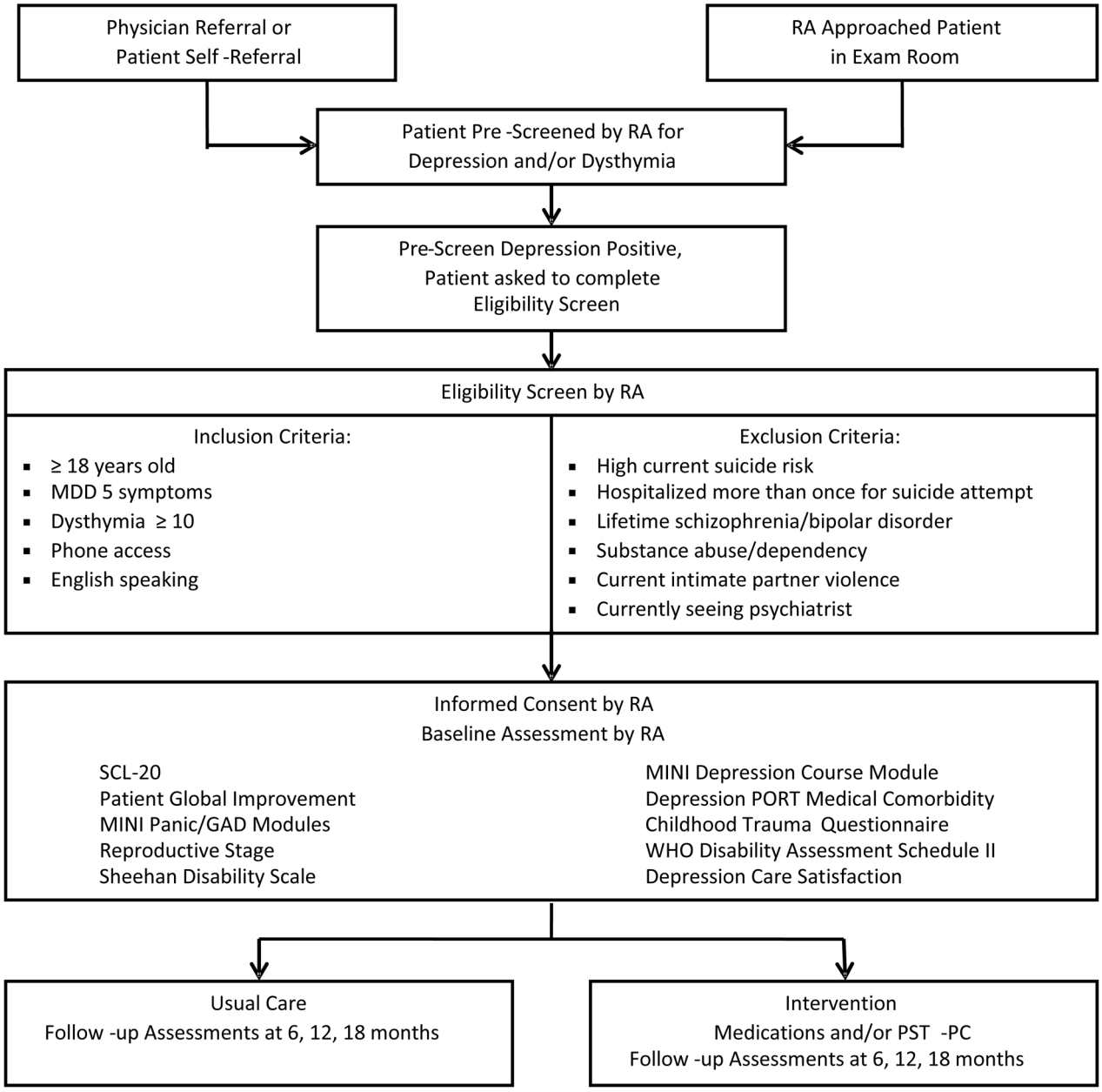

Figure 1.
Screening and Randomization Process for Participation in the DAWN Study

Table 1

Key elements of OB/GYN collaborative care model

• enhanced patient education about depression symptoms and patient choice of evidence- based treatment options
• depression care manager (DCM) to engage the patient in treatment and track depression care outcomes, side effects, and resistance to treatment
• monitoring tools and algorithms – Patient Health Questionnaire-9 (PHQ-9) and patient monitoring Excel register, and communication to providers via electronic medical record
• weekly psychiatric DCM supervision
• selected psychiatric consultations for treatment resistant patients
• collaborative care team approach

Table 2

Baseline History Elements

Mental Health	**Psychosocial**	**GYN**
Current depression (PHQ9)	Emotional v	pelvic pain
Current psychosis or mania	Physical Abuse	PMS/PMDD
Family history	Sexual Abuse	menopause
Anxiety disorder	PTSD screen	pregnancy
Panic disorder	Drug/alcohol abuse history	pregnancy
Prior psychiatric hospitalizations	Strengths	recent surgery
Prior drug therapy	Difficulties	contraception