

RELATIONSHIP AMONG POSTPARTUM DEPRESSION SCREENING, SYMPTOM SEVERITY AND TREATMENT RATES

RELACIÓN ENTRE DETECCIÓN DE DEPRESIÓN POSTPARTO, SÍNTOMAS DE SEVERIDAD Y PERÍODOS DE TRATAMIENTO

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ABSTRACT

Postpartum depression (PPD) prevalence is 10-15% and higher among vulnerable groups in the United States and internationally. Although PPD screening is becoming the norm, treatment rates remain low. **Purpose:** The purpose of this study was to examine treatment (i.e., medication and/or therapy) rates at 6 weeks and 3 months postpartum with encouragement from nurses for women with confirmed PPD and to examine rates in relation to symptom severity. **Methods:** descriptive design, over 5,000 women was screened for PPD and those meeting initial screening criteria completed confirmatory diagnostic interviews. Nurses encouraged and offered assistance to women with high symptom severity to obtain additional evaluation and treatment. Descriptive statistics and Chi square analyses were employed to examine treatment rates and rates by symptom severity. **Results:** Of the 134 enrolled women, 26.9% were receiving treatment at 6 weeks postpartum. At 3 months postpartum, 33.9% were receiving treatment. The increase in the proportion receiving treatment over time was not significant. However, at 6 weeks, symptom severity was associated with receiving treatment, but it was not at 3 months. **Conclusions:** Of importance, at both time points, a majority of women with high PPD symptom levels had **not** received treatment. Despite encouragement and offers of assistance, a majority did not obtain treatment, and rates did not increase significantly over time. Research is needed to decrease barriers and improve PPD treatment accessibility and availability. In addition, more knowledge about effective strategies to engage women in PPD treatment is needed.

Key words: Postpartum depression, screening, treatment.

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RESUMEN

La prevalencia de la depresión posparto (PPD) es del 10-15% y es más alta entre los grupos vulnerables en los Estados Unidos e internacionalmente. Aunque la detección de PPD se está convirtiendo en norma, las tasas de tratamiento siguen siendo bajas. **Propósito:** el propósito de este estudio fue examinar las tasas de tratamiento (medicamentos y / o terapia) en relación con la gravedad de los síntomas a las 6 semanas y 3 meses después del parto en mujeres con depresión posparto confirmada que fueron estimuladas por enfermeras. **Métodos:** diseño descriptivo realizado en más de 5.000 mujeres que fueron seleccionadas para PPD. Aquellas que cumplían los criterios de selección iniciales completaron entrevistas de diagnóstico confirmatorio. Las enfermeras ofrecieron asistencia y motivación a las mujeres con alta severidad de los síntomas para obtener una evaluación y tratamiento adicional. Se utilizaron estadísticas descriptivas. Se efectuaron análisis de Chi cuadrado para examinar las tasas de tratamiento y las tasas de severidad de los síntomas. **Resultados:** de las 134 mujeres inscritas, el 26,9% estaban recibiendo tratamiento a las 6 semanas después del parto. A los 3 meses después del parto, el 33,9% recibía tratamiento. El aumento en la proporción que recibía tratamiento con el tiempo no fue significativo. Sin embargo, a las 6 semanas, la gravedad de los síntomas se asoció con la recepción de tratamiento, pero no fue así a los 3 meses. **Conclusiones:** la importancia, de ambos períodos fue que se identificó que la mayoría de las mujeres con niveles de síntomas altos PPD no había recibido tratamiento. A pesar de recibir motivación y ofertas de ayuda, una mayoría no obtuvo el tratamiento, y las tasas no aumentaron significativamente con el tiempo. La investigación es necesaria para disminuir las barreras y mejorar la accesibilidad PPD tratamiento y la disponibilidad. Además, se necesita mayor conocimiento sobre las estrategias eficaces para lograr que las mujeres mantengan el tratamiento para PPD.

Palabras clave: depresión posparto, detección, tratamiento.

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INTRODUCTION

Postpartum depression (PPD) is a common complication during the early weeks and months following childbirth. PPD affects 10-15% of women in western countries with some higher rates documented based on multi-country samples⁽¹⁻⁷⁾ and among high-risk groups such as low income women (up to 30%) and women with preterm infants (up to 70%)⁽⁸⁻⁹⁾. PPD is linked to negative health sequelae for mothers, infants, and families⁽¹⁰⁻¹¹⁾.

Given documented PPD rates and growing recognition of its prevalence and negative effects, PPD screening is fast becoming the norm for practice in the United

States, and in many countries worldwide. Moreover, the World Health Organization has advocated universal PPD screening of postpartum women to improve detection and subsequent treatment⁽⁹⁾ and the United States Preventive Services Task Force is now recommending depression screenings during pregnancy and postpartum⁽¹²⁾. Yet, despite the prevalence and negative effects, PPD often remains untreated⁽⁹⁾. Barriers to treatment include stigma, inadequate provider training, poor resources and limited access to mental health care^(9, 10, 13-16).

Nonetheless, health policy has placed emphasis on increasing screening efforts based on the expectation that screening

and detection logically should lead to treatment⁽¹⁷⁾.

However, evidence to support a connection between screening, and adequate treatment rates is lacking^(5, 11, 18) and controversy about benefits versus risks of universal PPD screening continues to be voiced actively in the literature⁽¹⁹⁻²⁰⁾. Additionally, symptom severity is an important consideration regarding need for treatment and appropriate use of limited treatment resources in terms of availability and cost that requires attention in implementing and evaluating screening outcomes. Nonetheless, for many years PPD had been a hidden problem. Once its scope and effects became more widely recognized over the past three decades, attention of health policy experts, particularly in the United States, has centered on advocating universal PPD screening. Although it has been assumed that improved detection would lead to improved treatment rates, conclusions from two major Agency for Healthcare Research (AHRQ) evidence-based reports in the United States^(5, 17) and another recent systematic review⁽¹⁸⁾ do not support this assumption, and furthermore, call for examination of efficacy of PPD screening to improve treatment rates.

Clearly, it is imperative to move health policy beyond advocating universal PPD screening as a goal in itself, to mandating tracking screening outcomes, and examining and facilitating availability of pathways to accessible, appropriate mental health services^(17, 19).

Additionally, examination of symptom severity in relation to treatment rates following screening will provide useful information about how screening data may assist in facilitating treatment implementation for the women with the most pressing need based on PPD severity. Thus, it is imperative to ask if PPD screening leads to desired treatment rates when severity is considered and encouragement and support by nurses are provided. Only by examining links and gaps between screening and treatment rates can we determine both the

efficacy of screening and explore potential pathways to effective PPD treatment.

Theoretical Framework

The AHRQ PPD screening framework that has been in place for the past decade informed the study⁽⁵⁾. The framework begins by identifying a cohort of postpartum women with unknown mood state, proceeds to PPD screening, diagnostic evaluation for those with positive screens, and random group assignment (if an RCT is planned) with follow-up evaluation^(1, 5). The flow described in the AHRQ framework was matched in this study design with the purposeful addition of encouragement and offers of assistance by study nurses to help women to obtain follow-up evaluation and treatment via their primary care providers or the psychiatric services at the hospital where they gave birth.

The purpose of this study was to examine rates of treatment (i.e., medication and/or therapy) at 6 weeks and 3 months postpartum for women with PPD who received ongoing monitoring and encouragement from nurses to seek treatment.

Research Questions

The following research questions were posed: Following screening and study enrollment, what percentages of women received PPD treatment at 6 weeks and 3 months?

Was PPD symptom severity associated with treatment rates at 6 weeks and 3 months postpartum?

METHODS

Design

A secondary descriptive analysis of data from the CARE (Communicating and Relating Effectively) study was conducted. The CARE study was a randomized clinical trial (RCT) designed to test the efficacy of a behavioral coaching intervention to improve the quality of maternal-infant interaction between depressed mothers and their infants⁽²¹⁾.

The original study incorporated three phases: Phase I involved participant recruitment and postpartum depression screening at 2-4 weeks postpartum and confirmation of PPD with a diagnostic interview at 6 weeks postpartum; Phase II involved administering study measures, including the Edinburgh Postnatal Depression Scale (EPDS)⁽²²⁾ at 6-weeks and 3-months postpartum, to women who met diagnostic confirmation in order to monitor symptom severity, and implementing the clinical trial; and Phase III involved focus groups and individual follow-up interviews. Detailed descriptions of methods and results for the original study are available elsewhere^(2, 21). Because the variables of interest for this secondary analysis, i.e., treatment rates and depression symptom severity, did not differ significantly between the intervention and control groups in the original study, the two groups were combined and the sample was treated as a whole for this secondary analysis.

Study Participants

The sample size required for the planned analyses in the original RCT was 116 mother-infant dyads (i.e., 58 mother-infant dyads per group) as determined by power analysis to detect meaningful change between the intervention and control groups. This sample size was exceeded with N= 134⁽²¹⁾. Adequacy of sample size for Chi Square analysis used for this study was determined by the established rule of thumb that in cross-tabulation, no cell should be empty and no more than 20% of cells should have fewer than 5. However, it is recommended that additional analyses, i.e., Chi square analyses, be conducted to determine if the sample size is adequate in accordance with these guidelines⁽²³⁾.

Based on additional analyses, it was determined that the sample size is sufficient for the current secondary analysis and the statistics employed. Furthermore, these results were consistent with previous research⁽²⁴⁾.

A population of 7, 212 postpartum women was recruited for PPD screening and 5,169 were screened for PPD as part of Phase I of the RCT study⁽²⁾. Preliminary eligibility for Phase II (diagnostic interview and clinical trial phase) was determined by an Edinburgh Postnatal Depression Scale (EPDS)⁽²²⁾ screening score > 10.

The study sample included in the RCT was comprised of 134 postpartum women and their infants. Subject inclusion criteria were: (a) an EPDS screening score > 10 and subsequent confirmation of depression status by diagnostic interview; (b) birth of a healthy, singleton, term gestation infant at Brigham and Women’s Hospital or Massachusetts General Hospital, Boston, MA, U.S.A.; (c) adequate proficiency in English to complete study measures and converse with research nurses ⁽²¹⁾. Women were excluded if they had a diagnosis of bipolar disorder or psychosis, or lived beyond a 90-minute travel radius from the research study site in greater Boston, MA, USA.

Table 1. Demographic data

Characteristic	N	%	X	SD
Mother’s Age in Years			31	5,7
Mother’s Years Education			15,6	3,4
Family Income			\$80.132	\$49.070
Mother’s Race/ Ethnicity				
African	16	12		
American	11	8		
Asian	72	54		
Caucasian	30	22		
Hispanic	5	5		
Other				
Mother’s History of Depression				
Yes	66	49		
No	68	51		
Mother’s Employment				

Not Working	102	76	
Working	32	24	
<hr/>			
First Baby			
Yes	75	56	
No	59	44	
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EPDS: 6 weeks	134	12,34	4,73
EPDS: 3 months	127	9,57	5,12

The sample's demographic composition reflected the population of the area where the study was conducted ⁽²¹⁾. The mean age of mothers was 31 years and 56% were primiparas. The racial/ethnic background of participants was representative of the geographic area of southeastern New England/greater Boston, MA in the United States, with approximately half (54%) being Caucasian with overall high educational attainment and income. Demographic data are presented in Table 1.

Procedures

Details concerning initial study recruitment and screening procedures and results have been reported elsewhere^(1, 2, 21). Study nurses screened women by telephone and mail to identify women with positive PPD screens. Women whose diagnostic interviews confirmed presence of depression were retained in the study and their willingness to participate was confirmed. At each contact, these women were also actively encouraged to contact their primary care providers (PCP) or their birth hospital psychiatric services for follow-up evaluation and treatment referral when their EPDS scores showed moderate to high severity (> 13) or whenever any endorsement of thoughts of self-harm other than none was given. If any suicidal intent was voiced, the study nurse immediately took action to ensure the woman's safety and engage emergency treatment, e.g., by getting transport to a local emergency department. At each contact, participants were asked if they were receiving psychiatric treatment, including medication and/or psychotherapy, via an

updated demographic and health information questionnaire (i.e., the Mother's Information Tool Update), and women with high PPD scores (i.e., EPDS > 13) were again encouraged to seek follow-up from their primary care providers and were offered assistance to do so by study nurses⁽²¹⁾.

Questionnaires and Instruments

Mother's Information Tool (MIT) and MIT Update. The Mother's Information Tool (MIT) was used to elicit demographic and situational information via face-to-face interviews by study nurses from Phase II participants including: maternal and infant ages; infant gender; ethnicity and race; parity; marital/partner relationship status; education; employment status; income; current mental health treatment; maternal history of depression; pregnancy, labor and delivery history; and current health status of mother and infant ⁽²¹⁾. The MIT was administered at 6 weeks postpartum (Time 1), and the MIT Update, a shorter form, was administered at 3 months postpartum (Time 2) to obtain updated information about maternal and infant health and illness, and specifically maternal depression treatment.

Edinburgh Postnatal Depression Scale (EPDS). The EPDS⁽²²⁾ was used for PPD screening and symptom monitoring over time in this study. The EPDS was developed to identify symptoms of PPD and is the most widely used PPD screening instrument in community-based populations in the United States and internationally. ⁽²⁵⁾ The EPDS consists of 10 statements describing depressive symptoms with responses ranging from 1 (low) to 3 (high) according to severity or duration. Total scores on the EPDS range from 0-30. Cut-off scores may be set at 9/10 or 12/13. The authors of the EPDS recommended using the score of 9/10 to reduce failed detection to less than 10%, and suggested that mental health referral is indicated for scores 13 or higher⁽²²⁾. These guidelines were followed in the current study.

Statistical Analysis

At all data collection points, descriptive statistics were computed for study variables to determine the presence of marked skewness, outliers, and systematic missing data⁽²¹⁾. Appropriate adjustments were made for problems. No systematic patterns of missing data were found, and therefore mean substitution was employed based on individuals' scores for random missing data in study measures.

Administration of questionnaires and measures during face-to-face home visits, coupled with a low attrition rate (5% over time), minimized missing data.

No significant differences between the treatment and control group mothers at baseline were found on any variable. Therefore, the investigators concluded that the groups were equivalent and that the effects of all variables were randomly distributed⁽²¹⁾. For the purpose of this secondary analysis it was determined that the sample could appropriately be treated as a single group. Internal consistency reliability of the EPDS for this sample determined by Cronbach's alpha was .82. Descriptive statistics and Chi square analysis were used to examine treatment rates at both times and to examine rates in relation to symptom severity.

RESULTS

PPD was diagnosed for 134 enrolled women. EPDs mean scores, standard deviations and ranges are reported in Table 1. At 6 weeks postpartum (Time 1), 26.9% of women were receiving some form of treatment, i.e., medication and/or therapy. At 3 months postpartum (Time 2), 33.9% (n= 127) were receiving some form of treatment. Chi square analysis indicated that the increase in the proportion of women who received treatment from Time 1 to Time 2 was not significant. Treatment rates for women with elevated PPD symptom levels were 39.3% at 6-weeks postpartum and 37% at 3 months postpartum. Moreover, at both Time 1 and Time 2 a majority

of women (60.7% and 63% respectively) with high PPD symptom levels had not received any treatment. Interestingly, PPD symptom severity did affect treatment rates but only at 6 weeks (Chi square = 8.874, p= .003).

DISCUSSION AND CONCLUSIONS

Treatment rates for women with elevated PPD symptom levels were relatively low (i.e., well below 50%) at both 6 weeks at 3 months postpartum. Even though study nurses provided direct encouragement and offers of assistance to women with high symptom severity to seek follow-up from their primary care providers (i.e., obstetric or primary care or pediatric provider) or from the psychiatric services at their birth hospital, the majority of women received no treatment. Although higher PPD symptom severity was associated with treatment at 6 weeks, there was no such association at 3 months. This finding is surprising. Perhaps by 3 months many women with high symptom severity who were not already in treatment felt that they were managing their symptoms, so were less likely than women at 6 weeks to obtain treatment. In addition, it is likely that by 3 months postpartum, the women in this sample who were employed (24%) had returned to work given the maternity leave policy in the US. These findings suggest that 6 weeks postpartum may be an optimal time for nurses and other primary care clinicians to engage women in education about PPD and to offer treatment. This time also corresponds to the typical obstetric postpartum checkup so it is an ideal opportunity for obstetric providers to assess PPD and help affected women to engage in treatment. This finding also underscores the importance of Liberto's⁽¹⁴⁾ recommendation for providing early education to women about PPD and prompt referral, particularly during well-baby visits or routine postpartum care.

Finally, it is also possible that in the RCT by 3-months postpartum even wom-

en with high symptom severity (in both the treatment and control groups) experienced home visits by study nurses as supportive enough that formal depression treatment was not needed, despite ongoing encouragement by study nurses to seek follow-up care. Qualitative data from Phase III of the CARE study support this interpretation⁽²¹⁾.

Interestingly, the treatment rates in this study were higher than those found in an earlier study also led by Horowitz ⁽²⁴⁾ in which only 23.3% of women with high PPD symptoms at 3- months postpartum were receiving psychotherapy treatment, and even fewer were receiving psychotropic medication treatment. The association between symptom severity and higher treatment rates was supported in both studies.

Although the current study's treatment rates are far from optimal, they also are consistent with or slightly better than rates reported from other studies that less than 30%, and as low as 6% and 0%, of women with positive PPD screens obtained mental health treatment. ⁽¹⁷⁾ Perhaps the study protocol that directed study nurses to recommend that women with EPDS scores > 13 contact their providers or the hospital's psychiatric service for further evaluation and possible referral combined with offers of assistance to do so contributed to a somewhat higher treatment rate than generally reported previously. In addition increasing awareness of the prevalence of PPD among clinicians since the earlier study⁽²⁴⁾ and legislation to increase health care access within the state of Massachusetts, U.S.A., where most participants lived may have contributed to higher treatment rates at both time points but particularly at 6 weeks postpartum.

We also surmise that documented barriers to obtaining treatment (i.e., stigma, lack of training for primary care providers, lack of resources, and limited access to services)^(21, 26-36) likely operated in this study to deter many women from obtain-

ing treatment. Moreover, many women who participated in interviews and focus groups during the follow-up evaluation portion of the larger study validated these barriers and also indicated that they would have preferred to get treatment from their study nurse during their home visits even though the study protocol did not allow it⁽²¹⁾. Such qualitative data support the value of making PPD treatment easily accessible, e.g., delivering via home visits, and reducing stigma by providing it from trusted clinicians such as nurses who are not necessarily viewed as psychiatric providers.

Such insights support the conclusions of Farr *et al.*⁽²⁶⁾ based on results from the mandated PPD screening plan in New Jersey, and Myers *et al.*⁽¹⁷⁾ based on their extensive AHRQ study that screening alone is insufficient to decrease PPD symptom severity or to ensure that affected women receive appropriate treatment. We conclude that new treatment delivery models must be tested for feasibility, acceptability and efficacy, and then funded when shown to be viable and effective. Inherent in this problem of low treatment rates for PPD is the knowledge that PPD screening has a relatively low cost but mental health treatment for PPD requires more financial resources. In addition our mental health system in the United States at this time is not well positioned to facilitate access, treat, and pay for the services those women with PPD need. The researchers of this study conclude that universal screening is a crucial first step but urge that emphasis is needed on building a system in which women with PPD actually receive treatment that is acceptable, accessible, and effective. Given that changes in health care financing and availability occur over time, and are in flux particularly at this time in the United States, ongoing examination of treatment models, access and utilization is critically important for women with PPD.

Examining alternative approaches to delivery of PPD treatment is needed. Pro-

viding mental health services within the primary care on-site setting has been recommended^(14, 27,28) as a viable alternative to traditional models of providing mental health care in separate settings. Another promising intervention is telephone and/or internet-based support for women at high risk for PPD delivered by nurses or mental health professionals associated with the primary care practice^(29, 36). Non-stigmatizing approaches such as these have been found to be more acceptable to women with PPD^(29, 36).

Home visits to deliver interventions also have been shown to be highly acceptable to postpartum women^(21, 30-31, 34). Additionally, qualitative data from Horowitz *et al.*⁽²¹⁾ indicated that delivery by clinicians (specifically nurses) who are not viewed as “psychiatric” therapists who also can integrate education and guidance about infant care decreases stigma and may increase engagement among postpartum women.

Strengths of the current study include in-person data collection by nurses in home settings. This approach likely promoted our retention and minimal missing data. Ongoing PPD symptom monitoring along with encouragement for evaluation and treatment follow-up by study nurses provided a safety net, and our efforts in ongoing training, de-briefing and study evaluation with study nurses increased our confidence that we had good fidelity regarding our protocol. However, our success in engaging women in the study via ongoing contact with study nurses also may have reduced some women’s felt need for psychiatric treatment; some women in our follow-up phase III focus groups expressed confirmed this hunch. Limitations include the inability in this study and analysis to test innovative methods of treatment delivery. The primary purpose of the overall study was to test an intervention to promote quality of interaction between depressed mothers and their infants, not to test PPD interventions or delivery models. In addition, for some

women, contact with the study nurse was seen as highly supportive and therefore may have served as an unintended substitute for treatment. In the qualitative study component, some women expressed this perspective⁽²¹⁾.

This study also underscores the need to monitor the paths from PPD screening to treatment and in particular how support from nurses or other clinicians can promote assist women to seek and obtain PPD treatment. Additionally, PPD screening in primary care and during pediatric visits has shown high levels of acceptability among women and offers opportunity for education at optimal times⁽³³⁾.

In conclusion, based on our findings and the literature, we recommend that integrated models of mental health treatment be tested within primary care settings. Such integrated care will require training for clinicians without advanced mental health preparation such as pediatric or women’s health nurse practitioners^(27, 34-35), and/or creating positions for mental health providers within primary care settings, such as obstetric and/or pediatric settings, or primary care networks⁽¹⁷⁾. We suggest further that psychiatric-mental health nurse practitioners are ideal candidates for such positions because they can provide care that bridges primary and mental health care.

Additionally, funding for home-visiting programs and innovative delivery models are needed. Such approaches have worked in research but are not generally supported in the US health care system. Community health nurses could be trained to provide targeted mental health treatment to affected postpartum women in their homes^(27, 34-35). Extending treatment to postpartum women via telephone, telehealth/online delivery also has demonstrated efficacy and promise of reducing barriers of stigma and increasing access^(29, 36).

Finally, results from this study and previous research demonstrate clearly that although necessary, universal PPD screen-

ing is not sufficient to solve the problem. Efficacious PPD treatments have been tested and demonstrated. Nonetheless, because treatment rates across studies are far from optimal to solve the public health problem of PPD, new models for treatment delivery require funding and widespread testing with local adaptation across diverse populations followed by implementation.

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