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**Using the Edinburgh Postnatal Depression Scale to Screen for Symptoms  
of  
Depression among Latina, African American and Caucasian Adolescents**

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## **Abstract**

**Purpose:** To report use of the Edinburgh Postnatal Depression Scale (EPDS) as an effective screening tool for adolescent depressive symptoms.

**Data Sources:** Initial EPDS completed by 141 teens (72 hours post childbirth) with approximately 35% of sample completing at three, six and nine months postpartum.

**Conclusions:** One in three teens was identified initially with depressive symptoms reducing over time. Reliability for the English (alpha .81) and Spanish (alpha .71) versions of the EPDS was adequate. Mean scores of the EPDS and the Center for Epidemiologic Studies-Depression Scale resulted in a correlation of  $r=0.75$  strengthening the convergent validity of both instruments. A correlation

( $r=0.43$ ) between index question assessing prenatal mood and EPDS mean scores further enhanced validity.

**Implications for Practice:** Postpartum depression (PPD) is recognized as a common but frequently overlooked condition, especially among adolescents. Despite the prevalence, guidelines for addressing PPD do not exist. The EPDS, widely used for postpartum depression, served as an accurate screen for PPD among adolescents who spoke both English and Spanish.

**Keywords:** Depression, Adolescents, Latina, African American, Edinburgh Postnatal Depression Scale, Perinatal Screening, Culture

Research supported by Sigma Theta Tau International (STTI), Small Grants Awards; Delta Theta Chapter, STTI, University of Texas at Arlington; and the Sharon Davies Memorial Awards, Freedom from Fear.

### **Using the Edinburgh Postnatal Depression Scale to Screen for Symptoms of Depression among Latina, African American and Caucasian Adolescents**

Postpartum depression (PPD) is a serious mood disorder that affects approximately 12-15% of adult childbearing women worldwide<sup>27</sup> and up to 69% of adolescent childbearing women.<sup>34</sup> Symptoms may present up to 24 months postpartum.<sup>25</sup> Despite prevalence statistics, high probabilities of re-experience with future pregnancies, and well documented consequences of the disorder, PPD remains difficult to identify. Routine assessment for either prenatal depression (a risk factor for PPD) or PPD is not universal.<sup>26</sup> Screening guidelines for PPD assessment across healthcare institutions are inconsistent.

Several screening tools for PPD exist. One of the first available screening tools for general depression was the Beck Depression Inventory (BDI)<sup>2</sup> later followed by the BDI- II.<sup>3</sup> Items from the BDI and other validated measures produced The Center for Epidemiologic Studies Depression Scale (CES-D).<sup>40</sup> In the late 1980's the Edinburgh Postnatal Depression Scale (EPDS)<sup>12</sup> was developed as a quick and easy method of assessing PPD symptoms. Validation of the EPDS for screening depressive symptoms in the prenatal period has also been noted.<sup>45</sup> Most recently the Postpartum Depression Screening Scale<sup>6</sup> shows promise as a new assessment tool. All four screening tools have shown good reliability and validity among adult samples.

Inconsistencies in the use of the screening tools influence research outcomes and clouds direction of practice. Researchers apply inconsistent descriptions and definitions of PPD, use numerous instruments with different cut-off scores for the same tools and occasionally screen different symptom presentation.<sup>11</sup> Available research most commonly describes the screening for PPD among adult samples or older age (18-20) teens only<sup>46</sup> leaving a very vulnerable population overlooked. The two most commonly used tools for detecting depression among

adolescents include the BDI and the CES-D.<sup>47</sup> The purpose of this study is to report on the use of the Edinburgh Postnatal Depression Scale (EPDS) as an effective screening tool for depressive symptoms among adolescents who speak both English and Spanish. Evaluation of the EPDS among primary and secondary English-speaking teens is not noted in the literature.

## Review of the Literature

Depression, a common problem during and after pregnancy, is a serious illness, and interferes with day-to-day life and routines. Prevalence rates for perinatal depression vary with published estimates for minor and major depression to be between 6.5% to more than 12.9% depending on population characteristics, assessment tools and timing of assessment.<sup>23</sup> Prevalence rates for adolescents, however, are high according to most accounts.<sup>21,43</sup> Rates of depressive symptoms among adolescent mothers have been reported to be higher than among pregnant or parenting adults<sup>13</sup> with rates noted as high as 59% in mothers ages 15-19.<sup>47</sup> Common symptoms characterizing PPD can include feelings of inadequacy, anxiety, despair, lack of energy, loss of interest in sexual activities, and compulsive thoughts.<sup>4</sup> Numerous risk factors for postpartum depression (PPD) have been explored including age and ethnicity,<sup>20</sup> prenatal depression,<sup>5,48</sup> violence exposure,<sup>33,44</sup> mistimed or unplanned pregnancy,<sup>10</sup> and limited social support.<sup>1</sup> Depression studies among adolescents often overlook the Latina teen; therefore, prevalence rates and risk factors are unclear for this population.

Depressive mood even if not at a clinical level has consequences for later psychological adjustment and can have serious consequences for the infant and the young mother.<sup>5</sup>

Postpartum depression affects the adolescent mother's capacity to form and maintain relationships often leading to disengagement from maternal-child interaction and interfering with attentiveness and nurturing necessary for the infant to develop securely.<sup>11</sup> Depressed adult mothers display less affection, less spontaneity, and more constraints in their interactions with their infants than non-depressed mothers.<sup>3</sup>

Treatment considerations include severity of depression, whether a mother is breastfeeding or not, and mother's preference. PPD is a treatable disorder and earlier intervention results in better postpartum outcomes. Treatment options include individual and group psychotherapy, psychopharmacologic therapies, and complementary/alternative therapies.<sup>30</sup>

### *Screening Tools for Depression*

"... PPD remains an undetected condition of maternal morbidity, and no systematic approach to its detection, prevention or treatment has been established in nursing practice."<sup>38p127</sup> To address this gap in nursing practice, the Registered Nurses' Association of Ontario (RNAO) developed a best practice

guideline outlining 10 clinical postpartum recommendations with supporting evidence.<sup>38</sup> In these recommendations, RNAO lists the Edinburgh Postnatal Depression Scale (EPDS) as the recommended self-report tool to confirm depressive symptoms in postpartum mothers.

The EPDS is a self-report scale containing 10 items with four possible responses for each question from 0 to 3 points possible per response. Scoring the scale requires adding all responses to calculate a possible score of 0-30. The EPDS is easy and quick to administer and can be administered in waiting rooms prior to the nurse practitioner or physician's visit. Upon contact a quick glance of the EPDS directs nursing interventions in cases of perinatal depression.

RNAO recommendations state that 1) administration of the EPDS could be any time throughout the postpartum period (birth to 12 months) to confirm depressive symptoms, 2) nurses can encourage postpartum mothers to complete the EPDS in private, 3) a cut-off point of 12 can be used to determine depressive symptoms among English speaking women (with caution for different threshold scores among women of non-English speaking cultures), 4) interpretation of depressive symptoms must be in combination with clinical judgment, and 5) nurses must provide immediate assessment for report of self-harm behavior (a positive response to question # 10 of the screening tool).<sup>38</sup> Additionally it has been noted that the EPDS can be effectively used to screen for depressive symptoms during a telephone conversation with a mother.<sup>14,28</sup>

Despite RNAO recommendations, however, the use of the EPDS for adolescent screening is limited and, therefore, problematic for this population. Additionally, the use of non-validated cut-off scores is frequently noted in the literature and perhaps used in clinical practice. Non-validated cut-off scores and different wording or formatting of the scale may impact the true rate of PPD.<sup>36</sup> Original scoring of the EPDS by Cox, Holden, & Sagovsky (1987) and replicated findings by others<sup>9,29,39</sup> reported the optimum cut-off score to screen for *major* depression in postpartum (among English speaking women, mean age 26) at 12/13. For inclusion of *minor* depression or increasing measurement sensitivity, Cox, et al. recommended using 9/10 as the cut-off score, also confirmed by Murray & Carothers and recommended by Harris et al. Prenatal depression was defined via a cut-off score of 14 and above.

### *Cultural and Language Comparisons of the EPDS*

Cultural and language considerations must be taken into account and different cut-off scores may be required for non-English versions of the tool.<sup>14</sup> The EPDS has been psychometrically tested in diverse populations, translated into 23 languages and demonstrates high sensitivity, specificity, and predictive power. Numerous publications are available that validate the EPDS for cut-off scores among other cultures and languages; however, the sample age (range or mean) is typically undisclosed or reported as adult. Cut-off points may define major and

minor symptoms of depression together. Most commonly, reports are postpartum.

Lee and his colleagues<sup>31</sup> reported the EPDS as a useful screening tool for early detection of depressive illness in a postnatal Chinese population with a cut-off score of 9-10. This report is one of few that disclosed both a sample age range (16 and 42) and mean age of 29. Additional report of the use of the EPDS with Chinese women at 18 and 32 weeks prenatally supported antenatal consideration.<sup>31</sup> Ghubash, Abou-Satch, & Daradkeh<sup>24</sup> concurred that the Arabic version of the EPDS was a reliable and valid tool for screening depression in postpartum women (mean age 28) with a cut-off score of 10. Lundh & Gyllang<sup>35</sup> recommended using the Swedish version of the EPDS adhering to a threshold of 9/10 when using in community care. Sample age was not disclosed but researchers did recommend future research including screening for fathers-to-be for depressive symptoms.

Mazhari & Nakhaee<sup>37</sup> concluded that the EPDS among an Iranian sample of adult women (mean age 25) was a reliable and valid tool for detecting PPD. The best cut-off score for major depression was judged to be 12/13 with sensitivity and specificity of 95.3% and 87.9% respectively. Australian researchers<sup>9</sup> reported that a cut-off score of 12.5 on the EPDS correctly identified all nine women (mean age 28) who reached criteria for major depression. With the extremely small sample size, suggestion for replication among larger numbers of women was recommended. Zaers, Waschke, & Ehlert<sup>49</sup> noted a high prevalence of depression for German adults (screened at 6 weeks and 6 months postpartum) when using a cut-off score of 9. With this cut-off score a sensitivity of .96, a specificity of 1 and a positive predictive value of 1 was reached. Mean age of women was 30.6 (range 19-42). Spanish researchers<sup>22</sup> concluded that the EPDS was a reliable and valid tool to identify postnatal depression in Spanish women (mean age 29-30). For assessing both minor and major depression the best cut-off score was noted to be 10/11. Usage among adolescents was not noted. Norwegian researchers determined sensitivity, specificity, and positive predictive values of the EPDS for detecting major depression with a cut off score of 12.<sup>7</sup> Mean age of women was 30.8.

Two studies reporting a larger number of adolescents used the EPDS for screening PPD symptoms. A Brazilian based study (22% adolescents) noted highest sensitivity and specificity with a cut-off score for the EPDS at ten for PPD.<sup>42</sup> A second study exploring both prenatal and postpartum depression among adult (50%) and adolescent (50%) Portuguese mothers found EPDS cut-off scores over 12 to reflect depressive symptoms.<sup>21</sup> One cross-sectional study conducted in the United States known to this researcher used the EPDS within an English speaking, adolescent population only. Birkeland, Thompson, & Phares<sup>8</sup> reporting a Cronbach's alpha of .83, screened for symptoms of depression among 149 adolescents 15 to 19 years of age at 2 to 12 months postpartum. Birkeland et al. cautioned that the EPDS was normed in adult

mothers and used a cut-off score of 13 and above as suggested by Cox et al. (1987).

In summary PPD is a world health problem and in attempts to assess this serious mood disorder recommendations considering the use of the EPDS screening tool have been made. The EPDS has been shown to be a quick and easy tool to administer in a ten or five item format. Eberhard-Gran, Eskild, Samuelsen, & Tambs<sup>19</sup> describe the 5-item Edinburgh Depression Scale. The EPDS has been recommended for use in screening for PPD based on substantial evidence based practice among numerous groups and diverse cultures and languages. Use in assessing prenatal depressive symptoms is also receiving more attention. One disadvantage of the EPDS, however, is the continued, limited use with adolescent populations. This study reports on the use of the EPDS among an English and Spanish speaking adolescent population in the United States inclusive primarily of Latina, African American, and Caucasian teens.

## **Method**

### *Sample and Setting*

Criteria for inclusion into the study included (1) being between the ages of 12 and 19, (2) speaking either English or Spanish, (3) having a guardian present if under 18 for consent (as per state law), and (4) providing two or more telephone contact numbers for follow-up. Approximately 90% of teens approached with an explanation of the study accepted participation in the study. Non-participants either did not fit the criteria for inclusion or refused due to disinterest, lack of time, or not feeling well.

Due to the limited research among postpartum adolescents experiencing depressive symptoms, the researcher's pilot work was the foundation of a power analysis for an ongoing, longitudinal study. Evaluation of the EPDS was based on responses from adolescent mothers currently enrolled in the ongoing study. Adolescents were recruited from an urban, public hospital in the Southwest reporting over 14,000 births per year with over 10% to adolescents. Teens (N=156) ranged in age from 13 to 19 years of age (mean age 17.6) and were primarily Latina (61.9%). Twenty teens requested Spanish consents, research instruments and study explanations; 12 teens reported no English speaking ability. Over 82% of the teens were single mothers and 73.3% had completed 11 years of high school. Over 76% of the teens were first time mothers with nearly 65% reporting the pregnancy as unplanned. For 69% of the teens the father of the baby was present in labor; mothers, sisters or other relatives provided additional labor support. Disclosures of a history of childhood abuse (5.7%), partner abuse (7.3%) or substance use (10.7%) indicated reported rates below other studies on adolescent violence and substance use (see Table 1 for Sample Characteristics).

## Measures

At the initial interview (within 72 hours of delivery), both the EPDS and Center for Epidemiologic Studies-Depression Scale (CES-D) were completed. Wide use of the EPDS reflects a reliable self-report scale with a split-half reliability of 0.88 and an alpha coefficient of 0.87 among adult populations.<sup>18</sup> Reliability established in this study was .81 (English version) and .71 (Spanish version). Convergent validity of the EPDS has been reported when compared against a variety of specific depressive scoring systems including the American Psychiatric Association's Diagnostic Statistical Manual IV (DSM-IV).<sup>41</sup> Measuring depressive symptoms with both the EPDS and the Center for Epidemiologic Studies-Depression Scale resulted in a correlation of  $r=0.75$  strengthening the convergent validity of both instruments. A correlation ( $r=0.43$ ) between EPDS means and one index question assessing prenatal mood also strengthened the validity. A cut-off score of 10 indicated symptoms of *minor* depression. A cut-off score of 13 and above indicated symptoms of *major* depression. The Spanish version of the EPDS was translated from English to Spanish and back to English by a bilingual graduate research assistant (GRA) and a retired high school teacher who taught both English and Spanish classes (Spanish version-Appendix 1). The CES-D was translated for the teens from English by the bilingual GRA at data collection.

The CES-D instrument<sup>40</sup> was developed for the general population to screen for depressive symptoms and has high sensitivity and specificity in adolescents, including ethnic adolescents.<sup>33</sup> The 20 item CES-D has possible responses ranging from 0-3. Higher scores indicate more depressive symptomology. Scores of 16 or more indicate depressive symptomology where as scores of 22 or more indicate severe depressive symptomology.<sup>20</sup> The CES-D contains items that were originally taken from the BDI; however, in a comparison between the BDI and the CES-D, teen mothers preferred the CES-D indicating it was quick and simple and that the BDI was "depressing."<sup>47</sup> Additionally, most subscales of the CES-D correlate with the Dysthymia and Major Depression subscales of the Diagnostic Interview Schedule for Children (DISC).<sup>47</sup> These apparent advantages led to the choice of the CES-D as a companion tool at initial interviews. Furthermore, use for these two tools in combination follows best practice recommendations for effective screening.<sup>16</sup>

For an additional validity estimate, two specific index questions within the initial interview requested English and Spanish speaking teens to rank feelings prenatally. Responses provided a subjective assessment of prenatal (two weeks prior to delivery) and early postpartum (within 72 hours after delivery) mood: "How do you remember feeling in the past two weeks?" and "How do you feel today?" Responses "usually happy," "sometimes happy," "sometimes sad," "usually sad," and "always sad" were rated on a continuum from 1-5 respectively.

## Procedures

A list of adolescents fitting the study criteria were compiled daily by charge nurses on two postpartum units and presented to data collectors at time of recruitment. The EPDS and the CES-D were provided to adolescent mothers by a GRA who remained in attendance. Administration of the EPDS and CES-D plus completion of additional materials for the larger study required approximately 25 minutes. Spanish speaking only teens received a research packet in Spanish from a bilingual GRA. An effort was made not to read the instruments to the teen unless needed.

### *Data Analysis*

Frequency analysis and standard means described teen characteristics and prevalence of depressive symptoms by age and ethnic-racial group. Relationships between ranked order prenatal data and EPDS and CES-D scores were examined using Spearman's rho. Pearson's r was used to examine relationships between continuous variables (EPDS scores). T-tests examined differences between continuous variables (EPDS scores) across postpartum intervals of data collection.

## **Results**

Approximately one-third of the adolescents were found to present within 72 hours of delivery with depressive symptoms reflecting either current mood or possibly prenatal and/or chronic depression. One-quarter (24%) of teens displayed depressive symptoms at three months postpartum which continued to reduce over time to 4.8% at nine months. Statistical significance was noted between initial EPDS means, six month means ( $t=3.84$  ( $df =20$ ),  $p=.010$ ) and nine month means ( $t=3.09$  ( $df =20$ ),  $p=.057$ ).

Initial mean EPDS scores ( $N=141$ ) (Mean [M]: 7.4; standard deviation [SD]: 5.0; range: 19) within the first 72 hours of delivery suggested no symptoms of depression for teens overall. Individual scores, however, for 46 teens (32.6%) reflected either *minor* ( $n=15/10.6\%$ ) or *major* ( $n=31/22.0\%$ ) depressive symptoms. Mean scores by ethnicity-racial category with one missing identifier ( $N=140$ ) revealed Caucasian teens to have the lower means initially (Table 2). Over 35% of younger teens (13 to 16) reported depressive symptomatology as compared to older teens 17 to 19 years of age (30.9%).

Initial mean CES-D scores ( $N=126$ ) (M: 13.1; SD: 8.8; range: 41) within the first 72 hours of delivery confirmed EPDS findings of no symptoms of depression for teens overall. Thirty-nine teens (30.7%), however, scored 16 or above indicating depressive symptoms. Of adolescents showing depressive symptoms, 22 (17.3%) scored at 22 or above indicative of severe depressive symptoms. Caucasian teens reflected lower CES-D means initially (Table 2).

One index question exploring prenatal feelings retrospectively for all teens, “How do you remember feeling in the past two weeks?” was found to be correlated with initial scores from both the EPDS ( $\rho=.430$ ,  $p=.000$ ) and the CES-D ( $\rho=.486$ ,  $p=.000$ ). The second index question assessing immediate postpartum mood, “How do you feel today?” (within 72 hours of delivery) was not found to correlate with either the initial EPDS or CES-D scores. Index questions correlated with each other ( $\rho=.369$ ,  $p=.000$ ). Despite over 30% of teens reporting depressive symptoms initially only 6% of teens verbally stated their current mood as sad.

At three months postpartum mean scores on the EPDS (N=50) had declined (M: 5.78; SD: 4.33; range: 17). Mean differences, however, were not statistically significant between the two time periods. Ranging between 0 and 17, twelve teens (24%) reported mild, moderate or severe depressive symptoms. Two teens reported newly developed symptoms. Three teens (6%) scored 15 or above indicative of moderate/severe depressive symptoms. Opposite to initial findings, older teens were approximately one and a half times as likely to show depressive symptoms (25% versus 15.3%) than younger teens at three months postpartum.

At six months 45 teens completed the EPDS. Mean EPDS scores continued to decline (M: 5.3; SD: 4.8; range: 19) No teen under 17 years of age reported symptoms of depression. Of teens 17 to 19 years of age, 15.6% (n=7) had EPDS scores of greater than 12; six had scores above 13. One teen failed to include age and ethnicity on the survey.

Forty-two teens completed the EPDS at nine months. Mean EPDS scores continued to decline (M: 4.1; SD: 3.3; range: 11) with no teens reporting symptoms of major depressive symptoms. One younger teen (age 15) without previous depressive symptomatology showed delayed depressive symptoms with an EPDS score of 11 (minor depression). For older teens all EPDS scores had reduced except for one teen (age 19) with a score of 10. Overall symptoms of depression at nine months decreased to 4.8%.

Characteristics of this sample include a large number of Latinas both bilingual and English speaking only; therefore, mean EPDS scores by language are provided for all time periods. CES-D initial scores are also displayed. The CES-D was not re-administered across data collection points. Due to missing data identifying language mean scores by language versus ethnic- racial group (provided above) differed slightly (Table 3).

## **Discussion**

Findings of both the EPDS and the CES-D revealed that one in three adolescents had depressive symptoms at immediate postpartum (within 72 hours of childbirth). A significant correlation noted between EPDS means and an index question assessing teens’ prenatal mood two weeks before delivery suggested a

perinatal period for depressive symptoms. One in four teens continued to report depressive symptoms at three months with a noted reduction of symptoms across the extended postpartum. Other adolescent studies using the EPDS and the Beck Depression Inventory reflect similar findings. Using the EPDS Figueiredo et al.<sup>21</sup> found that over a quarter of Portuguese adolescents displayed symptoms of depression both at the third trimester of pregnancy and at two to three months postpartum. Across a wider assessment period, Birkeland et al.<sup>8</sup> noted via the EPDS that 29% of teens showed depressive symptoms between two and twelve months. With the use of the Beck Depression Inventory, Schmidt et al.<sup>43</sup> reported a peak in depressive symptoms among multi-ethnic adolescents at 3 months around 36% with a decline in rates by 48 months.

English and Spanish versions of the EPDS were found to be strongly correlated suggesting that the EPDS can be an effective screening instrument for depression among both English and Spanish speaking teens. Additional study with larger samples of bilingual and Spanish speaking only adolescents is encouraged. Additional verification of findings can be provided via a diagnostic interview (gold standard) and methodology as described by Garcia-Esteve, et al.,<sup>22</sup> Garcia-Esteve et al. translated the available English version EPDS into Spanish and in a two stage method first screened women at a six week postnatal check-up. Women scoring above or equal to nine on the EPDS plus a randomized 10% of the sample of women scoring less than nine were interviewed by a psychiatrist using the Structured Clinical Interview (SCI).

Report of symptoms at early postpartum for nearly a third of the sample highlights the need to screen prenatally for depression and ensure postpartum follow-up of young mothers. Early report of depressive symptoms within 72 hours of childbirth may reflect current mood, chronic depression, prenatal depression or both. An accurate screening tool sensitive to depressive symptoms of adolescents can direct interventions. The EPDS is a screening tool only. Without a diagnostic tool for further assessment, scores suggestive of depressive symptoms, especially at earlier postpartum, could imply the physical and physiological changes facing any new postpartum mother such as difficulties sleeping, fatigue, anxiety, and stress reflecting mother and child care deficits. In telephone conversations at three months study adolescents reported that current stressors of “returning to school, not having jobs, and being mommies” impacted their level of stress, lack of sleep and resulting fatigue. Often these stressors might characterize the older teens more with a balancing of parenthood, school, and work.

Adolescents not depressed at three months may in turn become depressed in later postpartum suggesting continuation of screening for adolescent mothers. Prospective studies examining depressive symptoms across extended time periods before, during and after pregnancy are extremely rare. Dietz, et al.<sup>17</sup> explored maternal depression among a large sample (N=4,398) of HMO enrolled adult and adolescent women. Approximately one in seven women was identified

and treated for depression during 39 weeks before pregnancy through 39 weeks after pregnancy and more than half of the women had recurring indicators for depression. Of those mothers under 20 years of age (N=79) 11.6% had at least one depression diagnosis during the study period.

Study limitations include sample mortality with missing demographic data resulting in data inconsistencies and sample size varying between 138 and 156 adolescents at initial interview. Further reduction in numbers of teens at follow-up suggests needed research; however, provides an area of interest and research direction. Additionally, the lack of a diagnostic indicator for depression, such as the SCI provided only screening information; however, study findings offer additional support on the adequacy of the EPDS as a screening tool for depressive symptoms, especially among English and Spanish speaking adolescents.

### *Clinical Implications*

Research continues to report a high prevalence of depression within adolescent mothers. Adequate screening measures are needed to detect depressive symptoms in both the prenatal and postpartum periods and recommendations are needed across health care facilities that strongly encourage screening for depression at these times. Nurses have an early opportunity to recognize depression among their young clients before devastating effects. Use of the EPDS with the recommended cut-off scores recommended by Cox, et al. (1987) for English speaking adults appears to be a very effective screening tool for depressive symptoms among English and Spanish speaking adolescents. Nurses must be familiar with resources in the community and within their employing agency for providing referrals, support and follow-up. Teens disclosing self-harm (final question on the EPDS) require immediate referral. The developers of the EPDS recommend additional questions for assessment of self-harm (Table 4). Agency policies and procedures must be in place assisting health care providers in the decision-making and plan of care for mothers scoring positive on self-harm Cox & Holden, 2003)

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**Table 1. Sample Characteristics**

Characteristic		Sample (N)*
Maternal age (years), M (SD)	17.68/1.58	N=156
Marital Status		N=156
Single	82.1%	
Married/Common law	17.9%	
Parity		N=154
Primiparas	76%	
Multiparas	24%	
Education		N=138
Elementary (1-8 grades)	5.8%	
Junior High (7-9 grades)	10.1%	
High School (10-12 grades)	63.8%	
High School graduate	20.3%	
Type birth		N=155
Vaginal	76.8%	
Cesarean	23.2%	
Gestational age (weeks)		N=156
More than 37	84%	
37-34	13.4%	
33-30	1.3%	
29-25	1.3%	

Weeks prenatal care		N=153
Over 9	51%	
9-5	30%	
4-1	17%	
No prenatal care	2%	
Planned pregnancy		N=148
No	64.9%	
Yes	35.1%	
Father of baby in delivery		N=155
No	31%	
Yes	69%	
Length of labor		N=152
Over 12 hours	38.2%	
12-9	23%	
8-4	24.3%	
Under 4 hours	14.5%	
Ethnic origin		N=155
Caucasian	11%	
Hispanic	61.9%	
African American	25.2%	
Other	1.9%	
*Values not = 156 indicates missing data		

**Table 2. Pattern of EPDS/CES-D Means by Ethnic-Racial Identity**

Ethnic-Racial Identity	Mean/Standard Deviation				
	(n) Range				
<9 no depressive sym					
>10 minor depressive	Initial	Initial	3 months	6 months	9 months
>13 major depressive	CES-D	EPDS	EPDS	EPDS	EPDS
Caucasian	12.1/8.1	5.9/4.1	8/3.3	5.9/6.1	2.7/2.3

	(16) 31	(15) 15	(6) 9	(7) 19	(3) 4
Hispanic	12.2/8.5 (77) 41	7.1/5.2 (87) 19	5.5/4.4 (31) 17	5.4/4.5 (27) 17	4.7/3.6 (28) 11
African American	16.0/9.5 (31) 40	8.3/4.5 (35) 17	5/4.3 (11) 11	4.7/5 (10) 14	2.9/2.5 (10) 6
Asian	18.0/-- (1) 0	14/- (1) 0	-----	-----	-----
Other	8.0/-- (1) 0	11/9.1 (2) 13	5/-- (1) 0	-----	-----
Total	13.1/8.8 (126) 41	7.4/5 (140) * 19	5.7/4/3 (49) 17	5.3/4.8 (44) 19	4.1/3.4 (41) 11

\*Missing data for ethnic-racial category for one adolescent across all time periods

**Table 3. Pattern of EPDS/CES-D Means by Language**

EPDS/n=		CES-D/n=					
M= Means		Total N= 119					
SD= Standard Deviation		M/SD= 13.1/8.5					
Timeframe	English*	Bilingual	Spanish	Total	English	Bilingual	Spanish
	M/SD	M/SD	M/SD	M/SD	M/SD	M/SD	M/SD
72 hours postpartum	6.9/4.8 n=72	7.8/5.1 n=50	9.00/4.3 n=12	7.4/4.9 N=134**	13.1/8.5 n=66	13.3/8.8 n=48	10.8/4.8 n=5
3 months	5.6/3.7 n=23	5.8/5.1 n=21	3.7/2.9 n=3	5.5 N=47	-not done-	-not done-	-not done-
6 months	6.0/5.5 n=26	4.5/4.8 n=15	3.0/2.4 n=4	5.3/4.8 N=45	-not done-	-not done-	-not done-
9 months	3.8/3.4 n=20	4.1/3.4 n=15	5.6/3.4 n=5	4.1/3.4 N=40	-not done-	-not done-	-not done-

\*Category includes English speaking only Latinas, Asian Americans and African Americans

\*\*Missing data for declaration of language

**Table 4. Assessment of Self-Harm**

1.	How often do you have thoughts of harming yourself?
2.	How severe are these feelings? How much have they been bothering you?
3.	Have you had these kind of feelings before? If so, what happened? How do you cope with them?
4.	Have you made any previous suicide/self-harm attempts?
5.	Have you thought about how you would harm yourself?
6.	What support do you have at home?
7.	(If she has a partner) Have you talked about your feelings with him/her?
8.	Are you close to your parents/other family members? Do they know how you have been feeling?
9.	Can you count on your partner and/or family members to give you emotional support?
10.	Is there anyone else in your life whose support you can count on?
11.	Have you told this person or anyone else about your feelings?
12.	Could you phone this person and would he/she come if you felt the needed support?

Based on Holden (1994) and RNAO, 2005<sup>38</sup>

#### Appendix 1. Spanish Version EPDS

Ya que hace poco que tuvo su bebé, quisieramos saber cómo ha estado sintiéndose. Favor de seleccionar la contestación que mejor defina cómo se ha estado sintiendo en los últimos días.

(online version: Como usted hace poco tuvo un bebe, nos gustaria saber como se ha estado sintiendo. Por favor SUBRATE la respuesta que mas se acerca a como se ha sentido en los ultimos 7 dias.)

1. He podido reirme y ver el lado cómico de las cosas.  
Tanto como siempre

No tantas veces  
Definitivamente no tantas veces  
No he podido

2. He mirado al futuro con gozo.  
Tanto como siempre  
Menos que antes  
Definitivamente menos que antes  
Casi nunca

3. Me he culpado a mí misma por cosas innecesarias cuando algo sale mal.  
Sí, la mayoría de las veces  
Sí, algunas veces  
Casi nunca  
Ninguna vez

4. He estado ansiosa y preocupada sin ninguna razón.  
No, nunca  
Casi nunca  
Sí, a veces  
Sí, muchas veces

5. Me he sentido asustada o en pánico sin ninguna razón.  
Sí, muchas veces  
Sí, a veces  
No, muchas veces  
Ninguna vez

6. He sentido que las cosas se me han echado arriba.  
Sí, la mayoría de las veces no he podido estar en control de lo que me sucede  
Sí, a veces no he estado en control  
No, la mayoría de las veces he estado en control  
No, siempre he podido mantener control

7. He estado tan infeliz que he tenido problemas al dormir.  
Sí, la mayoría de las veces  
Sí, a veces  
Casi nunca  
Nunca

8. Me he sentido triste y miserable.  
Sí, la mayoría de las veces  
Sí, algunas veces  
Casi nunca  
Nunca

9. He estado tan infeliz que he estado llorando.

Sí, la mayoría de las veces

Sí, algunas veces

Sólo en ocasiones

Nunca

10. El pensamiento de hacerme daño me ha pasado por la mente.

Sí, muchas veces

A veces

Casi nunca

Nunca