

**Contra Costa County Women Infants & Children (WIC)
Perinatal Depression/Anxiety Screening, Education and Referral Project**

**Project Evaluation Final Report (Revised)
Assessing Outcomes of a WIC Sample with
Moderate to Severe Perinatal Depression/Anxiety Symptoms**

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Evaluation Goal: *To evaluate Contra Costa County's Women Infants and Children (WIC) Perinatal Depression/Anxiety project's effectiveness by determining if clients who screen positive for depression and anxiety receive referral assistance and improve their emotional health status.*

Evaluation Overview and Objectives: *The project is designed to screen and refer to needed services all WIC clients in Contra Costa County who are determined to be at-risk for depression or anxiety. All clients seeing a WIC nutritionist or WNA (WIC nutritionist assistant) are screened for anxiety and depression using the Patient Health Questionnaire (PHQ-4) screening tool. PHQ-4 screening forms were collected for all WIC clients during the month of April 2011 for the evaluation. Those clients with scores of 6 and above on the PHQ-4 (i.e., indicating moderate to severe depression or anxiety) were subsequently re-contacted in July/August 2011 for a follow-up assessment of outcomes. The purpose was to determine:*

- 1) If there was an improvement in their emotional health as measured by a decrease in their PHQ-4 subsequent screening scores (i.e., indicating improved status), and in their self-report of a decrease in depression or anxiety.*
- 2) The overall demographic background of the sample of at-risk women and whether there were any demographic differences between those who were at-risk at the subsequent screening compared to their initial screening.*
- 2) The degree to which the sample of at-risk women utilized the referrals given by WIC staff, and which referrals were beneficial based on self-report.*
- 3) The proportion of the sample of at-risk women who did not use the services and referrals, and their self-reported reasons for not using the services and referrals.*

Method: WIC participants who made in-person visits to the WIC Nutritionists/WNAs for WIC certifications in Richmond, Concord, Brentwood and Pittsburg WIC county sites during the randomly selected month of April 2011 were screened for anxiety and depression by WIC staff using the Patient Health Questionnaire (PHQ-4) measure. In addition to the four PHQ-4 questions, they were asked two additional related questions, one on experiences of intimate partner or domestic violence threats, and the other on suicidal ideation. The PHQ-4 assesses self-reported symptoms of nervousness or anxiety, extreme worry, disinterest in doing things, or feeling down or depressed during the previous two week period. WIC clients were also asked what causes them to feel down, stressed or worried using a checklist format (see Exhibit 1).

EXHIBIT 1 – PHQ-4 SCREENING FORM

<u>Patient Health Questionnaire</u>				
Name:		Phone Number:		
Date of birth:		WIC Id#:		
Circle all that apply.				
I am:				
Caucasian/White	Latino/Hispanic	Pacific Islander	African American	
Alaskan/American Indian	Asian	Middle Eastern	Other:	
Over the last 2 weeks, how often have you been bothered by the following problems?				
	Not at all	Several days	More than half the days	Nearly every day
Feeling nervous, anxious or on edge	0	1	2	3
Not being able to stop or control worrying	0	1	2	3
Little interest or pleasure in doing things	0	1	2	3
Feeling down, depressed, or hopeless	0	1	2	3
Add Columns				
Anyone trying to control, threaten, or hurt you (physically or verbally)	0	1	2	3
Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3
What causes you to feel down, stressed, or worried?				
<input type="checkbox"/> I don't feel down, stressed, or worried	<input type="checkbox"/> Too much to do/ no time for me			
<input type="checkbox"/> Money issues	<input type="checkbox"/> Unhappy with weight/body			
<input type="checkbox"/> Trying to cope with children (parenting problems)	<input type="checkbox"/> Safety concerns			
<input type="checkbox"/> Health issues	<input type="checkbox"/> Drug/Alcohol issues			
<input type="checkbox"/> Housing concerns	<input type="checkbox"/> Family loss/death			
<input type="checkbox"/> Relationship concerns	<input type="checkbox"/> Big changes in life (move, breakup, job change, new baby, pregnancy)			
<input type="checkbox"/> Not enough sleep/tired	<input type="checkbox"/> I don't know/unsure			
	<input type="checkbox"/> Other _____			
<u>OFFICE USE ONLY</u>				
TX Y or N	MX Y or N	Referrals _____	TOTAL _____	

EXHIBIT 2 – PHQ-4 SCORING

0-2	No Depression/anxiety	<ul style="list-style-type: none"> • File the PHQ4 form with the WIC Certification Papers
3-5	Mild Depression/anxiety	<ul style="list-style-type: none"> • Give client brochure and referrals. • File the PHQ4 form with the WIC Certification Papers • Write down any referral you give them in the office use box. • In the office use only box, circle <u>TX</u> : Yes or No --if they are in therapy <u>MX</u>: Yes or No --if they are on medication.
6-8	Moderate Depression/anxiety	<ul style="list-style-type: none"> • Give client brochure and referrals • Refer to Public Health Nurse for follow-up. • File the PHQ4 form with the WIC Certification papers • Call the crisis line and/or mental health access line, if needed. Circle any other referrals that may help. • Put a HOLD on vouchers for next visit to follow up. • Write down any referral you give them in the office use box. • In the office use only box, circle <u>TX</u> : Yes or No --if they are in therapy <u>MX</u>: Yes or No --if they are on medication.
9-12	Severe Depression/anxiety	<ul style="list-style-type: none"> • Give Perinatal Depression/anxiety brochure and referral list. File the PHQ4 form with the WIC Certification Papers • FAX referral, questionnaire, the WIC Family Profile to Public Health Nursing for follow up. • Call the crisis line and/or mental health access line, if needed. • Put a hold on vouchers for next visit to follow up. <ul style="list-style-type: none"> • Write down any referral you give them in office use box. • In the office use only box, circle <u>TX</u>: Yes or No --if they are in therapy <u>MX</u>: Yes or No --if they are on medication

PHQ-4 Scoring: The client can score from 0 (“not at all”) to 3 (“nearly every day”) on each of the PHQ-4 questions for a score that ranges from zero to 12 (see Exhibit 2). A total score of 3-5 indicates “mild depression/anxiety” while a score of 6-8 indicates “moderate depression/anxiety” and a score of 9 or above indicates “severe depression/anxiety”. WIC staff followed a set protocol that outlined what they should do for each WIC client depending on the client’s score on the PHQ-4. In addition to providing at-risk clients with educational materials and referrals, they recorded whether the client was in therapy or on medication.

WIC staff supplied the perinatal depression/anxiety data, including screening forms, Patient Health Questionnaires, staff protocols and demographic information on all clients seeing the Nutritionists/WNAS for certification during the month of April 2011. Only clients with scores of 3 and above were contacted for follow-up 3 months after the initial screening.

RESULTS

Racial/Ethnic Background for the WIC Sample: One of the objectives of this evaluation was to determine the racial/ethnic composition of the WIC sample population being screened. Since April 2011 was selected as a random month for collecting the WIC sample for the follow-up survey, it should be fairly representative of the racial/ethnic composition of the entire WIC population being screened for perinatal depression/anxiety on an ongoing basis.

Table 1 presents the demographic data for racial/ethnic background of the 2143 clients who were screened at all four WIC clinic sites to create the evaluation sample in April 2011, and compares them to the racial/ethnic breakdown of WIC clients in general. Across both populations, the largest racial/ethnic group was Latina/Hispanic. Latinas made up more than half of the entire sample (54.6%) and two-thirds of the overall WIC population (66.4%). African American (13.6%) and White WIC clients (11.4%) were both in the double-digit percentages of perinatal women being screened for depression/anxiety in April 2011. The other racial/ethnic groups, Multi-Racial (6.8%), Asian (6.3%) and American Indian/Alaska Natives (0.5%) rounded out the April WIC sample. Of note, 6.8% of the sample did not specify any particular racial/ethnic group (see Table 1).

RACIAL/ETHNIC GROUP	WIC CLIENTS (NUMBER)	WIC CLIENTS (%)	WIC SAMPLE (NUMBER)	WIC SAMPLE (%)
LATINA/HISPANIC	16,803	66.4%	1170	54.6%
AFRICAN AMERICAN	3374	13.3%	292	13.6%
WHITE	2399	9.5%	245	11.4%
MULTI-RACIAL	1040	4.1%	145	6.8%
ASIAN	1235	4.9%	135	6.3%
AMERICAN INDIAN/ ALASKA NATIVE	373	1.5%	11	0.5%
UNSPECIFIED	90	0.3%	145	6.8%
TOTAL	25,314	100%	2143	100%

At first glance, it might appear that there were some differences between the normal WIC client racial/ethnic composition and the April WIC sample. The Latina/Hispanic group is 10% smaller in the sample, and the white, multi-racial, and Asian populations are 2% larger. However, when the “unspecified” proportion is taken into account, the WIC sample numbers could wind up closely paralleling the overall racial/ethnic composition, especially if the majority were Latinas. Overall, the racial/ethnic proportions are not of concern, especially given the small numbers the sample percentages represent for the sample.

Later on in the report, we also explore the racial/ethnic composition of the original sample scores and their three month follow-up scores to determine if there were disparities in who improved or did or did not receive assistance.

Demographics: Before turning to the factors that may have helped these women improve their emotional health, a look at some of the other demographics for the follow-up group of 80 WIC clients who initially screened in with “moderate to severe depression/anxiety” provides some useful context (see Table 2).

WIC Sites. Three of the four WIC sites are fairly similar in the percentages of women who scored 6 or greater on the PHQ-4 at follow-up. The Brentwood site is the smallest WIC site of the four which may reflect the smaller number of women screening in at “moderate to severe” depression/anxiety levels at follow-up. The overall smaller group of women receiving services at Brentwood may be another factor (see Table 2).

Age, Race/Ethnicity, Language. With an average age of 30 years, the age range for the 80 women is from 17 to 44 years. Only 68 of the 80 women reported their age; of that group, most women are from 20-29 years (45.6%), followed by 41.2% in their 30s, and 10.3% falling in the 40-49 year age group. Only two are adolescents (2.9%).

Almost half of the follow-up sample are Latina/Hispanic origin (48.8%), followed by 17.5% African American, 13.8% Multi-Racial, and 11.3% White. Less than 3% each were Asian, Other Race/Ethnicity, or unknown, and 1% was American Indian/Alaska Native. Reflecting the large number of Latina/Hispanic women, 43.8% spoke Spanish; while 56.3% were interviewed in English (see Table2).

TABLE 2 WIC PERINATAL DEPRESSION/ANXIETY FOLLOW-UP SAMPLE (N=80) DEMOGRAPHICS OF CLIENTS WITH INITIAL SCORES OF 6 OR >		
DEMOGRAPHIC FACTOR	NUMBER	PERCENT
WIC Screening Site		
Richmond	22	28%
Concord	19	24%
Pittsburg	29	36%
Brentwood	10	13%
Age Group (N=68)		
Under 18 years	2	2.9%
20-29 years	31	45.6%
30-39 years	28	41.2%
40-44 years	7	10.3%
Race/Ethnicity		
Latina/Hispanic	39	48.8%
African American	14	17.5%
Multi-racial	11	13.8%
White	9	11.3%
Asian	2	2.5%
Other	2	2.5%
Unknown	2	2.5%
American Indian/Alaska Native	1	1.3%
Language		
English	45	56.3%
Spanish	35	43.8%

Initial Screening Scores: Turning to the screening results, Table 3 presents the findings for the entire sample of WIC clients who were initially screened using the PHQ-4 in April 2011 (see Table 3). Twenty clients (1%) in the initial 2143 sample are not included due to missing screening scores.

As shown on Table 3, 21.9% of the WIC clients who were screened with the PHQ-4 in April 2011 had screened positive for some level of depression and/or anxiety. The levels of depression /anxiety for this WIC perinatal population, which includes both pregnant and parenting women, mirrors the proportions found in other studies, although the available studies focus on postpartum populations, and are fairly rare. A fairly recent 17-state, CDC-sponsored PRAMS study had a range of self-reported postpartum depression/anxiety from 12% to 20% (CDC, PRAMS, 2008). An earlier national meta-analysis study showed an average screening depression/anxiety rate of approximately 13% for postpartum women (O'Hara and Swain, 1996).

PHQ-4 LEVEL OF DEPRESSION/ANXIETY	PHQ-4 SCORE	NUMBER OF CLIENTS	PERCENT
NONE	0-2	1660	78.2%
MILD DEPRESSION/ANXIETY	3-5	324	15.3%
MODERATE DEPRESSION/ANXIETY	6-8	110	5.2%
SEVERE DEPRESSION/ANXIETY	9-12	29	1.4%
TOTAL	0-12	2123	100%

Focusing on our 2010 Contra Costa County WIC perinatal depression/anxiety/anxiety scoring results (which used the longer PHQ-9 screener), 8.7% of the WIC clients (N=4368) screened between May-July 2010 had a score that indicated that they had “moderate to severe depression/anxiety” (Zahnd, WIC October 7, 2010 Evaluation Report). While the proportion of the 2011 “moderate to severe depression/anxiety” WIC sample is slightly lower, the 2010 level does not differ significantly from the approximately 7% who screened in for “moderate to severe depression/ anxiety” in 2011 using the shorter PHQ-4 instrument (NOTE: For further information on validating the PHQ-4 with the PHQ-9, see Zahnd, WIC February 6, 2011 Evaluation Report).

As portrayed on Table 3, only 5.2% screened in for “moderate depression/ anxiety” while another 1.4% screened in for “severe depression/anxiety”. Most of this evaluation report will focus on those two groups (moderate to severe depression/anxiety) in analyzing the follow-up survey data.

Follow-Up Screening Process and Response Rates: Three months after the April 2011 WIC sample was initially screened, and directed to services depending on their perinatal depression/anxiety risk level, WIC staff began the follow-up survey and screening process.

The protocol was designed in two stages. For the clients with “mild depression/anxiety” (scoring between 3 and 5 on the initial PHQ-4), the protocol involved WIC staff attempting to reach them on the telephone to administer the follow-up screening survey. This group was only called *once* during the follow-up period (July-early August 2011). Given the need to limit staff time spent on reaching the “mild depression/anxiety” group for the follow-up project, WIC staff were only able to reach and interview by phone 74 clients out of a total of 324 with “mild depression/anxiety” (23% response rate). Given the low response rate, this evaluation report will only focus on the “moderate to severe depression/anxiety” group for the analysis.

WIC staff achieved a higher response rate (58.3%) for those women initially screening in with a score of 6 or above (moderate to severe depression/anxiety). Since the WIC staff attempted to reach this higher risk group by calling them at least *three times* as compared to only one time for the mildly depressed group, they were able to reach and interview more of these clients, specifically, 81 out of 139 clients (58.3% response rate). Of the 81 women, one did not fit the project protocol. This case was removed from the analysis so the total sample size of “moderate to severely depressed” group was 80.

Follow up Questionnaire

The WIC Follow-Up Questionnaire was designed jointly by senior level WIC staff and the evaluator, and went through a number of revisions until finalization (see Exhibit 3). The follow-up questionnaire also went through a pilot test, after which further revisions were made.

The telephone follow-up questionnaire begins with the WIC staff saying to the WIC client:

Hi, this is _____ from WIC. I'm calling to find out how you are feeling. The last time you came in to WIC, you were feeling a little down or stressed (refer to the last PHQ-4). Can I have a few minutes of your time to ask you a few questions? [If appears too busy, ask: Is there another time that would be better? (IF "yes", set date/time)].

If the WIC client is agreeable to the follow-up telephone interview, the WIC staff then proceeds to re-administer the PHQ-4, along with the two additional questions on violence and suicide ideation. With the WIC client's initial April 2011 PHQ-4 score on hand, the staff quickly assesses whether the score has improved, has not improved, or has gotten worse to assist them in conducting the rest of the survey (see Exhibit 3).

Questions regarding how they are currently feeling are then asked. The WIC staff pursue a different path for the follow-up group with improved scores versus those whose scores stayed the same or worsened. Then, as shown on Exhibit 3, all WIC clients are asked about when they first started to feel depressed, if they got any help, what helped them, and if they did not get help, why not. The interview ends with the WIC staff checking to see if the WIC client needs any other assistance or referrals. There is also room on the form for the WIC staff to add any open-ended notes or comments regarding the telephone follow-up interview and the client's emotional health (see Exhibit 3).

Finally, if the current score is moderate or severe, or if the client currently has a problem of violent threats or victimization or suicidal ideation, the WIC staff immediately provides assistance following the protocol outlined in the initial PHQ-4 screening process.

EXHIBIT 3 PHQ-4 F-UP FORM

WIC Follow-Up Questionnaire by Phone

Hi, this is _____ from WIC. I'm calling to find out how you are feeling. The last time you came in to WIC you were feeling a little down or stressed (refer to the last PHQ-4). Can I have a few minutes of your time to ask you a few questions? If appears too busy, ask: *Is there another time that would be better?* (IF "yes", set date/time) Date and Time: _____. If OK to continue, ask:

Over the last 2 weeks, how often have you been bothered by the following problems?				
Would you say:	Not at all	Several days	More than half the days	Nearly every day
Feeling nervous, anxious or on edge	0	1	2	3
Not being able to stop or control worrying	0	1	2	3
Little interest or pleasure in doing things	0	1	2	3
Feeling down, depressed, or hopeless	0	1	2	3
PHQ-4 Score: Add Columns				
Anyone trying to control, threaten, or hurt you (physically or verbally)	0	1	2	3
Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3

IF PHQ-4 SCORE HAS IMPROVED:

- 1. It seems like you are doing better** (than the last time you were seen in clinic). **Do you feel better?**
- Yes, I feel better
 - No, I do not feel better
 - I'm not sure

IF PHQ-4 SCORE HAS NOT IMPROVED OR HAS GOTTEN WORSE:

- 1a. It seems like you are still feeling anxious, worried, and/or depressed & down. Is this true?**
- Yes, I still feel anxious and/or depressed
 - No, I do not feel anxious and/or depressed
 - I'm not sure

2. Can you tell me when you first started to feel down or stressed (refer to previous PHQ-4)? (Probe)

- | | |
|---|--|
| <input type="checkbox"/> Before Pregnancy | <input type="checkbox"/> For a long time |
| <input type="checkbox"/> During Pregnancy | <input type="checkbox"/> Don't remember |
| <input type="checkbox"/> After giving birth, but before baby was one year old | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> After child was one year old | |

3. When you were feeling stressed or down, did you get any help? Circle YES or NO

If NO, skip to question 5.

If yes, what helped you? (Did seeing your doctor help... etc.? Probe for each answer)

- | | |
|--|---|
| <input type="checkbox"/> Your Doctor or nurse | <input type="checkbox"/> Medication |
| <input type="checkbox"/> Public Health Nurse | <input type="checkbox"/> Diet, exercise |
| <input type="checkbox"/> WIC Staff | <input type="checkbox"/> Spiritual help, prayer, church |
| <input type="checkbox"/> Friends or family support | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Group counseling | |
| <input type="checkbox"/> Individual counseling | |

4. Probe: Can you tell me more about how (the person or other type of help) helped you feel better?

CONTINUED ON BACK OF FORM

EXHIBIT 3 continued

CONTINUED ON BACK OF FORM

1. **If no, why did you not get any help?** (Probe as needed)

- Did not need help?
- Did the situation get better or did you just start to feel better on your own?
- Did you feel you did not want help?
- Were you afraid of losing your kids if you asked for help?
- Were you too depressed to ask for help, or were you uneasy about asking for help?
- Did you want help and tried to get it, but didn't get help?
- Did you not know who to ask? (If yes, Probe: Did you get any phone numbers to call? YES or NO. If NO, skip to question 6.)

(If YES) *Did you try to call someone, and were not able to get any help? (If yes): Who did you try?* _____

What happened? (open-ended):

- Didn't speak my language
- No insurance
- Did not have transportation
- Money issues number is not correct, always busy or could not reach anyone
- Other _____

2. (If applicable) **Is there anything you can think of that would help you feel better that I could help with?**

3. **Are there any referrals I can provide for you today that might be helpful** (see referral phone number lists)?

ADDITIONAL COMMENTS [Please include notes about places referred to, family situation, caregiver relationship to child (if not parent)]:

Date of Phone Interview: _____

Was There Improvement in Screening Scores?

The following tables and exhibits present the results for the 80 respondents who initially screened in with levels of “moderate to severe depression/anxiety”, and who subsequently were reached via telephone to complete the follow-up questionnaire (N=80).

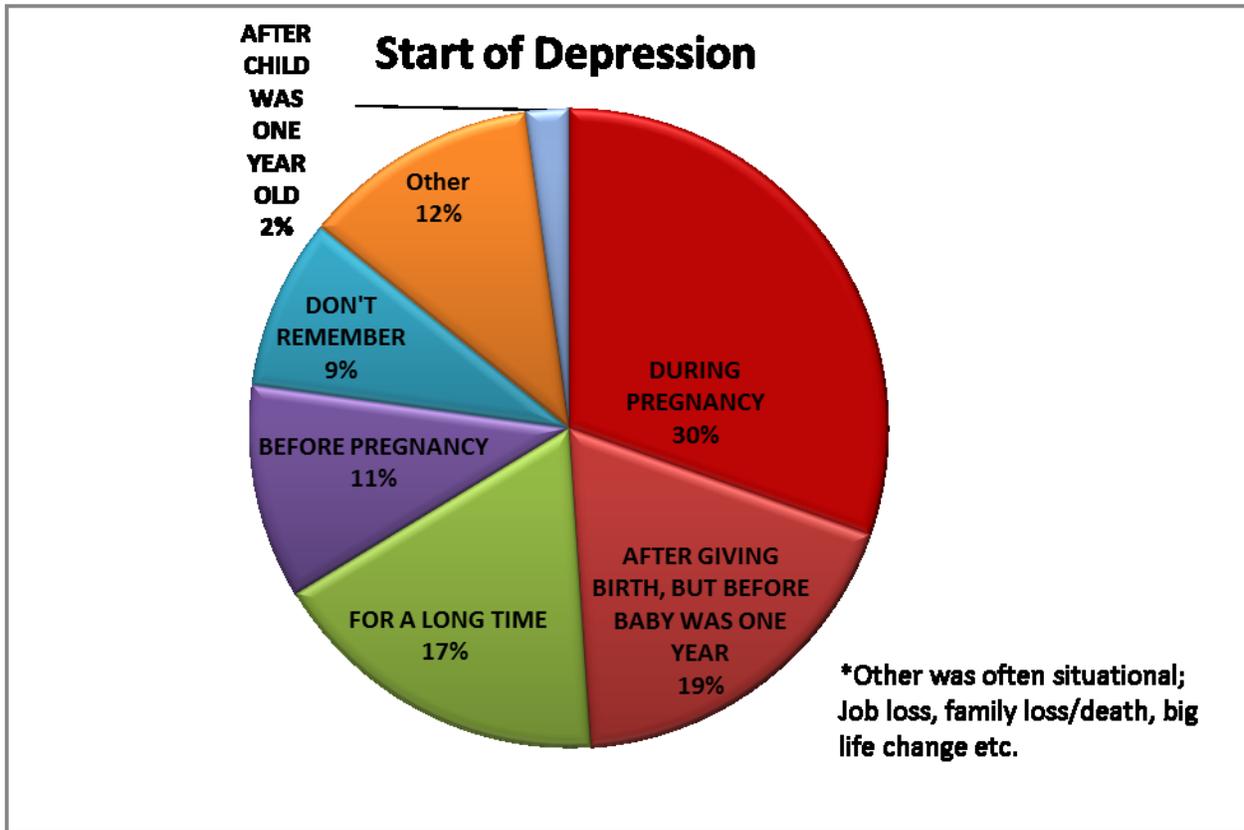
Initial Scores for the Follow-Up Group: Table 4 presents *initial scores* for the “moderate to severe depression/anxiety” group (April 2011) whom WIC staff were able to re-contact for the follow-up survey (N=80). The breakdowns on the table show the split between those with moderate depression/anxiety and those with moderate depression/anxiety who also affirmed either violent threats and victimization or suicide ideation at their initial screenings in April 2011; similar distinctions (i.e., severe versus severe plus violence or suicide ideation) are made for those with initial scores indicating “severe depression/anxiety” (see Table 4).

TABLE 4			
WIC PERINATAL DEPRESSION/ANXIETY PHQ-4 INITIAL APRIL 2011 SCORES FOR THE FOLLOW-UP GROUP WHO SCORED 6 OR > (N=80)			
PHQ-4 INITIAL LEVEL OF DEPRESSION/ANXIETY	PHQ-4 SCORE	NUMBER OF CLIENTS	PERCENT
MODERATE DEPRESSION/ANXIETY	6-8	60	75.0%
MODERATE DEPRESSION/ANXIETY + Q5/Q6	6-8 +	3	3.8%
SEVERE DEPRESSION/ANXIETY	9-12	14	17.5%
SEVERE DEPRESSION/ANXIETY + Q5/Q6	9-12 +	3	3.8%
TOTAL	6-12 +	80	100%

Over three fourths of the group initially screened in as moderately depressed (75%) on the PHQ-4 with an additional 3.8% screening in as moderately depressed and experiencing suicide ideation or violent victimization. Approximately 18% were at the severe depression/anxiety level; 3.8% indicated they both experienced severe depression/anxiety, and violent threats or victimization and/or suicide ideation at the initial April 2011 screenings. Of great concern is the fact that 25% of the baseline group expressed feelings of severe depression/anxiety or feelings of suicide ideation or concerns over violent victimization at their initial screening. While all 80 women needed assistance, the latter group was in immediate need of services and referrals.

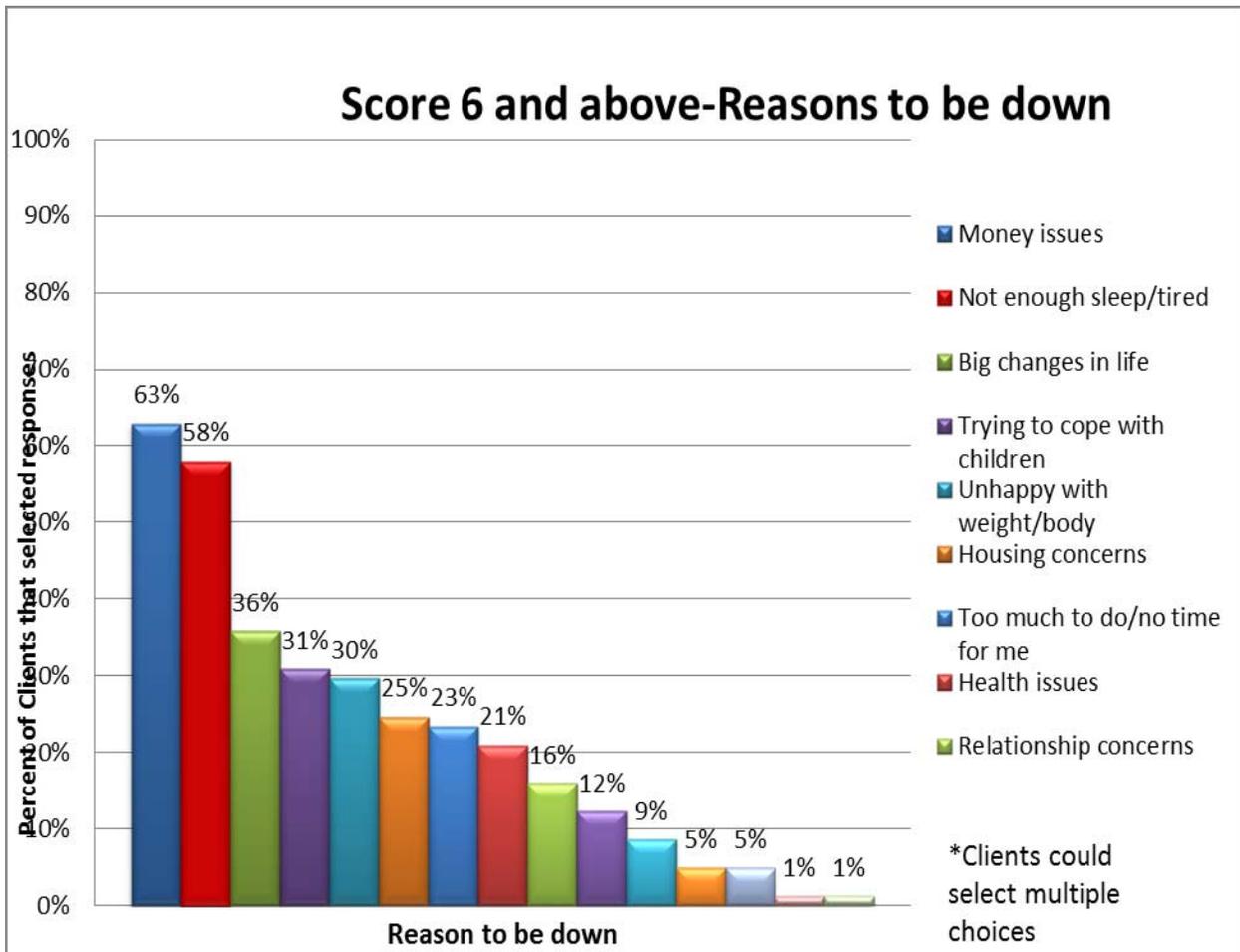
Of additional interest, Exhibit 4 shows the start of the women’s depression/anxiety from her perspective. Most began having feelings of anxiety or depression/anxiety during pregnancy (30%), although almost one in five cited “after giving birth but before the baby was age one year (see Exhibit 4).

EXHIBIT 4



During the initial screening, the women were given a checklist of reasons that might cause them to feel down, stressed or worried. Exhibit 5 presents the data for all of the women who were screened in April 2011 (see Exhibit 5). Given the economic recession, pregnancy or a recent birth, and their low income status, it is not surprising that over 60% of the women cited “money issues”. Besides the common reason of “not enough sleep or tired” (58%), there were a multitude of concerns listed. Women could select multiple responses, and almost 1/3 each reported “big changes in life”, “trying to cope with children or parenting” and “unhappy about their weight or body” (see Exhibit 5).

EXHIBIT 5

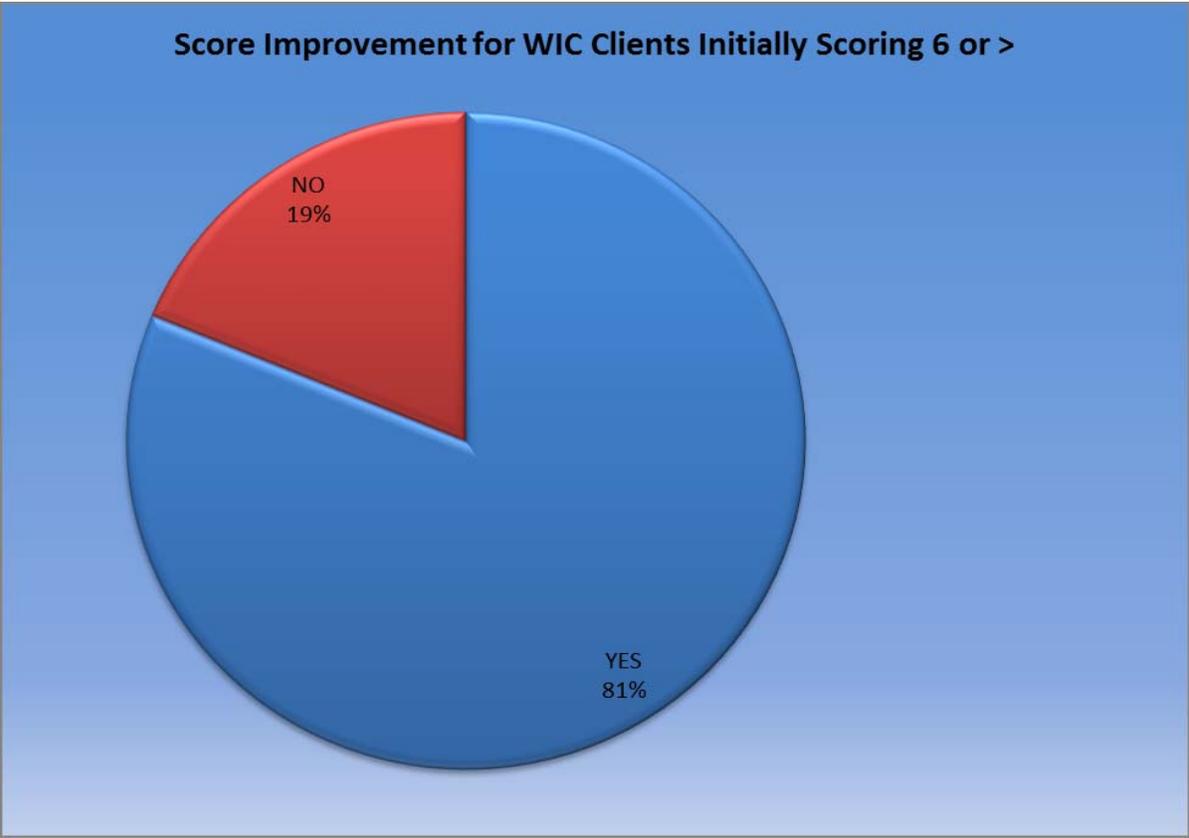


Subsequent Scores for the Follow-Up Group: Table 5 displays the follow-up screening scores for the 80 women who initially had “moderate to severe” depression/anxiety overall. With over 40% reporting “no depression/anxiety” at the 3 month follow-up, and another 34% screening in with a score that indicated “mild depression/anxiety”, it is apparent that the group of 80 women with high levels of depression/anxiety and experiences of violent threats or victimization and/or suicide ideation at baseline (April 2011) exhibited a significant level of improvement in their PHQ-4 screening scores (see Table 5). ***Levels of “moderate depression/anxiety” dropped from 79% at baseline to 14% at follow-up, a significant decrease. In a parallel fashion, levels of “severe depression/anxiety” declined from 21% in April 2011 to only 10% at the three month follow-up (see Table 5).***

TABLE 5 WIC PERINATAL DEPRESSION/ANXIETY PHQ-4 FOLLOW-UP SCORES AMONG CLIENTS WITH INITIAL SCORES OF 6 OR >			
PHQ-4 LEVEL OF DEPRESSION/ANXIETY	PHQ-4 SCORE	NUMBER OF CLIENTS	PERCENT
NONE	0-2	34	42.5%
MILD DEPRESSION/ANXIETY	3-5	27	33.8%
MODERATE DEPRESSION/ANXIETY	6-8	11	13.8%
SEVERE DEPRESSION/ANXIETY	9-12	8	10.0%
TOTAL	0-12	80	100%

Exhibit 6 displays in graphic form the overall improvement in scores for the “moderate to severe depression/anxiety” group of 80 women included in the follow-up survey. As shown in the pie chart, 81% improved their PHQ-4 scores at follow-up (see Exhibit 6). **To answer one of the evaluation objectives: “Is there an improvement in their emotional health as measured by an improvement in PHQ-4 screening scores?” the results are strongly affirmative.**

EXHIBIT 6

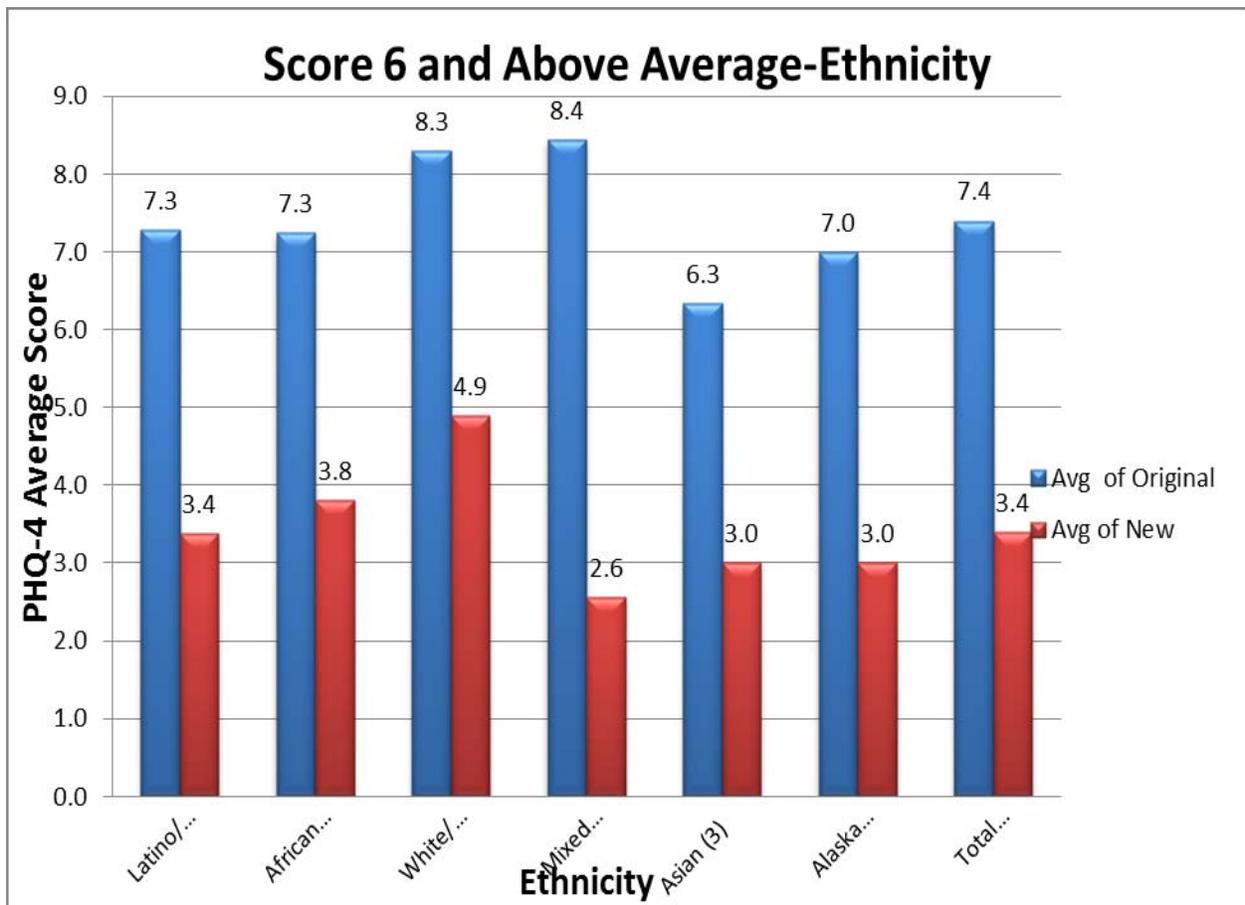


The data displayed on the pie chart in Exhibit 6 can be examined further by breaking down the “No” category into two separate groups: those women whose scores stayed the same versus those whose

scores worsened. At three months after their initial PHQ-4 screening, only 8.8% had the same scores (moderate or severe) at the follow-up survey, and 10% had more severe scores.

Women’s Original and Subsequent PHQ-4 Scores Among the At-Risk Sample: Exhibit 7 shows the average scores of the initial screening for the sample (blue bars), and the three month follow up scores (red bars) by race/ethnicity. Scores could range from 0-12. As indicated by the original scores, regardless of race/ethnicity, the average at-risk (i.e., >6) scores were fairly close regardless of race/ethnic breakdown. The scores ranged from 6.3 among Asian women to 8.4 among multi-racial women.

Exhibit 7



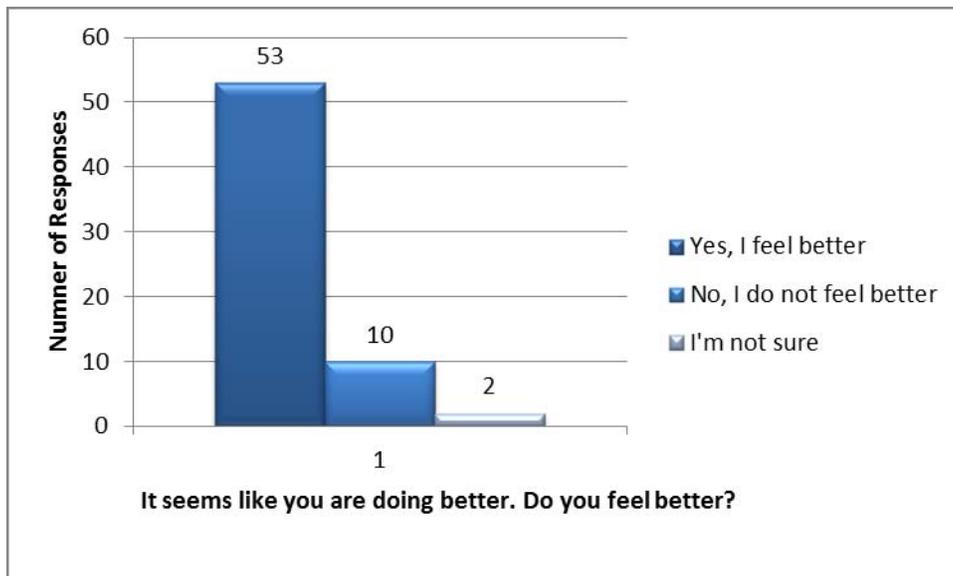
The white and the mixed race populations had the highest initial PHQ-4 depression/anxiety rates (8.3-8.4). While all racial/ethnic groups showed improvement at the subsequent rescreening with scores dropping approximately 3 points or more for each racial/ethnic group, the group demonstrating the most improvement at the 3 month follow-up was the mixed racial/ethnic group where their scores dropped from 8.4 to 2.6 (See Exhibit 7).

Women’s Self-Reported Emotional Health Improvement:

Another evaluation objective was to determine if the women themselves reported feeling better at follow-up if their scores had also improved. During the follow-up telephone interview, WIC staff asked the women whose scores had improved over the three months if they felt better. Those women whose scores stayed the same or worsened were asked instead if they still felt anxious or depressed. These “self-report” measures are displayed in Exhibit 8 and Exhibit 9 below.

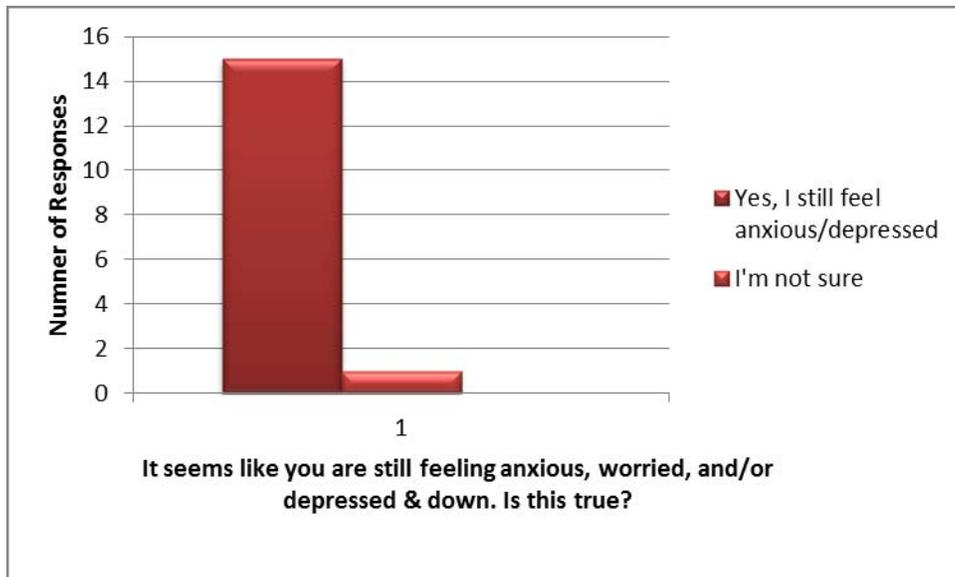
Among the 65 women with improved scores, 53 (81.5%) said that they felt better, ten (15.4%) reported not feeling better, and two women (3.1%) were not sure if they felt better or worse (see Exhibit 8).

**EXHIBIT 8: SELF-REPORTED STATUS AMONG WOMEN
WITH IMPROVED PHQ-4 SCORES AT F-UP**



As shown in Exhibit 9, among the smaller group of women (N=16) with the same or worse scores at the three month follow-up screening, 15 (93.8%) reported having continued feelings of anxiety, worry, or depression/anxiety. Only one woman said she was not sure of her feelings (6.2%) (see Exhibit 9).

EXHIBIT 9: WOMEN WITH SAME OR WORSE PHQ-4 SCORES AT F-UP



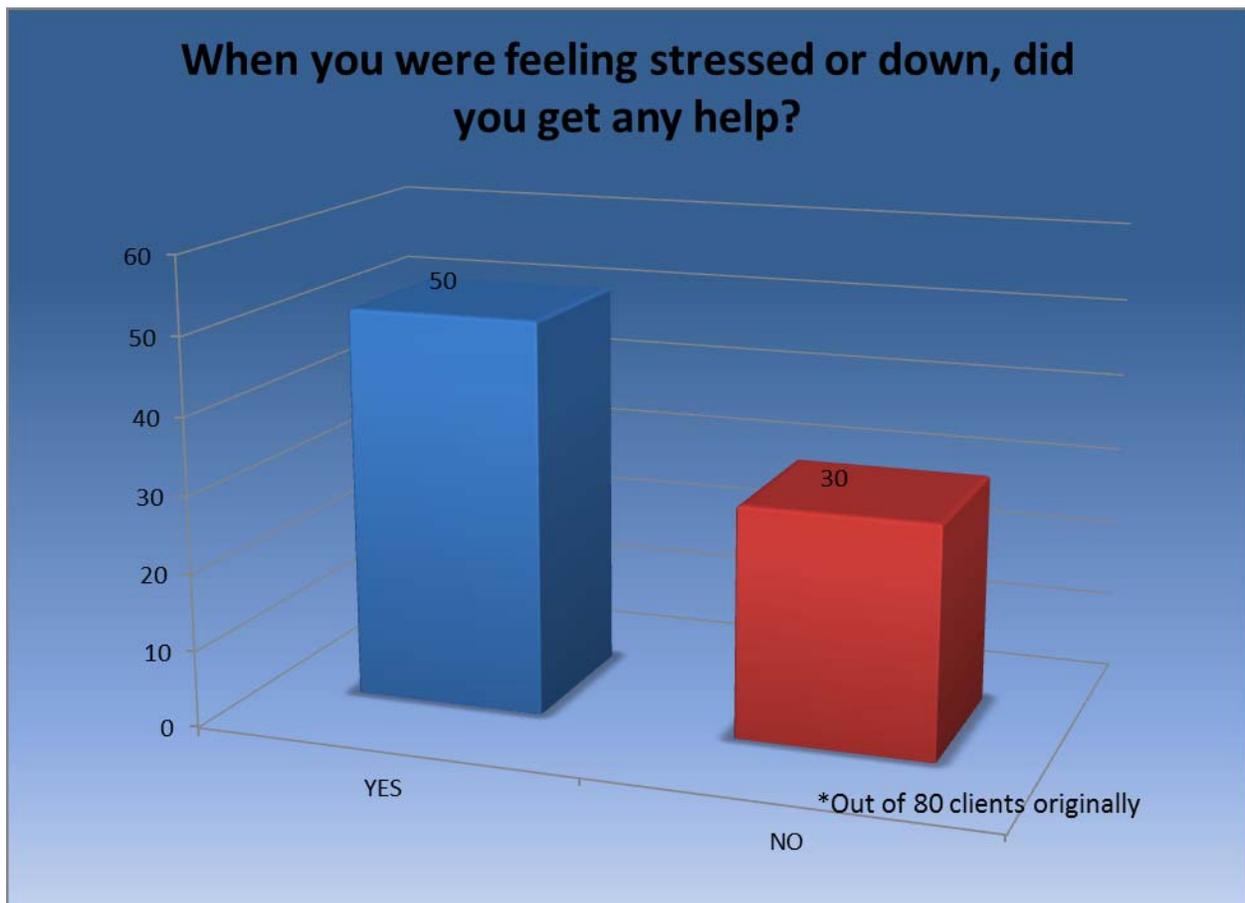
Did They Get Help?

Exhibit 10 presents the results for the 80 follow-up clients regarding whether they sought and received help for their perinatal depression/anxiety. Of the 80, 50 women (62.5%) indicated that they did get help. This result answers another evaluation objective: *Did 60% of the women with an initial PHQ-4 score of 6-12 (indicating “moderate to severe depression/anxiety”) recall receiving materials and/or referrals, and did 50% of the at-risk women use the referrals?* As shown on Exhibit 10, the answer to both questions is “yes”.

Although 30 of the women who initially had moderate to severe depression/anxiety did not seek or get any help, half of them (n=15) had better emotional health three months after their initial screening. Of note, at the initial screening, some of these women may have been receiving counseling, seeing their physician, or on medication for their depression/anxiety, and therefore may not have felt the need for further assistance at that time despite the level of their depression/anxiety (See following section: *“Why women did not seek help?”*).

Among the 65 women with improved scores at follow-up, 39 got help (60%). Of the small number of women who had the same score at follow-up (n=7), 71.4% got help, and of those with a worse level of depression/anxiety (n=8) at the three month follow-up, 62.5% got help.

EXHIBIT 10

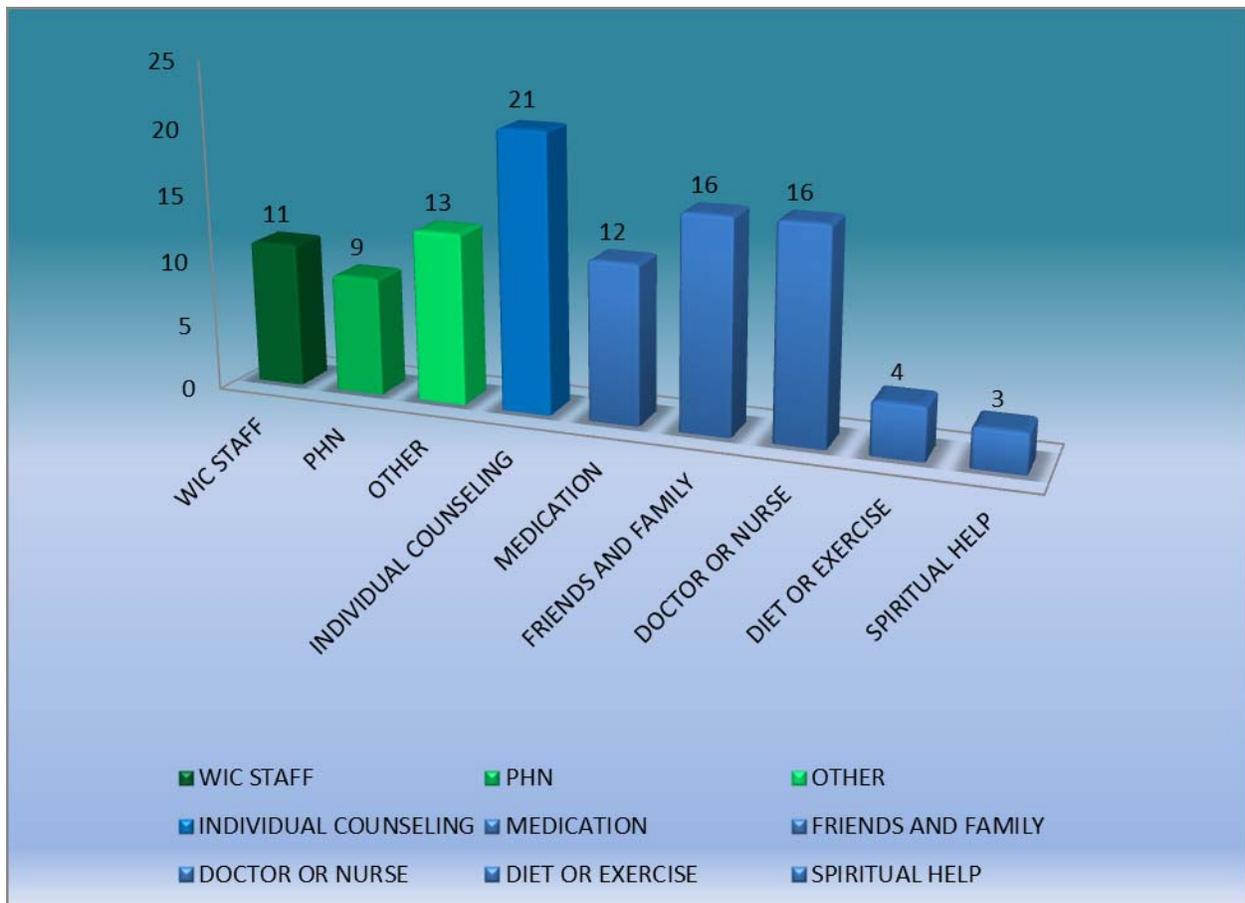


What Factors Helped Them Improve their Emotional Health?

For most of the women who sought and received help, the WIC perinatal depression/anxiety screening, education and referral project did make a difference. Exhibit 11 portrays all of the possible responses that women voiced during the follow-up interviews concerning the factors that helped them. The green bars indicate factors that helped the clients because staff followed the WIC perinatal depression/anxiety project protocol.

In all, 105 self-reported responses were recorded of factors that helped improve the women’s emotional health status. Almost one-third of those responses could directly be attributed to the WIC project; WIC Staff, WIC referrals to PHN (Public Health Nurse), and Other (Most of the “others” were listed on the WIC referral sheet. Programs mentioned were Mental Health Access line, Crisis Line, Healthy Start, WIC Depression Class, and Welcome Home Baby). Another 47.6% were medically or clinic driven, factors that could be associated with the WIC location and overall referral or monitoring process; these factors include individual counseling, medication and doctor and nurse visits. Finally, 22.3% of the responses were attributed to efforts and support from family and friends, individual behaviors (diet and exercise) and spiritual strength (see Exhibit 11).

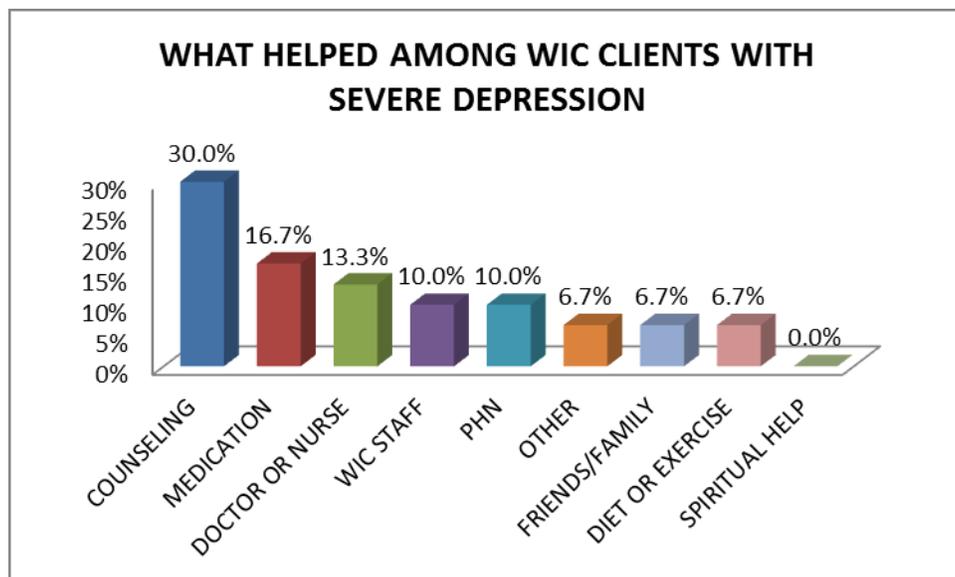
EXHIBIT 11



What Helped the Women with Severe Depression/Anxiety? Exhibit 12 shows the results for the smaller group of women who had “severe depression/anxiety” as to what helped them with their emotional health during the three month follow-up time frame (n= 17). Individual counseling (30%) was the most important factor listed by the women. Medication was cited as important part of what helped the “moderate to severe” group of women who were part of the follow-up interviews (see Exhibit 12).

In total, WIC efforts for the moderate to severe group contributed approximately 1/3 of the support that assisted them in improving their health i.e., WIC Staff, PHN and Other (Including Mental Health Access line, Crisis Line, Healthy Start, WIC Depression Class, and Welcome Home Baby). The factors that helped the 17 women with severe depression/anxiety did not differ significantly from the factors that helped the entire group of 80 women with “moderate to severe depression/anxiety”.

EXHIBIT 12



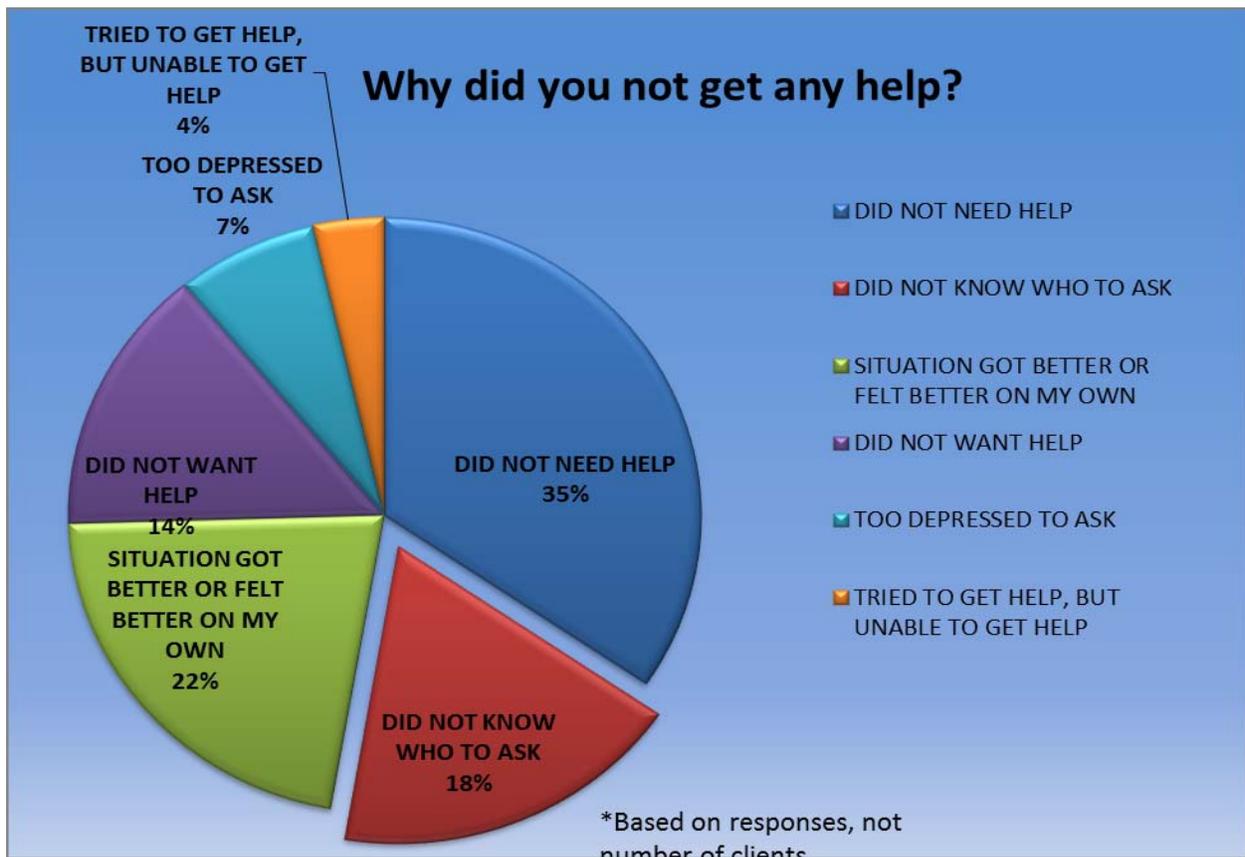
Why Women Did Not Seek Help:

The 30 women who did not seek help were asked why they did not reach out for assistance during a time when they felt depressed and anxious and when assistance was offered to them. The final exhibit portrays the results from that follow-up question (see Exhibit 13). Although the pie chart separates out “did not need help” (35%) from the “situation got better or felt better on my own” (22%), those two rationales are somewhat similar and when combined account for 57% of the reasons cited. The rationale “did not want help” (14%) is a bit more complex for analysis since it leaves hanging the question of why they did not want help.

Three categories on Exhibit 13 signal a need for further outreach, referrals and education to assist the women with perinatal depression/anxiety, namely, the categories: “Did not know who to ask” (18%),

“Too depressed to ask” (7%), and “Tried to get help but unable to get help” (4%). The latter two categories were fairly small, but are important indicators for a need for continued outreach. The first reason cited noted that that group of women did not know who to ask. Given the project protocol, that issue should have been addressed by the fact that all WIC staff provided referral source sheets to all the at-risk women. Whether they had a problem with recall, lost the sheet, or needed a bit more of a helping hand (perhaps circling a possible contact or providing a specific name) is something that WIC staff can consider when reviewing their overall protocol and adjusting it to further strengthen the process.

EXHIBIT 13



Evaluation Highlights:

In summary, highlights from the evaluation of the Perinatal Depression/Anxiety Project include:

- Perinatal depression/anxiety PHQ-4 screening of WIC clients during the month of April 2011 shows that 78.2% do not have symptoms of perinatal depression/anxiety while 15.3% show signs of mild depression/anxiety. 5.2% are moderately depressed while 1.4% reveals symptoms of severe depression/anxiety.

- 49% of the participants reported depression beginning within the perinatal stage (during or within one year after pregnancy).
- The racial/ethnic composition of the WIC sample population being screened includes Latinas, African American, White, Asian, American Indian/Alaska Natives, and multiracial with a significant percentage (over 50%) being Latinas. The racial/ethnic composition of the sample did not differ significantly from the overall WIC population.
 - While all racial/ethnic groups showed improvement at the subsequent rescreening with PHQ-4 scores dropping approximately 3 points or more for each racial/ethnic group, the group demonstrating the most improvement at the 3 month follow-up was the mixed racial/ethnic group whose scores dropped from 8.4 to 2.6.
- A three month follow-up project reached 58.3% of those with moderate to severe depression/anxiety.
- The most common reasons given for feeling depressed were “money issues” (63%) and “not enough sleep/tired” (58%).
- Among the 80 follow-up participants, levels of depression/anxiety decreased significantly. Levels of severe depression/anxiety declined from 21% in April 2011 to only 10% at the three month follow-up. Levels of moderate depression/anxiety dropped from 79% at baseline to 14% at follow-up. The remaining 76% reported mild to no depression/anxiety.
- Self-report on feeling better shows 81.5% felt improvement.
- 62.5% of the follow-up participants reported that they received help.
- 50% of those who did not seek help reported that they had better emotional health.
 - The main reason women reported that they did not receive services when asked at their three month follow-up was because they “did not need help” (35%); the second main reason was “they did not know who to ask” (18%). For the latter group, when WIC staff provide at-risk clients with the referral sheets, they can both circle specific referrals, and make calls if the client indicates she doesn’t know who to ask for help.
- Participants reported that the WIC project contributed to the improvement of their emotional health status in approximately 1/3 of the responses. 47.6% of the responses involved medical intervention and 22.3% of the responses focused on behavioral change and social support.
- 57% of those who did not seek help indicated an improvement in their situation without help. 14% did not want help. The remaining 29% indicate a need for further intervention.

Conclusion:

The results presented in this evaluation report indicate that the objectives of the WIC perinatal depression/anxiety project were met. Some suggestions for strengthening the protocol were pointed out in the “Highlights” section. Perhaps for future evaluation efforts, an at-risk sample could be

followed up for a longer period (6 months to 12 months) with interviews conducted at 3-4 points throughout the follow-up period. In addition, medical record data could supplement the screening and self-report data (qualitative and quantitative) during the follow-up period.

In conclusion, as one 28 year old, married Latina WIC client with three children reported in her follow-up interview:

“Having WIC has significantly helped with my stress over money issues and with support in general.”

This Spanish speaking WIC client got the help she needed through the efforts of WIC staff with the result that her “severe depression/anxiety” decreased to “mild depression/anxiety” at her three month follow-up interview.

The project undertaken by WIC staff for their at-risk clients will continue to improve the emotional health of prenatal and perinatal women and their infants in Contra Costa County for many years to come. This evaluation is submitted in the hope that WIC’s innovative effort to alleviate perinatal depression/anxiety will continue and serve as a model for WIC programs in other counties, states and nationwide.