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***PRENATAL SPOUSAL MILITARY DEPLOYMENT AND MATERNAL  
PRENATAL ADAPTATION AS PREDICTORS OF POSTPARTUM MATERNAL-  
INFANT ATTACHMENT***

Karen Weis, PhD, RN, Colonel  
Dean, United States Air Force School of Aerospace Medicine  
Brooks City-Base, TX 78235  
[karen.weis@brooks.af.mil](mailto:karen.weis@brooks.af.mil)

Regina P. Lederman, PhD, FAAN  
Professor, School of Nursing and Department of Preventive Health & Community  
Medicine,  
Division of Sociomedical Sciences, University of Texas Medical Branch  
[rlederma@utmb.edu](mailto:rlederma@utmb.edu)

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***Abstract***

A woman's ability to adapt and identify with the concept of being a mother is a process that occurs progressively throughout pregnancy and is predictive of postpartum adaptation and infant health outcomes. Integral to this adaptive process is the esteem-enhancing support from a partner or husband. Less is known about the impact of military deployment and the absence of the husband on the pregnant woman's level of anxiety and its impact on postpartum maternal-infant attachment. The effect of spousal deployment during pregnancy on prenatal anxiety and adaptation to a 6-month measure of maternal-infant attachment was the focus of this study. The sample comprised 113 pregnant

women eligible for care in the military medical system. Significant predictors of postpartum maternal-infant attachment and satisfaction with maternal role and infant care were: Prenatal deployment of one's spouse, specific prenatal measures of anxiety and depression, and the pregnant woman's relationship with her spouse. The findings indicate the unique and important support provided by the spouse. Most particularly the findings show the impact of prenatal partner/spousal separation secondary to military deployment on postpartum maternal adaptation and maternal-infant attachment.

**Keywords:** Prenatal psychosocial adaptation, prenatal anxiety, military deployment, maternal-infant attachment

## ***PRENATAL SPOUSAL MILITARY DEPLOYMENT AND MATERNAL PRENATAL ADAPTATION AS PREDICTORS OF POSTPARTUM MATERNAL-INFANT ATTACHMENT***

### **Introduction**

The adaptability and innovativeness of nurturant maternal behaviors in relation to the needs of a child require a "maternal intelligence" derived in part from a mother's knowledge base unique to each child. This knowledge base is gained through a progressive sense of the child occurring throughout pregnancy as maternal-fetal attachment.<sup>1,2</sup> Maternal anxiety that occurs as a result of poor self-acceptance of the maternal role is associated with an emotional detachment that impacts prenatal maternal transformation and maternal-fetal attachment, as well as postpartum maternal-infant attachment.<sup>3,4</sup> Moreover, maternal-fetal attachment is predictive of maternal health, and both fetal and infant outcomes<sup>5-7</sup> and is associated with greater postpartum maternal competence and effectiveness.<sup>2,8</sup> Condon and Corkindale<sup>4</sup> reported significant negative relationships of maternal-fetal attachment with prenatal maternal anxiety and with depression. Hart and McMahon<sup>9</sup> found similar relationships for state and trait anxiety, depression, and the quality of maternal-fetal attachment.

One of the strongest predictors of postpartum depression is the presence of depression or anxiety during pregnancy.<sup>10</sup> Although differing predictor variables for prenatal and postpartum depression have been proposed,<sup>10-14</sup> lack of partner support has been consistently predictive of depressive symptomatology in meta-analyses, as has satisfaction with the marital relationship.<sup>10,15,16</sup> There is a direct relationship between the strength of the family unit and the quality and strength of the maternal attachment both prenatally and postpartum.<sup>1,8,17,18</sup> A mutual, interdependent marital framework provides what may be the most important element for successful maternal adaptation and infant attachment.<sup>19</sup> It is important prenatally for a married woman to be able to communicate easily with her husband about pregnancy, childbirth, and their future together as a family. Lederman and Weis<sup>8</sup> reported the need for early first trimester flexibility within the family to decrease anxiety for all dimensions of maternal adaptation. Rather than

desiring greater structure within the family unit to combat feelings of uncertainty and disruption caused by shifting roles,<sup>20</sup> women desired greater flexibility. Importantly, these findings are derived from a military population, which may indicate a need for greater flexibility for a family within an environment requiring continual shifting of roles.<sup>21,22</sup>

The experience of deployments or multiple deployments for the military wife is associated with fears for spousal safety, marital and family strain, and elements of the unknown and uncertainty that could be expected to impact acceptance of and adaptation to pregnancy.<sup>23</sup> These concerns do not just reside with the mother but with the deployed father as well. Schachman<sup>24</sup> chronicled the feelings of deployed fathers and their absence during the prenatal period and during the birth experience. A major theme was the disruption of the protector and provider role. While early prenatal maternal anxiety is often overlooked, Weis et al.<sup>23</sup> found that the absence of the husband significantly affected the woman's acceptance of her pregnancy. Accepting and identifying with motherhood are both integral to maternal-fetal and maternal-infant attachment. Haas, Pazdernik, and Olsen<sup>25</sup> found significantly higher stress levels and altered eating habits for women experiencing deployment of their husbands. The study did not utilize a validated measure of anxiety or stress but survey questions written for the study.

There is a need to consider the multidimensional aspects of anxiety related to pregnancy and postpartum concerns.<sup>26,27</sup> Often, researchers have utilized general anxiety measures which do not sufficiently capture the root or foundation of the anxiety.<sup>27</sup> Short, global measures of stress and anxiety are easy to administer but lack sensitive information and clinical applicability needed to determine effective intervention.

The aim of this study was to address the gap in knowledge and longitudinal measurement of prenatal to postnatal maternal psychosocial developmental adaptation for a military sample impacted by deployment. Moreover, the proposed research model utilized pregnancy-specific measures of anxiety reflective of maternal elements of attachment. Rather than a cross-sectional approach to data collection and analysis, measures were taken in each trimester and a growth curve of maternal attachment anxiety was determined for each woman to predict postpartum anxiety and maternal-infant attachment, specifically satisfaction with motherhood and infant care.

### **Theoretical Framework**

The continual incorporation of the idea of a child and the idea of oneself as a mother is a progressive process building on each stage of pregnancy. Rubin<sup>1p39</sup> refers to the psychological and biological changes of pregnancy as changes to the "self-system." The self-system includes the ideal-self and body-image that the mother has during pregnancy which are components of one's maternal identity. This process is cumulative and requires a "binding-in" progressive relationship

between the mother and infant. Rubin recognized that the term “binding-in” was somewhat awkward but felt it was the most descriptive of the transformational changes.<sup>28</sup> The term is a direct German translation that means attachment or bonding.<sup>28</sup>

Lederman’s and Weis’s<sup>8</sup> conceptualization of the woman’s adaptation to pregnancy is similar to Rubin’s. Lederman’s seven dimensions of maternal adaptation are reflective of the processes occurring in Rubin’s self-system and binding-in. One of the seven dimensions, *Acceptance of Pregnancy*, refers to the adaptive processes inherent in prenatal growth and development experienced by the pregnant woman. Accepting one’s pregnancy is conceptualized as encompassing feelings related to planning and wanting pregnancy, feelings of well-being and happiness regarding the pregnancy versus depression and discomforts experienced during pregnancy, and feelings related to body changes. Additionally, the dimensions of maternal adaptation measure the anxiety the woman feels related to her motivation for motherhood, her ability to envision herself as a mother, and the life changes she will experience as a result of becoming a mother. The dimensions are reflective of the level of conflict the woman experiences relative to forming her maternal identity.

## **Method**

### ***Study Design***

A longitudinal study was conducted with data collection points across all three trimesters of pregnancy and 6-months postpartum. Individual growth curves were established for each woman’s prenatal anxiety related to seven dimensions of maternal psychosocial adaptation. These individual growth curves were then regressed for each woman’s postpartum anxiety associated with postpartum maternal adaptation, role satisfaction and infant attachment. Variables known to increase prenatal anxiety or adaptation, parity, military deployment, history of depression and postpartum depression were included in the model.

### ***Setting and Sample***

One hundred and thirteen women, all wives of military service members, were followed from the first trimester of pregnancy through the 6-month pediatric appointment. The women were a subset of a larger sample of 503 women originally followed across pregnancy and delivery. Recruitment was restricted to women from the earlier study electing to seek pediatric care for the newborn at the largest military treatment facility participating in the study. All women met the prenatal inclusion criteria, which were: 1) 18-35 years old; 2) singleton pregnancy; 3) active duty or dependent wife of a member of the Armed Forces; and 4) a primigravida or multigravida without connective tissue disorders, cardiac disease, kidney disease, or other illnesses that would increase one’s likelihood for preterm delivery or delivery of a low birth weight infant. The sample

represents a population of healthy, well-educated, predominantly white women, married to Air Force service members, with some college education, or an associate or bachelors degree, and primarily enlisted in the mid-salary range of \$30,000 to \$48,000 a year (see Table 1). Forty-one of the participants had experienced deployment of their husbands prenatally, and 37 women experienced deployment of their husbands postpartum.

**Table 1. Demographic Characteristics of Postpartum Sample (n = 113)**

	<u>X</u>		<u>S.D.</u>	
Age	26.32		4.23	
Education	<u>N</u>		<u>%</u>	
High school	13		11.50	
Some College	55		48.67	
Associate/Bachelor degree	34		30.10	
Graduate education <sup>a</sup>	11		9.73	
Ethnicity				
Black	12		10.62	
Hispanic	29		25.66	
White	68		60.18	
Other <sup>b</sup>	4		3.54	
	<u>Gravida</u>		<u>Partner</u>	
Military Branch	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Active Duty				
Air Force	48	42.48	75	66.37
Army	4	3.54	15	13.27
Navy	0	0.00	2	1.77
Other <sup>d</sup>	0	0.00	1	0.89
Non-Active Duty	61	53.98	20	17.70
	<u>Gravida</u>		<u>Partner</u>	
Military Rank	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>

Non-Active Duty	61	53.98	20	17.70
E <sub>1</sub> -E <sub>4</sub> <sup>e</sup>	30	26.55	36	31.86
E <sub>5</sub> -E <sub>7</sub> <sup>f</sup>	18	15.93	32	28.32
O <sub>1</sub> -O <sub>3</sub> <sup>g</sup>	3	2.65	17	15.04
O <sub>4</sub> -O <sub>9</sub> <sup>h</sup>	1	0.89	6	5.31
Other <sup>i</sup>	0	0.00	2	1.77

<sup>a</sup>Some Graduate Education *n*=4; Graduate Degree *n*=7

<sup>b</sup>Alaskan/American Indian *n*=2; Asian/Pacific  
Islander *n*=2

<sup>c</sup>Number reflects only those living with the  
father of the baby

<sup>d</sup>Marine *n*=1

<sup>e</sup>Enlisted members in low to mid pay  
grade/rank

<sup>f</sup>Enlisted member in mid to high level pay  
grade/rank

<sup>g</sup>Officers in low to mid pay grade/rank

<sup>h</sup>Officers in mid to high pay grade/rank

<sup>i</sup>Other; E8-E9 *n*=2

### ***Procedures***

Following approval by the institutional review boards, all women attending obstetrical orientation classes from September 2002 through April 2003 at one of four military treatment facilities were invited to participate in the study. The first of four booklets of study questionnaires was completed at the participant's initial first trimester prenatal appointment. A minimum interval of 6 weeks was ensured between each prenatal data collection point when possible. Prior to each prenatal data collection point, the participant was reminded by postcard that she would be met at her obstetrical appointment by a research assistant and given the next booklet of questionnaires. Participants enrolled in the prenatal portion of the study, completing all prenatal data collection requirements and remaining in the study through delivery, were invited to be part of a second phase (6-month postpartum data collection point) of the study. Those agreeing to participate in the fourth data collection point were consented and met by a research assistant at the infant's 6-month pediatric appointment where they completed the postpartum questionnaire booklet. Reminder postcards were mailed to the

participant's prior to the infant's pediatric appointment, reminding them of the additional time commitment.

## **Measures**

**Prenatal psychosocial measure.** Prenatal psychosocial adaptation was measured with the *Prenatal Self-Evaluation Questionnaire (PSEQ)*,<sup>8</sup> administered to the women in the first, second, and third trimesters of pregnancy. The PSEQ contains 79 statements which comprise seven scales measuring distinct dimensions of prenatal maternal psychosocial anxiety and conflict: *Acceptance of Pregnancy, Identification with a Motherhood Role, Well-Being of Self and Baby, Preparation for Labor, Fear of Pain, Helplessness, and Loss of Control in Labor, Relationship with Mother, and Relationship with Husband*. All items have four Likert response categories. The respondent is able to reflect on how she feels regarding the statement by circling, "Very Much So," "Moderately So," "Somewhat So," or "Not At All." Higher scores on a scale indicate greater anxiety or conflict related to the formulation of a motherhood role. The instrument was developed from interviews and diaries of 32 primigravid women ranging in age from 20 to 32 years.<sup>8</sup> Cronbach's alpha coefficients for the scales have been reported to range from  $\alpha = 0.75-0.92$ .<sup>8</sup> For this study, the alpha coefficients were similar, ranging from  $\alpha = 0.77-0.93$ . *Fear of Pain, Helplessness, and Loss of Control in Labor* had the lowest alpha ( $\alpha = 0.77$ ), and *Acceptance of Pregnancy and Relationship with Mother* had the highest reported alphas at  $\alpha = 0.90$  and  $\alpha = 0.93$  respectively.

**Postpartum psychosocial measures.** Postpartum psychosocial adaptation was measured with the *Postpartum Self-Evaluation Questionnaire (PPSEQ)*,<sup>29</sup> which was administered at the 6-month pediatric appointment. The PPSEQ is an 82-item instrument containing six separate scales: *Quality of Relationship with Husband, Mother's Perception of the Father's Participation in Child Care, Gratification from the Labor and Delivery Experience, Satisfaction with Life Situation and Circumstances, Confidence in Ability to Cope with Tasks of Motherhood, and Satisfaction with Motherhood and Infant Care*. The instrument uses a 4-point Likert scale ranging from "Very Much So" (1) to "Not at All" (4). Higher scores indicate greater anxiety or conflict related to the particular dimension. While the instrument was administered in its entirety, the analysis focused on the change over time in prenatal psychosocial variables to satisfaction and pleasure with being a mother and performing infant care. The *Satisfaction with Motherhood and Infant Care* is a 13-item scale that assesses the mother's pleasure with nurturant activities, an element of her attachment to the infant, and her preference for her new role. The Cronbach's alpha coefficients for the seven scales within the PPSEQ for this sample ranged from  $\alpha = 0.73-0.96$ . The Cronbach's alpha for *Satisfaction with Motherhood and Infant Care* was  $\alpha = 0.79$ .

***Prenatal and postnatal depression measure.*** The *Edinburgh Postnatal Depression Scale* (EPDS)<sup>30</sup> was administered at the first prenatal appointment, which was in the first trimester of pregnancy for all participants. The EPDS was also administered at the 6-month postpartum data collection point. The EPDS is a 10-item self-report scale validated for use during pregnancy and the postpartum period.<sup>31,32</sup> Scores range from 0-30; higher scores are associated with higher depression. Similar to the recommendations of Cox, Holden, and Sagovsky,<sup>33</sup> scores of 14 or greater were associated with a diagnosis of prenatal depression and a referral for further evaluation. The Cronbach's alpha has been established as 0.8.<sup>30</sup> For this sample, the Cronbach's alpha coefficient  $\alpha = 0.86$ .

During the prenatal assessment, the women were routinely asked if they have any history of having been treated for depression. This information was obtained from the electronic medical record and a dichotomous variable created for whether the participant indicated she did or did not have a history of depression.

***History of deployment measure.*** Deployment status was defined as the departure, travel, and arrival to some destination where temporary living quarters and work environments are established for the purpose of supporting a defined military mission for a specified minimum time and duration of at least 30 days. Notably, this definition was selected to capture differences across all military services for deployment requirements. At the time of this study, and for the military population being sampled, the length of deployments ranged from 1 to 12 months in length.

The women were asked during the first trimester data collection if their husbands were currently deployed. In the third trimester, the participant was asked if her husband had been deployed at any point during the pregnancy. For each of these measures (first trimester and at the third trimester data collection point) a dichotomous variable was created: (1) Yes, the spouse was deployed, and (2) No, the spouse was not deployed. A similar variable was created for the postpartum period, in which the women were asked if their husbands had been deployed at any point during the postpartum period.

### ***Data Analysis***

Statistical Analysis System (SAS) version 9.1 was used for all analyses. Analysis was only conducted for the women who were married and had completed questionnaire booklets for each trimester of pregnancy and the postpartum data collection point. Three data points existed for the measure of prenatal maternal adaptation (the PSEQ). Two-level unconditional linear growth curves for each of the seven dimensions of the PSEQ were created, in order to capture a true measure of the change over time for each dimension of the PSEQ (woman's anxiety and conflict related to maternal adaptation). The results from the multilevel model (the slopes of each of the seven dimensions of the PSEQ) were regressed on the postpartum psychosocial measure of *Satisfaction with*

*Motherhood and Infant Care*. The additional covariates within the model were deployment history, the measure of depression prior to pregnancy (a dichotomous variable), the postpartum measure for the EPDS and the woman's parity (Table 2).

In the two-level unconditional multilevel model of the seven PSEQ growth curves, the Level-1 model represented linear growth, and the Level-2 model expressed variation in parameters from the growth model as random effects for each of the seven dimensions of the PSEQ across the three trimesters. The multilevel models contained fixed and random parts. The fixed effects within the model were for the intercept and for the effect of TIME (trimesters of pregnancy). The random effects within the model were for individual intercepts, the TIME slope, and the within-person residual. The output from this model for each PSEQ slope was saved and used as the variables regressed on *Satisfaction with Motherhood and Infant Care*.

## Results

### ***Prenatal Psychosocial Adaptation***

Five of the seven dimensions of the PSEQ were found to predict the woman's postpartum satisfaction with motherhood and infant care, an element of maternal-infant attachment at 6 months postpartum (see Table 2). The five dimensions were *Acceptance of Pregnancy, Identification with a Motherhood Role, Relationship with Mother, Preparation for Labor, and Relationship with Husband*.

**Table 2. Coefficients from Regression of Change across Time (Slopes) for Prenatal Psychosocial Variables and Covariates on Satisfaction with Motherhood and Infant Care.**

Parameter	Estimate	SE	<i>t</i>	<i>p</i>
Acceptance of Pregnancy	-0.31	0.15	-2.13	<0.05
Identification with a Motherhood Role	1.17	0.16	7.18	<0.001
Relationship with Mother	0.25	0.08	3.06	<0.001
Preparation for Labor	-0.31	0.13	-2.45	<0.01
Concerns for Well-Being of Self and Baby	-0.04	0.14	-0.33	
Fear of Pain, Helplessness, and Loss of Control	0.31	0.16	1.92	
Relationship with Husband	0.25	0.09	2.67	<0.01

Husband Deployed in First Trimester	1.33	0.55	2.40	<0.05
Husband Deployed Anytime Prenatally	-0.87	0.36	-2.40	<0.05
Husband Deployed Postpartally	-0.21	0.32	-0.65	
Documented History of Depression Prior to Pregnancy	0.72	0.29	2.49	<0.01
Edinburgh Postnatal Depression Scale	0.06	0.02	4.11	<0.001
Parity	-1.01	0.24	-4.23	<0.001
Intercept	14.39	0.32	45.39	<0.001
Critical Value	13.32			
Degrees of Freedom	14			
R-Square	0.37			
Adj R-Square	0.34			

Two dimensions did not predict the *Satisfaction with Motherhood and Infant Care*. These two dimensions pertained to prenatal concerns about labor: *Concern for Well-Being of Self and Baby in Labor* and *Fear of Pain, Helplessness, and Loss of Control in Labor*. It is important to re-emphasize that the prenatal measures for the seven dimensions were the slopes across the three trimesters. These variables were created to capture the woman's feelings across pregnancy rather than a cross-sectional measure for each separate trimester. All the dimensions that predict *Satisfaction with Motherhood and Infant Care*, except *Acceptance of Pregnancy* and *Preparation for Labor*, have positive parameter estimates indicating that greater prenatal conflict and anxiety on these particular dimensions is related to greater postpartum anxiety and conflict with satisfaction in the maternal role. The negative parameter estimate for *Acceptance of Pregnancy* and *Preparation for Labor* would indicate that with greater prenatal anxiety and conflict associated with these dimensions there is less postpartum anxiety and conflict associated with *Satisfaction with Motherhood and Infant Care*. However, for these two dimensions, the negative parameter estimate may not be able to be interpreted in this manner. *Acceptance of Pregnancy*, *Preparation for Labor*, and *Concern for Well-Being of Self and Baby in Labor* are the three PSEQ dimensions having a significant linear slope. These three dimensions changed significantly over time by individual. The other dimensions do not reflect a significant change prenatally. Due to the change over time in these dimensions and the use of a longitudinal slope within the regression model, it is difficult to interpret a negative parameter estimate for these particular dimensions (*Acceptance of Pregnancy* and *Preparation for Labor*). It is important, however, to recognize that these pregnancy-specific measures of anxiety do predict the mother's satisfaction with motherhood and infant care.

### ***Deployment of Spouse***

Prenatal deployment of the spouse occurring in the first trimester had a statistically significant effect on *Satisfaction with Motherhood and Infant Care*, as did the measure for deployment across pregnancy. Deployment of the husband during the postpartum period did not have a statistically significant effect on *Satisfaction with Motherhood and Infant Care*. It is important to emphasize that the primary length of deployment was less than 6 months in a sample predominantly of Air Force at a time when deployment length was 3 months. So for those experiencing deployment of their husbands in the first trimester, many were home before delivery. Table 3 provides the frequencies for each variable of deployment.

**Table 3. Frequency Table for Deployment of Spouse (N = 113)**

Time of Deployment	FREQUENCY	%
During First Trimester	10	8.8
Any time Prenatally	31	27.4
After Delivery, within 6 months Postpartum	37	32.7

### ***Maternal Prenatal Depression***

Maternal depression was measured with two variables. The participants were asked about their history of depression, and their medical record was reviewed for any history for treatment of depression. This variable was entered into the model as a dichotomous variable. The total scale score for the EPDS (measured at the postpartum 6-month appointment) was entered into the model. In this study, the Cronbach's alpha coefficient for the EPDS was  $\alpha = 0.81$ . The scores for the EPDS had a mean of 7.44 (SD= 9.24). Fourteen participants had scores  $\geq$  to 14, with the remainder of the participants scoring within the 0-13 range for depressive feelings. Of significance, 6 of the 14 women (43%) reflecting scores  $\geq$  14 had deployed spouses. A history of depression and a higher score on the EPDS were predictive of postpartum maternal satisfaction with motherhood and infant care.

## **Discussion**

The project results showed that five of the PSEQ scales—*Acceptance of Pregnancy*, *Identification with a Motherhood Role*, *Relationship with Mother*, *Preparation for Labor*, and *Relationship with Husband* significantly predicted maternal *Satisfaction with Motherhood and Infant Care* at 6 months postpartum. These results indicate that higher anxiety on these five pregnancy-specific measures of anxiety was predictive of maternal postnatal satisfaction with motherhood and feelings of attachment to the infant. The results obtained in this project confirm similar research results obtained by Lederman and colleagues.<sup>29</sup>

Other postpartum results reflect the stability of maternal postpartum adaptive responses over time. One longitudinal study<sup>34</sup> demonstrated the stability of maternal psychosocial adaptation from 6 weeks postpartum to 2 to 3 years after birth. These results, together with those reported in the current study, reflect that maternal response to one's motherhood role is relatively constant from pregnancy to postpartum periods. Women who experience prenatal anxiety and adaptation conflict are in need of intervention to promote or improve maternal adaptation.

The results of the above studies underscore the longitudinal significance of maternal role formulation in pregnancy and the predictive validity of the Prenatal Self-Evaluation Questionnaire in identifying specific pregnancy-related anxiety, which may be amendable to focused intervention. Additionally, the findings demonstrate the importance of the spouse's prenatal presence to the woman and to her maternal adaptive process.

In this project, prenatal deployment, specifically in the first trimester, was predictive of maternal *Satisfaction with Motherhood and Infant Care* at 6 months postpartum. The variable of deployment at any point in the prenatal period also predicted maternal role satisfaction and infant attachment. In an examination of the impact of spousal deployment and community support to prenatal adaptation in this population, Weis, Lederman, Lilly, and Schaffer<sup>23</sup> reported that deployment significantly affected the woman's acceptance of pregnancy. Additionally, the presence of the husband in the first trimester was found to have greater significance to *Acceptance of Pregnancy* than at any other point in the prenatal period. Identifying with being a mother requires introspective understanding of oneself and in relation to other significant family members.<sup>1</sup> Clearly, this is less likely to occur in isolation from one's family. Longitudinally, we now have shown that the presence of the husband in the first trimester is predictive of adjustments the woman must make prenatally as well as postpartum.

Robrecht et al.<sup>35</sup> conducted a cross-sectional study and found that deployment of the partner during pregnancy was a risk factor for postpartum depression. The findings from this study reflect a significant relationship between deployment and prenatal depression. A history of prenatal depression was a significant predictor of postpartum maternal adaptation, as reported in prior literature.<sup>36</sup>

The relationship of the woman's parity with *Satisfaction with Motherhood and Infant Care* was assessed within the model. The results indicate that greater parity predicted less anxiety and conflict with postpartum maternal role adjustment and infant attachment. The issue of parity and maternal adaptation has mixed results. Weis et al.<sup>23</sup> found no differences for *Acceptance of Pregnancy* for primiparous or multiparous women. Lederman and Weis<sup>8</sup> report varied results for the conflict and anxiety multiparous women experience for the seven dimensions of maternal adaptation. Admittedly, multiparous women do experience a level of conflict for each of the different dimensions; however, the reasons for the underlying conflict and anxiety are different than those for the primiparous women.

When assessing the results of this study, certain sampling biases must be considered. The military bases from which the participants were recruited were primarily military training bases. The population sampled was predominantly Air Force. Sampling a combat unit, impacted by back-to-back deployments of greater length, might produce different results. The sample was composed of primarily white, well-educated women with available prenatal care. Ethnic differences in the pregnancy and postpartum dimensions were not assessed due to the small cell totals. Within the study sample, several women were wives of reservists called to active duty status. The small numbers did not allow for analysis of this subgroup. It is recognized that this particular population of military members has unique concerns that may have not been fully captured within this study.

Although the findings of this study may not be generalized to a civilian population, the prospective longitudinal focus of the study enhances our understanding of prenatal maternal adjustments to later postpartum maternal adaptation and infant attachment. The significance of the first trimester absence of the husband in predicting postpartum maternal adjustments is profound, given the relatively short deployment cycles experienced in this sample. These findings underscore the significance of early (first trimester) assessment to identify pregnancy-specific maternal anxiety and depression to focus appropriate intervention aimed at alleviating prenatal conflict and fostering maternal postpartum adaptation and infant attachment and care.

In 2008, a panel convened by the U.S. Surgeon General and the Institute of Medicine<sup>37</sup> recommended a focus on the assessment of psychosocial and behavioral factors influencing the outcomes of pregnancy. The project results have validated the use of maternal psychosocial measures of pregnancy anxiety to predict postpartum maternal adaptation and feelings of attachment and satisfaction with infant care. The ability to effectively measure prenatal conflict impacting maternal development permits focused intervention. Moreover, the findings highlight the need for such intervention to be initiated early in pregnancy.

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