

Baby Boot Camp

Facilitating Maternal Role Adaptation Among Military Wives

Kathleen A. Schachman ▼ Roberta K. Lee ▼ Regina P. Lederman

- ▶ **Background:** Current research suggests that women married to military service members may experience difficulty during the transition to motherhood attributable to the additional stressors of military life and inability to access traditional support systems.
- ▶ **Objective:** To test the effects of a nursing intervention on prenatal and postpartum maternal role adaptation among military wives.
- ▶ **Methods:** Primigravid military wives were assigned randomly to either a traditional childbirth education program ($n = 47$) or Baby Boot Camp ($n = 44$). The Baby Boot Camp is a 4-week childbirth-parenting preparation program based on a resilience paradigm. The strategies of Baby Boot Camp include identification of nontraditional external resources and development of internal resources to facilitate maternal role adaptation. The Prenatal Self-Evaluation Questionnaire, Personal Resource Questionnaire, and Resilience Scale were administered at baseline (32 to 37 weeks gestation), immediately after the intervention, and at 6 weeks postpartum.
- ▶ **Results:** The outcomes suggest that Baby Boot Camp strategies to enhance external and internal resources may have been successful in facilitating maternal role adaptation. An independent t -test showed that, as compared with the military wives who attended traditional childbirth education courses, the Baby Boot Camp participants experienced significantly greater prenatal and postpartum adaptation. As demonstrated by repeated measure analysis of variance, the Baby Boot Camp participants experienced an increase in external and internal resources immediately after the intervention. However, these differences in resources were not sustained at 6 weeks postpartum.
- ▶ **Conclusions:** The findings may lead to wider development and use of childbirth-parenting programs designed to meet the unique strengths and needs of the childbearing military wife.
- ▶ **Key Words:** adaptation · intervention · maternal role · military · postpartum · prenatal

The tremendous physical, cognitive, and psychosocial changes that occur during pregnancy and early motherhood have led many to view the transition to motherhood as a major life stressor (Burr & Klein, 1994; Lederman, 1996; Mercer, 1995). The birth of a baby presents unique challenges for women married to active duty military members. In addition to the stressors experienced during maternal role transition, military wives simultaneously face stressors inherent to military life. These military stressors include unpredictable and lengthy family separations, geographic isolation from extended family members, and the social disruption and expense of frequent relocations (Knox & Price, 1995).

More than 44,000 military wives experienced the birth of their first baby in the year 2000. The majority of these first-time births occurred within the junior enlisted military ranks. This population typically comprises young, newly married, financially unstable couples, who often are living away from home for the first time (Defense Manpower Data Center, 2001). The cumulative effect of military, maternal, and life stressors places these first-time mothers at risk of maternal role maladaptation.

Maternal role maladaptation is characterized by a lack of competence and skill in carrying out mothering behaviors, as well as self-reported attitudes and feelings of depression, stress, and lack of gratification in the maternal role (Koniak-Griffin, 1993). Evidence suggests that military wives experience a greater incidence of postpartum depression than their civilian counterparts. Within the general population, 20% to 34% of new mothers have scores above the cutoff point on the Center for Epidemiology of

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Depression Scale (CES-D) (Cowan, Cowan, & Schultz, 1996). Yet, in a study of 971 military wives stationed in the United States and abroad, 47% scored above the CES-D cutoff point for depressive symptoms after childbirth (Landsverk & Lindsey, 1995).

Maternal role maladaptation also has been associated with insensitive and nonnurturing infant care, child abuse, and child neglect (Millor, 1981). Cerny and Inouye (2001) found that more than half (52%) of the pregnant women residing at an Army base who were screened for child abuse potential with the Child Abuse Potential Inventory scored above the signal detection score for child abuse. Clearly, military wives are at risk for experiencing both behavioral and affective components of maternal role maladaptation.

The benefits of early intervention to facilitate maternal role adaptation have been well documented. These benefits include a more positive attachment between the mother and the infant (Koniak-Griffin & Verzemnieks, 1991), increased self-confidence and pleasure in caring for the child (Manning-Orenstein, 1998), and greater sensitivity and responsiveness to infant cues (Bryan, 2000). The purpose of this study was to test the effects of Baby Boot Camp (BBC), a childbirth and parenting intervention designed to facilitate maternal role adaptation among military wives.

Conceptual Model

The framework for BBC was based on the Resilience Model (Woodgate, 1999) (Figure 1), which asserts that an individual's adaptation to a stressor is influenced by protective and vulnerability factors within the individual and the environment. Vulnerability factors predispose the indi-

vidual to maladaptive outcomes, whereas protective factors ameliorate the response to a stressor and enhance the likelihood of an adaptive outcome (Rutter, 1987).

Protective factors that facilitate maternal role adaptation include both external and internal resources. External resources are the support systems in the new mother's social environment including her spouse, extended family, friends, and community (Logsdon, 2000). Internal resources, which are individual traits such as self-esteem, knowledge, and self-efficacy, also are used by the new mother to adapt to maternal stressors (Splonskowski & Twiss, 1995).

Excessive vulnerability factors or limited protective factors may predispose the military wife to maladaptive outcomes. Traditional external resources, which facilitate maternal role adaptation, may not be available to the military wife. During military deployment, spousal support may be lacking. Geographic isolation may limit support from extended family members. If recently relocated, the military wife may not be aware of available community resources, and supportive friendship networks may not yet be established (Knox & Price, 1995). In addition, the military wife, because of her relative inexperience in military, marital, and motherhood roles, may have had few opportunities to cultivate internal resources (Segal, 1986).

Because military wives may have limited access to traditional external resources, this population consistently seeks out nontraditional sources of social support. Nontraditional external resources, which arise from integrative social mechanisms within the military culture, often provide the military wife with an informal network of other military wives who band together for the purpose of mutual aid (Rosen & Moghadam, 1988). The process of establishing friendship networks is facilitated within the

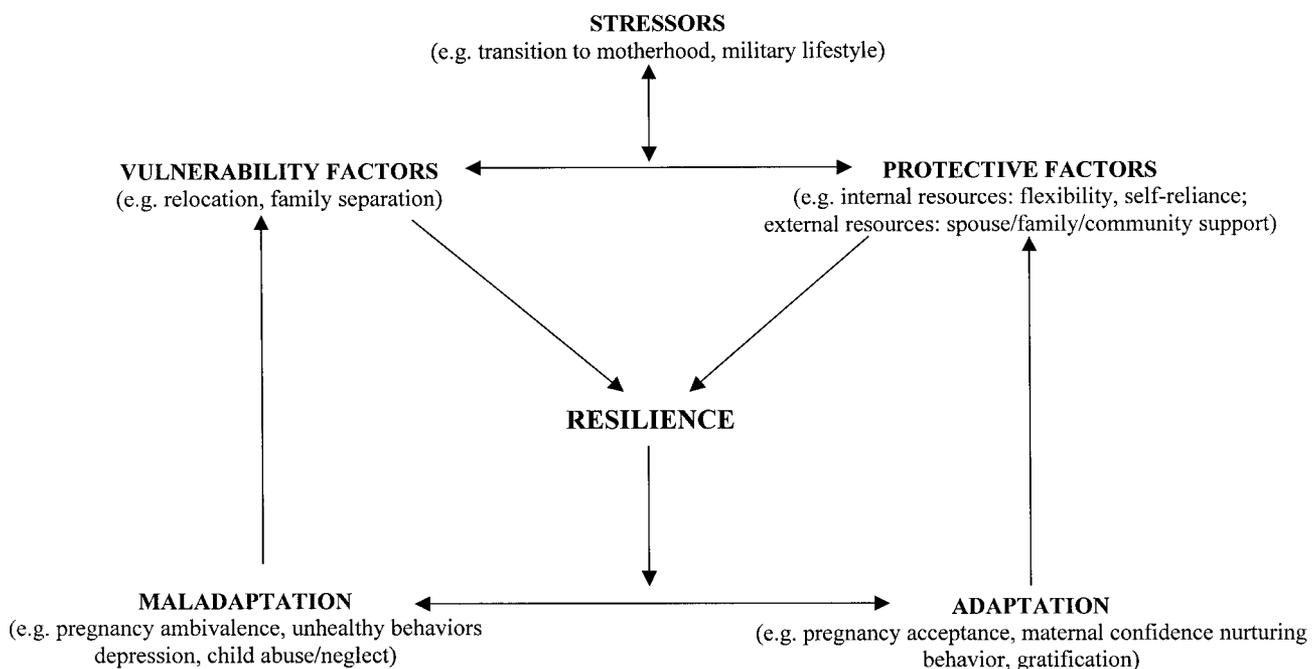


FIGURE 1. Resilience model.

military culture because military wives have defined social identities based on their husbands' position within the military unit. This institutionalization of roles allows the military wife to be integrated readily into the existing supportive social network despite relatively short periods of acquaintance (Klein, Tatone, & Lindsey, 1989).

Many military wives develop inner resources for adapting to the stressors of the military lifestyle, including self-reliant attitudes and behaviors (Knox & Price, 1995) and flexible expectations (Black, 1993). These internal resources become part of their coping repertoire, and may be mobilized to deal with future stressful situations such as maternal role transition (Cowan et al., 1996). The BBC intervention was designed to facilitate maternal role adaptation by enhancing internal and external resources unique to military wives.

Hypotheses

As compared with military wives who participate in traditional childbirth education (CBE) courses, military wives who participate in BBC have greater prenatal and postpartum adaptation as well as greater perception of external and internal resources immediately after the intervention and at 6 weeks postpartum.

Methods

Research Design

A randomized clinical trial was used, in which subjects were randomly assigned to either experimental BBC or the control group receiving traditional CBE.

Setting

The setting was an Air Force base in the U.S. Midwest with approximately 8,000 active duty personnel. This base was typical of other military installations in terms of geographic mobility, deployment routines, and representativeness of ranks. The intervention took place at the military hospital clinic where all military wives receive prenatal care.

Sample

The target population included all the primiparous pregnant women married to active duty military members stationed at the Air Force base who were at 30 to 36 weeks gestation. Potential participants were excluded if they had a diagnosis of any medical risk factors, were unable to speak and read English, were younger than 18 years, or were active duty servicewomen. The sample size was determined according to power analysis calculations, which indicated that 51 participants were needed in both the experimental and control groups to achieve 80% power for a medium intervention effect at an 0.05 alpha level.

Procedure

Approval of the appropriate institutional review boards was obtained before initiation of the study. Potential study participants were recruited by an offer of free childbirth classes at the military hospital. These classes were advertised in the local weekly military newspaper, and by posters

and flyers placed in the clinic. When interested individuals called to sign up for the childbirth classes, they were informed about the purpose of the study and invited to participate. All individuals who agreed to participate in the study and met the inclusion criteria were assigned randomly to either a control or experimental group. Group assignment was done in a predetermined order using a table of random numbers. Those who declined to participate in the study and those who did not meet the inclusion criteria were offered a separate traditional childbirth class taught by the researcher. Informed consent was obtained from all the participants.

A control group and an experimental group each met once a week for 4 weeks. The two groups met on different weeknights in an attempt to control contamination. After completion of the 4-week intervention, additional control and experimental group participants were recruited, and a second iteration of the intervention was implemented. Four iterations of the 4-week intervention, conducted from September 2000 to January 2001, were required to achieve an adequate sample size.

Intervention

The experimental group received a 4-week BBC intervention, whereas the control group received a 4-week traditional CBE course. The 3-hour CBE classes met once a week, and the content included traditional childbirth-parenting preparation topics such as breathing and relaxation techniques, prenatal health, obstetric procedures, and newborn appearance and care. The experimental BBC group met on a different night and received all the content of the traditional CBE in addition to the BBC intervention (Table 1). The BBC intervention required an additional hour and focused on the identification, development, and use of the internal and external resources unique to military wives.

Specific BBC strategies used to enhance internal resources included small group activities and a discussion panel. The small group activities involved reflection and sharing of the coping strategies often used to face military stressors. Positive feedback and reinforcement provided to the BBC participants served to bolster their confidence and self-esteem. Discussion panel members, who were newly delivered military wives, provided illustrative examples of how internal resources used to deal with the challenges of military life could be helpful in facing the stressors of motherhood.

The BBC strategies devised to enhance external resources were accomplished through exercises to help the expectant mother identify and expand her support network. Specific BBC strategies included providing informational packets about area resources, facilitating a supportive relationship through role modeling communication techniques, and dispelling myths and barriers that often preclude the use of external resource in military populations. Efforts were made to identify nontraditional support systems. The most important of these is the informal network of other military wives, particularly within the husband's military unit. Because other military wives often have successfully encountered many of the same challenges faced by these women, establishment of this linkage was a particularly important strategy of BBC.

TABLE 1. Weekly Content for Traditional Childbirth Education and Baby Boot Camp

Week 1	Week 2	Week 3	Week 4
Traditional Childbirth Education			
<u>Anatomy & Physiology</u> Why prepare for childbirth? Bodily changes Common discomforts Prenatal exercises Relaxation techniques	<u>Labor & Delivery</u> Stages of labor Early Active Transition Pushing Birth Recovery	<u>Hospital Tour</u> Labor and Delivery Postpartum Nursery Operating suite	<u>Adaptation to Parenthood</u> Postpartum blues Renegotiating roles
<u>Prenatal Care</u> Nutrition & weight Exercise Sex	<u>Breathing Techniques</u> (slow easy, choo-choo train, counted paced, pushing)	<u>Unexpected Outcomes</u> Cesarean birth Medical Complications (Preterm labor, HTN, diabetes, placenta previa, abruption)	<u>Normal Newborn</u> Appearance Reflexes Behaviors <u>Breast vs. Bottle</u> Pros and cons Techniques
Baby Boot Camp			
<u>Military & Maternal Stressors</u> Identification and group discussion of stressors related to motherhood and military lifestyle "Baby Don't Cry" doll Handouts: "Motherhood in the Military"	<u>Internal Resources</u> Identify and discuss internal resources frequently used by military wives to face challenges of military life (self-reliance, flexibility, resilience, etc.) Facing challenges of motherhood—how can these same strengths be used?	<u>External Resources</u> Identify and discuss external resources available to military and new moms. Discuss barriers seeking help and how to overcome them. Dispelling myths. Information packet containing handouts R/T external resources (New Parent Support Program, FAP nurse, Navy Relief Society, "Budgeting for Baby" class, WIC)	<u>Integration</u> Discuss/role play possible scenarios R/T early postpartum (i.e. unexpected deployment, financial difficulties, husband's job demands, relocation) Discussion panel with 2 military couples (include new mom whose husband is deployed) Topics: –Being away from family of origin –Developing ties with other military wives –Changes in roles –Military demands vs. family demands Focus on positive aspects and use of internal and external resources

Measurement of Prenatal Adaptation

The Prenatal Self-Evaluation Questionnaire (PSEQ) is a 79-item self-report questionnaire developed to measure adaptation to pregnancy (Lederman, 1996). Its seven subscales each measure a dimension of prenatal adaptation. The Cronbach alpha ranges from .83 to .94.

Measurement of Postpartum Adaptation

The Postpartum Self-Evaluation Questionnaire (PPSEQ) is an 82-item self-report questionnaire developed to measure

postpartum adaptation to motherhood (Lederman, Weingarten, & Lederman, 1981). The Cronbach alpha for each of its seven subscales ranges from .87 to .93. Scoring for both the PSEQ and the PPSEQ is based on a 4-point Likert scale response. The response options range from 4 (very much so) to 1 (not at all). Statements are positively and negatively worded, and reverse coding is used for positively worded statements. High scores indicate maternal developmental conflict or adaptational anxiety. Numerous studies have successfully demonstrated the content, con-

struct, and criterion-related validity of the PPSEQ and the PSEQ (Lederman, 1996; Lederman et al., 1981).

Measurement of External Resources

External resources were measured using the Personal Resources Questionnaire (PRQ-85) Part II (Brandt & Weinert, 1981), which measures perceived social support. Scores for the PRQ-85 Part II were obtained by summing the 25-item, 7-point Likert-like scale scores that assessed five relational functions of support: intimacy, nurturance, social integration, self-worth, and assistance/guidance. A high score indicates that the respondent perceives a high level of social support. Used in numerous studies, the PRQ-85 Part II has demonstrated sound psychometric properties (Strickland & DiIorio, 2003).

Measurement of Internal Resources

The Resilience Scale (RS) (Wagnild & Young, 1993) measures five components of inner strength: equanimity, perseverance, self-reliance, meaningfulness, and existential aloneness. All items are positively worded. The items are rated on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree), with higher scores reflecting greater inner resources. The Cronbach alpha for this study was .86. Psychometric evaluation has supported the reliability and validity of the RS (Wagnild & Young, 1993).

Data Collection

Data were collected before the intervention, immediately after the 4-week intervention, and at 6 weeks postpartum. Baseline assessments, completed in class during week 1, included a demographic questionnaire, the PSEQ, the PRQ-85, and the RS. The second data collection took place during week 4, at the completion of the intervention. The participants again completed the PSEQ, the PRQ-85, and the RS in class. The third observation took place at 6 weeks postpartum. The PPSEQ, PRQ-85, and RS, along with a birth outcome questionnaire were mailed to the participants. All the study questionnaires were identified by a numeric code, which ensured anonymity and allowed for the linkage of essential demographic information with the pretest and posttest questionnaires.

Data Analysis

Descriptive statistics were used to summarize demographic and prenatal management characteristics. Before the intervention, preliminary analyses with an independent *t*-test found no differences between the BBC and CBE groups in terms of the outcome variables. A χ^2 test of demographic characteristics showed a significant difference only in the Branch of Service category.

After the intervention, an independent *t*-test determined the difference between the BBC and CBE participants in terms of prenatal and postpartum maternal role adaptation. Repeated measures analysis of variance (ANOVA) was used to examine group differences over time regarding external and internal resources. A one-way ANOVA was used as a post hoc analysis to determine the observation point or points at which the BBC and CBE groups differed. The acceptable significance level for this study was a *p* value of .05.

Results

Sample

A total of 111 women agreed to participate in the study. The final sample consisted of 91 women (44 in the BBC group and 47 in the CBE group). Subject attrition ($n = 20$) was attributed mainly to failure to complete questionnaires at all three data collection points ($n = 11$). Three women were removed from the study for either maternal or neonatal medical complications. There were no significant differences in subject attrition by group.

All the participants were at 32 to 37 weeks gestation when the study began (Table 2). Maternal age ranged from 18 to 28 years, and approximately 70% were younger than 22 years. Nearly two thirds (69%) of the study participants had been married 2 years or less (mean, 22.8 months). The junior enlisted ranks predominated (63%), followed by the midgrade enlisted ranks (20%) and officers ranks (17%). The length of time the participants had lived at their current duty station ranged from 3 months to 4 years (mean, 14.8 months). Only 12% had lived at their current duty station for 2 or more years. With the exception of one woman, all the study participants were at least high school graduates. The majority of the study sample was White (76%), followed by African American (14%), Hispanic (5%), and Asian (2%). Most of the participants were married to Air Force personnel (79%).

Intervention Effects

Maternal Role Adaptation Immediately after the intervention, the BBC mothers reported significantly greater prenatal adaptation than the CBE mothers ($p = .034$), with a medium effect size of .46. Significant differences also were found in several PSEQ subsets, as displayed in Table 3. At 6 weeks after delivery, the BBC mothers reported significantly greater postpartum adaptation than the CBE mothers. The total PPSEQ scores differed significantly ($p = .043$), and a medium effect size was detected ($d = 0.42$). Several PPSEQ subsets showed significant differences as well.

Internal Resources No statistically significant group differences were found between the BBC and CBE mothers in terms of internal resources at time 1 (baseline) or time 3 (6 weeks postpartum) (Figure 2). Significant group differences were found at time 2 ($F[1,89] = 28.0$; $p < .001$), with the BBC mothers reporting greater internal resources than the CBE mothers immediately after the intervention. A very large effect size was detected at time 2 ($d = 0.97$). A repeated measures ANOVA showed a significant difference in internal resources over time, both within participants ($F[2,88] = 137.4$; $p < .001$) and within groups ($F[2,88] = 114.7$; $p < .001$).

External Resources The baseline assessment of external resources showed no statistically significant differences between the BBC and CBE mothers before the intervention (Figure 3). Immediately after the intervention (time 2), the BBC mothers reported greater perceived social support than the CBE mothers ($F[1,89] = 4.229$; $p = .043$), with a medium effect size of .43. However, these differences were

TABLE 2. Summary Statistical Description and Chi-Square Comparison of Total Participants by Demographic and Prenatal Management Characteristics

	BBC (n = 44)		CBE (n = 47)		z	p
	n	%	n	%		
Age (years)						
18 to 21	17	39	21	45		
22 to 24	23	52	21	45	-0.89	.372
25 and older	4	9	5	10		
Rank of service member						
Junior Enlisted	24	55	33	70		
Mid-Enlisted	12	27	6	13	-6.38	.524
Officer	8	18	8	17		
Highest level of education						
High school	19	43	24	51		
Some college	15	34	17	36	-1.08	.279
Graduated college	10	23	6	13		
Duration of marriage (in years)						
Less than 1	16	36	20	42		
1 to 2	11	25	16	34	-0.98	.325
2 to 3	11	25	6	13		
More than 3	6	14	5	11		
Length of time at current duty station (in years)						
Less than 1	15	34	19	40		
1 to 2	20	45	26	55	-6.20	.535
More than 2	9	21	2	5		
Race/Ethnicity						
White	33	75	36	77		
African-American	6	14	9	19	-0.37	.710
Hispanic	3	7	2	4		
Asian	2	4	0	0		
Branch of Service						
Army	3	7	9	19		
Navy	2	4	4	9	-2.13	.033*
Air Force	39	89	33	70		
Marine	0	0	1	2		
Prenatal care provider						
OB/GYN MD	10	22	11	23		
Family practice MD	20	46	25	54	-6.22	.534
Nurse midwife	14	32	11	23		
Method of delivery						
Vaginal	38	86	43	91	-0.78	.437
Cesarean	6	14	4	9		
Method of feeding						
Breast	24	54	29	62		
Breast/bottle	9	22	7	15	-0.56	.572
Bottle	11	24	11	24		
Postpartum visit						
Yes	43	99	46	96	-0.05	.963
No	1	1	2	4		

Note. * $p < .05$

BBC = Baby Boot Camp; CBE = Traditional Childbirth Education.

TABLE 3. Independent t-test Comparison of Total/Subset Means of Maternal Role Adaptation by Group

	BBC (n = 44)		CBE (n = 47)		t	p
	M	SD	M	SD		
Prenatal Adaptation (PSEQ)+	110.9	30.2	125.5	33.9	-2.14	.034*
Acceptance of pregnancy	19.4	6.3	20.4	6.7	-.711	.479
Identification of motherhood	20.7	6.7	21.9	7.6	-.820	.414
Relationship with mother	12.9	4.0	14.0	4.3	-1.22	.226
Relationship with husband	13.1	3.2	13.8	3.1	-1.12	.265
Preparation for labor	14.7	3.8	18.3	6.6	-3.64	.000*
Fear of pain/loss of control	15.0	4.1	18.3	5.1	-3.32	.001*
Concern for self/baby	15.1	4.4	18.8	4.8	-3.82	.000*
Postpartum Adaptation (PPSEQ)++	136.2	37.5	151.7	34.8	-2.055	.043*
Relationship with husband	18.3	5.5	19.6	4.5	-1.325	.189
Husband's participation	17.2	4.6	18.3	3.9	-1.293	.200
Satisfaction with labor/delivery	15.6	4.3	20.2	5.0	-4.743	.000*
Satisfaction with life	23.3	9.6	23.0	8.2	.170	.865
Confidence in motherhood	23.8	6.8	27.6	7.8	-2.443	.017*
Satisfaction with motherhood	20.1	5.6	22.4	4.6	-2.150	.034*
Support from family/friends	17.9	4.7	20.5	5.3	-2.475	.015*

Note. * $p < .05$

+Administered at Time 2 (Immediately after intervention); ++Administered at Time 3 (6 weeks postpartum).

BBC = Baby Boot Camp group; CBE = Traditional Childbirth Education group.

not statistically significant at 6 weeks postpartum (time 3). As demonstrated by repeated measures ANOVA, significant differences in external resources were found over time. Using Wilk's criterion, perceived social support was found to differ over time within participants ($F[2,88] = 799.1; p < .001$) and within groups ($F[2,88] = 119.9; p < .001$).

Discussion

The results of this study suggest that BBC strategies to enhance external and internal resources may have been successful in facilitating prenatal and postpartum maternal role adaptation. Immediately after the intervention, the BBC participants reported greater prenatal adaptation than the CBE participants in the "fear of pain or loss of self-control and self-esteem," "preparation for labor," and

"concern for the well-being of self and baby" subsets, indicating that the women who participated in BBC felt better prepared to handle the challenges of labor and more confident in their ability to deal with labor events than the women who participated in traditional CBE. They also were less likely to dwell on possible negative pregnancy and birth outcomes.

Selected outcomes of postpartum adaptation also may reflect the new mothers' enhanced sense of inner strength after the birth. The BBC mothers reported greater "confidence in motherhood," a subset that reflects the new mother's sense of confidence in her ability to cope with mothering tasks such as interpreting her baby's cues, and performing skills related to infant care. Significant differ-

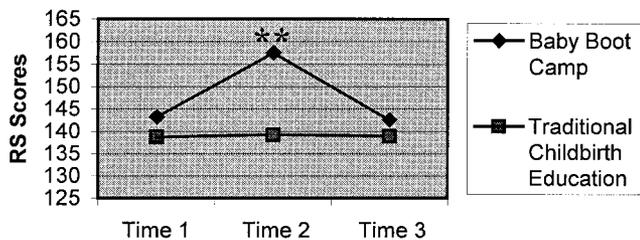


FIGURE 2. Internal resources over time by group. ** $p < .01$; RS = Resilience Scale.

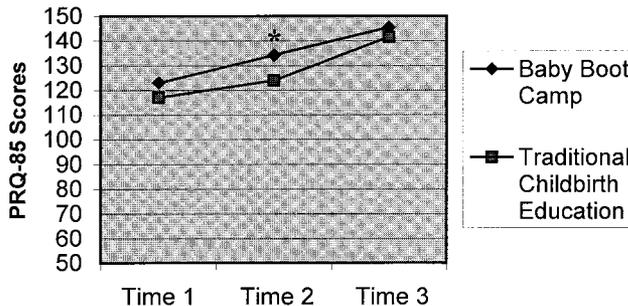


FIGURE 3. External resources over time by group. * $p < .05$; PRQ = Personal Resources Questionnaire, Part II.

ences also were found between the two groups in the "satisfaction with labor and delivery" subset, with the BBC mothers reporting a greater sense of mastery and accomplishment in their labor and delivery experience than the CBE mothers. This finding may be clinically significant in that a woman's perception of her performance in labor and delivery has been shown to influence her feelings and behaviors toward her newborn (Mercer, 1995), and she may draw parallels between her performance in labor and her adequacy as a mother (Lederman, 1996). Indeed, the BBC mothers reported greater adaptation in the "satisfaction with motherhood and infant care" subset than the CBE mothers.

Baby Boot Camp strategies were devised to help the expectant mother identify, cultivate, and use internal resources. The findings show that as a group, the BBC mothers experienced an increase in internal resources immediately after the intervention. The BBC mothers reported greater confidence, self-esteem, and sense of mastery than the CBE mothers. However, these group differences were not sustained into the postpartum period. At 6 weeks postpartum, the RS scores for both the BBC and CBE participants showed little difference from the initial baseline scores. There are a number of possible explanations for this phenomenon. It could be that the intervention lacked the necessary intensity and duration to sustain this change. In addition, the early postpartum period is a time when the new mother is assimilating a tremendous amount of new information about infant care, infant behavior, and maternal role requirements. A preponderance of literature has indicated that the first 2 months often are fraught with uncertainty and ambiguity as the new mother takes on maternal and infant care tasks (Grace, 1993; Koniak-Griffin, 1993). Data collection at 4 to 6 months postpartum may yield interesting results because it is at this point that most new mothers report an increasing confidence and satisfaction in the maternal role (Grace, 1993).

The results of the study show that the BBC mothers reported greater perceived social support immediately after the intervention than the CBE mothers. In particular, the BBC mothers had higher scores on PRQ-85 items related to the availability of informational, emotional, and material help, as well as items related to social integration and self-worth. Few differences existed between the BBC and CBE mothers on PRQ-85 items related to attachment/intimacy and nurturance immediately after the intervention.

As measured by the PRQ-85, there were no appreciable differences between the BBC and CBE mothers in relation to external resources at 6 weeks postpartum. Both groups reported an increase in perceived social support at time 3, particularly on PRQ-85 items relating to nurturance and availability of informational, emotional, and material help. However, the PPSEQ, also given at 6 weeks postpartum, showed group differences in the "support from family and friends" subset. As compared with the CBE mothers, the BBC mothers felt better able to identify their postpartum needs and effectively communicate them to members of their support network. It could be that the PPSEQ support subset is more sensitive than the PRQ-85 to the types of support needed by new mothers.

Both groups reported high levels of external resources at time 3. Discharge from the hospital, the well-baby and postpartum checkup, and home visitation all provide opportunities for the new mother to receive information on available resources. Literature has shown that during the early postpartum period, offers of informational, emotional and material support are the greatest. However, extension of support to the new mother tends to wane after the first or second month (Logsdon, Birkimer, & Barbee, 1997). Therefore, it may be of interest to assess changes in external resources several months after birth.

It is hoped that the favorable outcomes achieved by the BBC participants were a result of the BBC intervention. However, a number of threats to the internal validity of the study may have influenced the outcomes. The participants involved in the BBC intervention spent an additional hour of class time with the researcher each week to meet all of the BBC objectives. It could be that this extra contact time rather than the content of the BBC intervention was responsible for the favorable outcomes achieved by the BBC mothers. Future replications of this study may consider lengthening the CBE portion so that the additional time spent with the BBC group will be removed as a potential confounding factor.

Although no statistically significant differences were found between the BBC and CBE mothers in terms of demographic indices, there may have been clinically significant differences between the two groups that influenced the study outcomes. The CBE mothers tended to be younger and less educated. They also reported a shorter duration of marriage and time at their current duty station than the BBC mothers. These factors rather than the lack of a BBC intervention may have contributed to the lower outcome scores found among the CBE mothers. Variables not assessed, such as difficulty with delivery or establishment of infant feeding, also may have influenced outcomes.

The study outcomes also may have been influenced by a contagion effect. The research setting was a relatively small military base, and the study participants in both groups were likely to have opportunities to co-mingle and share information they learned as a result of their participation. Healthcare providers, although they were blinded to the study, may have disseminated information to participants in both groups. Had there been complete isolation and control of the two groups, greater differences may have been seen in relation to the study variables.

Research bias may have influenced the study outcomes. However, steps were taken to avoid potential researcher bias by using explicit research protocols and standardized instructions for all aspects of the intervention, including randomization and program content and delivery.

The results of this study suggest that BBC strategies to enhance external and internal resources may have been successful in facilitating maternal role adaptation among primiparous military wives. However, the BBC strategies that help the expectant mother to identify, develop, access, and use these resources may be equally effective among other at-risk populations. Incorporating the concepts and strategies of BBC into existing CBE programs may benefit other at-risk expectant mothers by facilitating their maternal role adaptation. ▀

Accepted for publication August 1, 2003.

This study was supported by an NINR National Research Service Award #F31 NR07554-01 and a Graduate School Fellowship from the University of Missouri, St. Louis.

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