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Combined Mother and Baby Care: Does it Meet the Needs of Families?

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On estime que le fait de combiner les soins prodigués à la mère et au nouveau-né prépare efficacement la famille aux changements de rôles et aux responsabilités accrues qu'entraîne l'arrivée d'un bébé à la maison. Peu d'études ont cependant exploré cette infrastructure sanitaire. Voilà pourquoi le personnel de postpartum du Sudbury General Hospital a profité du passage des soins traditionnels aux soins combinés mère/nouveau-né pour mettre sur pied un modèle d'étude post-enquête fonctionnant à l'aide d'un groupe témoin et basé sur un échantillonnage qu'il a lui-même choisi parmi des mères venant d'accoucher. Cent-trois mères recevant des soins traditionnels et cent-deux mères à qui on a prodigué des soins combinés mère/nouveau-né ont rempli un questionnaire destiné à classer la façon dont elles évaluaient leur propre compétence et leur satisfaction face aux soins prodigués. Les deux groupes d'étude ont accusé peu de différences. Le peu de temps écoulé entre la mise sur pied du programme et l'évaluation de celui-ci, et la qualité de l'enseignement prénatal reçu ont peut-être brouillé les résultats de l'étude. Les multipares ont obtenu un meilleur pointage en matière de soins à elles-mêmes, de soins au nouveau-né et de compétence maternelle que les primipares, quelle que fut l'infrastructure sanitaire. Les mères se préoccupaient surtout des besoins immédiats. Les futures recherches devraient tenir compte des différences entre les primipares et les multipares, et s'intéresser aux besoins moins immédiats des mères.

Combined mother/baby care is thought to be an effective way to prepare a family for the changing roles and added responsibilities that the arrival of a new baby entails, but few studies have evaluated this care delivery system. Therefore, the postpartum staff at Sudbury General Hospital conducted a post-test control group study design with a self-selected sample of postpartum mothers when the unit was changing from traditional to combined mother/baby care. One hundred and three mothers who received traditional care and 102 who had combined mother/baby care completed a questionnaire to assess perceptions of their own competence and satisfaction with the type of care administered. There were no significant differences between the two study groups. Factors that may have confounded the results include: insufficient time between institution of the program and its evaluation, and the quality of prenatal education received. Multiparous mothers scored higher on self care, infant care, and maternal competence than did primiparous mothers regardless of the care delivery system. Maternal concerns related to immediate needs. Future research should take the differences between primiparas and multiparas into account, and focus on the less immediate needs of mothers.

The physical needs of Canadian childbearing women and their families are usually met, but their emotional, social, and educational needs are often underestimated. Although family-centered care is available on postpartum units in hospitals, parents continue to identify the need for more infant care support and teaching along with better communication with staff. If the

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length of hospital stay after birth is reduced, it is even more important that postnatal units adopt a care delivery that assists parents with their new responsibilities.

In recent years, several Ontario hospitals have adopted a combined mother/baby approach to care delivery whereby mother and baby have the same nurse. In the traditional method of care delivery, separate nursery and postpartum staff provide care to mother and baby (Fraileigh, 1984; Mansell, 1984; Mizer & Barraro, 1979; Paukert, 1979; Vezeau & Hallsten, 1987; Watters, 1985; Watters & Kristiansen, 1989; Wexler & Bowes, 1982).

Numerous benefits of combined care have been reported in the literature. It promotes continuity of care (Harris, 1990; Harvey, 1982; McGrath, 1990; NAACOG, 1989; Watters, 1985; Watters & Sparrow, 1990), enhances patient teaching (Fraleigh, 1984; Harvey, 1982; Paukert, 1979; Watters, 1986; Watters & Sparrow, 1990; Wilkerson & Barrows,1988), and facilitates discharge planning (Wilkerson & Barrows, 1988). As a result, it is thought to help mothers to be more confident and competent (NAACOG, 1989; Wilkerson & Barrows, 1988). While combined care purportedly improves patient satisfaction and quality of care (Watters, 1985), there is little empirical evidence to support this view.

Parallel studies conducted in Ottawa and Kingston hospitals by Watters and Kristiansen (1989) and Watters, Gay, and Kristiansen (1988), compared combined mother/baby care and traditional care delivery. Results indicated that maternal competence and maternal satisfaction were significantly greater with mother/baby care, and mothers were more satisfied with the quality of education and the nurse-client relationship. Although both studies showed significant advantages of combined care, in the Kingston study the benefits were more pronounced with multiparas, whereas in the Ottawa study both primiparas and multiparas were satisfied with combined care. However, the fact that Kingston had a lower staff- to-client ratio (1:5-7) that did Ottawa (1:4-5) may have contributed to less satisfaction and maternal competence. It is interesting to note that length of hospital stay did not affect satisfaction with care. Kingston had a 5-day length of stay, and in Ottawa mothers stayed for 3 days post partum.

In Sudbury, staff on the postpartum unit were concerned that there would be insufficient time to prepare families for discharge from hospital since the length of stay had been shortened from 5 to 3 days after birth. The literature indicated that combined care offered numerous benefits in this respect, but there was little empirical evidence to support it. The postpartum staff conducted a comparative study to ascertain that combined care was better or as effective as the traditional method of care.

Method

This study took place in Ontario at Sudbury General Hospital, a modified level III perinatal Unit with 40 postpartum beds which serves a catchment area of 150,000 people. Watters and Kristiansen (1989) used a three-part instrument: a mothers' hospital questionnaire, a mothers' mail questionnaire and a breast-feeding telephone interview schedule. For the purpose of the current study the mothers' hospital questionnaire was used with a minor adaptation of Part 4 to include the sociodemographic and demographic data. Part 1 consisted of 20 closed-choice questions to measure competence with self and infant care, and satisfaction with policies/procedures, parent education and the nurse-client relationship.

Table 1

Distribution of Respondents (n=205) and Nonrespondents (n=111) by Age, Marital Status, Parity, Type of Delivery, Nursery and Feeding Method

Characteristics	Respondents-n (%)	Nonrespondents-n (%)	X^2(df,N)	p
Age			X^2(3,305)	.84
14–19 years	15 (7)	6 (5)		
20–29 years	128 (63)	71 (64)		
30–39 years	53 (26)	28 (25)		
≥40 years	2 (1)	2 (2)		
Missing data	7 (3)	4 (4)		
Marital Status			X^2(1,298)	.90
Married	180 (88)	86 (78)		
Single	22 (11)	10 (9)		
Missing data	3 (1)	15 (13)		
Parity			X^2(1,311)	.59
Primiparas	86 (42)	43 (39)		
Multiparas	116 (57)	66 (59)		
Missing data	3 (1)	2 (2)		
Delivery			X^2(1,314)	.94
Vaginal	158 (77)	86 (78)		
C-Section	45 (22)	25 (22)		
Missing data	2 (1)	—		
Nursery			X^2(1,313)	.90
Regular	127 (62)	69 (62)		
ICN	75 (37)	42 (38)		
Missing data	3 (1)	—		
Feeding			X^2(1,311)	.96
Breast	121 (59)	65 (58)		
Bottle	81 (40)	44 (40)		
Missing data	3 (1)	2 (2)		

Table 2

Distribution of Respondents According to Type of Care Received by Age, Marital Status, and Education (Traditional Care N=103, Combined Care N=102)

Characteristics	Type of Care: Traditional- n (%)	Combined- n (%)	X^2(df,N)	p
Age			X^2(3,198)	.97
14–19 years	8 (8)	7 (7)		
20–29 years	63 (6)	65 (64)		
30–39 years	28 (27)	25 (25)		
≥40 years	1 (1)	1 (1)		
Missing data	3 (3)	4 (4)		
Marital Status			X^2(1,202)	.39
Married	89 (86)	91 (89)		
Single	13 (13)	9 (9)		
Missing data	1 (1)	2 (2)		
Education			X^2(2,203)	.99
Public School	11 (11)	10 (10)		
High School	40 (39)	39 (38)		
College/University	52 (50)	51 (50)		
Missing data	—	2 (2)		

Part 2 was a 17-item checklist of common postpartum concerns, and mothers were asked to rate the adequacy of help they received for each. Part 3 was a 10-point ladder scale to rate the overall quality of care mothers received during their hospital stay.

A post-test control group design with a self-selected sample of postpartum women was used in the current study. Women were given the mothers hospital questionnaire by the unit ward clerk on their first postpartum day and were asked to voluntarily complete it before discharge. Validity and reliability of the mothers' questionnaire was reported by Watters and Kristiansen (1989) to have an internal consistency alpha coefficient of .60 or greater and a test-retest reliability correlation coefficient of .74 or greater.

Results

Of 317 deliveries occurring in the two data collection periods, 42% were primiparas and 56.6% were multiparas. Sixty-five percent of the mothers completed the questionnaire, including 57% (103/182) of those who received traditional care and 75% (102/135) of those who obtained combined care. There were no significant differences between respondents (205 or 65%) and nonrespondents (111 or 35%) in terms of marital status, parity, type of delivery, admission of baby to level I nursery, and method of feeding (Table 1).

The group of mothers who received traditional care (103) was similar to those who received combined care (102) (Table 2): in both groups ages ranged from 14 to 45 years with 62.4% of the sample being 20 to 29 years of age; most of the mothers were married (87.8%) and half (50.5%) had post secondary education. Approximately 22% of all deliveries were by C-section and 36.6% of the babies were admitted to the observational or intensive care nursery post partum (Table 3); most mothers described their labor as fairly hard (32%) to very hard (31.1%); slightly more than half of those whose babies were admitted to level I nursery held their newborns immediately after birth (50.5%) with an additional 25.2% having initial contact within 1 to 6 hours post partum. The only factor for which the difference between the two groups approached significance was the amount of time newborns spent

Table 3

Distribution of Respondents According to Type of Care Received by Delivery, Nursery, Birthing Experience, Held Baby Post Partum, and Baby in Room Day 1 (Traditional Care N=103, Combined Care N=102)

	Type of Care			
Characteristics	**Traditional- n (%)**	**Combined- n (%)**	**X^2(df,N)**	**p**
Delivery			X^2(1,203)	.54
Vaginal	82 (80)	76 (75)		
C-Section	21 (20)	24 (24)		
Missing data	—	2 (1)		
Nursery			X^2(1,202)	.36
Regular	61 (59)	66 (65)		
ICN	41 (40)	34 (33)		
Missing data	1 (1)	2 (2)		
Birthing Experience			X^2(3,191)	.73
Very hard	32 (31)	24 (23)		
Fairly Hard	33 (32)	34 (33)		
Fairly Easy	26 (25)	26 (26)		
Very Easy	7 (7)	9 (9)		
Missing data	5 (5)	9 (9)		
Held Baby Post Partum			X^2(3,203)	.71
Immediately	52 (50)	58 (57)		
1–6 hours	26 (25)	23 (22)		
7–12 hours	13 (13)	9 (9)		
>12 hours	12 (12)	10 (10)		
Missing data	—	2 (2)		
Baby in Room Day 1			X^2(3,188)	.06
0–5 hours	79 (77)	68 (67)		
6–9 hours	6 (6)	17 (16)		
10–18 hours	7 (7)	10 (10)		
19–24 hours	—	1 (1)		
Missing data	11 (10)	6 (6)		

Table 4

Distribution of Respondents by Demographic Characteristics (Traditional Care N=103, Combined Care N=102)

Characteristics	Type of Care: Traditional- n (%)	Combined- n (%)	X^2(df,N)	p
Parity			X^2(1,202)	.01
Primiparas	53 (52)	33 (33)		
Multiparas	50 (48)	66 (65)		
Missing data	—	3 (3)		
Prenatal Classes			X^2(1,200)	.05
Yes	61 (59)	46 (45)		
No	40 (39)	53 (52)		
Missing data	2 (2)	3 (3)		
Postnatal CareClass			X^2(1,111)	.04
Yes	39 (38)	16 (16)		
No	29 (28)	27 (26)		
Missing data	35 (34)	59 (58)		
Feeding			X^2(1,202)	.01
Breast	70 (68)	51 (50)		
Bottle	32 (31)	49 (48)		
Missing data	1 (1)	2 (2)		

in mothers' rooms on day 1 (X^2=7.53, p<0.06); 27.5% of combined care babies spent more than 5 hours with their mothers, versus 12.6% of traditional care babies. There was no significant difference between the groups for this variable on subsequent days.

There were other significant differences between the traditional and combined care groups (Table 4): more of the mothers who had received traditional care were breast-feeding their babies (68.0% versus 50.0%, X^2=6.53, p<.01) and had attended prenatal classes (59.2% versus 45.1%, X^2=3.90, p<.05) and classes on the postnatal period (37.9% versus 15.7%, X^2=4.27, p<.04); more of the mothers in the combined care system were multiparous (64.7% versus 48.5%, X^2=6.78, p<.01).

Initial analyses examined the reliability of the scales and subscales of the mothers' hospital questionnaire. For the traditional care group Cronbach's alpha ranged from .60 to .80 with the exception of the subscale policies/routines where an alpha of .40 was obtained. For the combined care group Cronbach's alpha ranged from .60 to .80 with the exception of two subscales: competence for self care .40 and policies/routines .40 .

To reduce the probability of type I errors, multivariate analysis of variance (MANOVA) was used to compare the outcomes associated with tradi-

Table 5

Distribution of Mothers' Scores for Competence and Satisfaction According to Parity

Variable	Maximum Possible Score		Primiparous	Multiparous	F	df	p
Total Score	80	M	66.91	67.74	.49	1	.48
		SD	7.87	7.34			
Competence	32	M	26.65	27.99	7.32	1,190	.01
		SD	3.55	3.27			
Self Care	12	M	9.55	1.14	7.29	1,190	.01
		SD	1.48	1.52			
Infant Care	20	M	15.84	17.10	1.99	1,190	.001
		SD	2.86	2.39			
Satisfaction	48	M	38.95	39.32	.13	1,119	.72
		SD	5.88	5.22			
Policies/Routines	16	M	12.37	12.56	.24	1,119	.63
		SD	1.98	2.11			
Parent Education	16	M	12.86	13.36	1.36	1,119	.25
		SD	2.74	1.93			
Nurse Client Relationship	16	M	13.72	13.40	.60	1,119	.44
		SD	2.20	2.21			
Overall Rating	10	M	8.65	8.39	.99	1,119	.32
		SD	1.38	1.42			

tional and combined care. These outcomes included: maternal rating of competence (with self-care and infant-care) and satisfaction (with policies/routines, parent education, nurse-client relationship, and 10-point ladder scale).

A simple one-way analysis of variance indicated no significant differences between the traditional and combined care groups with regards to total score on the mothers' hospital questionnaire or its components. A one-way analysis of variance examining the effect of parity indicated significant differences: regardless of the care delivery system, multiparas scored higher in terms of self care ($p<.01$), infant care ($p=.001$), and overall maternal competence ($p<.01$) than did primiparas (Table 5).

Maternal Competence

Analyses of variance of scores for the competence scale and corresponding subscales indicated no differences between the traditional and combined care groups (Table 6). The effect of parity, however, was significant (Pillais Trace $V=.09$ $p<.001$). On univariate tests multiparas had higher scores for

Table 6

Distribution of Mothers' Scores for Competence and Satisfaction According to Type of Care Received by Parity

Variable	Maximum Possible Score		Traditional		Combined		F	df	p
			Primi	Multi	Primi	Multi			
Total Score	80	M	66.03	67.63	68.03	67.82	.57	1	.45
		SD	8.16	7.42	7.45	7.35			
Competence	32	M	26.28	28.29	27.18	27.77	6.70	1,188	.01
		SD	3.70	3.16	3.30	3.35			
Self Care	12	M	9.47	10.25	9.67	10.06	6.96	1,188	.001
		SD	1.61	1.61	1.27	1.46			
Infant Care	20	M	15.57	17.29	16.21	16.95	10.15	1,188	
		SD	2.95	2.27	2.74	2.49			
Satisfaction	48	M	37.77	39.47	40.77	39.23	2.34	1,117	.13
		SD	6.15	5.13	5.08	5.33			
Policies/Routines	16	M	12.08	12.70	12.82	12.48	1.45	1,117	.23
		SD	1.92	2.00	2.04	2.18			
Parent Education	16	M	12.58	13.17	13.29	13.48	.21	1,117	.65
		SD	2.82	2.04	2.64	1.87			
Nurse Client Relationship	16	M	13.12	13.60	13.48	13.27	4.84	1,188	.03*
		SD	2.34	2.21	1.87	2.23			
Overall Rating	10	M	8.46	8.57	8.94	8.27	2.00	1,117	.16
		SD	1.56	1.33	1.03	1.48			

Two-Way Interaction Time by Parity: $p<.03$

overall competence ($F(1,188)=6.70$ $p=.01$), and competence for self care ($F(1,188)=6.96$ $p=<.01$) and for infant care ($F(1,188)=1.15$ $p<.01$) than did primiparas. Although not statistically significant, it is of interest to note that scores for competence among primiparas were higher with combined than traditional care, while the reverse was true of the multiparas' scores.

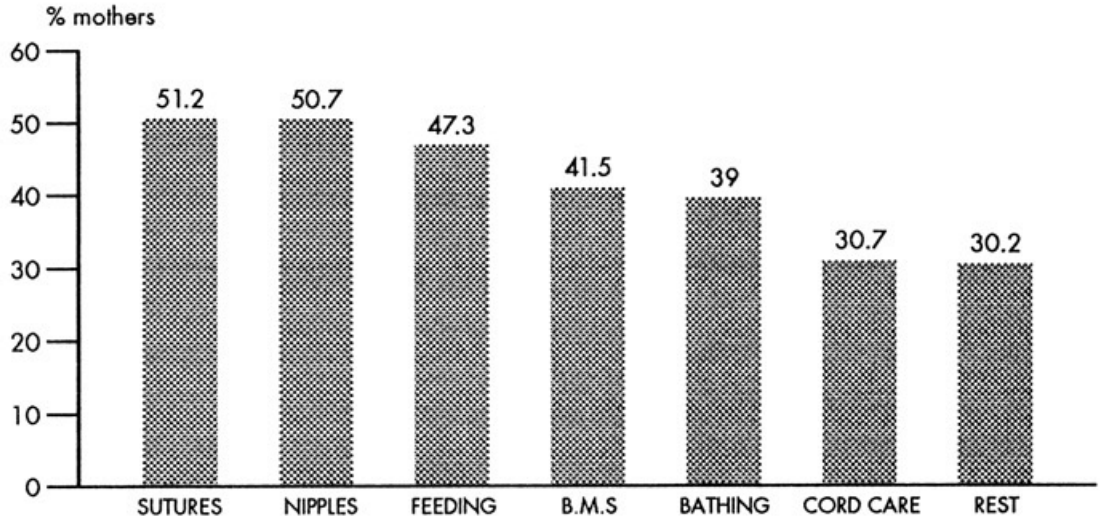
Maternal Satisfaction

Univariate tests revealed that primiparas receiving combined care had higher scores for satisfaction with the nurse-client relationship than did those in traditional care. Multiparas in the combined care group indicated less satisfaction with the nurse-client relationship than did those in the traditional care group ($F(1,117)=4.84$ $p<.04$).

Figure 1 presents the ranked distribution of mothers' concerns, whether they received traditional or combined care. Slightly more than half of the sample indicated that their perineal incision/abdominal sutures (51.2%) and

Figure 1

Distribution of Mothers' Concerns



breast and nipples (5.7%) were areas of concern; more than 40% expressed concern with their bowel movements and breast-feeding.

Discussion

Does the type of care delivery system used in a community hospital setting (traditional versus combined) affect maternal competence and maternal satisfaction? Initial analysis revealed that the reliability of the mothers' hospital questionnaire was satisfactory, with the exception of the subscales policies/routines for both care delivery groups and competence for self care in the combined care system. Our results are similar to those reported elsewhere (Watters, Gay & Kristiansen, 1988; Watters & Kristiansen, 1989). To improve internal reliability of the policies/routines subscale, Watters and Kristiansen (1989) removed items that showed weak or negative correlations. The present study may be limited by the fact that this adjustment was not made.

It is of interest that there was a high prevalence of multiparas and bottle feeders in the combined care group relative to the traditional care group. As more of the mothers in the latter group were primiparas and had attended prenatal classes, they might have been more influenced by prenatal teaching regarding the benefits of breast-feeding.

It is not surprising that multiparous mothers, regardless of the care delivery system, scored higher on self care, infant care, and maternal competence than did primiparas. However, several factors may have contributed to the fact that no significant differences were observed between the two care systems in terms of competence or satisfaction: because nurses had to develop

new skills to practice combined care, the evaluation may have occurred too soon after the institution of the new delivery system. The benefits of combined care seen in other centers might have become evident in this center had the staff been given more time to adjust.

Finally, the concerns expressed by mothers were related to immediate needs, as they had not begun to anticipate those that would occur after discharge. This may have been related to the fact that the questionnaire was completed before discharge from the hospital.

Conclusion

Although the results of this study do not statistically support the greater efficacy of combined care over traditional care in meeting the needs of families, evidence suggests that further study may provide more conclusive results in this respect. The needs of primiparas differ from those of multiparas, and routines surrounding the implementation of combined care should respect these differences. Postnatal schedules, routines, education, and support should be adjusted according to the needs of postpartum women and their families.

With the decrease in length of the postpartum hospital stay, postpartum care must be tailored to clients' needs. Continuity of caregiver provides more opportunity to get to know the short stay family. New mothers may not anticipate what their needs will be after discharge. Immediate and long term emotional, social, and educational needs should therefore be addressed by a combined care delivery system.

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