

Sustainability of Reduced Postpartum Depressive Symptoms and of Innovative Caring Practices Following Continuing Education for Community Nurses: A Longitudinal Quasi-Experiment

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Summary. *Background and Objective.* The education of community nurses on postpartum distress has been shown to reduce its prevalence. However, there is no evidence on the sustainability of reduced rates of postpartum depressive symptoms and innovative caring practices following a trial period of continuing education for nurses. This lack of evidence is addressed in this study. Therefore, the aim of the study was to evaluate the sustainability of reduced postpartum depressive symptoms and innovative caring practices beyond the duration of the trial period of continuing education for community nurses.

Methods. A community-based, longitudinal, time-series, quasi-experiment was conducted in 3 stages from 2003 to 2005. Sixteen health centers throughout Iceland participated. They were divided into the groups of experimental (EHCs), control (CHCs), and old experimental (OEHCs) centers. From 2003 to 2005, all previous CHCs were crossed over to the EHCs, and all previous EHC were retained as the OEHCs. The nurses at the EHCs participated in continuing education, which had been done previously by the nurses from the OEHCs. Mothers attending the study health centers and scoring 12 points or more on the Edinburgh Postnatal Depression Scale (EPDS) at the 9th week postpartum were eligible and invited to participate in the study. Participants from all study centers answered the EPDS at the 15th and 24th weeks postpartum. Nursing diagnosis and interventions as well as contacts with nurses and referrals to specialists were documented at all study centers.

Results. Of the 141 eligible women, 103 participated in the study. There was no significant difference in the EPDS score among the groups of women at baseline 9 weeks postpartum. The depressive symptoms experienced by women in all groups improved over time; however, those from the EHCs improved significantly when compared with the CHC group. For women from the OEHCs, there was no significant difference in depressive symptoms at the 15th week compared with those from either CHCs or EHCs. The follow-up of women from the OEHCs at the 24th week was negligible and prevented the comparison of groups with regard to depressive symptoms. Innovative caring practices were maintained to a large degree by the OEHC with the exception of the 24th week follow-up and a decline in counseling session.

Conclusions. Continuing education for nurses regarding the management of postpartum emotional distress may be related to a significant reduction in depressive symptoms for EHCs. However, the lasting improvements for OEHCs could not be demonstrated. It appears that each innovative caring practice introduced during the trial period with EHCs results in positive outcomes and should become a routine provision. If any innovative practice element is lacking or declines, such as follow-up and counseling at OEHCs, it may jeopardize the sustainability of positive patient outcomes.

Introduction

In Iceland, 14% of women report frequent depressive symptoms following childbirth, and 12% report simultaneously a high degree of parenting stress (1). Nurses and midwives are key professionals in managing antenatal and postpartum distress, and their education on the topic is claimed to be

crucial for effective patient interventions (2, 3). The amelioration of postnatal depression and distress has been shown to be possible if nurses and other health care professionals are educated on providing psychosocial interventions (4–6). These include interpersonal psychotherapy, cognitive behavioral therapy, nondirective counseling, supportive interactions,

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partner and peer support, and assistance in dealing with common infant behavioral problems and with sleep disruption in particular (3, 7, 8). In community-based intervention trials for depressed mothers, the beneficial outcomes for mothers are attributed to nurses' increased knowledge about the management of postpartum distress following formal training (5, 9, 10). Benefits associated with psychosocial interventions for postpartum distress (PPD) have been found to last through the first 3 to 4 postnatal months, but effects lasting up to 12 months also have been shown (4–6). Icelandic researchers discovered that postpartum depressive symptoms significantly decreased up to 6 months postpartum when community nurses were educated on this specific topic (11). However, a decrease of postpartum depressive symptoms lasting beyond a trial period of continuing education has not been shown. It has been suggested once the benefits of evidence-based interventions have been demonstrated, there must follow an evidence-based implementation to secure sustainability (12). Sustainability is defined as “The degree to which an innovation continues to be used after initial efforts to secure adoption are completed” (13) or “When new ways of working become the norm” (14).

Despite the demonstrated benefits of evidence-based health care interventions for patients and their cost-saving effects, the sustainability of new clinical practices in health care organizations remains a challenge for practitioners and researchers alike (15, 16). This challenge has been addressed by a growing number of models aiding the planning, implementation, and evaluation of sustainable practices (14, 16, 17). The sustainability of changed healthcare practices has been shown to be possible to some degree, and it is influenced by 5 key factors: 1) a program may be modified over time; 2) a “champion” is present; 3) a program “fits” with its organization’s mission and procedures; 4) benefits to staff members and/or clients are readily perceived; and 5) stakeholders in other organizations provide support (18). Four degrees of sustainability have been described in a health promotion program: absent, precarious, weak, and routine of activities (19). Once programs or practice-based trials have become embedded into organizational processes, they may no longer be identified as a specific program or trial, but develop into part of the organization’s core services (18). Sustainability in changing clinical practice is assumed to promote evidence-based nursing care (20). In the same study, sustainability was found to be dependent on supportive leadership, facilitative human resources, and nurses’ knowledge of nursing research (20). Evidence-based and effective health care practices that have been introduced into health care services but not sustained may be considered a waste of time, human resources, and substantial fi-

ancial resources. There is evidence that up to 70% of all organizational changes fails to survive over a longer period, and only 10%–15% of staff training is maintained in the workplace following 1 year (21, 22). This implies a substantial part of investment in organizational changes and training that could be wasted due to the lack of leadership, poor learning transfer, trainee dropout, and little use of knowledge.

Sustainability should be considered in the design of all interventions and programs that are meant to endure for a longer period (19). In a “Model for Sustainability,” it has been suggested 3 factors need to be considered in planning: process, staff, and organization (14). Process variables include benefits beyond helping patients, credibility of evidence, adaptability, and monitoring progress. Staff variables are related to training and involvement, behaviors, and senior and clinical leadership. Organizational variables address the fit with goals, the culture, and infrastructure of an institution.

The management of postpartum distress (PPD) constitutes a part of a health service rather than being a specific program or an intervention. However, evidence-based care and the presence of effective caring activities to serve this population may be rare anywhere and have not been found in the Icelandic primary health care services until recently (23). Although the knowledge on evidence-based, effective psychosocial interventions for postpartum distress is available, it is rarely integrated in the health care of postpartum women (24). Further steps need to be taken to transform them from evidence-based knowledge into evidence-based implementations. The latter step would result in innovative caring activities that could become routine for the sake of improving postnatal outcomes (12). Psychosocial interventions for PPD are considered an effective alternative treatment compared with antidepressants, and this recommendation is in line with the National Guidelines for perinatal mental health care in the United Kingdom (24, 25).

In the design of this current study, sustainability was addressed by integrating innovative caring practices that were assumed to become routine following a trial period of continuing education for community nurses. These were as follows:

- Routine screening for postpartum distress 9 weeks postpartum;
- Electronic documentation of nursing diagnoses;
- Intervention for distressed mothers according to the North American Nursing Diagnoses Association International Classification (NANDA) and the Nursing Intervention Classification (NIC);
- The mean frequency of 7 contacts and/or home-visits with distressed mothers and follow-up at the 15th and 24th weeks postpartum.

As there is no existing evidence that these innovative caring practices linked with the continuing education of nurses would suffice to sustain a rate of significantly reduced postpartum depressive symptoms until the 24th week postpartum, the outcomes after the trial period were examined in this study.

Context of Study. The study is a part of an evaluation of the clinical outcomes of continuing education on postpartum distress for nurses. Part of the results comparing experimental and control health centers (EHCs and CHCs, respectively) showed that nurses who care for women at EHC would practice in a way that benefits women by reducing postpartum depressive symptoms significantly up to 6 months (11). The majority of nurses who participated in the course stated that knowledge about postpartum distress increased and they would recommend it to colleagues (26). The entire study encompassed 4 phases lasting from 2001 to 2005. In this paper, the evaluation is related to 3 groups and encompasses 3 phases (2003–2005). The third group included in this study was named “old experimental centers” (OEHCs) as they had previously had the status of “experimental centers.” These centers were retained in the trial after nurses had completed their continuing education. The evaluation of outcomes for women is limited to postpartum depressive symptoms, as the previous study showed only benefits with regard to this indicator (11).

The aim of the study was to evaluate the sustainability of reduced postpartum depressive symptoms and innovative caring practices beyond the duration of the trial period of continuing education for community nurses.

The following research questions will be answered:

1. Do women in 3 groups of health centers (EHCs, CHCs, OEHCs) improve significantly on the Edinburgh Postnatal Depression Scale (EPDS) over time and among the groups, and is there an interaction effect?

2. Is there a clinically significant improvement in the recovery rate associated with EPDS scores of

women attending different groups of health centers?

3. Do innovative nursing practices differ among the groups of health centers with regard to documented NANDA and NIC, frequency of nurse-client contacts, and referrals to specialists?

Methods

Study Design and Sample. This study was designed as a community-based, longitudinal, time-series, quasi-experiment with community health centers divided into 3 groups: EHCs, CHC, and OEHC. The EHCs denote that nurses from these centers recruited subjects, participated in continuing education, and provided care based on the knowledge they had gained. The nurses from the CHCs also recruited subjects and provided standard care. The nurses from the OEHCs recruited subjects and were supposed to continue using their increased knowledge in practice including the innovative caring practices illustrated in Table 1.

The inclusion criterion for the community health centers was an established policy of screening for postpartum distress by the EPDS. In the first phase (2001–2002), 6 health centers were equally divided into experimental (A, B, and C) and control centers (D, E, and F). In the second phase (2003) when this study started, 3 previous control centers (D, E, and F) were crossed over to experimental centers, 5 new control centers (G, H, I, J, and K) were recruited, and 3 old experimental centers were retained (A, B, and C). In the third phase (2004), 5 previous control centers (G, H, I, J, and K) were crossed over to experimental, 5 new control centers recruited (L, M, N, O, and P), and 6 old experimental centers were retained (A, B, C, D, E, and F). In the fourth phase (2005), 5 previous control centers (L, M, N, O, and P) were crossed over to experimental ones, no new controls were added, and the old experimental centers were retained (A, B, C, D, E, F, G, H, I, J, and K).

All mothers who attended the study health centers were offered routine screening by responding to

Table 1. Innovative Caring Practices for Postpartum Distressed Women Included in the Design of the Study According to the “Model for Sustainability” (Maher et al., 2007)

Type of Center	Process	Staff	Organization
CHCs	Routine screening with EPDS Follow-up at week 15 and 24 Referrals	Number of contacts not prescribed	Documentation of NANDA/NIC
EHCs	Routine screening with EPDS and data collection Follow-up at week 15 and 24 Referrals	On-line course and involvement in the study Minimum of 4 contacts	Documentation of NANDA/NIC
OEHCs	Routine screening with EPDS Follow-up at week 15 and 24 Referrals	Number of contacts not prescribed	Documentation of NANDA/NIC

CHCs, control centers; EHCs, experimental centers; OEHCs, old experimental centers, EPDS, Edinburgh Postnatal Depression Scale; NANDA, Classification of Nursing Diagnoses; NIC, Classification of Nursing Interventions.

the EPDS at baseline and the 9th week postpartum, and those scoring 12 points or more were eligible and invited to participate in the study. Not being able to read or write in Icelandic was an exclusion criterion.

Ethical Consideration. Permission to carry out the study was granted by the National Bioethics Committee (VSNa2001060009/03-1/BG/ThÁ/). A prerequisite for permission was informed and written consent by medical and nursing directors of the study health centers. The nurses at study centers distributed an information letter during a routine visit to the health center at the 9th week postpartum, describing the study and the participants' rights. Participation was voluntary, of no known risk and anonymity was assured. Women who chose to participate signed a statement of informed consent. Mothers who participated in the study received a letter describing the study and a bill of research participants' rights, which they were asked to read before providing written consent. Questions about the study were answered by nurses at the study centers, the author, or the coworkers.

Intervention: Continuing Education Delivered by an On-Line Course. All nurses at the EHCs participated in continuing education delivered by an on-line course previously described. This program was focused on the understanding and management of postpartum emotional distress and common emotional and behavioral difficulties of infants (11).

Research Protocol. Uniform conduct of the study was ensured by a research protocol published previously (11). The nurses at the EHCs were instructed to have at least 4 contacts with study participants from the 9th to the 24th week, whereas no such an instruction was given to nurses at the CHCs and the OEHCs.

Measures. Participants completed a questionnaire on demographics and history of depression at the baseline of 9 weeks postpartum in addition to routine screening by the EPDS (Cox et al., 1987). Follow-up occurred at the 15th and 24th weeks postpartum. These time points coincided with a regular contact by a nurse.

Nursing Diagnoses and Interventions. A list of 21 possibly relevant nursing diagnoses and 22 interventions for distressed mothers was extracted from the Icelandic version of the NANDA and NIC classifications (27). The nurses from all the study centers were asked to document the NANDA, NIC, and each contact and referrals to specialists for all participants. Contacts included home visits, telephone calls, and visits to the health centre.

Edinburgh Postnatal Depression Scale. The EPDS is a self-report scale that was originally designed to identify postpartum depressed women (28). It con-

sists of 10 items, and its sum yields a score ranging from 0 to 30. A validity study for the Icelandic version of the EPDS has not been available yet; therefore, the cutoff point for the depression of postpartum women was oriented on studies from other West European countries and set at 12, indicating a high degree of postpartum psychiatric morbidity (9, 10, 29). Two tests of reliability confirmed the homogeneity of the translated Icelandic version with a national sample of 734 mothers (Cronbach α , 0.87; split-half, 0.83) (30).

Data Analysis. Differences in sample characteristics among the groups were analyzed using either an *F* test or a χ^2 test as appropriate. The effects of the different years when the measurements were made and the different health care centers were taken into account and effects considered to be random block effects. Initial differences at week 9 in the mean EPDS score among groups were analyzed using a mixed effects model, treating year and health care centers as random effects and treatments as a fixed effect. Similarly, the nursing documentation of NANDA and NIC, frequency of nurse-client contacts, and referrals to specialists were analyzed using a model with the same structure. Individual differences between the components of NANDA and NIC were identified, where significant, using a Tukey post-hoc test. Changes in the mean score of distress on the EPDS over time and among groups were analyzed by an augmented repeated measures ANOVA (RM-ANOVA), where the usual RM-ANOVA model is extended to include the year and the health care center as random effects. The significance of time, group, and interaction effects was tested using a likelihood ratio test.

A clinically significant change in the EPDS score was calculated with the Reliable Change Index (RCI) (31). The RCI for the EPDS was calculated to be 4 points, which is the difference between 2 scores needed for a clinician to be 95% confident that the change reflects a real change in the individual's mood. The categories of change are as follows:

1. Recovered;
2. Improved but not recovered;
3. No change;
4. Deteriorated.

The proportion of women who recover would be analyzed by using a normal approximation of a binomial test.

Data analysis was carried out using R (version 2.10.0, obtained from <http://www.r-project.org>) and the lme4 package (version 0.999375-32, obtained from <http://cran.r-project.org/web/packages/lme4/index.html>). The post-hoc analysis of similarity of OEHCs compared with EHCs or CHCs with respect to the EPDS was made using the Akai-

Table 2. Comparison of Women's Demographic Characteristic Among Groups of Health Centers

Characteristic	EHCs		CHCs		OEHCs		Total		Comparison Among Groups	
	N=39		N=39		N=25		N=103		ANOVA or χ^2	P Value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Age, years	27.44	5.08	27.90	4.24	28.92	5.36	27.85	4.75	0.48	0.62
No. of children	1.69	0.86	2.21	0.98	1.62	0.65	1.90	0.92	4.02	0.02
	N	%	N	%	N	%	N	%		
Marital status									3.33	0.50
Divorced	0	0	2	5.13	0	0	2	1.94		
Married/Cohabiting	33	84.62	31	79.49	12	48	76	73.79		
Single	6	15.38	6	15.38	1	4	13	12.62		
No data	0	0	0	0	12	48	12	11.65		
Education									3.11	0.54
Basic	13	33.33	16	41.03	6	24	35	33.98		
Upper secondary	19	48.72	14	35.90	3	12	36	34.95		
Higher	7	17.95	8	20.51	4	16	19	18.45		
No data	0	0	1	2.56	12	48	13	12.62		
Type of delivery									6.72	0.15
Vaginal birth	24	61.54	29	74.36	5	20	58	56.31		
Assisted birth	6	15.38	6	15.38	3	12	15	14.56		
Cesarean section	9	23.08	4	10.26	5	20	18	17.48		
No data	0	0	0	0	12	48	12	11.65		
Number of children									8.97	0.06
One	20	51.28	10	25.64	6	24	36	34.95		
Two	13	33.33	15	38.46	6	24	34	33.01		
Three and more	6	15.38	14	35.90	1	4	21	20.39		
No data	0	0	0	0	12	48	12	11.65		
History of depression	12	30.77	5	12.82	8	32	25	24.27	0.03	0.97

Differences among groups were compared using analysis of variance (ANOVA) for age and number of children while all other comparisons were made using a χ^2 test.

EHCs, experimental centers; CHCs, control centers; OEHCs, old experimental centers.

ke information criterion (AIC). A significance level of 0.05 was set throughout the analysis.

Results

Sample Description. The characteristics of the sample are described in Table 2. Mothers from the EHCs, CHCs, and OEHC were not significantly different regarding the mean age at baseline, but the women in the sample were slightly younger than the population of Icelandic women of childbearing age, whose mean age increased from 29 to 29.5 years from 2001 to 2005 (32). The significant difference found in the number of children among the groups can possibly be attributed to a large loss of data from the OEHCs.

A total of 141 women were eligible for the study; of them, 35 declined and 3 did not meet the inclusion criteria, leaving 103 participants in the sample. The reasons given for declining were as follows: no reason ($n=13$), no time or no interest ($n=4$), history of depression ($n=8$), in therapy elsewhere ($n=4$), fatigue ($n=1$), social problems ($n=3$), and other reasons. Of the 103 women who consented to the study, there were no data from EPDS questionnaires available for two at baseline. The data of other 28 EPDS were lost during the follow-up until the 24th week, with the largest loss being in the OEHCs (16/25,

64%). The reasons reported by the nurses for women not filling in the EPDS during the follow-up were as follows: a client changed a health center, moved to another location, interrupted the follow-up due to holiday seasons, or staffing shortage. Because of the substantial loss of data from the OEHCs, only differences between the 9th and 15th weeks could be compared for the EPDS for all groups.

Change in Distress. Question 1 was as follows: "Do women in 3 groups (EHCs, CHCs, OEHCs) improve significantly on the EPDS over time and among the groups, and is there an interaction effect?" No difference in the mean EPDS scores among the groups was observed at the 9th week postpartum, and the interaction effect was the group effect at week 15. The results confirmed that no significant difference among the groups existed initially ($\chi^2=0.7322$, $P=0.6934$). The group effect at the 15th week was proved to be significant ($\chi^2=6.3707$, $P=0.04136$), as the EHCs differed significantly from the CHCs ($t(38)=-2.515$, $P<0.01$). The OEHCs proved neither significantly different from the CHCs ($t(21)=-1.126$, $P=0.1364$) nor from the EHC centers ($t(21)=1.014$, $P=0.1611$). Health centers were then compared with the assumption that the OEHCs and the EHCs were similar and respectively the OEHCs and the CHCs were similar.

The results showed that the later assumption was marginally worse (AIC=1153.1 vs. AIC=1152.8), as the OEHCs tended to be more similar to the EHCs than to the CHCs.

Clinically Significant Change. Question 2 was as follows: “Is there any clinically significant improvement in the recovery rate on the EPDS of women attending different groups of health centers?” The results were inconclusive, as 16 of the 25 EPDS scales for women at the OEHCs had been lost at week 24.

Change in Nursing Practices. Question 3 was as follows: “Do nursing practices differ among the groups of health centers with regard to the documented NANDA and NIC, frequency of nurse-client contacts, and referrals to specialists?”

The results, presented in Table 3, show that the group effect in the number of documented NANDA was significant. The OEHCs documented more NANDA and NIC than both the EHCs and the CHCs, although the mean frequency of documented NIC was not significantly different among the groups of health centers. As shown in Table 4, there were 3 interventions that differed significantly between the groups. The EHCs differed from the CHCs significantly on all 3 interventions while the OEHCs differed only on 2 (Active Listening and Emotional Support). Contacts with nurses did not differ significantly among centers. Referrals to specialists proved to be significantly different among the groups of health centers, as women from the OEHCs were least likely to be referred to a specialist.

Discussion

The aim of this study was to gain evidence on the sustainability of reduced postpartum depressive symptoms and innovative caring practices at OEHCs that were linked to continuing education delivered by an on-line course for community nurses in Iceland. It has been shown previously that EHC (experimental) achieve a significant reduction of postpartum depressive symptoms compared with CHCs (control) until the 24th week postpartum, and this finding was confirmed in the present study (11).

However, the results of this study also showed that follow-up to the 24th week postpartum declined at all health centers and was predominantly lacking for women from the OEHCs (old experimental). This fact rendered a comparison of women’s depressive symptoms between groups of health centers inconclusive. Nevertheless, follow-up to week 15 remained sufficient to compare groups. The results confirmed previous findings that women in all groups improved over time (11). The findings are in agreement with other experimental intervention studies, where an improvement in depression among the groups after 3 months, and a gradual resolution of distress over time has been found (4–6, 10). Despite the inability to demonstrate the sustainability of reduced postpartum depressive symptoms between groups, the post-hoc analysis showed that the OEHCs tended to be more likely as the EHCs than the CHCs. This may be explained by the finding that the OEHCs sustained some innovative caring practices (11). The comparison of innovative caring practices in Table 3 shows that the OEHCs sustain nursing documentation of NANDA and NIC. Their mean for documenting nursing interventions was similar to that of the EHCs although the difference did not reach a statistical significance. Five interventions had previously been shown to distinguish the EHCs significantly from the CHCs:

1. Active listening;
2. Counseling;
3. Emotional support;
4. Sleep;
5. Support-system enhancement (11).

In this study, the frequency of documented nursing interventions of OEHCs was similar to that of EHCs but less counseling was provided by the OEHCs than the EHCs and they did not differ significantly from the CHCs. The types of interventions provided by the nurses that differed significantly among centers are nevertheless in agreement with best practice guidelines and clinical guidelines, which state that nonspecialists in mental health care, i.e., nurses and midwives, should provide supportive and psychosocial interventions to clients and re-

Table 3. Comparison of Mean Differences in Frequency of Nursing Documentation of NANDA and NIC, Contacts by Nurses With Women, and Referrals to Specialists by Groups of Health Centers

Groups of Health Centers	EHCs	OEHCs	CHCs	χ^2	P
	n=39	n=25	n=3		
NANDA frequencies of nursing diagnoses	3.76	8.37	0.89	7.69	0.02
NIC frequencies of nursing interventions	20.75	22.05	13.85	5.64	0.06
Nurse/client contacts	6.60	5.23	5.16	4.70	0.09
Referrals to specialists	2.65	1.67	7.60	2.65	0.001

EHCs, experimental centers; OEHCs, old experimental centers; CHCs, control centers; NANDA, Classification of Nursing Diagnoses; NIC, Classification of Nursing Interventions.

Table 4. Comparison of Significant Different Nursing Interventions by Groups of Health Centers

Nursing Intervention Classification	EHCs n=39	OEHCs n=25	CHCs n=39	Total n=103	P ANOVA
Active Listening	164 (4.2)*	111 (4.4)*	86 (2.2)	361 (3.5)	0.001
Emotional Support	143 (3.6)*	93 (3.7)*	82 (2.1)	318 (3.1)	0.046
Counseling	127 (3.3)*	72 (2.9)	79 (2.0)	278 (2.7)	0.009

* $P < 0.05$ compared with CHCs.

EHCs, experimental centers; OEHCs, old experimental centers; CHCs, control centers.

fer them to specialists when appropriate (25, 33). The sustainability of the documentation of NANDA and NIC at the OEHCs is attributed to the former self-report of increased nurses' knowledge and to their skills in analyzing a case material with regard to nursing diagnoses and interventions (26). The knowledge nurses had gained in the on-line course on PPD could also have affected the sustainability of nursing documentation.

The frequency of nurse/client contact was not significantly different among the groups of health centers, which was found to be similar to previous results. None of the groups reached a mean of 7 contacts as found previously for the EHCs (11). All groups decreased the mean number of contacts, which could be due to changed policy at health centers to reduce contacts/home visits. Nevertheless, the mean frequency of contacts remained higher than expected from the average of 3 home visits and higher than the instructed minimum of 4 contacts with the EHC (34).

If care costs are measured by the frequency of contact, there is no significant difference in costs between groups. However, a significantly reduced rate of postpartum depressive symptoms achieved at the EHCs optimizes the gains for women, and this finding is supported by those from another study (35). This issue is important for health care managers who try to maximize benefits for clients without raising the cost of health care. The OEHCs showed a significantly lower frequency of referrals to specialist compared with the other 2 groups. Previously, the EHCs referred significantly fewer women to specialists than the CHCs, and this was explained by increased nurses' confidence in their increased knowledge and skills with regard to supportive interventions (11, 25, 33). It cannot be concluded from the results of this study that fewer referrals to specialist benefit clients, as the follow-up to 6 months was insufficient, and it could not be shown that women from the OEHCs experienced a lower rate of depressive symptoms at week 24 than those in other groups. However, the detrimental effects of untreated long-term maternal depression on children, adolescents, and familial relationship are

known, and depression deserves to be viewed as a serious public health problem that requires proper management and follow-up (36–38).

Limitations. The sample of this study remained restricted despite long-term data collection over a 3-year period (39). It was estimated that at least 1200 women were screened for postpartum distress during the study period, and 10%–14% of them were expected to give a score of ≥ 12 on the EPDS according to the findings from a previous national survey (1). The large amount of data lost during the follow-up, particularly at the OEHCs at week 24, was not expected and limited the comparative analysis of depressive symptoms.

Conclusions

Nursing care following a trial period of continuing education by an on-line course was effective in achieving a statistically significant reduction in the rate of postpartum depressive symptoms. However, the sustainability of this outcome beyond the trial period could not be demonstrated as follow-up declined and was almost negligible at the OEHCs at week 24. It appears that a continuing education program for nurses about PPD must be linked to innovative and sustained caring practices to enhance patient outcomes. If some caring practices are lacking or declining after a trial, such as follow-up or counseling, it may jeopardize the sustainability of positive outcomes. It is suggested that continuing education for nurses is not viewed as a single key element in achieving the reduced rates of postpartum depressive symptoms. Its merits must be put in a context with sustained innovative caring-practices described in this paper. It is suggested that the sustainability of improved outcomes of PPD could be further researched for longer periods and in different social contexts.

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Statement of Conflict of Interest

The authors state no conflict of interests.

Pogimdyminės depresijos simptomų malšinimo ir inovatyvios priežiūros tvarumas, susijęs su bendruomenės slaugytojų profesiniu tobulinimusi. Ilgalaikis eksperimentas

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Raktažodžiai: tvarumas, profesinis tobulinimasis, pogimdyminė depresija, inovacija, pacienčių rezultatai, slauga, Islandija.

Santrauka. *Tyrimo tikslas* – įvertinti pogimdyminės depresijos simptomų malšinimo ir inovatyvios priežiūros tvarumą po bandomojo bendruomenės slaugytojų profesinio tobulinimosi kurso.

Pagrindimas. Įrodyta, kad bendruomenės slaugytojų mokymai pogimdyminio distreso tema mažina šių simptomų pasireiškimą. Tačiau trūksta įrodymų apie pogimdyminės depresijos simptomų malšinimo dažnį ir inovatyvios priežiūros tvarumą, susijusį su slaugytojų profesiniu tobulinimusi. Šiuo tyrimu siekiama papildyti minėtus įrodymus.

Medžiaga ir metodai. Tęstiniai pusiau eksperimentai vykdyti bendruomenėje 2003–2005 m. trimis etapais. Dalyvavo 16 sveikatos centrų visoje Islandijoje, kurie buvo suskirstyti į eksperimento grupės, kontrolinės grupės ir ankstesniojo eksperimento grupės centrus. Per 2003–2005 metus visi buvę kontrolinės grupės centrai buvo pervadinti eksperimento grupės centrais ir visi buvę eksperimento grupės centrai tapo ankstesnio eksperimento grupės centrais. Slaugytojai iš eksperimento grupės centrų dalyvavo profesinio tobulinimosi kursuose, kuriuos iki jų buvo įvykdę visi slaugytojai iš ankstesnio eksperimento grupės centrų. Tyrimui atrinktos ir pakviestos dalyvauti motinos, kurios lankėsi tyrimo centruose devintąją savaitę po gimdymo ir Edinburgo pogimdyminės depresijos skalėje (EPDS) surinko 12 ir daugiau balų. Dalyvės tyrimo centruose EPDS užpildė 15-ąją ir 24-ąją savaitę po gimdymo. Centruose buvo rinkti įrašai apie slaugos diagnozes ir intervencijas, taip pat apie susitikimą su slaugytoju ir apie siuntimą konsultuoti specialistams.

Rezultatai. Tyrimo dalyvavo 103 moterys iš 141. Devintąją savaitę po gimdymo moterų grupės nesiskyrė atsižvelgiant į grupių savybes. Depresijos simptomai grupėse kito visa laiką, tačiau eksperimento grupės centre jie labiau mažėjo nei kontrolinės grupės centre. Ankstesnio eksperimento grupės centre moterų patiriami depresijos simptomai, vertinant 15-ąją savaitę po gimdymo, nesiskyrė, lyginant su kontrolinės arba eksperimentinės grupės centrais. 24-ąją savaitę palyginimo atlikti nepavyko, nes ankstesnio eksperimento grupės centre moterų imtis buvo per maža. Inovatyvi praktika buvo plačiai diegiama ankstesnio eksperimento grupės centre, išskyrus 24-ąją savaitę, kai sumažėjo konsultacijų skaičius.

Išvados. Profesinis slaugytojų tobulinimasis pogimdyminių emocijų, depresijos simptomų valdymo tema gali būti susijęs su reikšmingu depresijos simptomų sumažėjimu eksperimento grupės centruose. Deja, ilgalaikis poveikis ankstesnio eksperimento grupės centruose nebuvo pastebėtas. Paaiškėjo, kad inovatyvi priežiūra, taikyta tyrimo metu eksperimento grupės centruose, sąlygojo teigiamus rezultatus ir privalo būti tęsiama. Trūkstant kurio nors inovatyvios praktikos elemento arba tais atvejais, kai jis nevisiškai įgyvendinamas, pvz., pakartotinis vertinimas arba konsultavimas, teigiamų pacienčių rezultatų tvarumas atsiduria pavojuje.

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