

Research Article

Interventions to Reduce Postpartum Fatigue: An Integrative Review of the Literature

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Abstract

Postpartum fatigue is a very common but pervasive condition that can last for weeks after birth which could impact a mother's ability to care for herself and her newborn. Primiparous women were found to be more fatigued than multiparous women; however multiparous women were found to utilize more strategies to conserve energy. The purpose of this review was to research interventions and strategies used to reduce the effects of postpartum fatigue. After elimination of articles that were not current, did not address the purpose of the review, were duplicates, or were not in English, 16 articles published between 2007 and 2017 were included. Studies have shown that strategies such as social support from family, friends, and others, nursing support in decreasing childcare stress, education on self-care strategies, aromatherapy, showers, exercise programs and the use of chamomile and lavender tea have significantly reduced postpartum fatigue in women. Despite all that is known about postpartum fatigue, limited information is available on interventions that lessen the effects of postpartum fatigue. More research is necessary to develop strategies and interventions to minimize the effects of postpartum fatigue.

Introduction

Fatigue is often reported during pregnancy and after child birth [1]. A study by Rychnovsky [2] indicated that 62 % of women experienced moderate levels of fatigue and 18.3 % reported severe fatigue in the early postpartum period. Postpartum Fatigue (PPF) is a complex phenomenon which results in decreased stamina that could impact a mother's ability to care for herself and her newborn [2]. In the literature, postpartum fatigue is described as a diminished capacity for physical and mental health tasks [2,3]. Postpartum fatigue is a multifaceted occurrence which can profoundly affect both physical and mental well-being [3-5].

Women have reported postpartum fatigue to be a major concern for more than twenty years [6]. Postpartum fatigue is commonly experienced but not well understood [6,7]. Impacting this further is a lack of understanding of the factors that contribute to postpartum fatigue [8]. The first few weeks postpartum are noted to be the most challenging and the most exhausting [9]. Parity did not appear to play a role in the fatigue which women experienced the first few weeks of the postpartum period [9]. However, lack of sleep was associated with postpartum fatigue [9]. Fatigue and tiredness were also associated with the amount of infant crying [10].

New mothers anticipate some degree of fatigue and sleep deprivation during the postpartum period [11]. Low levels of fatigue are easier to adapt to while severe fatigue and sleep deprivation affect functional status and could contribute to adverse maternal outcomes [11]. Postpartum fatigue has been described as "one of the most distressing symptoms that women experience" yet it is often overlooked [6]. Doering and Durfor [9] reported that postpartum fatigue is a combination of exhaustion and feeling overwhelmed which leads to diminished functioning [9]. Postpartum fatigue has been found to have a negative effect on both the mother's health and newborn's developmental process [4] as well as maternal role attainment [12]. Since fatigue has a huge impact on well-

being, maternal fatigue levels should be monitored during postpartum follow up visits [4].

Postpartum fatigue has not been found to improve significantly in the first six weeks postpartum [6]. In fact, postpartum fatigue has been found to worsen in the first four weeks postpartum [13]. Although numerous studies exist regarding postpartum fatigue, there is limited information available about strategies, interventions, or management of postpartum fatigue [6,10]. Some articles from the literature review discussed exercise programs, rest periods, social support, warm showers, and the use of lavender tea and chamomile tea [3,14-19]. As well, other interventions discussed were lavender oil aromatherapy, massage, self-care strategies such as rest, energy conservation, reducing stress, pain management and using the Tiredness Management Guide (TMG) [5, 12,20-23].

Materials and Methods

The purpose of the literature review was to seek articles that described strategies or interventions to minimize postpartum fatigue. A review of the literature was conducted through the following databases: EBSCO Host, CINAHL, Science Direct, Proquest, and Academic Journal. Key words used in the search were fatigue, postpartum fatigue, and postpartum fatigue and interventions, and strategies or management of postpartum fatigue. Inclusion criteria included peer reviewed journal articles published between 2007-2017, written in English, and articles that specified interventions or strategies to reduce postpartum fatigue whereas the exclusion criteria included articles that contained co-morbidities along with postpartum fatigue. Eleven hundred ninety-three articles were identified during the initial search. After elimination of articles that did not meet the inclusion criteria, 16 articles were included. Of the 16 articles, 13 were quantitative and 3 were qualitative studies. The articles were analyzed by the two principal investigators and a graduate assistant.

Results

This review looked at studies regarding interventions and strategies that were used to lessen the effects of postpartum fatigue. Although the literature search provided many articles on postpartum fatigue in general; few studies were available on its management, strategies, or

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interventions. Additionally most studies were conducted outside of the United States where greater support is available to new mothers. Less information is known about strategies utilized in the United States (See Table 1).

Table 1: Summary of the Main Characteristics of the Studies Reviewed.

Reference (Author & Year)	Study design	Study population	Data Collection method	Aim of study	Summary of Results and Discussions
Runquist, 2007 [8]	Qualitative- Grounded theory	13 Primipara and multipara women in in-patient postpartum unit in Southwest US	Interviewed 2-5 weeks postpartum	To construct a substantive theory of postpartum fatigue	Persevering was the central human process around which the grounded theory emerged. The process of persevering was explained through the relationships of influencing factors, postpartum fatigue, coping techniques, self-transcendence, and care giving. Participants persevered in care giving of infants and older children in spite of an overwhelming desire to rest and sleep using self-identified coping techniques in combination with the belief that their children brought purpose and meaning to their lives.
Song et al, 2010 [23]	Quantitative method	Convenience sample of 291 healthy postpartum women 4 to 8 weeks postpartum from 5 medical centers and 1 midwifery office in Korea	4-8 week follow up visits using self-report questionnaire	To test an explanatory theory of postpartum fatigue	Findings suggested that the potential role of comprehensive nursing focused on decreasing postpartum depression and improving sleep quality as a way to decrease postpartum fatigue. Also, nursing strategies for decreasing childcare stress and enhancing Sanhujori satisfaction may be helpful in reducing postpartum fatigue in Korean mothers.
Taylor & Johnson, 2010 [21]	Qualitative method with an exploratory descriptive design	59 women (27 primipara and 32 multipara aged 20-40 years in Canberra, Australia)	Open-ended questions at 6, 12, and 24 weeks after birth and Edinburgh Post-natal Depression Scale (EPDS)	To explore the strategies used by women to manage fatigue in the first 6 months after childbirth.	From six weeks to six months, the women used self-care strategies (sleep/rest, relaxing, conserving energy) more often than strategies designed to manage the load (getting help, planning, lowering expectations). Most multiparas (24/32) conserved energy to manage fatigue, in contrast to primiparas (13/27). Women experiencing high fatigue conserved energy more often than women who were experiencing less fatigue. No differences in strategy choice were found between women who experienced a vaginal birth and those who have experienced a C-section or between those women who scored greater than or equal to 13 on the Edinburgh Post-natal Depression Scale (EPDS) as opposed to those who scored less than 13. Overall, women rated their chosen strategies as very useful or useful. Womens' comments also indicated that getting help from partners and family was sometimes difficult, reducing the usefulness of this strategy. Implications for practice included preparing women and their partners to manage postnatal fatigue more effectively is essential. Midwives should encourage women to identify sources of help and what particular help that individual could provide. Scenarios should be used in parenting classes to encourage women and their partners to negotiate issues surrounding the sharing of responsibilities after birth. Ongoing assessment of fatigue and its management should continue beyond six weeks.
Giallo et al, 2014 [19]	A randomized controlled trial	202 from local government areas within the Australian state of Victoria	Data was collected from 5 survey tools at 3 collection points: pre and post intervention and at follow up.	To assess the efficacy of a psychoeducational intervention Wide Awake Parenting (WAP), to decrease symptoms of postnatal fatigue.	Mothers in the professionally-led group reported fewer symptoms of fatigue than mothers in the control condition at 6 weeks post-intervention. Mothers in either intervention had more positive attitudes toward their health- and self-care behaviors at post-intervention and follow-up. Mothers in the professionally-led intervention reported fewer symptoms of depression, anxiety, and stress than mothers in the other conditions at post-intervention. Wide Awake Parenting is effective in promoting mothers' self-efficacy to prioritize, plan for, and engage in health and self-care behaviors to promote mental health and manage fatigue.

Tsuchiya et al, 2015 [25]	A cross-sectional study	A convenience sample of 16 Japanese primiparas over age 35 who gave birth to a single newborn from 3 general hospitals in Japan	Sleep characteristics were assessed using actigraphs. Diaries of daily activities recorded infant care giving and subjective hours of sleep. The degree of fatigue was self-assessed using questionnaires.	To investigate the associations among sleep characteristics, feeding variables, and fatigue among older Japanese primiparas (≥ 35 years old).	Although participants' sleep was found to be significantly fragmented by the average number of feeds per night, sleep loss in this sample was not severe compared with previous actigraph studies of young Japanese mothers. Lower percentages of sleep efficiency (percentage of sleep between going to bed and waking up) and parameters of fragmented sleep were significantly correlated with higher degrees of fatigue. Nurses and other healthcare providers should observe mothers' sleep and assess levels of fatigue. Assistance should be offered to mothers who are tired, so that they can have less fragmented sleep during the night.
Mohammadi et al, 2015 [17]	Randomized controlled trial	127 women at 26-32 weeks' gestation with Edinburgh score less than 15 in Tabriz, Iran	Depression and fatigue scores were measured using the Edinburgh Postnatal Depression Scale and Fatigue Identification Form, respectively, at baseline, 1 month and 2 months after delivery	To determine the effectiveness of home-based low-intensity stretching and breathing exercises on the reduction of 1 and 2 month postpartum depression (primary outcome) and fatigue (secondary outcome) scores.	Mean rank of the difference scores of depression and fatigue were not significantly different among the groups, both at 1 and 2 months postpartum ($P > 0.05$). Therefore, this study did not provide evidence to show that training women to do the home-based exercises during pregnancy and postpartum period have a preventive effect on postpartum depression and fatigue. However, more studies are needed for making precise judgment.
Mori et al, 2016 [26]	Prospective cohort study	2854 Japanese women	The women were classified into 4 groups based on age and parity. All participants completed the Postnatal Accumulated Fatigue Scale, Japanese Edinburgh Postnatal Depression Scale, Postpartum Maternal Confidence Scale, and Postpartum Maternal Satisfaction Scale.	To assess fatigue, depressive symptoms, and maternal confidence or satisfaction among older primipara during the first month postpartum.	Primipara in all age groups were more severely fatigued and had a higher risk of postpartum depression than multiparous mothers during the first month postpartum. Older primipara had significantly lower scores on maternal confidence and maternal satisfaction than the other 3 groups at 1 month postpartum. These findings suggest that postpartum nursing should focus on promoting adequate sleep, providing emotional support, and fostering the process of maternal role adaptation among older Japanese primipara, particularly during the first postpartum month.
Ko & Lee, 2012 [20]	Randomized controlled trial	60 postpartum women in Taiwan	Demographic data, physical conditions, postpartum data and sleep related factors during initial interview. Pittsburgh sleep quality index was measured postpartum.	To examine the effectiveness of back massage to improve sleep quality in postpartum women.	Results indicated that interventions involving back reflexology during postpartum period significantly improved quality of sleep in postpartum women compared to women receiving routine postpartum care.
Ko et al., 2008 [3]	Control group pre/post-program design	61 post-partum women in Taiwan	Fatigue was measured by the Fatigue Symptom Checklist at three time periods (immediately postpartum, and 6-weeks postpartum). Depression was measured using CES-D scale	To explore the effectiveness of an exercise program on reducing levels of fatigue and depression among postpartum women.	There was no significant pre-intervention difference between the two groups in fatigue and depression on the initial (pre-program) questionnaire. Post-intervention results showed statistically significant differences between the two groups with the intervention group showing improvements in fatigue, however, there was no significant differences in depression between the two groups.
Shepard et al, 2012 [22]	Non experimental, cross sectional descriptive design	Convenience sample of 30 mothers less than 12 months postpartum between 18-35 from Women's, Infant's children (WIC) program in midwest	Demographic questionnaire and the Tiredness Management Guide (TMG) questionnaire	To evaluate each intervention listed in the TMG that mothers perceived as most helpful	The 25 most helpful interventions were placed into categories: rest and relaxation, time management, rearranging usual activities, relief/prevention of hemorrhoids/constipation, signs of infection, and emotional support. Mothers found that by using proper time management, fatigue during the postpartum could be decreased. Rearranging usual activities, relief/prevention of hemorrhoids/constipation, and signs of infection were things mothers felt were helpful in reducing postpartum fatigue, if not addressed fatigue is worse. Having someone to talk to can help with emotional support, especially for child care related materials.
Troy & Dalgas, 2003 [13]	Experimental repeated measures analysis of variance design	68 healthy mothers over 18 years of age, who could read and write English at an eighth grade level or higher, and who had a vaginal delivery of a healthy, full-term, single infant in Midwest Metropolitan area	Fatigue was measured with VAS-F scale, a self-report measure with two subscales.	To test the effectiveness of the Tiredness Management Guide (TMG) on the management of postpartum fatigue from 2-6 weeks postpartum	From the second through the fourth week, a significant interaction effect was found between group membership and time with the experimental group having lower morning fatigue. Results suggest that using the TMG may reduce levels of morning postpartum fatigue from the second through the fourth week postpartum.

Vaziri et al., 2017 [5]	Randomized clinical trial	Convenience sample of 56 primiparous women who had a normal vaginal delivery From a hospital affiliated with Shiraz University	Pain VAS scale, Fatigue VAS scale, and Positive and Negative Affect Schedule (PANAS)	To determine the effects of lavender oil aroma on maternal pains, fatigue, and mood in the early hours of the postpartum period	Lavender oil aromatherapy initiated in the first few hours postpartum resulted in better physical states. Significant differences were found between the 2 groups regarding perineal pain, physical pain, and fatigue ($p=0.02$, $p<0.001$). Fatigue may impact mother's physical and mental capacity. Inhalation aromatherapy practice early in the postpartum period could reduce a mother's pain and fatigue.
Ashrafinia et al., [14]	Clinical trial method	80 primiparous women from Rafsanjan Health Centers in Iran	The level of fatigue was assessed at discharge as a baseline and at 4 and 8 weeks postpartum using the Multidimensional Fatigue Inventory (MFI-20).	To examine the effect of Pilates exercise on postpartum fatigue	Participants were randomly divided into 2 groups: intervention group (N=40) and control group (N=40). In the intervention group, the women did Pilates 5 times per week for 8 weeks for 30 minutes each session. No intervention was given to the control group. Results indicate that physical exercise can reduce postpartum fatigue in all subscales.
Hsieh et al., 2017 [16]	Two group quasi experimental design.	358 Taiwanese postpartum, 20-43 years of age who gave birth in Taiwan	PPF was measured by a 10 item Postpartum Fatigue Scale (PFS)	To evaluate the effectiveness of warm showers on postpartum fatigue among women who had a vaginal birth.	Those participants that took warm showers showed improvement in postpartum fatigue from pretest to posttest mean score compared to women who did not take warm showers. The warm showers are a non-pharmacological, non-invasive, inexpensive option to reduce/alleviate PPF.
Chen & Chen, 2015 [15]	Pre-test post-test randomized controlled group design	80 participants with poor sleep quality based on Postpartum Sleep Quality Scale (PSQS) score of ≥ 16 and no history of allergy to herbal teas, foods and medicines from postnatal clinica in Southern Taiwan	Four scales were used: PSQS, Edinburgh Postnatal Depression Scale (EPDS), Postpartum Bonding Questionnaire (PBQ). Questionnaires were completed before the intervention, at 2 and 4 weeks post intervention.	To evaluate the efficacy of lavender tea in relieving postpartum fatigue (PPF), improving sleep quality, and maternal-infant attachment	Experimental group perceived less fatigue compared to control group but scores were similar between both groups at 4 weeks postpartum suggesting that positive effects of lavender tea are short term. These findings could promote the use of herbal therapy in postpartum care. The study also found that the intervention did not improve sleep quality in sleep-disturbed postnatal women.
Yesilcinar et al., 2017 [18]	Descriptive study	181 postpartum women from Ankara, Turkey	Demographic questionnaires, Multidimensional Scale of Perceived Social Support (MSPSS), Multidimensional Assessment of Fatigue Scale (MAFS), and Maternal Attachment Scale (MAS)	To determine the relationship between perceived social support, fatigue levels, and maternal attachment postpartum	No significant relationship was noted between the MSPSS, MAFS, and MAS right after delivery. At the second interview, there was a significant correlation noted. Fatigue levels decreased and attachment levels increased at the end of the first month, Care of the mother should include social support and fatigue assessment. Support systems should be provided and mothers should be encouraged to use them.

Social support from family, friends, and older children was found to play an important role in decreasing postpartum fatigue [9,18]. Mothers with consistent family support were able to feel "rested" while those without consistent support experienced more challenges in postpartum fatigue impeding their return to normalcy [9]. Nursing support in decreasing childcare stress and self-care strategies among postpartum women were significantly helpful in reducing fatigue [21,23,24]. Studies also showed that primipara were more fatigued postpartum than multipara but multipara used strategies that conserved more energy which ultimately decreased fatigue [21,25]. Several studies used a variety of interventions to assess the effect on postpartum fatigue. Among them, exercise, warm showers, back reflexology and aromatherapy were found to be effective in reducing fatigue [3,5,14,16,20].

Discussion

Several inferences have been drawn based on the literature review. Postpartum fatigue is a complex multifaceted phenomenon that impacts both physical and mental functional status [1,3-6,8]. New mothers anticipate some degree of fatigue [6,11] but appear ill-prepared for the depth of postpartum fatigue. Shortened hospital stays do not allow for extensive teaching in regard to postpartum fatigue [6,13,22]. As well, mothers may not be able to absorb much information due to fatigue

from long labors, perineal or abdominal pain, multiple visitors, and infant care demands.

In addition, mothers are expected to assume newborn care in many hospitals [7]. Rooming in with their infants may not allow the mother to have enough time for adequate rest in the early postpartum period, when women require more rest [7]. Adequate rest is important in the recovery from the effects of labor and birth particularly in mothers who have had caesarean birth [7]. The support postpartum mothers receive varies across cultures [26]. Since most of the studies were conducted outside of the United States, there can be cultural differences in how postpartum fatigue is viewed and treated. However, all postpartum women should be assessed for fatigue and measures initiated to assist mothers in reducing postpartum fatigue [2,10,13].

Implications

Postpartum fatigue is an unrelenting condition affecting all aspects of a new mother's life [12]. An in depth understanding of postpartum fatigue is necessary to better prepare mothers for the effects of postpartum fatigue [21]. In Baby Friendly Hospitals, mothers are responsible for 24 hour care of their newborns [7] which could impact their ability to get adequate rest, which adds to the challenge of managing

postpartum fatigue [9]. The benefits of rooming in have primarily been studied relative to newborn benefits, but not from the standpoint of impact on maternal recovery postpartum [7]. This is critical given that the sustained sense of exhaustion affects the well-being of the mother-baby dyad and ultimately the family unit [1,6]. Nurses should encourage a flexible rooming in policy as necessary based on individual needs to ensure adequate rest [7].

Conclusion

A number of conclusions were discerned from the literature review. First, postpartum fatigue is a common entity in the first six weeks postpartum [1,2,7]. Secondly, improvement in postpartum fatigue has not been reported in the first two to six weeks [6]. In fact, symptoms have worsened in the first month after birth [13]. Additionally, the pervasiveness of this condition warrants the need for effective ways to manage this phenomenon [13]. Since all mothers have reported the struggle with postpartum fatigue, nurses can assist in promoting improvement in this condition by encouraging the use of interventions that will facilitate sleep and rest during the postpartum hospitalization [9].

The concept of postpartum fatigue is complicated because it is impacted by multiple variables and factors [1,2]. Postpartum fatigue has been reported to cause serious health problems [4]. Despite the overwhelming nature of postpartum fatigue, there remains limited information on strategies or interventions to minimize the effects [6,10,21]. Short term relief has been noted from aromatherapy, chamomile and lavender tea, exercise programs, massage, warm showers, social support, and self-care management [5,13-18]. Since the long term effects of postpartum fatigue have been reported to negatively impact maternal health, further research is important to identify factors that precipitate the development of postpartum fatigue. Once risk factors are identified, interventions and strategies could be developed that could lessen the effects of postpartum fatigue and promote optimal maternal health.

Moreover, it should be noted that all of the studies reviewed were conducted outside the United States; and hence culture may have played an important role in identification and management of postpartum fatigue. Inadequacies in postpartum health care exist in the United States [26]. The postpartum period is a crucial time for both mother and the newborn. However, the quality of postpartum care received may be insufficient [26]. Further research is necessary in the United States for the development of policies that focus on maternal health and support which could lead to a reduction in postpartum fatigue.

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Author Contributions

All authors contributed to the development of this manuscript. All authors reviewed and approved final manuscript prior to submission.

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