

[研究論文]

A Study regarding the Effectiveness of Care Programmes for Helping Postpartum Women Relax

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Abstract

Purpose

Postpartum women experience striking physical changes and are prone to mental and social stress. Fatigue accumulates from lack of sleep, and many women have difficulty relaxing during this period. Trying to relieve their physical condition, we introduced a proposed care programme and evaluated its effectiveness at relaxing these women, using autonomic nervous system activity and subjective indicators.

Methods

Study Design: Uncontrolled intervention research. Subjects: Women undergoing regular postpartum process.

Hypothesis 1 : HR, the indicator for parasympathetic nerve activity, decreases after introduction of the care programme, and HF(High-frequency) , increases.

Additionally, LF (Low-frequency) HF(High-frequency) , the indicator for sympathetic nerve activity, decreases.

Hypothesis 2 : Scores on the general emotional scale increases after introduction of the care programme.

Analysis: The IBM SPSS statistics22 software was used for analysis.

Results

Hypothesis 1 : In comparison to the values prior to the implementation of the care programme, HR, the parasympathetic nerve activity indicator, decreased, whilst HF increased. However, LF (Low-frequency) / HF(High-frequency) , the sympathetic nerve activity indicator, did not decrease.

Hypothesis 1 was partially verified, with the presence of parasympathetic nerve activity stimulation.

Hypothesis 2 : In comparison to the values prior to the implementation of the care programme, standard emotion scores increased, confirming the expectations of Hypothesis 2.

Conclusion and Consideration

The introduction of the care programme for postpartum women in this study did have a significant effect on the parasympathetic nervous system.

However, no decrease in sympathetic nerve activity was observed.

The significant increase in standard emotion scores from before to after the programme showed that, subjectively, the care programme helped the subjects relax.

Implementation of this care programme for postpartum women stimulated their Parasympathetic nervous system and enabled subjective relaxation.

Keywords: Postpartum Women, Effectiveness of Care, Relaxation, Investigation

Introduction

Postpartum women experience striking physical changes and are prone to mental and social stress. Fatigue accumulates from lack of sleep, and many women have difficulty relaxing during this period.

Previous studies have reported that relaxation by foot baths and back massage could be effective. Measurement of relaxation effect in previous study used autonomic nerve activity and subjective relaxation measure.

I Purpose

Fatigue accumulates from lack of sleep, and many women have difficulty relaxing during this period. Trying to relieve their physical condition we introduced a proposed care programme and evaluated its effectiveness at relaxing these women, using autonomic nervous system activity and subjective indicators.

II Methods

1) Design: Uncontrolled intervention research.

2) Subjects: Women undergoing regular postpartum process.

3) Duration: November 2014—February 2015.

4) Measurement tools and details:

(1) Autonomic nervous system: Parasympathetic and sympathetic nerve activity were measured using a heart-rate monitor with built-in memory. Heart rate (below, HR) and high-frequency activity (HF) were measured as indicators of parasympathetic nerve activity, and the low-frequency /high-frequency (LF/HF) activity ratio was measured as an indicator of sympathetic nerve activity.

(2) Subjective indicators: The general emotion scale developed by Ogawa et. al.⁽¹⁾ was used.

(3) Basic attribute sheet: Containing information related to pregnancy, delivery, and the new born baby.

5) Care programme: After 10 minutes of foot-bathing using the Yamamoto Method (below, Y Method),⁽²⁾ we applied a hot compress to the back of the subjects' necks and performed a 15- minutes oil massage on their feet.

The flow of measurement of care and care effect is shown in Figure 1.

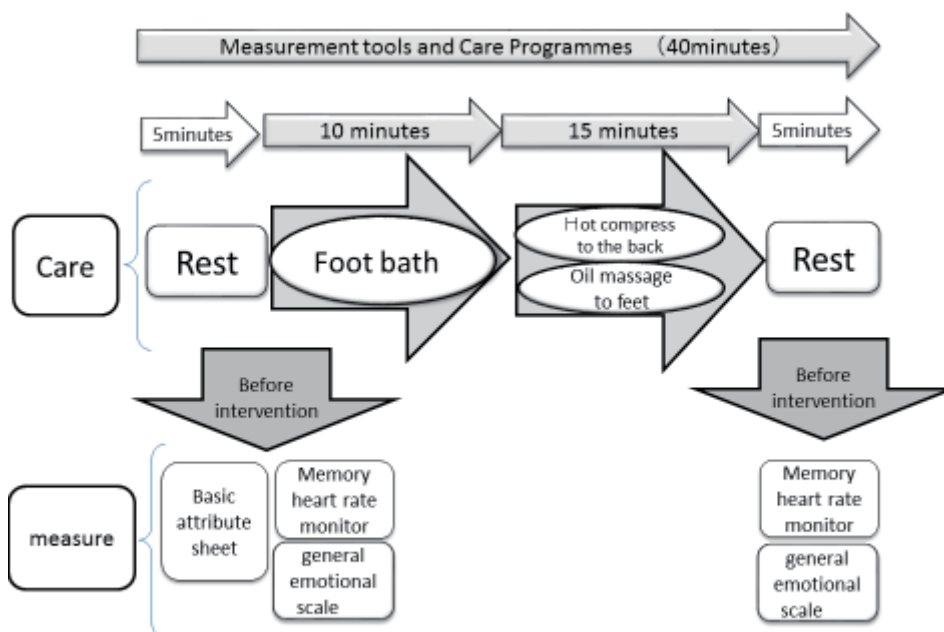


Figure 1 Care program and measurement flow

6) Hypothesis: If the subjects are relaxed, the parasympathetic nervous system will take priority, and sympathetic nervous system activity will decrease.

The following hypotheses were established.

(1) Hypothesis 1: HR, the indicator for parasympathetic nerve activity, decreases after introduction of the care programme, and HF increases. Additionally, LF /HF, the indicator for sympathetic nerve activity, decreases.

(2) Hypothesis 2: Scores on the general emotional scale increases after introduction of the care programme.

7) Data collection method: Measurements of autonomic nerve activity and subjective indicators were obtained before and after implementing the care programme.

Basic attribute sheets were filled in before the care programme was implemented.

8) Analysis: After inputting HR, HF, and LF /HF data from the heart rate monitor with built-in memory into a computer, MemCalc, a specialist analysis software programme, was used to conduct frequency analysis.

For the general emotion scores, 25 questions were used with a 4-point scale, with higher scores taken to mean that subjects were subjectively more relaxed. Next, the average HR, HF, LF /HF, and general emotion point values for the periods before and after implementation of the care programme were examined using a responsive t-test, and the significance threshold was set as less than 5%. For the basic attribute information, descriptive statistics were used. The IBM SPSS statistics22 software was used for analysis.

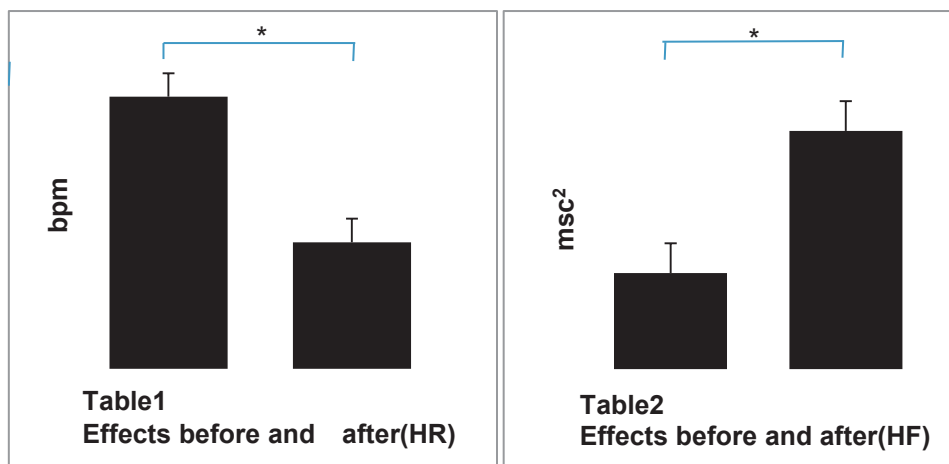
9) Ethical considerations: An explanation in writing was prepared for the study subjects, and it was explained orally that, based on the aims, methods, details of collaboration, and volitionally of the research, participation in, absence thereof, or withdrawal from the study would not have any negative consequences. Protection of privacy and ethical considerations were also explained, and agreement from the subjects was confirmed in writing. With consideration of the percutaneous absorption of oil, a patch test was used to confirm the absence of this issue prior to implementation of the oil massage. This study was carried out having received 'approval' (14-10-76) from both the A University Board of Ethics and the board of ethics at the cooperating research facility (14-S-13).

III Results

1) Basic attributes of subjects: the 24 subjects were all postpartum women, and had proceeded through the stages of pregnancy, delivery, and postpartum hospitalisation without any issues for themselves or their new born babies.

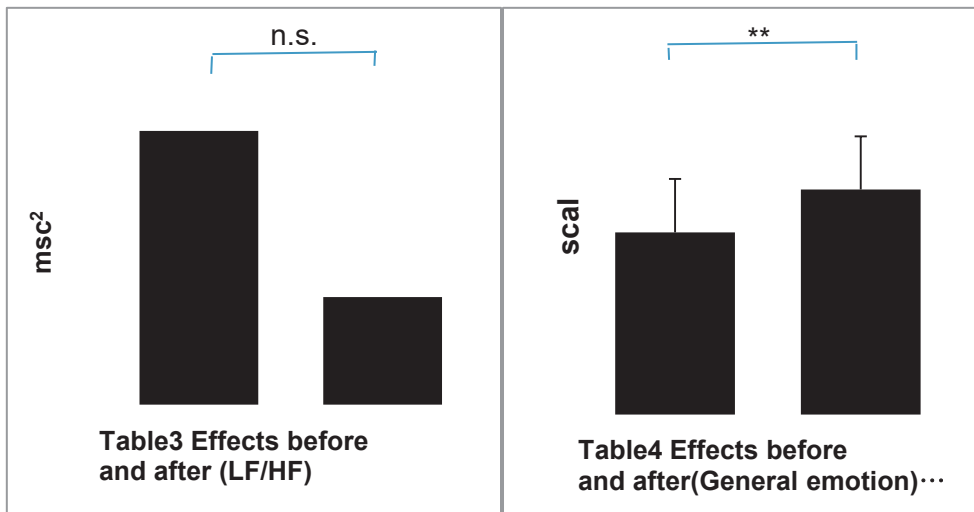
2) In terms of changes seen from data before and after the care programme, HR was 75.8 bpm before and 72.7 bpm after, indicating a significant decrease ($p = 0.021$). [Table1]

3) HF was 2.9 msec² before and 4.1 msec² after, indicating a significant increase ($p = 0.016$). [Table 2]



4) LF / HF decreased from 2.3 msec² before to 1.6 msec² after, though this decrease was not significant ($p = 0.063$). [Table 3]

5) The general emotion scale scores were 68.5 before and 84.6 after, indicating a significant increase ($p = 0.009$). [Table 4]



- 6) Hypothesis 1 : In comparison to the values prior to the implementation of the care programme, HR, the parasympathetic nerve activity indicator, decreased, whilst HF increased. However, LF /HF, the sympathetic nerve activity indicator, did not decrease. Hypothesis 1 was partially verified, with the presence of parasympathetic nerve activity stimulation.
- 7) Hypothesis 2: In comparison to the values prior to the implementation of the care programme, standard emotion scores increased, confirming the expectations of Hypothesis 2.
- 8) The introduction of the care programme for postpartum women in this study did have a significant effect on the parasympathetic nervous system. However, no decrease in sympathetic nerve activity was observed. The significant increase in standard emotion scores from before to after the programme showed that, subjectively, the care programme helped the subjects relax.
- 9) Implementation of this care programme for postpartum women stimulated their parasympathetic nervous system and enabled subjective relaxation. However, no decrease in the sympathetic nervous system was achieved.

IV Conclusion

We introduced a proposed care programme and evaluated its effectiveness at relaxing these women, using autonomic nervous system activity and subjective indicators.

The result of setting and verifying two hypotheses was as follows.

Hypothesis 1: In comparison to the values prior to the implementation of the care programme, HR, the parasympathetic nerve activity indicator, decreased, whilst HF increased. However, LF /HF, the sympathetic nerve activity indicator, did not decrease. Hypothesis 1 was partially verified, with the presence of parasympathetic nerve activity stimulation.

Hypothesis 2: In comparison to the values prior to the implementation of the care programme, standard emotion scores increased, confirming the expectations of Hypothesis 2.

The introduction of the care programme for postpartum women in this study did have a significant effect on the parasympathetic nervous system. However, no decrease in sympathetic nerve activity was observed. The significant increase in standard emotion scores from before to after the programme showed that, subjectively, the care programme helped the subjects relax.

Implementation of this care programme for postpartum women stimulated their parasympathetic nervous system and enabled subjective relaxation.

The introduction of a care program for postpartum women in this study can be said to have relaxed both autonomic nerves system and subjectively.

I would like to verify future research by Randomized controlled trial test.

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