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Research Article

A Study to Evaluate the Effectiveness of Gua-Sha Therapy (Scraping Technique) On Breast Engorgement Among Primi Para Mothers in Selected Hospital at Dindigul District.

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Abstract:

A quasi-experimental study was conducted to evaluate the effectiveness of Gua-sha therapy (scraping technique) on breast engorgement among primi para mothers in selected hospitals in Dindigul district. A quantitative evaluative approach with a quasi-experimental non-equivalent control group pretest-posttest design was adopted. Sixty primi para mothers with breast engorgement on the 3rd-5th postnatal day were selected using non-probability purposive sampling, with 30 in the experimental group and 30 in the control group. A socio-demographic and obstetrical data form and the six-point breast engorgement scale developed by Hill and Humenick were used. The experimental group received Gua-sha therapy, whereas the control group received no intervention. In the experimental group, severe engorgement decreased from 46.67% in the pretest to 0% in the posttest, while normal breast condition increased from 0% to 56.67%. The mean score decreased from 4.93 ± 1.25 to 1.83 ± 1.17 , with a mean difference of 3.10 and paired $t = 16.02$ ($p < 0.005$). In the control group, the mean score changed from 5.13 ± 1.22 to 5.16 ± 1.23 , with $t = 0.91$ and no significant difference. The posttest comparison between groups was significant ($t = 10.71$, $df = 58$, $p < 0.005$). Significant associations were reported with family type, appearance of the breast and palpation in the experimental group and occupation, family type, frequency of breastfeeding and palpation in the control group. Gua-sha therapy was effective in reducing breast engorgement among primi para mothers.

Keywords: Gua-sha therapy; scraping technique; breast engorgement; primi para mothers; postpartum care; breastfeeding.

INTRODUCTION

Breastfeeding is a natural physiological process, but difficulties may occur during the early postpartum period. Breast engorgement is a common problem among lactating mothers and is characterized by painful swelling, firmness and tenderness of the breasts. It is associated with milk accumulation, vascular and lymphatic congestion and interstitial edema.

The postpartum period extends through the first six weeks after childbirth. During lactogenesis, prolactin promotes milk production and oxytocin facilitates milk ejection. When milk removal does not adequately match milk production, the breasts may become distended, firm and painful. Delayed breastfeeding, insufficient feeding frequency or duration and ineffective milk removal may contribute to engorgement.

Breast engorgement may interfere with effective breastfeeding and can contribute to nipple discomfort, difficulty with latch and early discontinuation of breastfeeding. Early identification and appropriate management are therefore important components of postnatal nursing care. Common non-pharmacological measures include effective milk removal, breast massage and warm or cold applications.

Gua-sha is a traditional East Asian scraping technique in which a smooth-edged tool is used to apply controlled pressure and scraping over the skin. It is proposed to stimulate superficial circulation and may help reduce pain,

applied to selected breast-related acupoints including ST16, ST17, ST18, SP17 and CV17.

The literature reviewed in the dissertation reports beneficial effects of Gua-sha and other supportive interventions for breast engorgement. Studies involving Gua-sha, breast massage, acupressure and breastfeeding education have demonstrated improvement in engorgement-related outcomes. The present study was undertaken to evaluate the effectiveness of Gua-sha therapy among primi para mothers with breast engorgement.

AIM

To evaluate the effectiveness of Gua-sha therapy (scraping technique) on breast engorgement among primi para mothers.

NEED FOR THE STUDY

Breast engorgement is an important early postpartum problem that can cause heaviness, tenderness, pain and difficulty in breastfeeding. The dissertation notes that it is particularly relevant among primi para mothers during the period of rapidly increasing milk production. Although hot or cold applications, massage and milk expression are commonly used, mothers may experience discomfort with some measures. Gua-sha therapy was selected as a non-pharmacological intervention based on its reported potential to stimulate circulation and relieve local symptoms.

Previous studies cited in the dissertation support the potential usefulness of Gua-sha. Chiu and Gau reported significant improvements in breast temperature, breast engorgement pain

and discomfort following Gua-sha. Neethu Varghese reported significant relief in breast engorgement after Gua-sha therapy. Amudha and Prakash and Farag et al. also reported beneficial effects of scraping techniques among postnatal women.

MATERIAL AND METHODS

A quantitative evaluative approach with a quasi-experimental non-equivalent control group pretest-posttest design was adopted. The experimental group received Gua-sha therapy, while the control group received routine care without intervention. The study was conducted among 60 primipara mothers on the 3rd–5th postnatal day with breast engorgement, with 30 mothers in each group, selected through purposive sampling. The experimental group was recruited from Christian Fellowship Hospital and the control group from Sri Balaji Hospital, Dindigul, to minimize contamination.

Eligible participants were conscious and oriented primipara mothers who could understand Tamil and were willing to participate. Mothers with postnatal complications, breast abnormalities, use of other complementary therapies, or unavailability during the procedure were excluded.

Data were collected using a socio-demographic and obstetrical questionnaire and the six-point Hill and Humenick breast engorgement scale. Scores 1–2 indicated normal breast condition, 3 mild, 4–5 moderate, and 6 severe engorgement. Content validity was established by nursing and obstetric experts, and reliability was reported as $r = 0.70$. A pilot study was conducted with six mothers.

Pretest assessment was followed by 30 minutes of Gua-sha therapy twice daily at selected points (ST16, ST17, ST18, SP17 and CV17) in the experimental group, followed by posttest assessment. The control group received no Gua-sha intervention. Frequency and percentage were used for categorical variables, while paired t-test, unpaired t-test, and Chi-square test were used for analysis.

RESULTS IN PARAGRAPH

Table 1 shows that in the experimental group, 43.33% of mothers were aged 21–25 years, 31.67% were Hindus, 50% had higher secondary education, 40% were private employees, 40% had a family income of ₹5,001–9,000 and 60% belonged to nuclear families. In the control group, 50% were aged 21–25 years, 40% were Muslims, 50% had higher secondary education, 43.33% were housewives, 43.33% had a family income of ₹5,001–9,000 and 76.67% belonged to nuclear families.

Regarding obstetrical variables, 76.67% of the experimental group and 60% of the control group had spontaneous normal vaginal delivery. Babies weighing above 2 kg accounted for 83.33% and 66.67%, respectively. In the experimental group, 40% breastfed every two hours, 70% had enlarged breasts, 80% had normal nipples, 73.33% reported fullness and 80% had breasts warm to touch. In the control group, 40% breastfed whenever the baby cried, 36.67% had enlarged breasts, 76.67% had normal nipples, 46.67% reported fullness and 76.67% had breasts warm to touch.

Table 2 shows that in the experimental group, severe engorgement decreased from 14 (46.67%) in the pretest to 0 (0%) in the posttest, while normal breast condition increased from 0 to 17 (56.67%). Mild engorgement increased from 4 (13.33%) to 11 (36.67%), and moderate engorgement decreased from 12 (40%) to 2 (6.66%).

Table 3 shows that in the control group, severe engorgement increased from 17 (56.67%) to 18 (60%), moderate engorgement decreased from 10 (33.33%) to 9 (30%), and

mild engorgement remained at 3 (10%). No mother had normal breast condition in either assessment.

Table 4 shows that the experimental group had a reduction in mean breast engorgement score from 4.93 ± 1.25 to 1.83 ± 1.17 . The mean difference was 3.10 and the paired t-value was 16.02 with 29 degrees of freedom, which was significant at $p < 0.005$.

Table 5 shows that the control group mean score changed from 5.13 ± 1.22 to 5.16 ± 1.23 . The mean difference was 0.03 and the paired t-value was 0.91 with 29 degrees of freedom, indicating no significant change.

Table 6 shows that the posttest mean score was 1.83 ± 1.17 in the experimental group compared with 5.16 ± 1.23 in the control group. The mean difference was 3.33 and the unpaired t-value was 10.71 with 58 degrees of freedom, showing a significant difference at $p < 0.005$.

Table 7 shows significant associations of pretest breast engorgement with family type, appearance of breast and palpation in the experimental group, and with occupation, family type, frequency of breastfeeding and palpation in the control group.

DISCUSSION

The study demonstrated that Gua-sha therapy was effective in reducing breast engorgement among primi para mothers. In the experimental group, severe engorgement decreased from 46.67% to 0%, while normal breast condition increased to 56.67% after the intervention. This indicates a marked shift from higher levels of engorgement toward normal or mild breast condition.

The mean score decreased from 4.93 ± 1.25 to 1.83 ± 1.17 , with a mean difference of 3.10 and paired $t = 16.02$ ($p < 0.005$). In contrast, the control group showed no meaningful improvement, with the mean score changing from 5.13 ± 1.22 to 5.16 ± 1.23 and $t = 0.91$. The significant posttest difference between the groups ($t = 10.71$, $df = 58$, $p < 0.005$) provides further evidence of the effectiveness of Gua-sha therapy.

The findings are consistent with Neethu Varghese (2018), who reported significant relief in breast engorgement after Gua-sha therapy. Chiu and Gau (2018) also reported significant improvements in breast engorgement, pain and discomfort after Gua-sha compared with routine care. Amudha and Prakash (2023) reported a significantly lower posttest engorgement score in the Gua-sha group, while Farag et al. (2023) found significantly less breast engorgement among women receiving the scraping technique.

The association analysis showed that family type, appearance of the breast and palpation were significantly associated with pretest breast engorgement in the experimental group. In the control group, occupation, family type, frequency of breastfeeding and palpation were significantly associated. These findings suggest that selected maternal, breastfeeding and breast characteristics may be related to baseline engorgement.

Overall, the study supports Gua-sha therapy as a non-pharmacological nursing intervention for reducing breast engorgement among primi para mothers when performed appropriately by trained personnel.

CONCLUSION

Gua-sha therapy (scraping technique) was effective in reducing breast engorgement among primi para mothers. The experimental group showed a substantial shift from moderate and severe engorgement toward normal and mild breast condition, whereas the control group showed no

effective non-pharmacological approach for managing breast engorgement.

RECOMMENDATIONS

- Similar studies may be conducted with larger sample sizes in different settings.
- Comparative studies may be conducted between Gua-sha therapy and routine hospital care or other non-pharmacological interventions.
- The study may be replicated among multipara mothers and different postpartum populations.
- Further studies may assess the longer-term effect of Gua-sha therapy on breastfeeding continuation and maternal comfort.
- Additional objective measures such as breast temperature, edema, pain and breastfeeding effectiveness may be included.

LIMITATIONS

- The study included only 60 primi para mothers, with 30 in each group.
- Non-probability purposive sampling was used, which limits generalization.
- The study was conducted in selected hospitals in Dindigul district.
- The intervention and posttest assessment were limited to the early postpartum period.

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Table 1: Distribution of level of emotional intelligence among nursing officers. (N = 100)

S. No.	Variable	Category	Experimental n (%)	Control n (%)
1	Age	18–20 years	8 (26.67%)	6 (20%)
		21–25 years	13 (43.33%)	15 (50%)
		26–30 years	7 (23.33%)	5 (16.67%)
		Above 30 years	2 (6.67%)	4 (13.33%)
2	Religion	Hindu	11 (31.67%)	9 (30%)
		Muslim	9 (30%)	12 (40%)
		Christian	10 (33.33%)	9 (30%)
		Any other	0 (0%)	0 (0%)
3	Educational status	Illiterate	0 (0%)	0 (0%)
		Primary education	7 (23.33%)	5 (16.67%)
		Higher secondary education	15 (50%)	15 (50%)
		Graduate	8 (26.67%)	10 (33.33%)
4	Occupation	House wife	7 (23.33%)	13 (43.33%)
		Private employee	12 (40%)	8 (26.67%)
		Government employee	0 (0%)	0 (0%)
		Self employee	11 (36.67%)	9 (30%)

5	Income of family	Below ₹5,000	3 (10%)	5 (16.67%)
		₹5,001–9,000	12 (40%)	13 (43.33%)
		₹9,001–12,000	10 (33.33%)	7 (23.33%)
		More than ₹12,000	5 (16.67%)	5 (16.67%)
6	Family type	Nuclear family	18 (60%)	23 (76.67%)
		Joint family	10 (32.33%)	6 (20%)
		Single parent	2 (6.67%)	1 (3.33%)
7	Mode of delivery	Spontaneous normal vaginal delivery	23 (76.67%)	18 (60%)
		Vaginal delivery with vacuum extraction	6 (20%)	11 (36.67%)
		Vaginal delivery with forceps extraction	1 (3.33%)	1 (3.33%)
8	Gestational weeks at delivery	Below 28 weeks	0 (0%)	0 (0%)
		28–32 weeks	6 (20%)	4 (13.33%)
		33–36 weeks	0 (0%)	7 (23.33%)
		37 weeks and above	4 (13.33%)	19 (63.33%)
9	Birth weight of baby	Below 1 kg	0 (0%)	0 (0%)
		1–1.5 kg	0 (0%)	2 (6.66%)
		1.5–2 kg	5 (16.67%)	8 (26.67%)
		Above 2 kg	25 (83.33%)	20 (66.67%)
10	Frequency of breast-feeding	Every ½ an hour	2 (6.66%)	2 (6.66%)
		1 hour once	13 (43.33%)	5 (16.67%)
		Every 2 hours once	12 (40%)	11 (36.67%)
		Whenever baby cries	3 (10%)	12 (40%)
11	Appearance of breast	Enlarged breast	21 (70%)	11 (36.67%)
		Redness of skin	3 (10%)	5 (16.67%)
		Shining of skin	2 (6.66%)	8 (26.67%)
		Presence of visible veins	4 (13.33%)	6 (20%)
12	Appearance of nipple	Flat nipple	4 (13.33%)	5 (16.67%)
		Cracked nipple	0 (0%)	0 (0%)
		Inverted nipple	2 (6.66%)	2 (6.66%)
		Normal nipple	24 (80%)	23 (76.67%)
13	Pain and discomfort	Feeling of fullness	22 (73.33%)	14 (46.67%)
		Presence of itching	2 (6.66%)	4 (13.33%)
		Nipple pain during sucking	3 (10%)	2 (6.66%)
		Pain persisting between feeds	3 (10%)	10 (33.33%)
14	Palpation	Warm to touch	24 (80%)	23 (76.67%)
		Palpable lump	0 (0%)	0 (0%)
		Tenderness	6 (20%)	7 (23.33%)
		Axillary lymph node enlargement	0 (0%)	0 (0%)
15	General symptoms	Increased body temperature	5 (16.67%)	4 (13.33%)
		Headache	10 (33.33%)	6 (20%)
		Generalized malaise	13 (43.33%)	12 (40%)
		Fatigue	2 (6.66%)	8 (26.67%)

Table 2. Distribution of Pretest and Posttest Degree of Breast Engorgement Among Primi Para Mothers in the Experimental Group (n = 30)

Degree of engorgement	Pretest f (%)	Posttest f (%)
Normal	0 (0%)	17 (56.67%)
Mild engorgement	4 (13.33%)	11 (36.67%)
Moderate engorgement	12 (40%)	2 (6.66%)
Severe engorgement	14 (46.67%)	0 (0%)

Table 3. Distribution of Pretest and Posttest Degree of Breast Engorgement Among Primi Para Mothers in the Control Group (n = 30)

Degree of engorgement	Pretest f (%)	Posttest f (%)
Normal	0 (0%)	0 (0%)
Mild engorgement	3 (10%)	3 (10%)
Moderate engorgement	10 (33.33%)	9 (30%)
Severe engorgement	17 (56.67%)	18 (60%)

Table 4. Paired t-test of Pretest and Posttest Degree of Breast Engorgement in the Experimental Group (n = 30)

Time	Mean	SD	Mean Difference	t-value	df	Interpretation
Pretest	4.93	1.25	3.10	16.02	29	Significant, p<0.005
Posttest	1.83	1.17				

Table 5. Paired t-test of Pretest and Posttest Degree of Breast Engorgement in the Control Group (n = 30)

Time	Mean	SD	Mean Difference	t-value	df	Interpretation
Pretest	5.13	1.22	0.03	0.91	29	Not significant
Posttest	5.16	1.23				

Table 6. Unpaired t-test of Posttest Degree of Breast Engorgement Between Experimental and Control Groups (N = 60)

Group	Mean	SD	Mean Difference	t-value	df	Interpretation
Experimental group	1.83	1.17	3.33	10.71	58	Significant, p<0.005
Control group	5.16	1.23				

Table 7. Significant Association Between Pretest Degree of Breast Engorgement and Selected Demographic and

Group	Variable	χ^2 value	df	Interpretation
Experimental	Family type	2.78	6	Significant
Experimental	Appearance of breast	18.98	9	Significant
Experimental	Palpation	21.72	9	Significant
Control	Occupation	17.85	9	Significant
Control	Family type	14.72	6	Significant
Control	Frequency of breast-feeding	17.92	9	Significant
Control	Palpation	7.50	9	Significant

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