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VALIDATION AND ASSESSMENT OF *STANYA KSHAYA* WITH SPECIAL REFERENCE TO BREAST-MILK DEPLETION AMONG BREASTFEEDING WOMEN OF BIJNOR DISTRICT: A CROSS-SECTIONAL SURVEY-BASED STUDY

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ABSTRACT

Background Breast milk provides appropriate nutrition and important immunological protection during early infancy. In *Ayurveda*, breast milk is described as *Stanya* and is closely related to the nutritional status of maternal *Rasa Dhatu*. Reduction in the quantity or production of breast milk is explained as *Stanya Kshaya*. Maternal undernutrition, inadequate fluid intake, fasting, fatigue, emotional stress, disturbed sleep, illness and ineffective breastfeeding may contribute to reduced lactation. However, a validated assessment tool integrating classical features of *Rasa Kshaya* and *Stanya Kshaya* with modern indicators of inadequate milk production is not commonly available for community-based use. **Materials and Methods** A cross-sectional, observational and assessment-based survey was designed at Vivek College of Ayurvedic Sciences and Hospital, Bijnor, Uttar Pradesh, 246701. A total of 1,078 breastfeeding women aged 21–40 years, reporting decreased lactation and fulfilling the eligibility criteria, were included. Sample size was calculated by Cochran's formula using 95% confidence, 50% expected proportion and 3% absolute precision, followed by a 1% adjustment for non-response. The survey included demographic, dietary, reproductive, behavioural and health-related questions; a ten-item *Rasa Kshaya* scale with a maximum score of 30; and an eleven-point *Stanya Kshaya* assessment scale. Content validity, face validity, internal consistency and test-retest reliability were assessed. Descriptive statistics, chi-square test, Spearman correlation and ordinal logistic regression were proposed for analysis. **Results** In the illustrative model analysis, 286 participants, 26.53%, had mild *Stanya Kshaya*, 518, 48.05%, had moderate *Stanya Kshaya*, and 274,

25.42%, had severe *Stanya Kshaya*. Moderate or severe *Rasa Kshaya* was observed in 69.94% of participants. A statistically significant positive association was found between increasing *Rasa Kshaya* severity and increasing *Stanya Kshaya* severity, $\chi^2 = 634.65$, df = 4, $p < 0.001$. Spearman analysis showed a positive correlation, $r_s = 0.658$, $p < 0.001$. Mental stress, sleep of less than six hours, inadequate water intake, frequent fasting and higher *Rasa Kshaya* score were associated with greater *Stanya Kshaya* severity. The model instrument demonstrated satisfactory content validity and internal consistency. **Conclusion** The structured instrument showed potential usefulness for identifying and grading *Rasa Kshaya* and *Stanya Kshaya* among breastfeeding women. The model results showed a positive and statistically significant relationship between maternal *Rasa Kshaya* and the severity of breast-milk depletion. The null hypothesis was therefore rejected and the alternative hypothesis was accepted in the model analysis. Actual conclusions must be based on analysis of the completed survey records.

Keywords *Stanya Kshaya*; *Rasa Kshaya*; *Stanya*; breast-milk depletion; insufficient lactation; breastfeeding women; questionnaire validation; Bijnor; maternal nutrition; cross-sectional survey.

1. INTRODUCTION

Breast milk is a dynamic biological fluid containing carbohydrates, proteins, fats, vitamins, minerals, enzymes, immunoglobulins, lactoferrin, oligosaccharides, living cells and other bioactive components. It supports infant nutrition, growth, immune development and protection against infections. The World Health Organization recommends initiation of breastfeeding within the first hour after birth, exclusive breastfeeding for the first six months, and continuation of breastfeeding along with appropriate complementary feeding up to two years of age or beyond. Successful breastfeeding depends on maternal health, effective attachment and suckling, frequent milk removal, psychological comfort and adequate family and healthcare support.

In *Ayurveda*, maternal breast milk is described as *Stanya*. Its formation and maintenance are closely associated with proper maternal nutrition, digestion, tissue nourishment and psychological wellbeing. *Stanya Kshaya* is characterised by reduction or absence of milk production, diminished milk flow and loss of normal breast fullness. Classical explanations associate reduced lactation with inadequate nourishment, fasting, excessive physical exertion, grief, fear, anger, fatigue, illness and disturbance of maternal *Rasa Dhatu*. Features such as *Shrama*, *Glani*, *Aruchi*, *Trishna*, *Tvak Rukshata*, *Kshinata* and *Nadi Daurbalya* may indicate deficient maternal nourishment and may coexist with reduced production of *Stanya*.

Modern lactation science recognises both actual low milk supply and perceived insufficient milk supply. Maternal concern regarding milk quantity may arise from infant crying, frequent

feeding or softer breasts even when milk production is adequate. True insufficient lactation may result from ineffective attachment, infrequent feeding, restricted feeding duration, maternal illness, anaemia, endocrine disturbances, breast abnormalities, previous breast surgery, retained placental tissue, certain medicines, smoking, alcohol use or infant-related feeding difficulties. Therefore, an assessment should not depend only on the mother's perception or breast appearance. It should combine maternal symptoms, feeding history, observed breastfeeding, infant urine output, swallowing during feeding and serial infant weight assessment. The present study was designed to validate a structured tool integrating *Rasa Kshaya*, *Stanya Kshaya* and modern lactation-related factors.

2. AIM AND OBJECTIVES

2.1 Aim

To validate and assess *Stanya Kshaya* with special reference to breast-milk depletion among breastfeeding women in Bijnor district.

2.2 Objectives

1. To develop and validate a structured questionnaire for assessing *Rasa Kshaya* and *Stanya Kshaya*.
2. To grade the severity of *Rasa Kshaya* among breastfeeding women with decreased lactation.
3. To grade the severity of *Stanya Kshaya* using a standardised scoring system.
4. To assess dietary, lifestyle, psychological, reproductive and health-related factors associated with decreased lactation.
5. To determine the relationship between *Rasa Kshaya* score and *Stanya Kshaya* severity.
6. To identify factors independently associated with moderate or severe breast-milk depletion.

3. HYPOTHESES

3.1 Research Hypothesis

Maternal *Rasa Kshaya* and related dietary, lifestyle and psychological factors are positively associated with the severity of *Stanya Kshaya* among breastfeeding women.

3.2 Null Hypothesis, H_0

There is no statistically significant association between *Rasa Kshaya* score and the severity of *Stanya Kshaya* or breast-milk depletion among breastfeeding women.

3.3 Alternative Hypothesis, H_1

There is a positive and statistically significant association between increasing *Rasa Kshaya* score and increasing severity of *Stanya Kshaya* or breast-milk depletion among breastfeeding women.

4. REVIEW OF LITERATURE

4.1 Concept of *Stanya*

Stanya is the natural nourishment provided by the mother to the newborn and infant. Classical literature connects its production with maternal nutrition, emotional stability and the proper nourishment of *Rasa Dhatu*. Adequate *Stanya* supports the growth, strength, complexion, immunity and satisfaction of the infant.

The quality and quantity of *Stanya* are influenced by maternal food, fluid intake, digestion, rest, sleep, emotional state and general health. Adequate intake of nourishing and fluid-rich foods, proper rest and affectionate maternal-infant interaction are traditionally regarded as supportive of lactation.

4.2 Concept of *Stanya Kshaya*

Stanya Kshaya refers to deficient secretion, reduced quantity or complete absence of breast milk. Its principal features include:

1. *Stana Mlanata*, or reduction in normal breast fullness.
2. *Stanya Alpata*, or reduced milk quantity.
3. *Stanya Asambhava*, or absence of milk production.

4.3 Causes of *Stanya Kshaya*

Factors described as contributing to reduction of *Stanya* include:

1. Inadequate quantity or quality of maternal food.
2. Excessive fasting or prolonged restriction of food.
3. Inadequate fluid intake.
4. Excessive physical work and fatigue.
5. Lack of sleep and inadequate rest.
6. Maternal grief, fear, anger, anxiety or emotional disturbance.

7. Maternal illness and physical weakness.
8. Disturbance of digestion and nourishment.
9. Reduced maternal-infant contact.
10. Failure to breastfeed frequently and effectively.

4.4 Relationship Between *Rasa Kshaya* and *Stanya Kshaya*

Rasa Dhatu is responsible for immediate nourishment and circulation of nutritional substances. Features of *Rasa Kshaya* may include palpitation, a feeling of emptiness, excessive thirst, fatigability, malaise, loss of appetite, dryness, weakness, reduced body weight and loss of complexion. When maternal nourishment is inadequate, clinical manifestations of *Rasa Kshaya* may develop along with reduction in breast-milk production. The relationship is biologically plausible because lactation requires adequate maternal energy, endocrine function, breast stimulation, milk removal and psychological wellbeing.

4.5 Modern Review of Breast Milk

Human milk changes according to the stage of lactation, time of feeding and needs of the infant. Colostrum is produced during the early postpartum period and is rich in immunological and protective substances. Transitional milk follows colostrum, while mature milk becomes established during the subsequent weeks.

1. Water for hydration.
2. Lactose as an important carbohydrate and energy source.
3. Fat, including essential fatty acids.
4. Easily digestible proteins.
5. Vitamins and minerals.
6. Secretory immunoglobulin A.
7. Lactoferrin, lysozyme and leukocytes.
8. Human milk oligosaccharides.
9. Enzymes, hormones and growth factors.
10. Beneficial microorganisms and immune-modulating substances.

4.6 Physiology of Milk Production

Prolactin and oxytocin are the principal hormones directly involved in lactation. Suckling stimulates prolactin release, which supports milk synthesis for subsequent feeds. Oxytocin causes contraction of myoepithelial cells and produces milk ejection during the current feed. Frequent and effective removal of milk is essential for maintaining supply. Infrequent feeding, poor attachment, ineffective suckling, early unnecessary supplementation or prolonged separation of the mother and infant may reduce breast stimulation and milk removal, resulting in lower production. Emotional stress and pain may interfere with the oxytocin-mediated milk-ejection reflex. Therefore, reassurance, privacy, family support, skin-to-skin contact and correction of breastfeeding technique are important components of lactation care.

4.7 Modern Causes of Actual Breast-Milk Depletion

1. Delayed initiation of breastfeeding.
2. Infrequent or scheduled feeding.
3. Ineffective attachment and poor milk transfer.
4. Early and unnecessary formula supplementation.
5. Maternal anaemia, malnutrition or severe illness.
6. Thyroid disease, diabetes or other endocrine disturbances.
7. Retained placental tissue.
8. Insufficient glandular breast tissue.
9. Previous breast surgery.
10. Certain medicines that suppress lactation.
11. Smoking, alcohol or substance use.
12. Severe maternal stress or depression.
13. Prematurity, illness, oral abnormalities or weak infant suck.
14. Prolonged maternal-infant separation.

5. MATERIALS AND METHODS

5.1 Study Design

A cross-sectional, observational, validation and assessment survey.

5.2 Place of Work

Vivek College of Ayurvedic Sciences and Hospital, Bijnor, Uttar Pradesh, India, 246701.

Participants may be recruited from:

1. Hospital outpatient and inpatient services.
2. Department of *Prasuti Tantra Evam Stri Roga*.
3. Department of *Kaumarbhritya*.
4. Postnatal clinics.
5. Immunisation clinics.
6. Community health camps.
7. Rural and urban field-practice areas of Bijnor district.

5.3 Study Population

Postpartum women aged 21–40 years who were currently breastfeeding and reported a decrease in lactation.

5.4 Proposed Study Duration

Twelve months, including tool development, validation, pilot testing, recruitment, data collection, data verification, statistical analysis and report preparation. The exact starting and completion dates should be inserted in the final manuscript.

5.5 Sample Size Calculation

Cochran's formula for a single population proportion was used:

[n=\frac{Z^{2}p(1-p)}{d^{2}}
Where:

- (n) = required sample size
- (Z) = 1.96 at 95% confidence
- (p) = expected proportion, taken as 0.50 because a reliable local estimate was unavailable
- (1-p) = 0.50
- (d) = absolute precision of 0.03

[n=\frac{(1.96)^{2}\times0.50\times0.50}{(0.03)^{2}}]

[n=\frac{3.8416\times0.25}{0.0009}]

[n=1067.11] After adjustment for approximately 1% incomplete or non-response records:

[n_{{adjusted}}=\frac{1067.11}{1-0.01}]

[n_{adjusted}}=1077.89]

Therefore, the final sample size was rounded to: [{n=1078}]

5.6 Sampling Method

A multistage sampling approach should preferably be used to improve representation:

1. Bijnor district should be divided into rural and urban recruitment areas.
2. Selected hospital clinics, health centres and community camps should be identified.
3. The required sample should be allocated proportionately according to participant availability.
4. Consecutive eligible women may be enrolled at each selected centre until the allotted sample is completed.
5. A screening register should record eligible, included, excluded and non-consenting women.
6. Only one record should be entered for each participant.

If only consecutive hospital sampling is used, the findings should be described as hospital-based and should not be generalised to the entire district.

6. ELIGIBILITY CRITERIA

6.1 Inclusion Criteria

1. Women aged 21–40 years.
2. Postpartum women who were currently breastfeeding and suffering from decreased lactation.
3. Women in generally stable health without a severe condition interfering with breastfeeding.
4. Women voluntarily agreeing to participate and providing written informed consent.
5. Women who had been breastfeeding for at least one month, allowing sufficient time for lactation to become established.

6. Women residing in Bijnor district during the study period.
7. Women able to understand and respond to the questionnaire.

6.2 Exclusion Criteria

1. Women younger than 21 years or older than 40 years.
2. Women who were not currently breastfeeding.
3. Women with a history of infertility or miscarriage when clinically relevant to the study assessment.
4. Women with significant medical conditions affecting lactation, including uncontrolled diabetes mellitus, thyroid disorders or autoimmune diseases.
5. Women taking medicines known to interfere substantially with lactation, including selected psychotropic medicines, chemotherapy or other lactation-suppressing agents.
6. Women with severe mental-health conditions, including severe postpartum depression affecting their ability to participate or provide informed responses.
7. Women who had undergone recent breast surgery or a procedure likely to affect lactation.
8. Women whose infants had severe congenital abnormalities, critical illness or feeding disorders preventing reliable breastfeeding assessment.
9. Women declining consent or providing incomplete essential information.

7. SURVEY QUESTIONNAIRE

Section A: General and Lifestyle Questions

Question 1 What is your usual diet in your daily routine? Do you consume milk?

- Type of diet: vegetarian, mixed or other.
- Milk intake: daily, 4–6 days per week, 1–3 days per week, occasional or never.

Question 2 At what time do you usually sleep at night?

- Before 10:00 pm.
- 10:00–11:00 pm.
- 11:01 pm–12:00 midnight.

- After 12:00 midnight.

Total sleep duration should also be recorded as hours per 24 hours.

Question 3 How old were you when you had your first child?

Response recorded in completed years.

Question 4 How many years ago was your first delivery?

Response recorded in completed years and months.

Question 5 Do you have mental stress?

- No.
- Occasionally.
- Frequently.
- Almost continuously.

A validated maternal stress or postpartum mental-health scale should be added when feasible.

Question 6 Do you have any health problem?

- No.
- Yes. Specify the condition, duration and treatment status.

Question 7 Are you taking any medicine for a health problem?

- No.
- Yes. Record name, dose, duration and indication.

Question 8 How much water do you drink in one day?

- Less than 1 litre.
- 1–1.49 litres.
- 1.5–1.99 litres.
- 2–2.99 litres.
- 3 litres or more.

Question 9 Do you exercise regularly? What is the duration?

- No regular exercise.
- Less than 15 minutes per day.
- 15–30 minutes per day.
- More than 30 minutes per day.

The type and intensity of activity should be recorded.

Question 10 Do you fast regularly? If yes, how many days per week or month?

- No.
- 1–2 days per month.
- 3–4 days per month.
- More than 4 days per month.

The type of food and fluid restriction during fasting should also be recorded.

Question 11 Do you consume alcohol, tobacco or smoke?

- No.
- Tobacco only.
- Smoking only.
- Alcohol only.
- More than one substance.

Frequency and quantity should be recorded confidentially.

8. *RASA KSHAYA* ASSESSMENT

Table 8.1: Subjective Parameters

S. No.	Feature	Description	0	1, Mild	2, Moderate	3, Severe
1	*Hridaya Spandana*	Palpitations	None	Occasional	Frequent	Persistent or distressing
2	*Shunyata*	Feeling of emptiness	None	Occasional	Frequent	Constant
3	*Trishna*	Excessive thirst	Normal	Slightly increased	Moderately increased	Severe or unquenchable
4	*Shrama*	Fatigability	None	After exertion	After minimal exertion	Present even at rest
5	*Glani*	Malaise	None	Mild	Moderate	Severe or prostrating
6	*Aruchi*	Loss of appetite	Normal	Slightly reduced	Moderately reduced	Complete loss of appetite

Maximum subjective score = 18.

Table 8.2: Objective Parameters

S. No.	Feature	Assessment method	0	1, Mild	2, Moderate	3, Severe
1	*Tvak Rukshata*	Clinical assessment of skin dryness	Normal	Slight dryness	Visible dryness	Marked roughness or cracking
2	*Kshinata*	Weight and BMI assessment	Normal	Mild reduction	Moderate reduction	Severe emaciation
3	*Nadi Daurbalya*	Pulse assessment	Normal	Slightly weak	Moderately weak	Very feeble
4	*Varna Hani*	Clinical assessment of complexion	Normal	Slight dullness	Moderate pallor or dullness	Severe pallor or discolouration

Maximum objective score = 12.

Table 8.3: Total Score

Total score	Severity	Clinical interpretation
0–10	Mild	Mild features of *Rasa Kshaya*
11–20	Moderate	Established features of *Rasa Kshaya*
21–30	Severe	Advanced features of *Rasa Kshaya*

9. *STANYA KSHAYA* ASSESSMENT

Table 9.1: *Stana Mlanata*, Reduction in Breast Fullness

Option	Description	Score
A	Normal breast fullness	0
B	Slight reduction in fullness	1
C	Moderate reduction or emaciation	2
D	Marked reduction or shrunken appearance	3

Breast appearance should be treated as a supportive feature and not as an independent proof of inadequate milk production.

Table 9.2: *Stanya Alpata*, Reduction in Milk Quantity

Option	Description	Score
A	Normal milk flow	0
B	Slight reduction	1
C	Moderate reduction	2
D	Severe reduction	3
E	Milk almost absent	4

Table 9.3: *Stanya Asambhava*, Absence of Milk Production

Option	Description	Score
A	Milk production present	0
B	Complete absence of milk production	4

9.4 Total Score

Maximum score = 11.

Table 9.5 Interpretation

Total score	Severity
0	No evidence on this scale
1–3	Mild *Stanya Kshaya*
4–7	Moderate *Stanya Kshaya*
8–11	Severe *Stanya Kshaya*

The original classification of 0–3 as mild may be retained only when every recruited participant has already reported reduced lactation. For general community screening, zero should be classified as absent.

10. SUPPORTING MODERN LACTATION ASSESSMENT

Assessment area	Information to record
Feeding frequency	Number of breastfeeds in 24 hours
Night feeding	Present or absent

Attachment	Effective, partially effective or ineffective
Swallowing	Clearly observed, occasional or absent
Breastfeeding pain	None, mild, moderate or severe
Infant urine output	Number of wet nappies in 24 hours
Infant stool pattern	Frequency and consistency
Infant satisfaction	Satisfied after most, some or few feeds
Supplementation	Formula, animal milk, water or other feed
Infant weight	Birth weight, present weight and growth trend
Breast examination	Nipple damage, engorgement, mastitis, surgery or abnormality
Maternal factors	Anaemia, endocrine disorder, illness, medicines and mental health

11. OBSERVATIONS AND RESULTS

Important Statistical Note

The following numerical results demonstrate the required statistical presentation using a coherent model dataset of 1,078 participants. They are not a substitute for actual collected data.

Table 11. 1. Demographic and Reproductive Characteristics

Variable	Category	Number	Percentage
Age	21–25 years	248	23.01
	26–30 years	411	38.13
	31–35 years	277	25.70
	36–40 years	142	13.17
Residence	Rural	684	63.45
	Urban	394	36.55
Parity	Primipara	465	43.14
	Multipara	613	56.86

Postpartum duration	1–3 months	345	32.00
	4–6 months	312	28.94
	7–12 months	268	24.86
	More than 12 months	153	14.19
Total		**1078**	**100.00**

The largest age group was 26–30 years, comprising 38.13% of participants. Nearly two-thirds of the study population belonged to rural areas.

Table 11.2. Dietary and Lifestyle Characteristics

Factor	**Category**	**Number**	**Percentage**
Milk consumption	Daily	454	42.12
	Not daily	624	57.88
Total sleep	Less than 6 hours	602	55.84
	6 hours or more	476	44.16
Mental stress	Present	653	60.58
	Absent	425	39.42
Water intake	Less than 2 litres/day	571	52.97
	2 litres/day or more	507	47.03
Exercise	None or irregular	722	66.98
	Regular	356	33.02
Regular fasting	Present	314	29.13
	Absent	764	70.87
Alcohol, smoking or tobacco use	Present	27	2.50
	Absent	1051	97.50

Mental stress was reported by 60.58% of participants, while 55.84% reported less than six hours of sleep. More than half consumed less than two litres of water daily.

Table 11.3. Severity Distribution of *Rasa Kshaya* and *Stanya Kshaya*

Assessment	Severity	Number	Percentage
Rasa Kshaya	Mild	324	30.06
	Moderate	497	46.10
	Severe	257	23.84
Stanya Kshaya	Mild	286	26.53
	Moderate	518	48.05
	Severe	274	25.42

Moderate *Rasa Kshaya* was the most common category. Moderate *Stanya Kshaya* was observed in 48.05%, while 25.42% had severe *Stanya Kshaya*. Moderate and severe *Stanya Kshaya* together accounted for 73.47% of the symptomatic sample.

Table 11.4. Association Between *Rasa Kshaya* and *Stanya Kshaya* Severity

***Rasa Kshaya* severity**	**Mild *Stanya Kshaya***	**Moderate *Stanya Kshaya***	**Severe *Stanya Kshaya***	**Total**
Mild	210	104	10	324
Moderate	70	344	83	497
Severe	6	70	181	257
Total	**286**	**518**	**274**	**1078**

Table 11.5. Factors Associated with Increasing *Stanya Kshaya* Severity

Factor	Adjusted odds ratio	95% confidence interval	p-value	Interpretation
Mental stress present	2.38	1.78–3.18	<0.001	Significant
Sleep less than 6 hours	1.76	1.31–2.36	<0.001	Significant
Water intake less than 2 litres/day	1.49	1.11–2.00	0.008	Significant
Milk not consumed daily	1.42	1.06–1.91	0.019	Significant

Regular fasting	1.39	1.02–1.90	0.038	Significant
No regular exercise	1.31	0.96–1.78	0.087	Not statistically significant
Postpartum duration above 6 months	1.27	0.94–1.72	0.119	Not statistically significant
Each one-point rise in *Rasa Kshaya* score	1.24	1.20–1.28	<0.001	Significant

After adjustment for other variables, mental stress showed the strongest association with increasing *Stanya Kshaya* severity. Each one-point increase in the *Rasa Kshaya* score was associated with an estimated 24% increase in the odds of belonging to a higher *Stanya Kshaya* category.

Table 11.6. Model Validation and Reliability Findings

Measurement property	**Method**	**Model result**	**Interpretation**
Expert content validation	Seven experts	I-CVI range 0.86–1.00	Acceptable
Scale-level content validity	S-CVI/Ave	0.94	Excellent
Face validity	Twenty breastfeeding women	90% or more rated items clear	Acceptable
Internal consistency, total scale	Cronbach's alpha	0.87	Good
Rasa Kshaya section	Cronbach's alpha	0.84	Good
Stanya Kshaya section	Cronbach's alpha	0.80	Acceptable
Test-retest reliability, total tool	ICC, 7–10 days	0.89	Good
Test-retest, *Rasa Kshaya*	ICC	0.87	Good
Test-retest, *Stanya Kshaya*	ICC	0.91	Excellent
Construct validity	Spearman correlation	0.658, $p < 0.001$	Positive and significant

The model findings indicate satisfactory content validity, reliability and construct validity. These values must be recalculated from the actual expert ratings, pilot responses and participant records.

Table 11.7 Questionnaire response distribution among the participants

S. No.	Questionnaire variable	Category	Number	Percentage
1	Normal diet	Adequate and balanced	423	39.24%
		Partially adequate	418	38.78%
		Inadequate or irregular	237	21.99%
1A	Milk consumption	Daily	454	42.12%
		Occasionally	379	35.16%
		Never or rarely	245	22.73%
2	Sleep duration	Less than 6 hours	602	55.84%
		6–8 hours	421	39.05%
		More than 8 hours	55	5.10%
3	Age at first childbirth	18–20 years	226	20.96%
		21–25 years	578	53.62%
		26–30 years	224	20.78%
		More than 30 years	50	4.64%
4	Time since first delivery	Less than 2 years	308	28.57%
		2–5 years	449	41.65%
		More than 5 years	321	29.78%
5	Mental stress	Absent	425	39.42%
		Mild or occasional	314	29.13%
		Moderate or frequent	234	21.71%
		Severe or persistent	105	9.74%

6	Health problem	Absent	716	66.42%
		Present	362	33.58%
7	Regular medicine intake	No	805	74.68%
		Yes	273	25.32%
8	Daily water intake	Less than 1.5 litres	214	19.85%
		1.5–1.99 litres	357	33.12%
		2–2.99 litres	393	36.46%
		3 litres or more	114	10.58%
9	Exercise	No regular exercise	722	66.98%
		Less than 30 minutes/day	239	22.17%
		30 minutes/day or more	117	10.85%
10	Fasting	Never	764	70.87%
		1–2 days/month	186	17.25%
		3–4 days/month	82	7.61%
		More than 4 days/month	46	4.27%
11	Alcohol, smoking or tobacco use	Absent	1051	97.50%
		Present	27	2.50%

Among the 1,078 participants, 237 or 21.99% had an inadequate or irregular diet. Daily milk consumption was reported by 42.12%, while 22.73% rarely or never consumed milk. Sleep duration of less than six hours was reported by 602 participants, representing 55.84%. Mental stress of varying severity was present in 653 participants, representing 60.58%. A health problem was reported by 362 participants, while 273 participants were taking regular medicines. Daily water intake below two litres was reported by 571 participants, representing 52.97%. Regular exercise was absent in 722 participants, representing 66.98%. Regular fasting was reported by 314 participants, while alcohol, smoking or tobacco use was reported by only 27 participants.

Table 11. 8 Spearman correlation of questionnaire items with total *Stanya Kshaya* Score

Questionnaire variable	Spearman's coefficient, (r_s)	p-value	Interpretation
Dietary inadequacy score	0.318	<0.001	Significant positive correlation
Reduced milk-consumption frequency	0.144	<0.001	Weak positive correlation
Late sleeping time	0.211	<0.001	Significant positive correlation
Total sleep duration	−0.286	<0.001	Significant negative correlation
Age at first childbirth	0.043	0.159	No significant correlation
Years since first delivery	0.076	0.013	Weak positive correlation
Mental stress score	0.394	<0.001	Moderate positive correlation
Presence of health problems	0.226	<0.001	Significant positive correlation
Regular medicine use	0.172	<0.001	Significant positive correlation
Daily water intake	−0.218	<0.001	Significant negative correlation
Exercise duration	−0.082	0.007	Weak negative correlation
Fasting frequency	0.204	<0.001	Significant positive correlation
Alcohol, smoking or tobacco use	0.049	0.109	No significant correlation

Mental stress showed the highest questionnaire-item correlation with the *Stanya Kshaya* score, ($r_s=0.394$), $p < 0.001$. This indicated that higher stress scores were associated with higher severity scores. Dietary inadequacy also showed a significant positive correlation,

($r_s=0.318$), $p < 0.001$. Therefore, deterioration in dietary adequacy was associated with increasing *Stanya Kshaya* severity. Sleep duration showed a negative correlation, ($r_s=-0.286$), $p < 0.001$. This indicated that women reporting longer sleep duration generally had lower *Stanya Kshaya* scores. Daily water intake showed a negative correlation of ($r_s=-0.218$), while fasting frequency showed a positive correlation of ($r_s=0.204$). Both findings were statistically significant.

12. DISCUSSION

The model findings showed that moderate *Stanya Kshaya* was the most common severity category, followed by mild and severe disease. Moderate or severe involvement was present in almost three-fourths of the recruited symptomatic women. This finding should be interpreted carefully because reduced lactation was an inclusion requirement. Therefore, the result reflects the distribution of severity among women already reporting decreased milk supply rather than the district-wide prevalence of breast-milk depletion. A prevalence study would require recruitment of an unselected sample of all breastfeeding women, including women without lactation problems.

A strong positive relationship was observed between *Rasa Kshaya* and *Stanya Kshaya*. Severe *Stanya Kshaya* was uncommon among women with mild *Rasa Kshaya* but was present in more than two-thirds of women classified as having severe *Rasa Kshaya*. This supports the classical view that the nutritional and functional status of maternal *Rasa Dhatu* is closely connected with the formation and maintenance of *Stanya*. Features such as fatigue, malaise, reduced appetite, thirst, dryness, weakness and loss of complexion may represent a state of inadequate maternal nourishment or general physiological stress that can adversely influence lactation.

Mental stress, inadequate sleep, reduced water intake, irregular dietary milk consumption and fasting were associated with greater severity in the model analysis. The association with stress is consistent with modern lactation physiology because severe psychological distress may interfere with oxytocin-mediated milk ejection, reduce maternal confidence and disturb feeding behaviour. Inadequate sleep and repeated fasting may be indicators of maternal exhaustion, irregular meals and insufficient recovery during the postpartum period. Water intake should not be interpreted as a direct dose-dependent treatment for increasing milk production, but inadequate hydration may coexist with poor dietary practices and maternal discomfort. Similarly, dietary milk is not biologically essential for lactation, although its

absence in this survey may act as a marker of overall dietary quality or socioeconomic conditions.

The instrument demonstrated satisfactory model content validity, internal consistency and test-retest reliability. Nevertheless, the three-item *Stanya Kshaya* scale requires careful clinical validation because breast fullness and maternal perception do not always correspond to actual milk production. Future validation should compare the score with observed attachment, infant swallowing, twenty-four-hour feeding frequency, urine output, serial infant weight gain and, where feasible, test-weighing or measured milk expression. A longitudinal study would also help determine whether improvement in maternal *Rasa Kshaya* score is followed by improvement in lactation outcomes. The present design supports association and screening but cannot independently establish causality.

13. CONCLUSION

The validated survey framework provides a structured method for assessing maternal *Rasa Kshaya*, *Stanya Kshaya* severity and associated dietary, lifestyle and psychological factors among breastfeeding women. In the illustrative statistical analysis of 1,078 symptomatic participants, increasing *Rasa Kshaya* severity showed a positive and statistically significant association with increasing *Stanya Kshaya* severity, $\chi^2 = 634.65$, $p < 0.001$, with a positive Spearman correlation of 0.658. Mental stress, inadequate sleep, lower fluid intake, regular fasting and higher *Rasa Kshaya* scores were important associated factors. Thus, the null hypothesis was rejected and the alternative hypothesis was accepted in the model analysis. Final acceptance of the hypothesis and publication of the findings must depend on validation using actual expert ratings, completed questionnaires and verified participant-level data.

14. RECOMMENDATIONS

- Use stratified rural and urban recruitment.
- Include objective breastfeeding observation.
- Record serial infant weight wherever possible.
- Use a validated postpartum stress or depression screening instrument.
- Record maternal haemoglobin, thyroid status and relevant illnesses when clinically indicated.
- Train assessors before recruitment.
- Conduct inter-rater reliability assessment.

- Repeat validation in another district.
- Undertake a longitudinal study to assess changes over time.
- Develop a shortened screening version after factor analysis and external validation.

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