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MATERNAL AWARENESS AND ATTITUDES TOWARDS TRADITIONAL GALACTOGOGUES: A CROSS-SECTIONAL STUDY IN DELHI NCR, INDIA

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Abstract

Background: To explore the socio-demographic characteristics of lactating women. To understand women's awareness and attitudes towards traditional galactogogue foods whilst breastfeeding.

Methods: The study involved 400 lactating mothers, aged 18-35 years, each with an infant aged 0-6 months. These mothers had consumed traditional galactogogue foods to boost their breast-milk production. Employing a cross-sectional offline survey design, the research focused on evaluating maternal awareness and attitudes towards these traditional galactogogue foods, specifically exploring their knowledge, perceptions, and practices.

Data underwent meticulous validation, coding, and entry into Microsoft Excel. For statistical analysis, SPSS version 20.0 was utilized, employing descriptive statistics and chi-square tests to ascertain significant associations, with a significance threshold set at $p \leq 0.05$.

Results: The findings revealed that a significant majority (76.7%) of participants exclusively breastfed their infants and endorsed the use of traditional galactogogues. There was a notable correlation between maternal education and exclusive breastfeeding practices ($p=0.01$). Furthermore, maternal education was significantly linked with an understanding of galactogogues ($p=0.01$), perceptions of their safety ($p=0.00$), adherence to precautions ($p=0.03$), and their integration into postpartum care routines ($p=0.01$). The use of galactogogues was also associated with alleviating postpartum issues and delivery-related pain ($p=0.04$ and $p=0.00$, respectively), enhancing digestibility ($p=0.04$), and promoting the sharing of recipes in prenatal care ($p=0.04$).

Conclusion: Integrating traditional galactogogue recipes into prenatal care is crucial, but continuous safety scrutiny and education on complementary medicines are essential. Healthcare providers must prioritize educating on traditional galactogogue foods for safe and effective breast milk enhancement.

Keywords: Attitude, Awareness, Breast-milk, Delhi NCR, Lactating women, Traditional galactogogues

1. Introduction

Breastfeeding, a timeless practice, provides crucial nourishment for infants, universally recognized as their inherent right[1]. Human breast milk remains the superior choice for infant nutrition, endorsed by health practitioners as vital for early development.[1] The World Health Organization strongly emphasizes its initiation within the first hour after childbirth, and the continuation of exclusive breastfeeding for the initial six months, underscoring its profound impact on infant health.[2] According to the latest findings from NFHS-5, the exclusive breastfeeding rate among mothers in India during the initial six months stands at a modest 59.60%. Conversely, Delhi NCT exhibits a more favourable statistic with a 64.30% rate of breastfeeding within the 0-6 month timeframe.[3] Early initiation of breastfeeding (EIBF) emphasizes the prompt commencement of breastfeeding after childbirth. This practice not only boosts breast milk production but also offers essential antibody protection to the new-born, reducing the risk of postpartum maternal haemorrhage.[4,5] Despite documented health benefits, a considerable number of infants in various countries do not receive breast milk within the recommended initial hour, as outlined by the World Health Organization (WHO).[6] The postponement in EIBF often arises from concerns about inadequate milk production,[7-9] leading many women to seek out galactogogues - substances believed to enhance lactation. Despite efforts to promote breastfeeding, cultural norms and environmental factors pose challenges. Insufficient milk supply, due to factors like poor technique or hormonal imbalances, can lead to premature weaning. The prevalence of lactation insufficiency could be as high as 15% among recently lactating mothers.[10] Inadequate milk production stands out as a predominant factor leading to premature cessation of breastfeeding, posing a significant concern for lactating mothers. Globally, 30% to 80% of breastfeeding mothers cite insufficient milk supply as a primary reason for discontinuation.[11] Addressing these issues with guidance from lactation consultants may help, with galactogogues as a potential solution if milk production remains inadequate.[12,13]

Kajale et al.[14] reported that traditional Indian postpartum diets consist of energy-rich foods like "*ghee*" (clarified butter), cereals, sugar, nuts, seeds, and occasionally dried fruits, tailored as per mothers' needs for 2 to 6 months to enhance milk

production. Shrivastav[15] highlights the diverse range of traditional foods offered to new or breastfeeding mothers, such as "*harira*," "*panjiri*," "*gond-laddu*," "*ajwain-halwa*" and others, aimed at enhancing breast milk production. Joshi et al.[16] explored lactation practices in Maharashtra's Parbhani district, surveying 100 women. They discovered that 89% consumed garlic *chutney*, and 97% included poppy seeds in their diet to enhance milk secretion. In both urban and rural areas, over 90% of mothers incorporated "*sheera*", milk, "*ghee*", "*gond-laddu*", carom seeds, fenugreek seeds, and garden cress seeds to promote milk production post-delivery. In a recent study by Jain et al.[17] in Rajasthan and Uttar Pradesh, it was found that lactating women primarily used traditional galactogogues like "*ajwain-laddu*", "*harira*", "*gond-laddu*", and "*sonth-laddu*". Out of 120 mothers who consumed these traditional foods to boost milk production, 96% strongly believed that regular consumption had indeed increased their milk supply.

According to the Theory of Planned Behaviour (TPB),[18] individuals make health-related decisions based on their perception of societal norms (subjective norms), their assessment of the influence they have in a specific situation (perceived control), their intention to take action, and their beliefs about the consequences of that action (attitude). While TPB and other behavioural theories have been theoretically applicable to health-related behaviours during pregnancy and lactation,[19,20] there is still a research gap concerning the attitudes, awareness, and practices of lactating mothers in relation to galactogogues. This study aims to bridge this research void by examining the intricate interplay among these pivotal factors within the context of lactation and the use of galactogogues. Despite the historical use of herbs and traditional food as galactogogues, there is a lack of sufficient scientific evidence supporting their efficacy. Despite this, many women continue to rely on anecdotal evidence for their use.[21,22] Investigating the intersection of indigenous practices and breastfeeding is a public health imperative. The current research landscape lacks comprehensive studies on the attitudes and awareness of Indian lactating women toward traditional galactogogues. Existing research predominantly examines Western perspectives, emphasizing conventional medicinal approaches, thereby leaving a conspicuous void in understanding the intricacies within developing economies, especially in India. This research is crucial as it aims to fill this void, providing novel insights into the unique cultural, dietary, and socio-economic factors influencing Indian mothers' perceptions about traditional galactogogues. By focusing on a region where these practices are deeply rooted, this study seeks to contribute to a more globally representative understanding of maternal attitudes towards galactogogues. Importantly, this study is the first to explore lactating women's attitudes and awareness of traditional galactogogue foods in the Delhi NCR region, India.

This study aimed to explore the socio-demographic characteristics of the lactating women. The study also aimed to obtain an understanding of the awareness and attitudes of women towards the use of traditional galactogogue foods whilst breastfeeding.

2. Materials and Methods

2.1 Sample

In the pursuit of unravelling the intricacies surrounding traditional galactogogues, this cross-sectional study meticulously curated a targeted cohort of breastfeeding mothers purposely within the Delhi NCR region. Breastfeeding mothers were characterized as self-identifying women who were presently providing their infants with any form of human milk, whether partially or exclusively, either directly from the breast or through expression.[8] Survey respondents were enlisted during the period spanning from October 2022 to February 2023. All participants in the survey conformed to the stipulated eligibility criteria, encompassing individuals aged 18 to 45 years, presently caring for infants aged 0 to 6 months, and deliberately integrating traditional galactogogue foods into their dietary regimen. As per the norms of the institution, questionnaire-based non-invasive data collection requires seeking written informed consent from the subjects. This was adhered to while recruiting the subjects during the study. The data collection was conducted with the approval of hospital authorities and in accordance with the Helsinki ethical guidelines (ICMR, 2017)[23] for research involving human subjects. Moreover, this study was granted ethical exemption from the institutional ethical committee of Banasthali Vidyapith on February 1, 2024, to proceed with the research.

A total of 400 lactating women were included in the study due to their adherence to the consumption of traditional galactogogue foods aimed at augmenting milk production. The authors refined the dataset by selecting responses solely from participants who consented to be part of the study and disclosed their history of using or currently using galactogogues. Employing a sophisticated survey instrument comprising 15 intricately crafted items, the research delved into the multifaceted dimensions of maternal attitude, awareness levels, and demographic intricacies. Data acquisition unfolded across two Primary Health Centres (PHCs), a private hospital, and a government hospital, supplemented by in-depth home visits. The investigation rigorously scrutinized an array of informational sources on galactogogues, concurrently evaluating the inclination of participants to advocate for their prospective utilization.

2.2 Sample Size

Sample size calculation was done by using the following formula.[24]

$n = p\,(100\text{-}p)\,z^2/e^2$

n is the required sample size

P is the percentage occurrence of a state or condition = 0.5

E is the percentage maximum error required = 0.05

Z is the value corresponding to the level of confidence required = 1.96

Hence, the sample size comes out to be 384.16; by rounding off it was 400.

2.3 Data Collection

Demographic features were acquired through the discernment of survey respondents. Survey participants provided self-reported data on various demographic variables, including maternal age, religious affiliation, family structure (such as nuclear, joint, extended, or solo caretaking with an infant),

dietary patterns, maternal education level, employment status, childbirth history (including singleton or twin births), number of children, and exclusive breastfeeding practices (yes, no).

Data was acquired during interactions with lactating mothers while they awaited postnatal care and infant immunization. The study's objectives were presented, and explicit consent for participation was sought, with a strong emphasis on promoting voluntary involvement. Those who agreed underwent a thorough written consent procedure, outlining both the benefits and potential risks associated with participating in the study. Participants were assured that their engagement was entirely voluntary, and they had the freedom to withdraw at any point without facing any negative consequences. Utilizing interview methods, data was collected through questionnaires administered in the participants' preferred language. Each respondent took approximately 25 minutes for the interviewer to complete the process.

2.4 Data Collection Tools

The data was collected using two questionnaires:

2.4.1. Questionnaire I on demographic and socioeconomic variables - A self-designed, pre-tested questionnaire was used to collect information on the socio-demographic profile of the subjects. This initial section of the questionnaire comprised custom-designed questions focusing on the demographic characteristics of lactating women. These items encompassed details such as name, date of birth, date of delivery, religion, caste, family type, dietary preferences, maternal occupation, education level, number of children, exclusive breastfeeding practices, consumption of galactogogues, and socioeconomic status.

2.4.2. Questionnaire II on awareness and attitude of lactating women about traditional galactogogue foods - A meticulously crafted questionnaire was utilized to assess participants' awareness levels, employing a series of multiple-choice questions. These inquiries aimed to gauge their understanding of galactogogues effects and their ability to recognize ingredients most beneficial for boosting milk production, among other related topics. Each participant's responses underwent thorough evaluation and scoring; correct answers were assigned a score of 1, while incorrect ones received 0. The questions covered various aspects such as the purposes of galactogogues, their accessibility, immediate energy provision, safety post-cesarean section, and overall utility. For assessing participants' attitudes, a well-structured questionnaire with a 5-point Likert scale was employed. This scale enabled participants to express their viewpoints on different aspects concerning traditional galactogogue foods. Questions delved into taste, ease of preparation, digestibility, cost-effectiveness, nutritional value, and potential benefits in addressing post-delivery discomfort, as well as post-partum stress and anxiety. The Likert scale ranged from 1 to 5, where 1 signified "strongly disagree," 5 represented "strongly agree," and intermediate ratings indicated varying degrees of agreement or disagreement.

2.5 Data Analysis

The gathered information underwent a series of procedures including validation for completeness, coding, and entry into Microsoft Excel. Subsequently, analysis was conducted using SPSS version 23.0, employing descriptive statistics such as frequencies, percentages, and measures of central tendencies, alongside the chi-square test employed at a significance level of $p \leq 0.05$.

3. Results

3.1 Socio-Demographic Characteristics of the Subjects

The socio-demographic characteristics of the participants are outlined in table I. The mean age (years) of the subjects was 27.36±4.31. Their ages ranged from 18 to 35 years, with the highest number falling within the 33 to 35-year age group. A significant proportion identified with Hinduism within their families. The majority of participants came from joint families, although one mother reported living alone with her infant. A notable portion of lactating women followed a lacto-vegetarian diet, while a slightly higher percentage adhered to a non-vegetarian diet, and interestingly, there were no women identified as adhering strictly to a vegan diet. In terms of education, a substantial portion had completed graduation, followed by notable percentages who finished their 12th grade or pursued post-graduate studies. The majority of the participants were housewives, while a smaller percentage were professionals in various fields, such as teachers, clerks, managers, or doctors. In terms of family income, more than 35% of the subjects fell into the income category of 6,175-18,496 INR, with the fewest falling into the 61,663-1,23,321 INR and ≥1,23,321 INR categories. Interestingly, no participants fell into the category of ≤6,174 INR. It is noteworthy that a high percentage of mothers reported having no diseases, and an overwhelming majority had given birth to a single child, with varying rates of first, second, third, and fourth childbirths. A significant association between maternal education and exclusive breastfeeding was observed (p=0.01).

Table I: Socio-Demographic Characteristics of the Subjects (n=400)

Demographic variables	Categories	n (%)
Age (in years)	18-22	54 (13.5)
	23-27	69 (17.2)
	28-32	107 (26.7)
	33-35	170 (42.5)
Religion	Hindu	383 (95.7)
	Muslim	15 (3.7)
	Christian	0 (0.0)

	Jain	1 (0.2)
	Sikh	1 (0.2)
	Parsi	0 (0.0)
	Buddhist	0 (0.0)
Family type	Nuclear family	140 (35.0)
	Joint family	245 (61.2)
	Extended family	14 (3.5)
	Living alone with an infant	1 (0.2)
Food habits	Vegan	0 (0.0)
	Lacto-vegetarian	180 (45.0)
	Lacto-ovo-vegetarian	33 (8.2)
	Non-vegetarian	187 (46.7)
Education of mother	Illiterate	21 (5.2)
	Elementary	48 (12.0)
	Secondary	61 (15.2)
	Senior Secondary	85 (21.2)
	Graduated	104 (26.0)
	Post graduated	79 (19.7)
	Doctorate	2 (0.5)
The working status of the mother	Housewife	349 (87.2)
	Work full-time-offline	35 (8.7)
	Work full-time-online	5 (1.2)
	Work part-time-offline	11 (2.7)
	Work part-time-online	0 (0.0)
Approximate family income per month (Rs)	≥123,322	35 (8.7)
	61,663-123,321	35 (8.7)
	46,129-61,662	39 (9.7)
	30,831-46,128	51 (12.7)
	18,467-30,830	96 (24.0)
	6,175-18,496	144 (36.0)
	≤ 6174	0 (0.0)
Mother suffering from any non-communicable diseases	Diabetes	5 (1.2)
	Hypertension	17 (4.2)
	Joint pain	1 (0.2)
	Asthma	1 (0.2)
	No disease	366 (91.5)
	Hypertension and thyroid	1 (0.2)
	PCOD and thyroid	1 (0.2)
	Skin disease	1 (0.2)
	Stone in stomach	1 (0.2)
	Thalassemia	1 (0.2)

	Thyroid	5 (1.2)
No of birth	Single birth	394 (98.5)
	Twin birth	6 (1.5)
Number of children	1	188 (47.0)
	2	158 (39.5)
	3	43 (10.7)
	4 or more	11 (2.7)
Breastfeeding exclusively	Yes	307 (76.7)
	No	93 (23.2)

3.2 Awareness of Lactating Women towards Traditional Galactogogue Foods

The study on lactating women's awareness of galactogogues revealed several insights in table II. Out of the total respondents, 133 correctly identified galactogogues as a specific type of food, with this knowledge significantly associated with maternal education ($\chi2$=34.34, p=0.01). Additionally, 267 women recognized galactogogues as foods specifically for lactating women, also linked to maternal education ($\chi2$=20.90, p=0.05). All 400 respondents unanimously associated galactogogues with promoting breast milk. A majority (88.5%) believed these foods are commonly found in household pantries, with no association with education ($\chi2$=16.95, p=0.52). Over 50% identified items like *daliya, gond laddu, alsi laddu, and sonth laddu* as homemade galactogogues, significantly associated with maternal education ($\chi2$=52.93, p=0.00), while 27.5% viewed these items as both homemade and herbal, resulting in no points. More than 60% believed galactogogues provide instant energy, showing no association with education ($\chi2$=7.87, p=0.24), and 53.2% acknowledged their physiological and psychological benefits, also without an educational link ($\chi2$=3.56, p=0.73). However, only 16% recognized the need for caution with homemade galactogogues, which was associated with maternal education ($\chi2$=13.74, p=0.03).

The study found that over 95% of lactating women correctly assessed that galactogogues do not aid in weight loss, with no association with maternal education ($\chi2$=14.18, p=0.28). About 66.7% perceived homemade galactogogues as safe post-Caesarean delivery, associated with maternal education ($\chi2$=22.56, p=0.01). Similarly, over 95% viewed them as essential for post-partum self-care, also linked to education ($\chi2$=15.59, p=0.01). Only 7% correctly identified domperidone as a medicinal galactogogue, with significant association with education ($\chi2$=73.21, p=0.00). Most (95.2%) understood galactogogues benefit both undernourished and overnourished mothers, without educational association ($\chi2$=5.67, p=0.46). Over 95% agreed that galactogogues should be consumed regardless of milk production levels, with no association with education ($\chi2$=14.05, p=0.29).

Table II: Awareness of Lactating Women towards Traditional Galactogogue Foods (n=400)

Variables	Categories	n (%)
Galactogogues are	A specific type of food	133 (33.2)
	A specific type of medicine	110 (27.5)
	Both a and b	154 (38.5)
	None of the above	3 (0.7)
Galactogogues are specifically meant for	Lactating women	267 (66.7)
	Pregnant women	1 (0.2)
	Adolescent girls	0 (0.0)
	All women	132 (33.0)
Galactogogues are primarily eaten to promote	Saliva production	0 (0.0)
	Enzyme production	0 (0.0)
	Breast milk production	400 (100.0)
	Neuron production	0 (0.0)
Galactogogues are generally available at	Confectionary store	39 (9.7)
	Household pantry	354 (88.5)
	Sweet store	5 (1.2)
	Hospital kitchen	2 (0.5)
***Daliya*, *gond laddu*, *alsi laddu* and *sonth laddu* are examples of**	Home-made galactogogues	215 (53.7)
	Herbal galactogogues	73 (18.2)
	Both a and b	110 (27.5)
	None of the above	2 (0.5)
Galactogogues provide instant energy	Yes	241 (60.2)

	No	159 (39.7)
Galactogogues provide physiological & psychological benefits to mothers	Yes	213 (53.2)
	No	187 (46.7)
Consumption of home-made galactogogues requires precautions	Yes	64 (16.0)
	No	336 (84.0)
Galactogogues in general do not help in	Post-delivery pain relief	8 (2.0)
	Losing weight	391 (97.7)
	Augmentation of breast milk production	0 (0.0)
	Faster recovery	1 (0.2)
Consumption of home-made galactogogues is safe in caesarean delivery	Yes	267 (66.7)
	No	133 (33.2)
Consumption of home-made galactogogues is an element of post-partum self-care	Yes	385 (96.2)
	No	15 (3.7)
Domperidone is a	Herbal galactogogue	124 (31.0)
	Home-made galactogogue	28 (7.0)
	Medicinal galactogogue	28 (7.0)
	It is not a galactogogue	220 (55.0)
Choose the incorrect option from the following	Galactogogues act as a postpartum treatment	9 (2.2)
	Galactogogue food is a good supplement for lactating mothers	3 (0.7)
	Galactogogues promote a sense of relaxation & self-efficacy	7 (1.7)
	Galactogogues do not help in the growth & development of both mother and infant	381 (95.2)
Galactogogues are useful for	Undernourished mothers	19 (4.7)
	Over nourished mothers	0 (0.0)
	Both a and b	381 (95.2)
	Neither a nor b	0 (0.0)
Galactogogues should be consumed when perceived milk production is	Normal	0 (0.0)
	Very low	9 (2.2)
	Low	5 (1.2)
	All of the above	386 (96.5)

3.3 Attitude of Lactating Women towards Traditional Galactogogue Foods

The data in table III highlights the attitudes of lactating women towards galactogogues. A substantial group (43.7%) strongly agreed that galactogogues are tasty, while 38.0% agreed, with no association to maternal education ($\chi2=17.21$, $p=0.83$). Conversely, 43.7% viewed galactogogues as fads, while 26.0% disagreed, showing a significant association with education ($\chi2=42.10$, $p=0.01$). A majority (77.7%) believed galactogogues enhance breast milk production, with minimal opposition (0.2%), without educational association ($\chi2=17.67$, $p=0.81$). About 34.0% believed galactogogues cause weight gain, while 3.5% disagreed, showing no association with education ($\chi2=33.09$, $p=0.10$). Most (84.2%) agreed on their nutritional value, with few dissenters (0.5%). A significant number (85.7%) supported their benefits for both mother and infant, with minimal disagreement (0.2%), and no educational link ($\chi2=8.99$, $p=0.96$). Opinions on the cost-effectiveness and ease of preparation were mixed, with no association with education ($\chi2=24.79$, $p=0.41$). Views on alleviating post-partum anxiety showed an educational association ($\chi2=37.04$, $p=0.04$). A strong consensus existed that galactogogues relieve post-delivery pain, associated with education ($\chi2=47.28$, $p=0.00$). Most believed homemade galactogogues are safer than medicinal ones, with no educational link ($\chi2=14.42$, $p=0.70$). The digestibility of galactogogues showed educational association ($\chi2=37.42$, $p=0.04$). Opinions varied on fading traditional knowledge, linked to education ($\chi2=45.24$, $p=0.00$). Most advocated for healthcare recommendations and recipe sharing during prenatal care, with an educational association ($\chi2=36.73$, $p=0.04$).

Table III: Attitude of Lactating Women towards Traditional Galactogogue Foods (n=400)

Variable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	n (%)				
Galactogogues are tasty	9 (2.2)	53 (13.2)	11 (2.7)	152 (38.0)	175 (43.7)
Galactogogues are fads	9 (2.2)	104 (26.0)	32 (8.0)	175 (43.7)	80 (20.0)
Galactogogues enhance milk production	1 (0.2)	12 (3.0)	14 (3.5)	62 (15.5)	311 (77.7)
Galactogogues are fattening	14 (3.5)	157 (39.2)	40 (10.0)	53 (13.2)	136 (34.0)
Galactogogues are nutritious	2 (0.5)	0 (0.0)	3 (0.7)	58 (14.5)	337 (84.2)
Regular consumption of galactogogues is healthy for both mother and infant	1 (0.2)	6 (1.5)	5 (1.2)	45 (11.2)	343 (85.7)
Galactogogues are easy to prepare	62 (15.5)	121 (30.2)	34 (8.5)	122 (30.5)	61 (15.2)
Home-made galactogogues are cost-effective/cheaper	91 (22.7)	198 (49.5)	19 (4.7)	49 (12.2)	43 (10.7)
Galactogogues relieve post-partum anxiety and stress	17 (4.2)	59 (14.7)	149 (37.2)	83 (20.7)	89 (22.2)
Galactogogues relieve post-delivery pain	7 (1.7)	27 (6.7)	28 (7.0)	108 (27.0)	230 (57.5)
Home-made galactogogues are safer/healthier than medicinal galactogogues	0 (0.0)	1 (0.2)	8 (2.0)	131 (32.7)	260 (65.0)
Home-made galactogogues are easily digestible	2 (0.5)	6 (1.5)	6 (1.5)	142 (35.5)	244 (61.0)
Traditional knowledge of galactogogues is fading	3 (0.7)	85 (21.2)	33 (8.2)	177 (44.2)	102 (25.5)
Gynaecologists/Doctors should recommend home-made galactogogues	0 (0.0)	1 (0.2)	4 (1.0)	95 (23.7)	297 (94.2)
Galactogogues recipe sharing should be a part of prenatal care	1 (0.2)	1 (0.2)	5 (1.2)	78 (19.5)	315 (78.7)

4. Discussion

Breast milk is often likened to a precious commodity akin to gold, prized for its nutritional value and benefits to infants, especially during the initial months of life.[25] The Working Party of the Panel on Child Nutrition has unequivocally stated that there exists no superior nourishment for healthy infants during the first two years of growth when compared to breast milk. Human breast milk is uniquely tailored to meet the nutritional needs of infants and is specifically adapted to the species.[26] Additionally, it confers numerous advantages to infants, including reduced morbidity, bolstered immunity, enhanced retinal function, improved cognitive development, lower prevalence of diabetes, and mitigate risk factors for cardio-respiratory infections.[10]

Yet, some mothers may face challenges in achieving an ample milk supply, stemming from factors like insufficient production[27], structural anomalies, infections, discomfort, suboptimal latching,[28] weak sucking, irregular feedings, premature births, maternal or infantile illnesses, adoption, and surrogate motherhood.[29] Despite the dearth of clinical evidence substantiating their effectiveness, these women turn to natural galactogogues or traditional remedies to address this challenge.[30] Consequently, in certain cases, galactogogues become a strategic measure to boost breast milk production.[31]

The study revealed a remarkable consensus among all participants, with 100% (n=400) of the mothers demonstrating awareness of the role of galactogogues in enhancing breast milk production. This finding resonates with previous research, which indicated that a significant majority of breastfeeding mothers in Kuantan exhibited a commendable understanding of galactogogue consumption, with 58.3% displaying proficient knowledge in this regard.[32]

Among the scant prior investigations endeavouring to delve into the perspectives and encounters of mothers utilizing both pharmaceutical and herbal galactogogues,[33] no study, as of now, has specifically surveyed lactating mothers in the Delhi NCR region, India, to probe their attitudes and awareness concerning traditional galactogogue foods for enhancing milk production. This study, therefore, fills this void by recruiting mothers with a history of past or current breastfeeding experiences,

systematically documenting their insights and cognizance regarding traditional galactogogue foods.

While numerous prior investigations have scrutinized women's viewpoints regarding the utilization of medications while breastfeeding, the majority have centered on conventional medications.[34] This investigation aims to fill a notable research void by concentrating on the perceptions and cognizance of this segment concerning the consumption of traditional galactogogue foods. All participants involved in this study acknowledged and esteemed the advantages of breastfeeding, endorsing the 'breast is best' ideology. They exhibited a favourable stance toward breastfeeding and expressed readiness to exert the required efforts for its success, even embracing the utilization of traditional remedies to enhance breastfeeding effectiveness—the potential psychological or emotional effects of utilizing traditional galactogogue foods while breastfeeding should be given due consideration. As revealed in this study, participants provided favourable responses indicating that traditional galactogogues help in improving breast milk production. This discovery aligns with comparable research conducted by Westfall, where participants also expressed positive feedback despite the limited scientific evidence supporting the effectiveness of most traditional galactogogues.[35]

The World Health Organization[4] advocates for exclusive breastfeeding for up to six months. In this present study, 77% (n= 307) of lactating women emphasized the significance of adhering to exclusive breastfeeding practices. The result illustrated a significant association between the education of mothers and exclusive breastfeeding (p=0.01). The National Family Health Survey (NFHS-5) unveiled a favourable progression in India concerning Exclusive Breastfeeding (EBF), showcasing an increase from NFHS-4 to NFHS-5.[36] Within this study, 89 lactating mothers expressed a belief that galactogogues alleviate post-partum anxiety and stress, showing an association with maternal education (p=0.04). This observation resonates with corresponding research conducted by Sim et al.[7] which delved into the awareness and attitudes of breastfeeding women employing herbal galactogogues during the breastfeeding period. It is expected that women who utilized traditional galactogogues while breastfeeding embraced an integrative and holistic approach to their healthcare. Several research studies have showcased the widespread acceptance and implementation of integrative healthcare.[37-40]

The Academy of Breastfeeding Medicine recommends clinicians, including IBCLCs, address low milk supply concerns through thorough evaluations.[41] This involves reassuring parents or providing guidance on effective milk removal, promoting strategies for maternal well-being, and addressing underlying medical conditions. Our research subjects echo these sentiments, emphasizing the integration of galactogogue recipe sharing into prenatal care. They advocate for gynaecologists, doctors, and healthcare providers to endorse homemade galactogogues, showing a significant association with the education of mothers (p=0.04).

Women anticipate health professionals to possess comprehensive knowledge and willingness to engage in discussions regarding alternative therapies, advocating for the recommendation of homemade galactogogues to enhance breastfeeding effectiveness. By staying updated with current information and involving women in decision-making processes, healthcare providers can bolster adherence to and success of breastfeeding-related treatments. Moreover, 79% (n=315) of lactating women believe that integrating galactogogues recipes into prenatal care is essential, and 65% (n=260) consider them safer than medicinal galactogogues, showing no association with the education of mothers (p=0.70). Notwithstanding these apprehensions, given the pervasive acclaim and widespread endorsement of integrative or holistic healthcare within the broader populace, certain women may be inclined to choose alternative avenues. These alternatives, such as herbal remedies and traditional formulations, are sought to enhance breastfeeding efficacy. A prior dissatisfactory encounter with mainstream therapeutic approaches may further propel individuals towards the adoption of alternative modalities during the breastfeeding period.[42] In line with other existing literature and prior discoveries, women who breastfeed recognized the necessity for comprehensive information, particularly seeking scientific assessment regarding the effectiveness and safety of these galactogogues and other traditional remedies while breastfeeding.[43-45] This sentiment finds support in another research indicating that women, based on a study, perceive herbal galactogogues, particularly fenugreek, as the most efficacious in enhancing breast milk production. The inclination towards fenugreek as opposed to pharmaceutical galactogogues may be attributed to a sense of inherent comfort, adherence to traditional beliefs, perceived heightened efficacy, and a lack of familiarity regarding potential medication toxicity.[46] Future research could extend its focus by delving into additional behavioral aspects of lactating women concerning traditional galactogogue foods or recipes. Exploring diverse behavior theories could further enrich our understanding, paving the way for comprehensive insights into the choices and practices surrounding galactogogue consumption. This robust approach promises to unveil a more nuanced and holistic perspective on the behaviors of lactating women in the context of traditional galactogogue usage. Moreover, urgent research into the safety and efficacy of traditional galactogogues, encompassing meticulous clinical trials and insightful case reports, is essential. This imperative undertaking aims to furnish health professionals and breastfeeding women with thoroughly substantiated, research-based evidence, fostering informed decision-making and optimal care practices.

5. Conclusion

The research indicates a robust awareness among lactating women regarding galactogogues, dispelling misconceptions about post-Caesarean deliveries. While opinions vary on the taste and longevity of galactogogues, a unanimous consensus among all 400 respondents highlights their positive impact on breast milk production. Notably, there is a prevailing belief in the safety and health benefits of homemade alternatives over medicinal options, signalling the need for further exploration. Diverse attitudes, particularly on stress alleviation, underscore the complexity of postpartum care, emphasizing the requirement for personalized interventions. The findings emphasize the importance of preserving traditional knowledge and advocate for healthcare professionals to recommend homemade options. Moreover, the incorporation of recipe sharing into prenatal care is proposed, providing valuable insights for targeted education

and interventions that can ultimately enhance postpartum care decisions for the well-being of both mothers and infants. Additionally, the favorable perspectives exhibited by users of traditional galactogogues ought to inspire health professionals and researchers to delve deeper into this subject. Simultaneously, the adverse opinions concerning the timing of breastfeeding education and the inconsistency of information warrant careful consideration, urging an enhancement in services provided for breastfeeding women. It is also imperative for healthcare professionals to prioritize educating individuals about the safe and efficacious utilization of traditional galactogogue foods to enhance breast milk production effectively. This emphasizes the crucial role of healthcare providers in disseminating knowledge on culturally rooted practices for optimal maternal and infant health outcomes.

6. Conflicts of Interest

There are no conflicts of interest

7. Acknowledgements

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