iJRASET
International Journal For Research in Applied Science and Engineering Technology



# INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

**Volume:** 13 **Issue:** VIII **Month of publication:** August 2025

**DOI:** https://doi.org/10.22214/ijraset.2025.73837

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
*ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538*
*Volume 13 Issue VIII Aug 2025- Available at www.ijraset.com*

# Assessment of Knowledge, Attitude and Practice Towards Galactagogues Consumption among Lactating Mothers (Age 21-40 Years) in Urban Setting

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***Abstract:*** ***Background: Galactogogues are substances that promote breast milk production and are commonly used in Indian traditional postpartum care. Despite their widespread use, particularly among urban mothers, there is limited scientific data exploring their consumption patterns, associated beliefs, and influencing factors in India's urban context. This study aimed to assess the knowledge, attitudes, and practices (KAP) regarding galactogogue consumption among lactating mothers aged 21–40 years in Mumbai and to identify the socio-demographic and cultural factors influencing their use.***
***Methods: A descriptive cross-sectional study was conducted on 100 lactating mothers recruited via purposive sampling from Mumbai. Data were collected using a structured questionnaire comprising demographic and socioeconomic details, a 3-day dietary recall for galactogogue consumption, and a validated KAP survey. Statistical analyses, including chi-square tests, were used to explore associations between galactogogue preference and socio-demographic variables.***
***Results: Participants exhibited high levels of knowledge (78%), positive attitudes (93%), and strong practices (84%) toward galactogogue use, yielding an overall KAP score of 88%. Herbal and dietary galactogogue—such as fenugreek, ginger, garlic, oats, gond, and laddoos—were commonly used, with 73% of mothers consuming them daily and 93% using more than one type simultaneously. Shatavari use was significantly higher among mothers aged 31–40 years and in specific communities ($p < 0.05$), while other galactogogue showed no significant association with age, education, or income. Cultural norms and familial advice were the primary influences on galactogogue use, while pharmaceutical options were rarely used.***
***Conclusion: Galactogogue consumption in urban Mumbai is a culturally ingrained practice, with high awareness and widespread daily use among lactating mothers. The findings emphasize the need for culturally sensitive, evidence-based lactation support strategies to ensure the safe and informed use of galactagogues in urban postpartum care.***
***Keywords: Galactogogues, breastfeeding, lactating mothers, urban health, cultural practices, knowledge attitude practice (KAP), India***

## I. INTRODUCTION

Breastfeeding is a cornerstone of early-life nutrition, offering a biologically tailored source of nutrients, immune factors, and bioactive molecules essential for neonatal survival and development (Chung et al., 2008). The lactation process begins during pregnancy and is hormonally regulated, with prolactin stimulating milk synthesis and oxytocin facilitating milk ejection (Odentet al., 2012). Beyond its physiological function, successful lactation depends on emotional well-being and environmental support, as oxytocin release is highly sensitive to stress (Canales-Pérez et al., 1984). Breast milk composition evolves over time to meet the growing infant's nutritional needs and plays a critical role in immune protection and cognitive development (Thapa et al., 1988).
The World Health Organization (WHO) 2023 and United Nations International Children's Emergency Fund (UNICEF) 2023 recommends exclusive breastfeeding for the first six months, followed by continued breastfeeding alongside complementary feeding up to two years or beyond. However, adherence varies globally due to factors such as cultural beliefs, misinformation, aggressive formula marketing, and insufficient workplace support. In some cultures, colostrum is considered harmful, delaying initiation of breastfeeding, while societal norms around modesty and body image further hinder breastfeeding in public. Urban mothers, especially those in nuclear families, often lack adequate guidance and support, leading to early weaning.

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Despite its natural basis, many mothers experience challenges like poor latching, nipple trauma, mastitis, engorgement, and insufficient milk supply, which can compromise breastfeeding success (Lawrence & Lawrence et al., 2021). To address such issues, galactogogue, agents that promote milk production are commonly used. These include pharmacological options like domperidone and metoclopramide, which act by antagonizing dopamine to elevate prolactin levels (Saxena et al., 2025). However, due to potential cardiac risks, especially with domperidone, their use is restricted in several regions (Conaway & O'Donnell et al., 2025). Herbal and food-based galactogogue are widely adopted due to their cultural acceptance and perceived safety.

Galactogogues enhance lactation primarily by influencing prolactin, the hormone critical for milk synthesis, and in some cases, by affecting oxytocin for milk ejection. Natural galactogogues such as fenugreek, moringa, and banana blossoms have been shown in various studies to modestly increase milk volume and maternal satisfaction (Prakasam et al., 2024; Kundarti et al., 2025; Yanti et al., 2025). While traditional use is widespread in Asia, Africa, and the Middle East, evidence from large-scale randomized trials remains limited, and safety profiles are not uniformly established. Thus, there is a growing call for evidence-based recommendations that integrate traditional knowledge with clinical validation.

In India, the use of galactagogues is embedded in traditional systems like Ayurveda, where the concept of "stanya janana" refers to milk-enhancing agents described in texts such as the *Charaka Samhita* and *Sushruta Samhita*. Common galactogogue include Shatavari (*Asparagus racemosus*), Methi (*Trigonella foenum-graecum*), Gondh (edible gum), Jeera *(Cuminum cyminum*), and Ajwain (*Trachyspermum ammi*), typically administered in laddoos, decoctions, or ghee-based preparations. Clinical validation is emerging; for instance, the Ayush-SS granules, a polyherbal formulation, have been shown to increase milk output (Saxena et al., 2025). However, while culturally entrenched, many practices continue without formal medical guidance, highlighting the need for standardized, evidence-based lactation support in India.

Given the widespread use of galactogogues often rooted in tradition and peer advice rather than scientific guidance, it is crucial to assess the knowledge, attitudes, and practices (KAP) of lactating mothers, especially in urban settings where nuclear family structures, digital media reliance, and time constraints prevail. Misconceptions regarding galactogogue, fear of insufficient milk supply, and lack of access to lactation counseling may lead to inappropriate or ineffective use of these agents. By evaluating the KAP related to galactogogue use, researchers and healthcare providers can identify educational gaps, cultural barriers, and behavioral patterns that influence maternal decision-making. This understanding can inform the development of targeted interventions and policies aimed at promoting safe, effective, and culturally acceptable lactation support (Chung et al., 2008; WHO, 2023). This study aims to assess Knowledge, Attitude and Practice of lactating mothers (Age 21-40 years) residing in Mumbai towards the consumption of galactogogues. Galactogogues have long been part of traditional Indian postpartum diets, yet data on their use in urban settings remains limited. Additionally, urban areas are culturally diverse, with mothers drawing on varied traditional practices. Understanding the preferences and usage patterns of galactogogues among urban lactating mothers can provide insights into how they navigate these challenges. This knowledge can help healthcare providers offer culturally sensitive support and guide the development of products and services tailored to mothers' needs, ultimately promoting successful breastfeeding and improving maternal and infant health.

## II. METHODOLOGY

A descriptive cross-sectional study was conducted among 100 lactating mothers who are currently exclusively breastfeeding, aged 21-40 years. The participants were recruited using a purposive convenience sampling method from a tertiary hospital and through referrals, residing in Mumbai, Maharashtra. The inclusion criteria consisted of lactating mothers who were currently breastfeeding or mothers who have introduced complementary feeding but continue breastfeeding aged 21-40 years, residing in Urban Mumbai. Lactating mothers who never initiated breastfeeding, had a history of breast surgery or have medical contraindications and mothers who have infants with special feeding needs were excluded from the study.

Ethical clearance was obtained from the Intersystem Biomedical Ethics Committee (ISBEC) prior to data collection, and written informed consent was secured from all participants to ensure voluntary participation and data confidentiality. Data were collected over six months using a self-developed structured, questionnaire-based approach.

The tools administered included demographic and socioeconomic data analysis using a self-designed questionnaire, A 3-day diet recall to analyse frequency of consumption of galactogogue and KAP questionnaire was used to assess the mother's Knowledge, Attitude and Practice regarding the use of Galactogogues.

Data analysis was performed using SPSS software (version 20). Data presented as Mean ± SD or frequency (percentage). Descriptive statistics such as mean, standard deviations, frequency distribution, and chi-square test were computed for quantitative analysis. $p < 0.05$ was considered to be statistically significant.

## III. RESULTS

This section presents the key findings of the study, which assessed the knowledge, attitudes, and practices (KAP) regarding galactogogues consumption among lactating mothers aged 21–40 years in Mumbai. The analysis includes socio-demographic characteristics, socio-economic status, anthropometric data, dietary habits, and frequency of galactogogue use. Statistical associations were examined between galactogogue preferences and factors such as age, education, income, and community. The results offer valuable insights into how cultural practices, maternal experiences, and perceived lactation challenges shape the use of galactagogues in an urban Indian setting, highlighting the widespread reliance on traditional remedies and the need for integrating professional guidance with culturally rooted postpartum practices.

TABLE NO. 1 Socio-demographic Characteristics of the Mother

| Socio-Demographic Characteristics of the Mother | Frequency (n) | Percentage (%) |
|---|---|---|
| Mothers Age (Years) | | |
| 21-40 years | 100 | 100 |
| Qualification | | |
| Not Educated | 0 | 0 |
| $10^{th}$ | 0 | 0 |
| $12^{th}$ | 0 | 0 |
| Graduate | 64 | 64 |
| Post Graduate | 36 | 36 |
| Ph.D | 0 | 0 |
| Nationality | | |
| Indian | 100 | 100 |
| Religion | | |
| Islam | 51 | 51 |
| Hindu | 33 | 33 |
| Christian | 16 | 16 |
| Community | | |
| Muslim | 51 | 51 |
| Maharashtrian | 32 | 32 |
| Gujarati | 1 | 1 |
| South Indian | 16 | 16 |
| No. of Children | | |
| One | 43 | 43 |
| Two | 38 | 38 |
| Three | 12 | 12 |
| Four | 5 | 5 |
| Five | 1 | 1 |
| Six | 1 | 1 |
| Currently Breastfeeding | 100 | 100 |
| Miscarriage | 12 | 12 |
| Preterm Birth | 17 | 17 |
| Type of Delivery | | |
| Vaginal | 74 | 74 |
| Caesarean | 26 | 26 |

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Table no. 1 presents the socio-demographic characteristics of the mothers. All participants (100%) were between 21–40 years of age. With respect to educational qualifications, the majority were graduates (64%), followed by postgraduates (36%) while none of the participants were uneducated, had completed only 10th, 12th or held a Ph.D. degree. All respondents (100%) were Indian nationals, indicating a culturally homogenous national background. In terms of religion, a slightly higher proportion of mothers followed Islam (51%), followed by Hinduism (33%) and Christianity (16%), reflecting a diverse religious representation within the sample. With regard to community affiliation, the Muslim community constituted the largest group (51%), while 32% of the participants identified as Maharashtrian, 16% as South Indian, and 1% as Gujarati. This distribution shows that although the majority of the participants shared a common national identity, there was diversity in terms of religion and regional community background.

It also outlines the number of children each mother had, their current breastfeeding status, any history of miscarriage or preterm birth, and the mode of delivery. The data shows that 43% of mothers had one child, indicating a large proportion of first-time mothers in the study. A further 38% reported having two children, 12% had three, while a small number had four (5%), five (1%), or six (1%) children, reflecting a varied parity distribution.

A previous miscarriage was reported by 12% of the participants, which may be important in understanding concerns related to maternal health or fertility. Additionally, 17% of the mothers had experienced a preterm birth, which may have implications for breastfeeding challenges or infant health outcomes.

In terms of mode of delivery, the majority of mothers (74%) delivered vaginally, while 26% underwent caesarean section. This indicates that while natural delivery was predominant, a significant proportion had surgical intervention, which can potentially influence initial breastfeeding practices and postpartum recovery.

All mothers (100%) in the study were actively breastfeeding during the time of data collection, confirming their relevance as the target group for studying galactogogue use and lactation-related behaviors.

TABLE NO. 2 Socio-demographic Characteristics of the Infant

| Socio-Demographic Characteristics of the Infant | Frequency (n) | Percentage (%) |
|---|---|---|
| Infant Age (Months) | | |
| 0-6 Months | 100 | 100 |
| Gender | | |
| Male | 60 | 60 |
| Female | 40 | 40 |

Table no. 2 shows the demographic profile of the children. All infants (100%) were in the age group of 0–6 months. The study population showed slightly more male infants (60%) as compared to female infants (40%).

TABLE NO. 3 Socio-economic Status of the Study Participants as per Kuppuswamy Score

| Socioeconomic class | Frequency (n) | Percentage (%) | Monthly family income in INR '₹' |
|---|---|---|---|
| I (Lower Class) | 0 | 0 | <124444 |
| II (Upper lower Class) | 0 | 0 | 12445 - 37324 |
| III (Lower Middle class) | 24 | 24 | 37325 - 93380 |
| IV (Upper Middle class) | 76 | 76 | 93381 - 249343 |
| V (Upper class) | 0 | 0 | >249343 |

NOTE: (%) stands for valid percentage, (n) stands for frequency

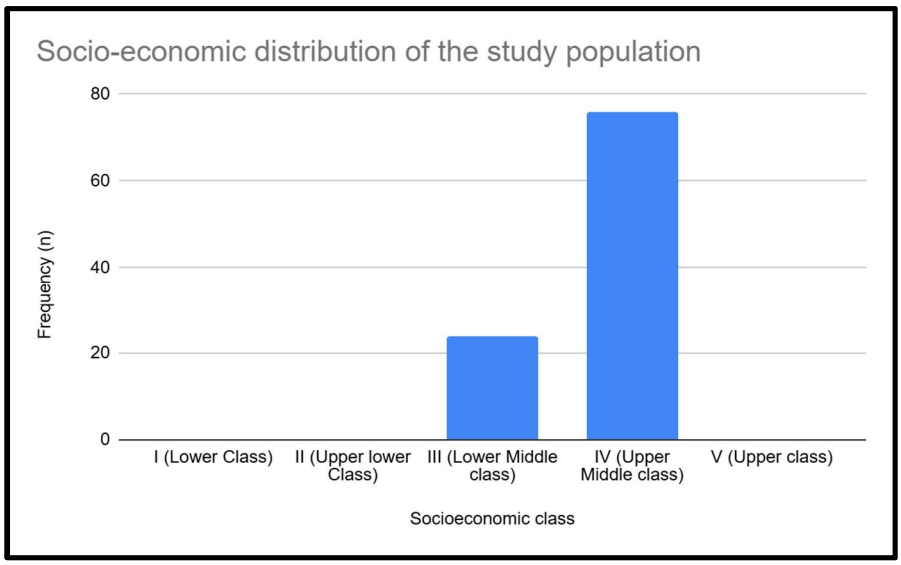



FIGURE 1: Socio-economic distribution of the study population

Table no. 3 Presents the distribution of participants according to their socio-economic class. A majority of the participants (76%) were found to be in the upper-middle class (Class IV), followed by 24% in the lower-middle class (Class III). None of the families were classified under upper class (V), upper lower class (II), or lower class (I), as per the income brackets defined by the scale.

TABLE NO. 4 Anthropometric data of the Mother

| Anthropometric Data | Minimum | Maximum | Mean + SD |
|---|---|---|---|
| Weight (kg) | 53 | 82 | 66.82 ± 7.769 |
| BMI | 17.0 | 33.7 | 24.526 ± 3.7916 |
| Weight Gain during pregnancy (kg) | 7.0 | 10.0 | 9.15 ± 0.9361 |
| Height (cms) | 155 | 180 | 165.54 ± 8.721 |
| Gestational age at delivery (weeks) | 36 | 41 | 38.51 ± 1.283 |

Table no. 4 presents the anthropometric data of the mothers. The mean weight was 66.82 ± 7.77 kg, with a range between 53 and 82 kg. The average BMI was 24.53 ± 3.79, ranging from 17.0 to 33.7. The mean weight gain during pregnancy was 9.15 ± 0.94 kg. The average height of the mothers was 165.54 ± 8.72 cm. The mean gestational age at delivery was 38.51 ± 1.28 weeks, with a minimum of 36 and maximum of 41 weeks.

TABLE NO. 5 Anthropometric Data of the Infants

| Variables | Minimum | Maximum | Mean + SD |
|---|---|---|---|
| Birth weight (kg) | 2.53 | 6.47 | 4.4605 ± 1.09599 |
| Current weight (kg) | 3.61 | 9.24 | 6.372 ± 1.56601 |
| Current height (cms) | 50.00 | 69.70 | 59.173 ± 5.68904 |
| Height weight Ratio | .070 | .138 | 0.10621 ± 0.017185 |

Table no. 5 Shows the Anthropometric profile of the Infants. The mean birth weight was 4.46 ± 1.10 kg, with a range from 2.53 to 6.47 kg. The current weight of the infants ranged from 3.61 to 9.24 kg, with a mean of 6.37 ± 1.57 kg. The average current height was 59.17 ± 5.69 cm, with a minimum of 50.00 cm and a maximum of 69.70 cm. The height-to-weight ratio ranged from 0.070 to 0.138, with a mean value of 0.1062 ± 0.0172.

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TABLE NO. 6 Medical history of the Study Participants.

| Medical History | Frequency (n) | Percentage (%) |
|---|---|---|
| Diabetes | 12 | 12 |
| Hypertension | 9 | 9 |
| Thyroid | 9 | 9 |

NOTE: (%) stands for valid percentage, (n) stands for frequency

Table no. 6 summarizes the self-reported medical history of the lactating mothers. Among the participants, 12% reported having diabetes, while 9% had hypertension, and another 9% were managing thyroid-related disorders. These chronic conditions may have an impact on postpartum health and lactation performance and may also necessitate dietary or therapeutic modifications during the breastfeeding period.

The data obtained indicates that 30% of the mothers were taking one or more medications at the time of data collection. Monitoring such medical background is important to contextualize the nutritional practices and supplementation behaviors among lactating women

TABLE NO. 7 Eating Habits of the Study Participants

| Variables | Frequency (n) | Percentage (%) |
|---|---|---|
| Food Preferences | | |
| Vegetarian | 30 | 30 |
| Non-Vegetarian | 70 | 70 |
| Ovo-Vegetarian | 0 | 0 |
| Lactose Free | 0 | 0 |
| Gluten Free | 0 | 0 |
| Others | 0 | 0 |
| Food Allergy | | |
| Yes | 8 | 8 |
| No | 92 | 92 |

NOTE: (%) stands for valid percentage, (n) stands for frequency

Table no. 7 provides details regarding the eating habits and water intake practices of the study participants. Among the mothers, 70% reported being non-vegetarian, while 30% followed a vegetarian diet. This dietary diversity reflects potential variation in protein, micronutrient, and overall nutrient intake across the group.

Food allergies were reported by 8% of the participants, indicating a small subset of the population that may require dietary modifications or restrictions due to allergic responses. The nature of these allergies was not specified in the data but remains relevant for assessing potential limitations in dietary diversity.

TABLE NO. 8 Knowledge, Attitude and Practice Analysis

| Scoring | Minimum Score | Maximum Score | Range | Percentage |
|---|---|---|---|---|
| Knowledge score | 0 | 22 | 0-22 | 78% |
| Attitude score | 0 | 38 | 0-38 | 93% |
| Practice score | 0 | 16 | 0-16 | 84% |
| Total Knowledge, Attitude and Practice (KAP) score | 0 | 75 | 0-75 | 88% |

The Knowledge, Attitude and Practice scores was categorised as Poor KAP (<50%), Fair KAP (50-74%), Good KAP ( ≥75%)
The total KAP score was categorised as Poor KAP (0 – 38), Fair KAP (39 – 56), Good KAP (57 – 75) scores.
With a total score of 75, the KAP score was categorized within the upper range of the scoring system provided. Since the score was within the "Good KAP" category, it suggests that the participants have demonstrated a strong understanding, positive attitudes and practice towards the use and importance of galactogogues.
A good Knowledge Score of 78% demonstrated that the mothers showed a high level of awareness about galactogogues, their benefits, and sources. This data indicates that most mothers had a sound theoretical understanding of galactogogues, possibly influenced by cultural practices, family traditions, and peer networks.
The KAP analysis reveals a good Attitude Score of 93% thereby indicating a highly positive attitude of the mothers towards galactogogues. This reflects a universally affirmative perception among lactating mothers regarding the effectiveness, safety, and importance of galactogogues in supporting breast milk production. This widespread acceptance suggests a favorable mindset that may contribute to high compliance and continued usage among mothers in urban settings.
84% of Practice Score demonstrated good practice towards galactogogues consumption among the study population, indicating frequent and consistent use of galactogogues in the daily routine of the mothers.
Overall, the total KAP score was 88%, suggesting that a majority of mothers not only possessed knowledge about galactagogues but were also incorporating them into their diets. This alignment between knowledge, attitude, and practice could possibly reflect the cultural normalization and integration of galactogogue in postpartum nutrition among mothers in the studied urban population.

TABLE NO. 9 Knowledge regarding different types of galactogogues

| Variables | Frequency (n) | Percentage (%) |
|---|---|---|
| Galactogogue laddoo | 91 | 91 |
| Shatavari | 61 | 61 |
| Ginger | 100 | 100 |
| Fennel seeds | 100 | 100 |
| Gond | 91 | 91 |
| Oats | 100 | 100 |
| Fenugreek seeds | 100 | 100 |
| Garlic | 100 | 100 |
| Others | 8 | 8 |

NOTE: (%) stands for valid percentage, (n) stands for frequency

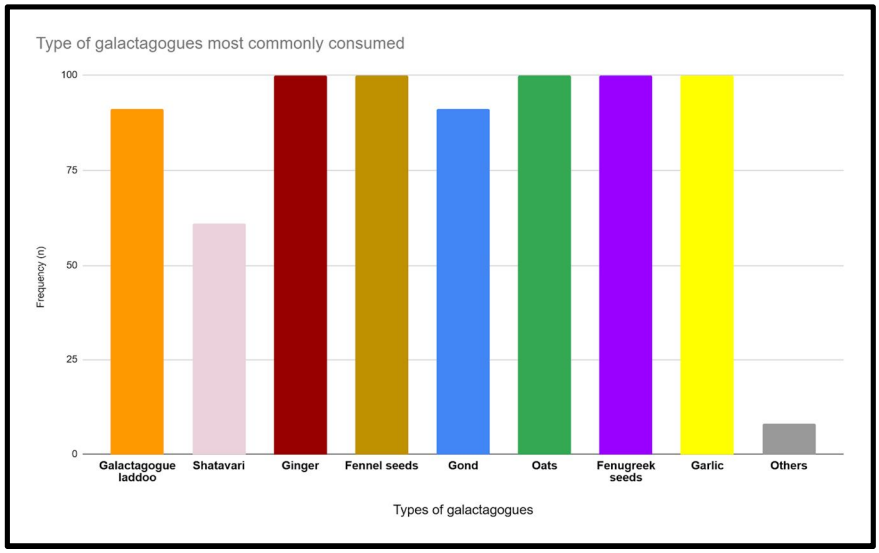



FIGURE 2: Frequency of Common Known Galactogogues

Table no. 9 shows that out of the 8 commonly consumed galactogogues in India the most common were found to be Ginger, Garlic, Oats, Fenugreek seeds and Fennel Seeds Participants reported familiarity and use of various food-based galactogogues. As shown in Figure 2, all respondents (100%) identified ginger, fennel seeds, oats, fenugreek seeds, and garlic as galactogogues. Gond and galactogogue laddoos were recognized by 91% of participants. Shatavari was identified by 61% of the study population. A small proportion (8%) of the mothers reported awareness of other galactagogues, which included coconut water, dal, honey water, and Lactare capsules (a commercially available herbal supplement prescribed to one participant one month post-delivery).

These findings suggest a high level of awareness of commonly used herbal and dietary galactogogues among the urban lactating mothers surveyed, particularly those widely integrated into traditional diets.

TABLE NO. 10 Association between Galactogogue preference and Age Groups

| Sr no. | Common Galactogogues | Age (Years) | | | | | | Chi-square value | p- value |
|---|---|---|---|---|---|---|---|---|---|
| | | 21-25 years | | 25-30 years | | 31-40 years | | | |
| | | (n) | (%) | (n) | (%) | (n) | (%) | | |
| 1 | Galactogogue laddoo | 46 | 92 | 28 | 90 | 17 | 90 | 0.132 | 0.936 |
| 2 | Shatavari | 27 | 54 | 17 | 55 | 17 | 90 | 8 | 0.018* |
| 3 | Ginger | 50 | 100 | 31 | 100 | 19 | 100 | .a | - |
| 4 | Fennel seeds | 50 | 100 | 31 | 100 | 19 | 100 | .a | - |
| 5 | Gond | 46 | 92 | 28 | 90 | 17 | 90 | 0.132 | 0.936 |
| 6 | Oats | 50 | 100 | 31 | 100 | 19 | 100 | .a | - |
| 7 | Fenugreek seeds | 50 | 100 | 31 | 100 | 19 | 100 | .a | - |
| 8 | Garlic | 50 | 100 | 31 | 100 | 19 | 100 | .a | - |

NOTE: Significant value p ≤0.05, .a is constant, (%) stands for valid percentage, (n) stands for frequency

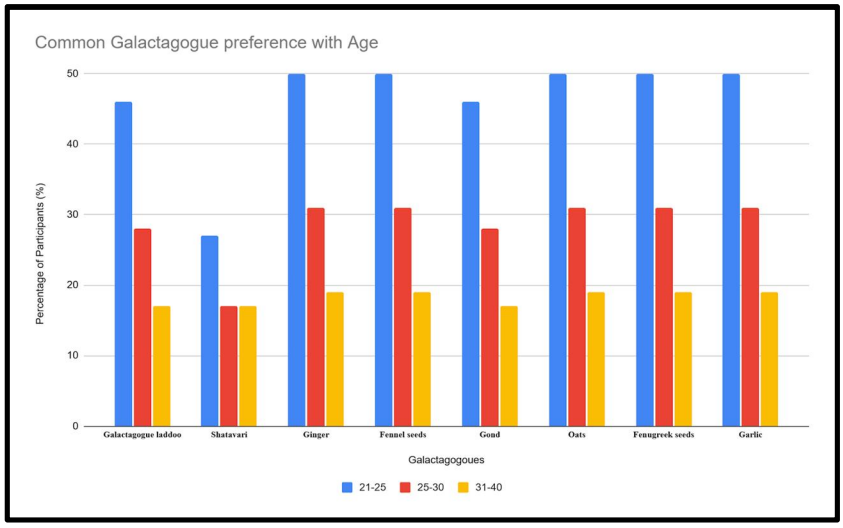



FIGURE 3: Association of Consumption of Common Galactogogue with Age Groups

The relationship between participants' age and their preference for specific galactogogues was assessed using the chi-square test. The participants were grouped into three age categories: 21–25 years, 25–30 years, and 31–40 years. Table summarizes the distribution of galactogogue preference across age groups. No statistically significant association was found between age and the preference for galactogogue laddoo, gond, or any of the universally consumed galactogogues such as ginger, fennel seeds, oats, fenugreek seeds, and garlic, as all participants reported 100% usage for these items.

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However, a significant association was observed between age and the use of Shatavari ($\chi^2 = 8$, $p = 0.018$). While 54% of mothers aged 21–25 years and 55% of those aged 25–30 years reported using Shatavari, a much higher proportion (90%) of women aged 31–40 years preferred it. This suggests that older lactating mothers may be more inclined to use Shatavari as a galactogogue.

TABLE NO. 11 Association between galactogogue preference and Education

| Common Galactogogues | Graduate | | Professional Degree | | Chi-square value | p- value |
|---|---|---|---|---|---|---|
| | (n) | (%) | (n) | (%) | | |
| Galactogogue laddoo | 59 | 92 | 32 | 89 | 0.306 | 0.58 |
| Shatavari | 39 | 61 | 22 | 61 | 0 | 0.986 |
| Ginger | 64 | 100 | 36 | 100 | .a | - |
| Fennel seeds | 64 | 100 | 36 | 100 | .a | - |
| Gond | 59 | 92 | 32 | 89 | 0.306 | 0.58 |
| Oats | 64 | 100 | 36 | 100 | .a | - |
| Fenugreek seeds | 64 | 100 | 36 | 100 | .a | - |
| Garlic | 64 | 100 | 36 | 100 | .a | - |

NOTE: Significant value $p \leq 0.05$, .a constant,(%) stands for valid percentage, (n) stands for frequency

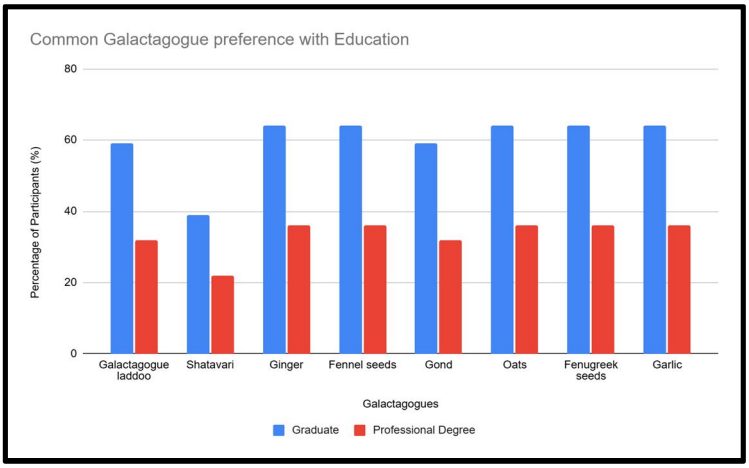



FIGURE 4: Association between galactagogue preference and Education

The table no. 11 presents the association between the education level of participants and their preference for selected galactogogues. All participants in the study fell into two education categories: graduates and those with a professional degree (postgraduates). No participants belonged to other educational levels. Preferences for commonly used galactogogues—such as ginger, fennel seeds, oats, fenugreek seeds, and garlic—were uniformly high (100%) across both groups, rendering statistical analysis through chi-square inapplicable. For galactogogues like shatavari, gond, and laddoo, chi-square values were not statistically significant ($p > 0.05$), indicating no significant association between education level and galactogogue preference.

TABLE NO. 12 Association between galactogogue preference and Socio-economic status

| Common Galactogogues | Lower Middle | | Upper Middle | | Chi-square value | p- value |
|---|---|---|---|---|---|---|
| | (n) | (%) | (n) | (%) | | |
| Galactogogue laddoo | 23 | 96 | 68 | 90 | 0.901 | 0.343 |
| Shatavari | 15 | 63 | 46 | 61 | 0.3 | 0.863 |
| Ginger | 24 | 100 | 76 | 100 | .a | - |
| Fennel seeds | 24 | 100 | 76 | 100 | .a | - |
| Gond | 23 | 96 | 68 | 90 | 0.901 | 0.343 |
| Oats | 24 | 100 | 76 | 100 | .a | - |
| Fenugreek seeds | 24 | 100 | 76 | 100 | .a | - |
| Garlic | 24 | 100 | 76 | 100 | .a | - |

NOTE: Significant value p ≤0.05, .a is constant,(%) stands for valid percentage, (n) stands for frequency

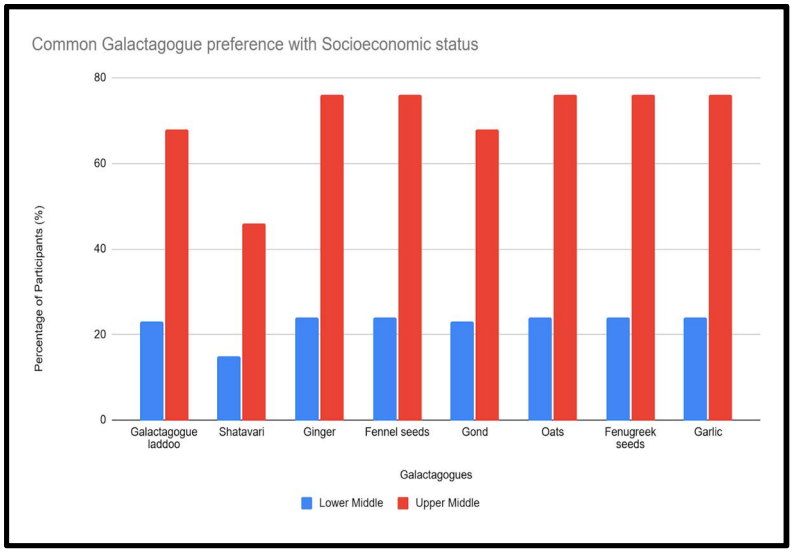



FIGURE 5: Association of Consumption of Common Galactagogue and Socio-economic status of the Study Participants

Table no. 12 presents the relationship between participants' socioeconomic status—classified as lower middle class and upper middle class based on the Modified Kuppuswamy Scale—and their preference for commonly used galactogogues.

For Ginger, Fennel seeds, Oats, and Fenugreek seeds, all participants across both socioeconomic groups reported 100% usage. For other galactogogue such as galactogogue laddoo, gond, and shatavari, the chi-square values indicated no statistically significant association ($p > 0.05$), suggesting that galactogogue preferences were not influenced by income level within this urban population. Preferences appeared uniformly high, indicating that cultural practices surrounding galactogogue use may transcend economic differences.

TABLE NO. 13 Association between galactogogue preference and Community

| Galactogogues | Muslim | | Maharashtrian | | Gujarati | | South Indian | | Chi-square value | p- value |
|---|---|---|---|---|---|---|---|---|---|---|
| | (n) | (%) | (n) | (%) | (n) | (%) | (n) | (%) | | |
| Galactogogue laddoo | 47 | 92 | 29 | 91 | 1 | 100 | 14 | 88 | 0.427 | 0.935 |
| Shatavari | 23 | 45 | 25 | 78 | 0 | 0 | 13 | 81 | 13.688 | 0.003* |
| Ginger | 51 | 100 | 32 | 100 | 1 | 100 | 16 | 100 | .a | - |
| Fennel seeds | 51 | 100 | 32 | 100 | 1 | 100 | 16 | 100 | .a | - |
| Gond | 47 | 92 | 29 | 91 | 1 | 100 | 14 | 88 | 0.427 | 0.935 |
| Oats | 51 | 100 | 32 | 100 | 1 | 100 | 16 | 100 | .a | - |
| Fenugreek seeds | 51 | 100 | 32 | 100 | 1 | 100 | 16 | 100 | .a | - |
| Garlic | 51 | 100 | 32 | 100 | 1 | 100 | 16 | 100 | .a | - |

NOTE: Significant value p ≤0.05,(%) stands for valid percentage, (n) stands for frequency, .a is constant

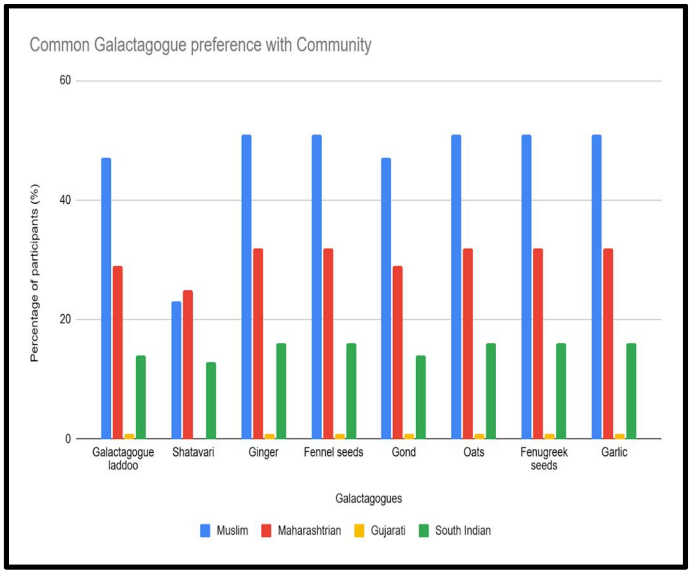



FIGURE 6: Association of Consumption of Common Galactogogue and community

This table no. 13 explores the relationship between participants' community background (Muslim, Maharashtrian, Gujarati, and South Indian) and their preference for commonly used galactogogue. Preferences for ginger, fennel seeds, oats, fenugreek seeds, and garlic were reported at 100% across all communities, making chi-square analysis inapplicable for these items due to lack of variation.

For galactogogue laddoo and gond, no significant association was found between community and preference ($p > 0.05$), indicating widespread use regardless of community background. However, a statistically significant association was observed between community and shatavari preference ( $p = 0.003$). A notably higher preference for shatavari was reported among South Indian (81%) and Maharashtrian (78%) participants, compared to Muslim (45%) and Gujarati (0%) participants. This suggests that regional and cultural factors may strongly influence the use of certain traditional or Ayurvedic galactogogue like shatavari.

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TABLE NO. 14 Frequency of galactogogues consumption per day

| Consumption (per day) | Frequency (n) | Percentage (%) |
|---|---|---|
| Once | 36 | 36 |
| Twice | 30 | 30 |
| Thrice | 27 | 27 |
| Four times | 4 | 4 |
| Five times | 1 | 1 |

NOTE:(%) stands for valid percentage, (n) stands for frequency

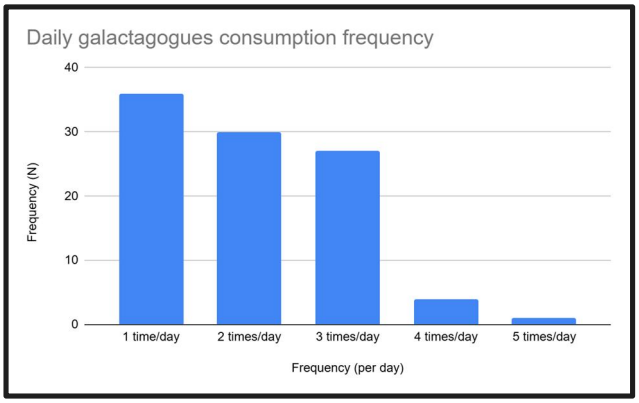



FIGURE 7: Daily galactogogues consumption frequency

Table no. 14 presents data on how frequently galactogogues were consumed by lactating mothers on a daily basis. The frequency of galactogogue consumption was assessed using a 3 Day Diet Recall. The most common frequency reported was once per day, by 36% of participants, followed closely by 30% who consumed them twice daily, and 27% who consumed galactogogue three times per day.

A smaller proportion of mothers reported higher frequencies, with 4% consuming galactogogue four times per day and 1% reporting intake five times daily. These findings suggest that galactogogue use is a regular and intentional dietary practice, with most mothers consuming them one to three times daily, likely integrated into routine meals or traditional postpartum preparations. The data also reflects a degree of variation in usage, possibly influenced by personal preference, advice from family or healthcare providers, perceived milk supply response, or ease of access and preparation.

## IV. DISCUSSION

This study explored the extent to which urban mothers are informed about, believe in, and utilize galactogogues as part of their postpartum dietary routines. Findings confirm that galactogogue consumption is a culturally ingrained behavior, primarily driven by familial advice, perceived benefits, and tradition rather than professional or clinical guidance. These results align with earlier studies (Sim et al., 2015; Pahuja et al., 2024), which emphasize that while galactogogue use is widespread, scientific validation remains limited. This highlights the need for evidence-based lactation counseling that respects cultural norms while offering medically sound guidance.

The socio-demographic profile revealed a highly educated population, with 60% graduates and 36% postgraduates, which may contribute to higher awareness of lactation-related practices (Hauff et al., 2012). Religious and regional diversity reflected Mumbai's multicultural landscape, yet galactogogue use remained consistent across communities. Notably, Shatavari use was significantly higher among Maharashtrian and South Indian mothers, consistent with previous findings (TM Khan et al., 2018). A high proportion of first-time mothers (43%), along with a history of miscarriages or preterm deliveries in some, suggests that perceived lactation challenges may have encouraged galactogogue use as a supportive measure (Oberfichtner et al., 2023).

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Despite a predominance of vaginal deliveries (74%), a considerable number of cesarean births (26%) were observed, which could delay lactation initiation and prompt galactogogue usage (Shen et al., 2022). Most participants belonged to the upper-middle-class (76%) or lower-middle-class (24%) as per the Modified Kuppuswamy Scale, reflecting a relatively informed, urban demographic. Anthropometric and birth-related indicators (e.g., mean gestational age of 38.5 weeks, mean birth weight 4.46 kg) suggest overall good maternal and infant health, supporting a positive lactation environment, though 17% reported preterm births, a known factor associated with early use of lactation aids (Hill et al., 2005).

The KAP analysis revealed a strong overall score of 88%, categorized as "Good," indicating high awareness, favorable attitudes, and consistent use of galactogogues. Herbal and dietary galactogogues like fenugreek, fennel, garlic, oats, and gond were commonly used daily (73%), often in combinations (93%), reflecting patterns seen in similar Indian settings (McBride et al., 2022; TM Khan et al., 2018). Interestingly, pharmaceutical galactogogue were rarely used, and Shatavari was especially preferred by older mothers (31–40 years), perhaps due to greater experience or trust in Ayurvedic solutions. The effectiveness of galactogogues was positively perceived, with 89% of mothers reporting increased milk supply.

Taste, cost, and availability were the primary factors influencing galactogogues consumption, more so than cultural significance, a finding that mirrors modern consumer preferences (Derakshani et al., 2023). Importantly, no significant associations were found between education or socioeconomic status and galactogogues usage, supporting earlier findings by Garbacz in 2024, which suggest that cultural influence may outweigh formal education in determining health behaviors (Garbacz et al., 2024). Overall, the study underscores the importance of culturally sensitive, evidence-based lactation support strategies in urban India to promote safe and effective breastfeeding practices.

## V. CONCLUSION

This study demonstrates that galactogogues consumption among lactating mothers in Mumbai is a culturally rooted and widely practiced behavior, driven more by familial traditions and cultural beliefs than clinical guidance. Mothers exhibited good knowledge, positive attitudes, and consistent practices, with frequent use of herbal and dietary galactogogues such as laddoo, fennel, fenugreek, ginger, and Shatavari. Pharmaceutical use was minimal, and preferences showed limited association with socio-demographic factors, except for Shatavari, which was more commonly used among women aged 31–40 and specific communities. Other galactogogues showed no significance with age, education, or income, indicating cultural influence over usage patterns. The findings highlight the importance of integrating traditional postpartum practices with structured, evidence-based lactation counseling. Empowering mothers with accurate, accessible, and culturally appropriate information that can help improve both maternal confidence and breastfeeding outcomes, ensuring safe and effective galactogogues use in modern urban settings.

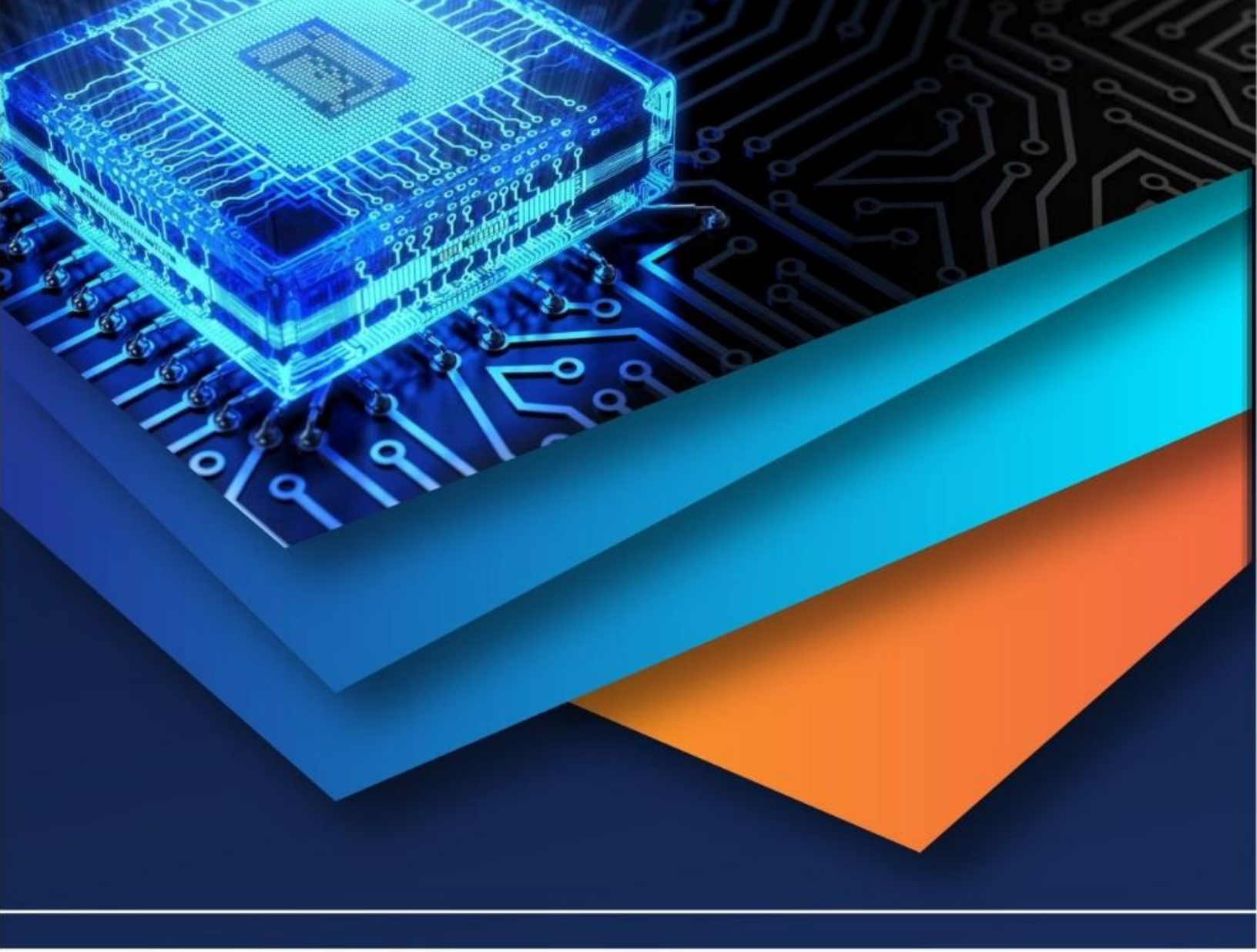
## REFERENCES

[1] Canales-Pérez, E. S. (1984). Control of lactation. Gaceta Médica de México, 120(2), 131–136. https://pubmed.ncbi.nlm.nih.gov/6735024
[2] Chung, M., Ip, S., Yu, W., Raman, G., Trikalinos, T., & DeVine, D. (2008). Interventions in primary care to promote breastfeeding: A systematic review. Agency for Healthcare Research and Quality (US). https://pubmed.ncbi.nlm.nih.gov/20722164
[3] Odent, M. (2012). The role of the shy hormone in breastfeeding. Midwifery Today with International Midwife, (101), 39–42. https://pubmed.ncbi.nlm.nih.gov/22486011
[4] Thapa, S., Short, R. V., & Potts, M. (1988). Breast-feeding and birth spacing save lives. Journal of Obstetrics & Gynaecology Research, 14(2), 117–129. https://pubmed.ncbi.nlm.nih.gov/12342408
[5] World Health Organization. (2021). Infant and young child feeding: Guiding principles for feeding non-breastfed children 6–24 months of age. https://www.who.int/publications/i/item/9241593431
[6] Lawrence, R. A., & Lawrence, R. M. (2021). *Breastfeeding: A guide for the medical professional*. Elsevier Health Sciences.
[7] Saxena, U., Ota, S., Rajput, S., et al. (2025). Clinical evaluation of Ayush-SS granules in exclusively breastfeeding mothers with insufficient lactation. International Breastfeeding Journal.
[8] Conaway, E.M., & O'Donnell, A.E. (2025). Osteopathic manipulation to increase lactation quantity: a prospective case series. Journal of Osteopathic Medicine
[9] Prakasam, A., Darji, P., Kumar, P. (2024). Therapeutic benefits of Fenugreek on Breast Milk Production and Weight Gain Among Newborns. Journal of Natural Products.
[10] Kundarti, F.I., Aliza, N.N., & Indriani, R. (2025). Nigella sativa oil increases breast milk production post-caesarean. Jurnal Riset Kesehatan. PDF
[11] Yanti, E.F., et al. (2025). Formulation of Katuk (Sauropus androgynus) extract effervescent tablets. Indonesian Pharmacopeia Journal https://ipj.uds.ac.id/ipj/article/view/44
[12] Hill, P. D., Aldag, J. C., Chatterton, R. T., & Zinaman, M. (2005). Comparison of milk output between mothers of preterm and term infants: the first 6 weeks after birth. Journal of Human Lactation, 21(1), 22-30.
[13] Pahuja, A., Jain, M., & Rawat, K. (2024). A Review on Galactogogic Properties of India's Rich Tradition of Medicinal Herbs and Spices for Lactation. Traditional and Integrative Medicine, 308-317.

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[14] Shen, X., Lin, S., Li, H., Amaerjiang, N., Shu, W., Li, M., ... & Hu, Y. (2022). Timing of breastfeeding initiation mediates the association between delivery mode, source of breastfeeding education, and postpartum depression symptoms. Nutrients, 14(14), 2959.
[15] Derakhshani, M., Asgarian, A., Tousi, H., Zainolabedini-Naeiny, Z., Miraj, S., & Gharlipour, Z. (2023). Cultural beliefs and practices in postpartum women in Iran: A qualitative study. Journal of West African College of Surgeons, 13(3), 28-35.
[16] Garbacz, A., Juszczak, P., Nowicki, M., Łukasz Kowalczewski, P., & Człapka-Matyasik, M. (2024). Exploring galactagogue use among breastfeeding women: Insights from an observational study. Plos one, 19(10), e0310867.
[17] Sim, T. F., Hattingh, H. L., Sherriff, J., & Tee, L. B. (2015). The use, perceived effectiveness and safety of herbal galactagogues during breastfeeding: a qualitative study. International Journal of Environmental Research and Public Health, 12(9), 11050-11071.
[18] Hauff, L. E., & Demerath, E. W. (2012). Poor positioning, decreased prolactin levels, and low milk output associated with early cessation of exclusive breastfeeding in obese women.
[19] Khan, T. M., Wu, D. B. C., & Dolzhenko, A. V. (2018). Effectiveness of fenugreek as a galactagogue: A network meta-analysis. Phytotherapy Research, 32(3), 402-412.
[20] McBride, G. M., Stevenson, R., Zizzo, G., Rumbold, A. R., Amir, L. H., Keir, A. K., & Grzeskowiak, L. E. (2022). Knowledge of galactagogue use during breastfeeding in Australia: a cross sectional online survey. Journal of Human Lactation, 38(4), 740-748.

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