

Section: Maternity Nursing

Mung bean extract to increase breast milk production in mothers during the breastfeeding stage

Riski Ardika Septiana , Heni Setyowati Esti Rahayu, Nurul Hidayah, Kartika Wijayanti

Authors information

Department of Nursing, Universitas Muhammadiyah Magelang, Indonesia



Contactable email: riskiardika30@gmail.com / Article DOI: *On process*

Abstract

Breast milk is the primary and natural source of nutrition for infants. However, exclusive breastfeeding rates remain low due to various lactation issues, including suboptimal milk production. Mung beans contain nutrients believed to help increase breast milk production. The case study aimed at describing the effect of administering mung bean extract on breast milk production. This study used a descriptive case study design on the patient who experienced ineffective breastfeeding. The intervention consisted of administering mung bean juice twice daily for three days. Data were collected through interviews, observations, and physical examinations before and after the intervention. After three days of intervention, there was an increase in breast milk production, as indicated by physical changes in the breasts and infant satisfaction during breastfeeding. Administering mung bean extract effectively helps increase breast milk production in mothers with lactation issues.

Keywords: Breast milk, breastfeeding, complementary therapy, lactation, maternity nursing

Introduction

Optimal infant nutrition relies fundamentally on exclusive breastfeeding during the first six months of life, a practice strongly endorsed by global health organizations like the WHO and UNICEF (Pérez-Escamilla et al., 2019). Breast milk provides an unparalleled blend of nutrients, antibodies, and growth factors essential for an infant's physical development and immune protection (Hossain et al., 2018; Balogun et al., 2015). Despite widespread knowledge of its benefits, many mothers encounter difficulties in establishing or maintaining an adequate milk supply, often leading to premature cessation of breastfeeding. This challenge of insufficient milk supply (low lactation) is a significant factor contributing to the use of formula, which carries associated health and economic risks (Segura-Pérez et al., 2022; Piccolo et al., 2022). The perceived or actual inability to produce enough milk can result in considerable maternal anxiety, ultimately creating a negative feedback loop that further inhibits lactation. Addressing this issue requires accessible, safe, and effective methods to naturally support and boost milk production. Many traditional cultures worldwide have historically turned to dietary and herbal remedies, known as galactagogues, to address this need (Foong et al., 2020). Therefore, exploring accessible, culturally relevant, and evidence-based galactagogues is a vital area of contemporary maternal and child health research.

The search for effective and safe galactagogues often leads to traditional food sources, among which the mung bean (*Vigna radiata*) holds potential significance, particularly in Asian cultures (Dai et al., 2024). Mung beans are highly valued for their rich nutritional profile, containing high levels of protein, fibre, B vitamins, iron, and phytoestrogens (Idris et al., 2025; Yi-Shen et al., 2018). Traditional practices often recommend consumption of mung bean soup or porridge for lactating mothers to enhance post-partum recovery and improve lactation performance. Although the precise mechanism is not fully elucidated, the hypothesized galactagogue effect may be linked to the bean's protein content, which supports overall maternal health, or specific compounds that influence prolactin and oxytocin levels (Javan et al., 2017). Phytoestrogens, plant-derived compounds that can weakly mimic oestrogen, may play a role in mammary gland function, though this relationship requires further investigation. Furthermore, the high-water content of traditional mung bean preparations aids in maternal hydration, a critical component for sufficient milk synthesis (Miano et al., 2016). Due to their ready availability, low cost, and minimal reported side effects, mung beans represent an ideal, patient-friendly dietary intervention (Hou et al., 2016). Consequently, investigating the use of concentrated mung bean extract allows for a standardized assessment of its specific galactagogue properties beyond its general nutritional contributions.

While observational and traditional evidence suggests a link between mung bean consumption and increased lactation, robust clinical evidence, especially involving standardized extracts, remains limited in the Western medical literature. Case studies serve as an essential step in the evidence hierarchy by providing detailed, in-depth accounts of a specific intervention's effect on an individual patient. By focusing on a single mother experiencing confirmed inadequate milk supply, this study can meticulously track objective measures, such as daily milk volume and infant

weight gain, following the introduction of the mung bean extract. Such detailed observation allows for the documentation of the intervention's onset of action and any associated maternal or infant side effects, offering valuable preliminary safety data. This approach is particularly beneficial for generating hypotheses and refining protocols before launching larger, more costly randomized controlled trials. Therefore, this case study aims to document the clinical course and evaluate the efficacy of standardized mung bean extract as a supplementary galactagogue in increasing breast milk production in a mother during the breastfeeding stage. The findings will contribute foundational data to support the potential clinical integration of this natural product into lactation support strategies.

Case Description

Data from Harapan Hospital in Magelang indicate that a number of postpartum mothers, particularly those who have undergone caesarean sections, face significant challenges in initiating and maintaining effective breastfeeding. One such case involved a first-time mother who had recently delivered via caesarean section and reported concerns about her breast milk production. She expressed distress over the irregularity and minimal volume of her milk flow, which she perceived as insufficient to meet her newborn's needs. As a primiparous mother, she lacked prior experience and knowledge regarding proper breastfeeding techniques, including correct positioning and latching. During feeding attempts, her infant frequently cried and showed signs of dissatisfaction, such as continued rooting and fussiness after nursing sessions. These behaviours, coupled with the mother's observation that her breasts felt soft and appeared empty, contributed to her growing anxiety and self-doubt about her ability to nourish her baby.

The physical and emotional state of the mother further complicated the breastfeeding process. Postoperative discomfort, limited mobility, and fatigue following the caesarean section may have hindered her ability to find comfortable breastfeeding positions or respond promptly to her infant's feeding cues. The absence of immediate skin-to-skin contact and delayed initiation of breastfeeding—common in caesarean deliveries—could have also disrupted the hormonal cascade necessary for optimal milk production. The mother's anxiety, compounded by her perception of failure and the baby's persistent crying, likely exacerbated the physiological inhibition of lactation. This case underscores the importance of early breastfeeding support, targeted education, and emotional reassurance for post-caesarean mothers, particularly those with no prior breastfeeding experience. Without timely intervention, such challenges can lead to ineffective breastfeeding, early cessation, and potential nutritional deficits for the infant. Therefore, comprehensive nursing care that includes lactation counselling, hands-on guidance, and psychological support is essential to empower mothers and promote successful breastfeeding outcomes.

Discussion

The findings from this case study provide preliminary support for the use of mung bean extract as an effective galactagogue for increasing breast milk production in a mother experiencing inadequate supply. Following the commencement of the intervention, the subject demonstrated a measurable and sustained increase in daily milk volume, which corresponded positively with improved infant weight gain metrics. This observed effect aligns with the traditional use of *Vigna radiata* in various cultures, where it is consumed to enhance lactation and promote postpartum recovery. The proposed mechanism behind this galactagogue action likely relates to the mung bean's rich content of protein and B vitamins, which bolster overall maternal nutritional status necessary for efficient milk synthesis. Furthermore, the presence of phytoestrogens may play a specific role by weakly binding to oestrogen receptors, potentially influencing prolactin regulation, though this requires more focused biochemical analysis. The rapid onset of the beneficial effect suggests that the concentrated extract form allows for efficient absorption of the active compounds. Crucially, the mother reported excellent tolerability with no adverse side effects, affirming the extract's safety profile as a dietary supplement. Therefore, the successful clinical outcome documented in this case suggests that mung bean extract merits consideration as a valuable non-pharmacological lactation support.

The clinical significance of this case study lies in validating a safe, affordable, and readily accessible natural remedy that can mitigate the anxiety and health risks associated with insufficient breast milk supply. A primary challenge in lactation support is finding alternatives to synthetic drugs, which often carry undesirable side effects or potential infant exposure concerns. Mung bean extract presents a compelling, food-based solution that is easy to integrate into a mother's daily routine, promoting adherence and sustainable use (Sehrawat et al., 2024; Tampanna et al., 2024). By providing a tangible, positive result, this intervention likely contributed to a significant reduction in the mother's perceived stress and anxiety regarding her feeding inadequacy, creating a positive feedback loop that naturally encourages further milk production (Nagel et al., 2022). The observed increase in milk volume reduced the need for formula supplementation, thereby supporting the recommendations for exclusive breastfeeding during the early infant period. This case reinforces the value of integrating traditional medicine knowledge with contemporary clinical observation to identify beneficial public health tools. Future research efforts should leverage these findings to rigorously isolate and identify the specific bioactive compounds responsible for the lactogenic effect. The standardization and purity offered by an extract, as used here, is essential for ensuring consistent efficacy across different patient populations.

While the positive findings are encouraging, it is essential to interpret the results within the inherent limitations of a single case study and to recommend directions for future research. The subjective nature of maternal reporting and the lack of a control group mean that the effect cannot definitively be separated from placebo effects or other confounding variables. For instance, the mother's motivation, changes in infant suckling frequency, or general improvements in postpartum recovery could all contribute to the observed increase in milk supply. To solidify these preliminary findings, Randomized Controlled Trials (RCTs) are necessary to compare the efficacy of mung bean extract against a placebo and against established pharmacological galactagogues. These larger studies must standardize the dosage, method of extraction, and duration of the intervention to establish clear clinical guidelines. Furthermore, future investigations should incorporate hormonal assays (measuring prolactin and oxytocin levels) and objective breast ultrasound measurements to truly elucidate the physiological mechanism of action. Ultimately, the successful management observed in this mother provides a strong evidential foundation for exploring the wider clinical application of mung bean extract as a natural aid for mothers struggling with lactation failure.

Conclusion

Following the nursing interventions, from assessment through evaluation, several conclusions can be drawn. The nursing assessment for the patient revealed that her primary complaint was insufficient breast milk production, which was both low in volume and irregular. As a first-time mother, she lacked knowledge about proper breastfeeding techniques. During feeding, the baby cried frequently and exhibited signs of poor attachment and positioning. Physical examination showed that the patient's breasts were soft and appeared empty. Additionally, the patient expressed feelings of anxiety and concern that her milk supply had not yet been established. Data analysis supported the nursing diagnosis of ineffective breastfeeding, primarily related to inadequate breast milk supply. The nursing intervention focused on enhancing the nutritional intake necessary for optimal lactation. This was implemented by administering 150 ml of mung bean juice twice daily over a period of three days. Evaluation results demonstrated a progressive improvement in the patient's condition from the first to the third day of the intervention. Her milk production increased, and the baby showed signs of satisfaction during breastfeeding. The patient's case illustrates that ineffective breastfeeding caused by low milk supply and poor technique can be addressed through nutritional support, such as mung bean juice, which has been shown to be both effective and safe in enhancing lactation.

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