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# A Retrospective Study on the Current Status and Monthly Trends of Human Milk Donation Program for Neonatal Intensive Care Unit (NICU) in a Selected Hospital in Tagum City, Davao Del Norte

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***ABSTRACT***

*Human milk donation supports vulnerable infants by providing safe nutrition when maternal milk is unavailable. This study assessed the current status, monthly trends, donor screening patterns, and milk collection performance of a hospital-based program supporting NICU patients in Tagum City. The study used a descriptive-correlational, retrospective record-based design. Through total enumeration, all complete hospital records from January 2025 to March 2026 were reviewed using a researcher-made data extraction sheet. Frequency, percentage, mean, trend analysis, comparative testing, and correlation analysis were applied to the recorded monthly program indicators for statistical interpretation. A total of 5,934 mothers were screened; 5,634 passed, 300 did not pass, and 2,370 became active donors. The program collected 2,777,013.90 mL and consumed 2,394,348.00 mL. Screening outcomes differed significantly by referral status, while the number screened was not significantly related to monthly milk volume collected during the period. The program demonstrated strong screening performance and substantial NICU milk utilization, but donor activation remained limited and monthly indicators fluctuated. Referral status was significantly associated with screening outcomes, whereas screening more mothers did not ensure greater milk collection. Sustained donor participation and improved program monitoring were therefore considered operationally necessary. The hospital should strengthen referral procedures, immediate donor enrollment, lactation support, donor follow-up, flexible collection schedules, and digital tracking. Monthly monitoring should focus on donor conversion, retention, milk yield, inventory, and NICU demand. A structured development program should institutionalize these strategies, assign clear responsibilities, and evaluate implementation outcomes regularly, systematically.*

**Keywords:** *human milk donation, donor screening, active donors, pasteurized human milk, milk collection, NICU support, retrospective records, development program*

## INTRODUCTION

Human milk donation provides nutritional support for vulnerable NICU infants when maternal milk is insufficient. Despite global recommendations, programs face supply shortages, unequal access, and strict safety requirements. Limited local evidence exists on donor screening, referrals, milk collection, acceptance, disposal, and NICU utilization in Tagum City. Therefore, this retrospective record-based study assessed the program's status, monthly trends, significant differences, and relationships using hospital records from January 2025 to March 2026.

**Statement of the Problem**

This study assessed the current status, monthly trends, and significant patterns of the Human Milk Donation Program for Neonatal Intensive Care Unit support in Tagum City, Davao del Norte.

**Scope and Delimitations**

This retrospective descriptive-correlational study assessed Human Milk Donation Program records from January 2025 to March 2026 using total enumeration and a data extraction sheet. It examined screening, referrals, milk collection, utilization, trends, differences, and relationships, excluding participant experiences and clinical outcomes.

**Review of Related Literature**

Human milk provides essential nutrients, immune protection, and developmental support, while donor milk offers a clinically valuable alternative for vulnerable infants when maternal supply is insufficient, especially in NICU care (Nagel et al., 2023; Quigley et al., 2024).

**Theoretical Framework**

***Virginia Henderson's Need Theory*** is connected to the present study because donor human milk contributes to the nutritional and health needs of infants admitted to the NICU.

***Ramona Mercer's Maternal Role Attainment Theory*** is relevant to the study because the Human Milk Donation Program involves postpartum mothers who may become human milk donors.

***Jean Watson's Theory of Human Caring*** is connected to the present study because the Human Milk Donation Program reflects caring in both maternal and neonatal health services.

**METHODOLOGY**

A quantitative descriptive-correlational retrospective record-based method was used to assess the current status, monthly trends, significant differences, and relationships within the Human Milk Donation Program for NICU support in Tagum City, Davao del Norte.

**Research Design**

This study utilized a descriptive-correlational research design. This quantitative design described existing program conditions and examined differences and relationships among recorded variables without manipulating them.

**Research Steps**

The researcher secured approvals, coordinated with hospital personnel, identified eligible records, extracted required data, verified entries, encoded information, performed statistical analyses, and interpreted the findings.

**Data Collection and Sample Selection**

Total enumeration included all complete hospital records, while a researcher-made data extraction sheet captured donor screening, referral, milk collection, consumption, and program trend data.

**Data Analysis Methods**

Frequency, percentage, total, mean, and trend analysis summarized program indicators, while comparative testing and correlation analysis examined screening differences and the relationship between mothers screened and milk collected at the 0.05 significance level.

**Research Hypothesis and Validation**

Null hypotheses were tested at the 0.05 significance level, while adviser and hospital personnel review established the data extraction sheet's appropriateness and content accuracy.

**Study Limitations and Ethical Considerations**

The study was limited to official retrospective records; ethical approval, confidentiality, anonymity, institutional permission, secure data storage, and accurate reporting were maintained.

## RESULTS AND DISCUSSION

***Question 1. What is the current status of the Human Milk Donation Program for NICU support?***

The findings revealed that 5,934 mothers were screened, of whom 5,634 or 94.94 percent passed, while 300 or 5.06 percent did not pass. A total of 5,634 were referred and 300 were non-referred. Among eligible mothers, 2,370 became active donors. The program collected 2,777,013.90 mL of pasteurized human milk, while 2,394,348.00 mL was consumed by NICU patients, reflecting an 86.22 percent utilization rate.

***Question 2. What are the monthly trends of the Human Milk Donation Program from January 2025 to March 2026?***

The findings showed that monthly indicators fluctuated throughout the 15-month period. Mothers screened ranged from 334 to 461, while the passing rate ranged from 87 to 97 percent. Active donors varied from 94 to 249 monthly. Pasteurized human milk collected ranged from 130,745 mL to 229,011 mL, while monthly consumption ranged from 117,885 mL to 234,814 mL. No consistently increasing or decreasing trend was observed.

***Question 3. Is there a significant difference in the number of mothers who passed and did not pass donor screening when grouped according to referred and non-referred donors?***

The findings revealed significant differences in screening outcomes according to referral status. Referred mothers recorded a mean passing count of 375.60, while non-referred mothers recorded no passing cases. Conversely, referred mothers recorded no non-passing cases, whereas non-referred mothers had a mean of 20.00. Both comparisons obtained p-values below 0.001, resulting in the rejection of the null hypothesis and indicating significant differences between the groups.

***Question 4. Is there a significant relationship between the number of mothers screened and the volume of human milk collected from January 2025 to March 2026?***

The findings showed a weak negative correlation between the number of mothers screened and the volume of human milk collected, with a correlation coefficient of −0.261. The resulting p-value of 0.348 exceeded the 0.05 level of significance. Therefore, the null hypothesis was not rejected. This indicated that screening more mothers did not necessarily result in a greater volume of collected human milk during the period examined.

***Question 5. Based on the findings, what development program can be developed to enhance Human Milk Donation for NICU support in Tagum City, Davao del Norte?***

The findings supported the development of the SUSTAIN-MILK Tagum Program, which focused on donor referral, pre-screening, activation, retention, lactation support, milk collection, transport, inventory management, and digital monitoring. Proposed strategies included immediate enrollment of eligible mothers, follow-up communication, flexible collection schedules, home pick-up services, standardized referral forms, donor tracking, monthly performance reviews, and demand forecasting to stabilize milk supply and improve NICU utilization.

## SUMMARY

The findings showed that the Human Milk Donation Program maintained a high donor-screening passing rate and substantial pasteurized human milk utilization for NICU support. However, fewer than half of eligible mothers became active donors, while monthly screening, donor participation, milk collection, and milk consumption fluctuated. Referral status significantly differentiated screening outcomes, whereas the number of mothers screened was not significantly related to the volume of milk collected.

## CONCLUSIONS

- The program demonstrated strong screening performance, but the conversion of eligible mothers into active donors remained limited.
- Referred mothers were significantly more likely to pass screening, while non-referred mothers accounted for the recorded non-passing outcomes.
- The number of mothers screened did not significantly influence the volume of human milk collected, indicating that donor activation, retention, accessibility, and donation frequency were more critical to milk supply.
- Monthly variations in active donors, milk collection, and milk consumption showed the need for continuous monitoring, coordinated recruitment, and responsive inventory management.
- A structured development program was necessary to strengthen donor referral, activation, retention, collection logistics, digital tracking, and NICU milk allocation.

## RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are suggested:

- The hospital should strengthen standardized referral and pre-screening procedures through uniform forms, eligibility checklists, and orientation for healthcare workers and prospective donors.

- Eligible mothers should be immediately enrolled in donor activation and follow-up programs that include counseling, lactation support, donation scheduling, and regular communication.
- Flexible milk collection systems, such as home pick-up, community drop-off points, cold-chain transport, and provision of storage materials, should be established.
- A digital donor and milk-tracking system should be implemented to monitor screening outcomes, active donors, donation frequency, milk collected, milk consumed, and remaining inventory.

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## AI DECLARATION STATEMENT

AI-supported tools helped with grammar and structure in creating this article. No AI tools were used to collect, analyze, or interpret data; all authors are credited for their academic contributions.

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