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EVALUATION OF GOVERNMENT NUTRITION PROGRAMS FOR INFANTS IN THE PANNALA MOH AREA

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ABSTRACT

This study evaluates the effectiveness and challenges of government-initiated nutrition programs for infants in the Pannala MOH division of Sri Lanka. Despite Sri Lanka's commendable national health policies, infant malnutrition remains prevalent in rural regions like Pannala. The research adopts a mixed-methods approach, combining quantitative surveys with qualitative interviews, to assess caregiver awareness, program accessibility, midwife officer challenges, and maternal participation. Key programs reviewed include the Nutrition Clinics, Growth Monitoring and Promotion (GMP), and Thriposha Program. Findings indicate that although awareness of these programs is relatively high, participation is hindered by supply inconsistencies, transportation barriers, staffing shortages, and socioeconomic disparities. Statistical analysis revealed strong positive correlations between program effectiveness, family socioeconomic status, parental feeding knowledge, and infant nutritional outcomes. The study concludes that while government programs are well-structured, their impact is limited by implementation and operational challenges. Recommendations include improving supply chains, expanding community education, deploying mobile clinics, enhancing staff capacity, and fostering NGO partnerships. The findings aim to guide policymakers and health authorities in strengthening maternal and child nutrition interventions, especially in underserved areas.

Keywords: *Infant nutrition, Government health programs, Pannala MOH area, Thriposha, Growth monitoring, Maternal participation*

Introduction

Infant malnutrition continues to be a major public health problem in Sri Lanka, especially in the rural setting, where infant malnutrition affected 11.1 of all infant admissions of the Pannala MOH division. Nutrition in infancy is crucial and necessary for there to be growth physically, cognitively, and overall, in terms of wellbeing. Poor nutrition in early life has been shown to cause stunting, weakened immunity, poor cognitive development, all of which have a negative impact on long term health outcomes (WHO, 2020). World Health Organization (WHO) recommends that a baby is exclusively breastfeed for first 6 months, and then introduced appropriate complementary feeding to meet the infant growth and development. (WHO, 2020) Although Sri Lanka possesses one of the region's strongest public health systems, there remain structural disparities in nutrition between different areas which point to how ineffectively and in some cases, poorly, government nutrition programs are accessible and deliver the nutrition benefits they promise.

In combating malnutrition, the Sri Lankan government has adopted many such initiatives of maternal and child nutrition. These programs advancing breastfeeding promotion, ongoing nutritional supplementation, growth monitoring and food security interventions (Nanayakkara et al., 2019.) are spearheaded by the Ministry of Health. Yet, even though efforts, such as these programs, malnutrition persists in selected areas and the effectiveness of such programs must be evaluated. This study is done to review on the accessibility, the implementation challenges and the community perception about the government nutrition programs for infants in the Pannala MOH area. The findings will inform policymakers and women and children's healthcare providers who can promote the reach and efficiency of maternal and child nutrition programs.

Research Methodology

This study adopted a mixed-methods approach**,** integrating both quantitative and qualitative research techniques to comprehensively evaluate the effectiveness of government nutrition programs in the Pannala MOH area. This approach enabled triangulation of data to enhance the validity and reliability of findings.

The study was conducted as a descriptive cross-sectional study, allowing data to be collected from a defined population at a single point in time. This design was suitable for assessing the current status of the nutrition programs and

understanding the perspectives of stakeholders involved in implementation and participation (Nanayakkara et al., 2019).

Quantitative data was obtained primarily through structured questionnaires, while qualitative insights were gathered via in-depth interviews and a case study analysis of program delivery. This design enabled a multi-dimensional exploration of both outcomes and processes.

The conceptual framework focused on the relationship between awareness and knowledge of nutrition programs (independent variable) and infant nutritional status (dependent variable), moderated by accessibility factors and implementation challenges**.** The study hypothesized that higher awareness and better access would positively influence infant nutritional outcomes.

The research was confined to government-sponsored nutrition programs operational within the Pannala MOH division. It specifically assessed:

- Effectiveness in improving child nutrition.
- Accessibility of the programs.
- Challenges in implementation.

Programs run by non-governmental organizations (NGOs) or the private sector were excluded. A key limitation was response bias**,** particularly in self-reported data by caregivers and subjective assessments from midwife officers. Additionally, the **six-**month duration of the study limited the ability to measure long-term health impacts on infant nutrition (Mahmood et al., 2008).

The **target population** consisted of:

- Mothers of infants attending government-led feeding and nutrition programs.
- Public Health Midwives (PHMs) and healthcare personnel involved in program implementation.

To ensure inclusivity across different socioeconomic strata, stratified random sampling was employed. The strata were based on geographic location and income levels. A sample size of 60 was determined using a statistical formula based on the total number of registered infants in the Pannala MOH area, ensuring representativeness and statistical validity.

- *Variables and Measurement*

Independent Variable: Awareness and knowledge of nutrition programs (measured using structured Likert-scale questions).
Dependent Variables: Infant nutritional status, assessed through clinical indicators such as:

  - Weight-for-age
  - Height-for-age
  - Mid-upper arm circumference

Moderating Variables:

- Accessibility to services (distance to clinics, frequency of visits, participation rates).
- Implementation challenges (as identified through interviews with PHMs).
- *Data Collection Methods*

Multiple sources of data were used to ensure comprehensive analysis:

1. **Structured Questionnaires**
- Administered to 60 mothers to collect data on demographics, program awareness, feeding practices, and program participation.
2. **Key Informant Interviews**
- Conducted with 6 Public Health Midwives to explore challenges in program delivery, outreach issues, and improvement needs.
3. **Document Reviews**
- Examination of MOH records, nutrition reports, and relevant statistics (Ministry of Health, 2020) to validate field data and provide contextual background.

Data Analysis Techniques

Quantitative Data:

- Processed using SPSS software**.**
- Descriptive statistics (frequencies, means, percentages) were used to describe the sample and summarize responses.
- Chi-square tests examined the association between awareness levels and nutritional status.
- Binary logistic regression was used to identify predictors of positive infant health outcomes.

Qualitative Data:

- Interview transcripts were analyzed using thematic analysis**.** Recurring themes were identified regarding:
    - Service delivery challenges.
    - Community barriers.
    - Suggestions for program enhancement (UNICEF, 2022).

Results

Descriptive Analysis

The primary objective of this study was to evaluate the effectiveness of government nutrition programs in improving the nutritional status of infants within the Pannala MOH area. Descriptive statistics provide an overview of participant responses across four key variables aligned with the study objectives.

Variable		N	Minimum	Maximum	Mean	Std. Deviation
Effectiveness of Government Nutrition Programs		60	1.59	5.00	3.66	0.90
Socioeconomic Status of Families		60	1.44	5.00	3.78	0.83
Parental Feeding Practices and Knowledge		60	1.44	5.00	3.76	0.98
Nutritional Status of Infants		60	1.00	5.00	3.71	0.99

These values suggest that respondents perceived a moderate level of effectiveness in government nutrition programs, with similarly moderate to favorable assessments of socioeconomic conditions and parental practices. However, the observed standard deviations highlight variability in perceptions, indicating unequal impacts across different family contexts.

Reliability Analysis

To ensure the internal consistency of the instruments used, Cronbach's Alpha values were calculated for each scale. All values exceeded the acceptable threshold of 0.70, confirming that the measurement tools reliably captured the intended constructs:

Variable	Cronbach's Alpha
Effectiveness of Government Nutrition Programs	0.87
Socioeconomic Status of Families	0.84
Parental Feeding Practices and Knowledge	0.85
Nutritional Status of Infants	0.83

These reliability scores support the soundness of the quantitative instruments used in the study, thus reinforcing the validity of the subsequent analyses.

Correlation Analysis

Pearson correlation coefficients were computed to explore the relationships among the key variables. Significant positive correlations were observed across all variables:

- Effectiveness of Government Nutrition Programs was strongly correlated with both Nutritional Status of Infants ($r = .603$, $p < .01$) and Socioeconomic Status of Families ($r = .598$, $p < .01$).
- Parental Feeding Practices and Knowledge was moderately correlated with Nutritional Status of Infants ($r = .544$, $p < .01$) and Socioeconomic Status of Families ($r = .327$, $p < .05$).

These results align with the research objective of identifying key influencing factors on child nutrition. They suggest that program effectiveness, family conditions, and parental knowledge are interrelated and play a combined role in shaping nutritional outcomes.

Regression Analysis

To assess the predictive influence of the independent variables on infant nutrition, a multiple linear regression was conducted.

Model Summary:

- $R = 0.728$
- $R^2 = 0.530$ (Adjusted $R^2 = 0.505$)
- Standard Error = 0.698

ANOVA

- $F(3, 56) = 21.033$, $p < .001$

Regression Coefficients

Predictor	B	β	t	Sig.
Effectiveness of Government Nutrition Programs	0.263	0.239	1.94	0.002
Socioeconomic Status of Families	0.426	0.358	3.12	0.003
Parental Feeding Practices and Knowledge	0.317	0.313	2.99	0.004

These results confirm that all three variables significantly predict the nutritional status of infants. Socioeconomic status appears to have the strongest predictive power, followed closely by parental practices and program effectiveness. These findings reinforce the multifaceted nature of child nutrition and the need for integrated interventions.

Discussion

While the quantitative findings offer valuable insights aligned with the study objectives particularly regarding the role of government programs, socioeconomic factors, and parental knowledge the absence of qualitative analysis presents a notable limitation. Given the study's mixed-methods framework, qualitative data was expected to provide contextual depth, such as participant narratives on program access, cultural feeding practices, and community-level challenges.

The strong statistical associations observed reinforce the importance of a holistic approach in designing and implementing nutrition programs. However, the integration of qualitative findings such as themes from interviews or focus group discussions would have enriched the analysis by revealing why certain programs are more effective or why disparities exist among families.

For future studies or in further reporting, incorporating the qualitative data is essential to honor the chosen methodology and to capture the lived realities behind the statistical trends.

Conclusion

This study aimed to evaluate the effectiveness of government nutrition programs for infants in the Pannala MOH area by examining their existence, accessibility, and impact. The findings indicate that while the programs are widely recognized by mothers, participation levels remain uneven due to several logistical and socio-cultural challenges.

The study revealed that awareness of programs such as the Thriposha Program (81%) and the Growth Monitoring and Promotion Program (74%) is relatively high. However, participation rates are considerably lower—67% and 60% respectively—primarily due to irregular distribution, cultural perceptions, clinic accessibility issues, and conflicting work schedules of mothers. These findings align directly with the study's objective of assessing how accessibility influences program uptake.

Furthermore, the study found that although nutritional supplements are available to 60% of the mothers, only 42% reported having easy access to clinics, with 20% citing transportation as a major barrier. This supports the objective of identifying operational bottlenecks in program delivery.

The role of midwife officers was also examined, as they are vital to program implementation. However, staff shortages and heavy workloads significantly limited their ability to deliver services effectively. In addition, 72% of respondents indicated that lack of funding and human resources weakened program outcomes, and only 65% reported active community involvement. These findings highlight the gaps in both institutional capacity and community engagement, which are critical to achieving program effectiveness.

In conclusion, while the government nutrition programs are well-intentioned and generally well-structured, several barriers—including supply inconsistencies,

staffing limitations, and low community participation—reduce their effectiveness. To fulfill the full potential of these programs and align them with the objectives of improving infant nutrition, it is essential to implement policies that enhance funding, strengthen service delivery systems, and foster deeper community involvement.

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