SYNOPSIS - DISSERTATION

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TITLE: STRATEGIC INTERVENTIONS FOR IMPROVING NEWBORN VACCINE RETENTION: INSIGHTS FROM A MATERNITY AND PAEDIATRIC HOSPITAL

INTRODUCTION:

New-born immunization is a cornerstone of public health, preventing life-threatening infectious diseases during infancy and early childhood. Despite the availability of comprehensive immunization programs, vaccine dropouts and delays in schedule adherence remain major challenges, especially in hospital-based settings.

Maternity and paediatric hospitals are often the first point of contact between the healthcare system and new-borns, placing them in a pivotal position to initiate and ensure complete immunization schedules.

This study explores the patterns, challenges, and solutions associated with new-born vaccine retention in a maternity and paediatric hospital setting. It will examine the factors contributing to missed or delayed vaccinations and assess strategic interventions such as reminder systems, parental education, electronic health records, and follow-up mechanisms that can enhance vaccine compliance. The results aim to strengthen hospital-based immunization practices and contribute to better child health outcomes.

RESEARCH QUESTION:

What are the key factors affecting new-born vaccine retention, and how can strategic interventions in maternity and paediatric hospital settings improve immunization adherence?

OBJECTIVES:

1.To identify the current trends in new-born vaccine retention at a maternity and paediatric hospital.

2.To evaluate the barriers to timely and complete vaccination in new-borns.

3.To assess the effectiveness of existing interventions aimed at improving vaccine adherence.

4.To propose evidence-based strategic interventions to enhance vaccine retention rates among new-borns

HYPOTHESIS:

Primary Hypothesis: Strategic interventions such as structured parental counselling, digital reminder systems, and systematic follow-up significantly improve new-born vaccine retention rates in a maternity and paediatric hospital setting compared to standard care alone.

Secondary Hypotheses: Mothers who receive targeted education on immunization during the postnatal period are more likely to adhere to the new-born vaccination schedule. Implementation of digital reminders (SMS/calls) reduces missed vaccination appointments in the first month of life.

New-borns discharged with scheduled vaccination follow-up dates recorded and communicated are more likely to complete their primary immunization doses on time.

MATERIAL AND METHODS:

STUDY DESIGN: Descriptive cross-sectional study with a mixed-methods approach (quantitative and qualitative analysis).

SETTING: CLOUD NINE HOSPITAL BANGALORE

STUDY POPULATION: New-borns delivered at the hospital and their mothers/guardians during the postnatal stay and subsequent follow-up visits.

Inclusion Criteria:

New-borns delivered in the hospital within the study period.

Parents/guardians willing to participate and provide informed consent.

Exclusion Criteria:

New-borns with contraindications to vaccination.

Parents unwilling to participate.

STUDY TOOLS:

Structured questionnaire for mothers.

Review of hospital vaccination records.

Key informant interviews with healthcare staff.

Hospital Management Information System (HMIS) for new-born reports and pharmacy sales data.

DURATION OF STUDY:

The study was conducted over a three-month period, from April to June 2025. This timeframe included data collection, analysis, and interpretation of vaccination retention rates for paediatric patients.

SAMPLE SIZE:

Based on hospital average delivery rate and new born taking data from HMIS of approximately 2500 new born from (01-04-2024 to 30-03-2025).

Questioning approximately 210 mothers regarding the vaccination knowledge and its importance for new-borns.

Taking meaningful data of vaccination from approximately 30-40 healthcare workers.

SAMPLING TECHNIQUE:

CENSUS SAMPLING (TOTAL POPULATION SAMPLING)

All new-borns delivered during the study period are included which helps in complete coverage and full completeness of sample size.

DATA COLLECTION PROCEDURE:

Quantitative data collected from HMIS and pharmacy sales records to track vaccination retention at the 6th week, 10th week, 14th week, and 6th month.
Follow up calls conducted with parents/guardians of infants who missed vaccinations to gather qualitative data on reasons for non-retention
Mothers will be interviewed using pretested structured questionnaires regarding their knowledge, attitudes, and practices (KAP) towards new-born immunization.

OPERATIONAL DEFINITIONS:

Vaccine Retention: Completion of all recommended new-born vaccines.

Strategic Intervention: Any targeted activity or program implemented by the hospital to improve immunization adherence (e.g., SMS reminders, counselling, home visits).

DATA ANALYSIS PLAN:

Quantitative data analysed using Microsoft Excel to calculate retention rates and identify trends.
Qualitative data analysed using thematic analysis to identify common reasons for non -retention.

ETHICAL CONSIDERATIONS:
Data confidentiality, privacy, and participant anonymity will be strictly maintained.

IMPLICATIONS OF RESEARCH:

The study will provide actionable insights into improving new-born immunization practices in hospital settings. It can guide policy and program implementation for better vaccine adherence, ultimately reducing preventable infant morbidity and mortality.

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