
The Correlation Between Midwives' Knowledge And Early Stunting Detection Through Implementation Of Congenital Hypothyroidism Screening In Infants At The Inpatient Ward Of Rd Dkt Hospital, Kediri City

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Abstract

This study aims to analyze the relationship between the knowledge level of midwives and the implementation of early stunting detection through Congenital Hypothyroidism Screening (CHS) in infants at RS DKT Kota Kediri. Stunting remains a major public health problem in Indonesia due to its long-term impact on physical growth, cognitive development, and susceptibility to chronic diseases. Congenital hypothyroidism is a preventable risk factor for stunting when detected and managed early; however, the coverage and consistency of CHS implementation in healthcare facilities are still limited and highly dependent on healthcare workers' competence. This study employed a quantitative approach with a cross-sectional design. The respondents consisted of 26 midwives working in inpatient wards and polyclinics at RS DKT Kota Kediri, selected using total sampling. Data were collected using a structured questionnaire to assess midwives' knowledge regarding CHS and an observation checklist to evaluate the implementation of CHS based on established Standard Operating Procedures (SOP). Data analysis was conducted using the Chi-Square test to examine the relationship between knowledge level and CHS implementation. The results showed that the majority of respondents had good knowledge regarding congenital hypothyroidism screening, and most midwives implemented CHS in accordance with SOP. Statistical analysis demonstrated a significant relationship between the knowledge level of midwives and the proper implementation of CHS ($p < 0.05$), indicating that higher knowledge levels were associated with better compliance with screening procedures. This study highlights the critical role of midwives' knowledge in ensuring the effective implementation of congenital hypothyroidism screening as an early detection strategy for stunting risk. Strengthening continuous education, targeted training programs, and institutional support for CHS implementation are essential to improve screening coverage and contribute to comprehensive stunting prevention efforts in hospital settings.

Keywords: Knowledge, Midwives, Congenital Hypothyroidism Screening, Early Detection, Stunting, Hospital.

INTRODUCTION

Stunting remains one of the most pressing public health challenges in Indonesia due to its long-term consequences on human development. This condition not only affects children's linear growth but also impairs cognitive function, learning ability, future productivity, and increases vulnerability to chronic diseases in adulthood. Data from the Indonesian Nutritional Status Survey (SSGI) in 2022 indicate that the national stunting prevalence reached 21.6%, showing a decline from 24.4% in 2021. Despite this progress, the prevalence remains far above the national target of 14% set for 2024, underscoring the urgency of strengthening preventive interventions (SSGI, 2022; Ministry of Health of the Republic of Indonesia, 2023).

In East Java Province, stunting prevalence remains a public health concern, including in urban areas where access to healthcare services is relatively adequate. This situation suggests that stunting is not solely associated with geographical or economic limitations, but also linked to underlying health conditions that originate early in life. Stunting is a multifactorial problem influenced by nutritional deficiencies, recurrent infections, environmental exposure, socioeconomic factors, and neonatal health conditions that are often undetected at birth (East Java Provincial Health Office, 2023).

One important yet frequently overlooked risk factor contributing to stunting is congenital hypothyroidism (CH). Congenital hypothyroidism is an endocrine disorder characterized by insufficient thyroid hormone production in newborns, a hormone that plays a vital role in brain

maturation, linear growth, and metabolic regulation. If not detected and treated early, this condition can lead to permanent growth failure, intellectual disability, and long-term developmental impairment, including stunting (Ministry of Health of the Republic of Indonesia, 2024).

Congenital hypothyroidism is a preventable cause of stunting when identified during the neonatal period. Early detection through Congenital Hypothyroidism Screening (CHS) allows timely treatment and prevents irreversible damage. Recognizing its importance, the Indonesian Ministry of Health has incorporated CHS into the national newborn screening program. However, the implementation coverage of this program remains limited across healthcare facilities (Ministry of Health of the Republic of Indonesia, 2023).

National data show that in 2022, only approximately 2.3% of newborns in Indonesia underwent congenital hypothyroidism screening. Several barriers contribute to this low coverage, including limited laboratory facilities, inadequate logistics, absence of institutional policies, and insufficient knowledge among healthcare providers. Among these factors, the role of midwives is particularly crucial, as they serve as frontline providers in maternal and neonatal care and are directly involved in newborn health services (Ministry of Health of the Republic of Indonesia, 2023).

Delayed diagnosis of congenital hypothyroidism remains a serious issue in Indonesia. Many cases are detected only after the child reaches one year of age, at which point neurological damage is often permanent and difficult to reverse. This delay eliminates the opportunity for optimal early intervention and significantly increases the risk of stunting and lifelong developmental limitations. These findings emphasize the importance of effective screening systems supported by knowledgeable healthcare providers (Universitas Airlangga, 2024).

Previous studies have highlighted the critical role of healthcare workers' knowledge in the successful implementation of CHS. A study conducted by Rahmania et al. (2024) in Malang Regency demonstrated that structured educational interventions significantly improved healthcare workers' knowledge regarding CHS, thereby enhancing their readiness to perform screening procedures. This study confirms that education is a key strategy for strengthening early detection programs (Rahmania et al., 2024).

Conversely, research by Hiola et al. (2024) found that while logistical availability and family consent were significant determinants of CHS coverage, healthcare workers' knowledge remained a fundamental component influencing screening implementation. These findings suggest that knowledge alone may not be sufficient, but it serves as an essential foundation for effective service delivery when supported by adequate systems and resources (Hiola et al., 2024).

At the healthcare facility level, inconsistencies in CHS implementation are still evident. In several hospitals, CHS has not been fully integrated into routine neonatal care protocols. This gap is often associated with limited internal regulations and insufficient understanding of the long-term benefits of CHS in preventing stunting. Such conditions were identified during a preliminary assessment conducted at RS DKT Kota Kediri (RS DKT Kota Kediri Preliminary Study, 2025).

Preliminary findings from semi-structured interviews with midwives at RS DKT Kota Kediri revealed that most respondents had limited understanding of congenital hypothyroidism screening. While they were familiar with heel-prick blood sampling as a technical procedure, they lacked comprehensive knowledge of its purpose in detecting thyroid hormone deficiency and its relationship to growth failure and stunting (RS DKT Kota Kediri Preliminary Study, 2025).

Furthermore, all interviewed midwives reported that they had never received specific training or formal dissemination related to CHS. Most professional development activities focused on general neonatal care, such as exclusive breastfeeding promotion, neonatal resuscitation, and routine newborn management. CHS was not yet established as a standard neonatal care procedure and was performed only upon pediatrician instruction, resulting in inconsistent screening practices (RS DKT Kota Kediri Preliminary Study, 2025).

The midwives expressed a strong need for structured training and institutional support to enhance their competence in CHS implementation. They acknowledged that improved knowledge

would enable them to provide accurate education to parents, actively participate in early detection efforts, and contribute more effectively to stunting prevention strategies. This highlights the strategic role of midwives as both care providers and health educators (UNFPA, 2024).

Based on these conditions, examining the relationship between midwives' knowledge and the implementation of congenital hypothyroidism screening at RS DKT Kota Kediri is highly relevant. This study is expected to generate empirical evidence on how knowledge influences screening practices and to serve as a foundation for policy development, targeted training programs, and strengthening neonatal screening services as part of comprehensive stunting prevention efforts (Ministry of Health of the Republic of Indonesia, 2024).

RESEARCH METHODS

This study employed a quantitative approach with an observational analytic design using a cross-sectional method. The cross-sectional design allows the independent and dependent variables to be measured simultaneously at a single point in time without any intervention from the researcher. This design is appropriate for examining the relationship between variables as they naturally occur in the field, particularly in healthcare service settings.

The study was conducted at RS DKT Kota Kediri in 2025. The population of this study consisted of all midwives working at RS DKT Kota Kediri. Due to the relatively small population size, a total sampling technique was applied, in which all 26 midwives were included as research respondents. This sampling technique ensured that the data represented the entire population and minimized sampling bias.

The independent variable in this study was the level of knowledge of midwives regarding Congenital Hypothyroidism Screening (CHS), measured using a structured knowledge questionnaire. The dependent variable was the implementation of early stunting detection through congenital hypothyroidism screening, assessed through an observation checklist based on the hospital's Standard Operating Procedures (SOP). The level of knowledge was measured on an ordinal scale (poor, moderate, and good), while the implementation of CHS was measured on a nominal scale (implemented according to SOP and not implemented according to SOP).

Data collection was conducted once during the study period. Prior to data collection, respondents were informed about the study objectives and provided informed consent. The collected data were then processed and analyzed using statistical software.

Data analysis consisted of univariate and bivariate analyses. Univariate analysis was performed to describe the frequency and distribution of respondents' characteristics, knowledge levels, and CHS implementation practices. Bivariate analysis was conducted to examine the relationship between the level of knowledge and the implementation of congenital hypothyroidism screening. The Chi-Square test was used because the variables were categorical with ordinal and nominal scales. If the expected cell frequency was less than five, Fisher's Exact Test was applied to maintain the validity of the statistical results.

The level of statistical significance was set at $\alpha = 0.05$. A p-value of ≤ 0.05 indicated a statistically significant relationship between the level of midwives' knowledge and the implementation of early stunting detection through congenital hypothyroidism screening. Conversely, a p-value greater than 0.05 indicated no significant relationship between the two variables.

RESULTS AND DISCUSSION

Knowledge Level of Midwives on Congenital Hypothyroidism Screening

The results of this study indicate that more than half of the midwives at RS DKT Kota Kediri demonstrated a good level of knowledge regarding early stunting detection through Congenital Hypothyroidism Screening (CHS). Of the 26 midwives involved, 15 respondents (57.7%) were categorized as having good knowledge, 7 respondents (26.9%) had sufficient knowledge, and 4 respondents (15.4%) had poor knowledge. This finding suggests that the majority of midwives already possess adequate theoretical understanding of CHS procedures, objectives, and benefits, although a small proportion still requires additional capacity building to ensure uniform competency across all service units (Sundari, Sari, & Frameswari, 2024).

From a theoretical perspective, knowledge is a fundamental predisposing factor that influences professional behavior in health services. Adequate knowledge enables midwives to understand the importance of early screening, recognize indications, and follow standard procedures accurately. Health workers with higher knowledge levels tend to demonstrate better clinical judgment and consistency in service delivery, particularly in preventive programs such as newborn screening (Hiola, Hilamuhu, & Katili, 2024).

This finding is consistent with previous studies conducted in Indonesia. Fitri and Zulisa (2023) reported that health workers with good knowledge were significantly more effective in early detection of growth disorders, including stunting-related conditions. Their study emphasized that knowledge directly affects the quality of preventive actions taken by health personnel. Therefore, the predominance of well-informed midwives at RS DKT Kota Kediri represents an important institutional asset for optimizing the implementation of CHS as part of early stunting prevention efforts (Fitri & Zulisa, 2023).

Implementation of Congenital Hypothyroidism Screening (CHS)

The implementation of Congenital Hypothyroidism Screening at RS DKT Kota Kediri was generally found to be in accordance with Standard Operating Procedures (SOP). Among the 26 midwives, 20 respondents (76.9%) performed CHS in compliance with established SOPs, while 6 respondents (23.1%) did not fully adhere to the procedures. This indicates that most midwives are capable of carrying out screening activities correctly, including heel-prick blood sampling, sample handling, and documentation, although gaps in procedural consistency still exist.

The researcher assumes that non-compliance with SOP among a minority of midwives may be influenced by factors such as workload, limited refresher training, or suboptimal supervision. Similar findings were reported by Sekarjati (2024), who identified procedural deviations in CHS implementation related to reporting delays and coordination challenges with referral laboratories. These operational barriers may reduce the overall effectiveness of screening programs if not adequately addressed (Sekarjati, 2024).

Further support comes from Putri and Cholifah (2025), who emphasized that successful CHS implementation depends not only on individual competence but also on managerial support, routine supervision, and structured evaluation. Health facilities that provide continuous training and strong leadership commitment tend to achieve higher SOP compliance rates. This aligns with the relatively high compliance observed at RS DKT Kota Kediri, suggesting the presence of supportive organizational factors (Putri & Cholifah, 2025).

Relationship Between Midwives' Knowledge and CHS Implementation

Bivariate analysis using the Chi-Square test revealed a statistically significant relationship between midwives' knowledge levels and the implementation of Congenital Hypothyroidism Screening at RS DKT Kota Kediri ($p = 0.025$). Midwives with good knowledge predominantly performed CHS according to SOP (90%), whereas those with poor knowledge showed equal proportions of compliant and non-compliant practices. This finding confirms that higher knowledge levels are associated with better adherence to screening standards.

The researcher assumes that midwives with adequate knowledge are more confident, meticulous, and aware of the clinical consequences of improper screening. Knowledge strengthens professional responsibility and encourages compliance with technical guidelines. This is in line with Siahaan (2022), who found that knowledge significantly influenced health workers' consistency in implementing child health programs, including early detection and preventive services (Siahaan, 2022).

These results are also supported by Agustina, Yulizar, and Yunola (2021), who demonstrated that knowledge and attitudes of health workers had a direct impact on the quality of early disease detection practices. Although their study focused on cervical cancer screening, the underlying principle remains relevant: preventive health interventions require not only technical skills but also strong cognitive foundations. Therefore, improving midwives' knowledge through continuous education is essential to ensure consistent and high-quality implementation of CHS at RS DKT Kota Kediri (Agustina, Yulizar, & Yunola, 2021).

CONCLUSIONS

Based on the results of a study involving 26 midwives at RS DKT Kota Kediri using a total sampling technique, the following conclusions can be drawn:

The majority of midwives demonstrated a good level of knowledge regarding early stunting detection through Congenital Hypothyroidism Screening (CHS), indicating that most respondents have an adequate understanding of the screening concept, procedures, and benefits.

The implementation of Congenital Hypothyroidism Screening at RS DKT Kota Kediri was largely conducted in accordance with Standard Operating Procedures (SOP), although a small proportion of midwives still did not fully comply with established guidelines.

There is a statistically significant relationship between midwives' knowledge levels and the implementation of CHS, where higher knowledge is associated with better compliance with SOP in screening practices.

Midwives with good knowledge were more likely to perform CHS correctly and consistently compared to those with sufficient or poor knowledge, highlighting the importance of cognitive competence in preventive health services.

Continuous education, regular training, and structured supervision are essential to further improve midwives' knowledge and ensure uniform and optimal implementation of Congenital Hypothyroidism Screening as part of early stunting prevention efforts.

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