

Health Data in the Community: Birth and Death Registration in Timor-Leste

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Abstracts: Birth and death registration is a crucial component of civil registration and public health systems. Registration is carried out through community reporting by local leaders to health workers, which is then forwarded to the country's National Statistical System, particularly in Timor-Leste. The study aimed to find out the birth and death registration in villages in Timor-Leste.

The methods used in this study are a qualitative descriptive method. The research was conducted at 14 municipalities in Timor-Leste. The instruments used for data collection included the questionnaire, which was helped by the mWater application for interviews with heads of families. Technical Analysis uses descriptive statistics supported by the SPSS version 22.0.

This study indicates that the registration of birth data within communities varied across municipalities, with the highest rates observed in Atauro (98.0%), Lautem (79.1%), and Manatuto (91.6%). Similarly, the perception of registering family death data with local leaders also showed significant differences by municipality, with Atauro (99.5%) and Aileu (84.2%) showing the highest reported perceptions, while Dili (51.6%) and Bobonaro (64.1%) registered lower rates.

The study concluded that to enhance birth registration coverage, increased investment, innovation promotion, procedural simplification, and improved coordination between the health and civil registration sectors are necessary. Governments and local leaders should boost public awareness, strengthen the Civil Registration and Vital Statistics system, and implement context-specific strategies tailored to local socio-cultural conditions.

Keywords: Birth Registration, Death Registration.

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I. INTRODUCTION

Birth and death registration is a crucial component of civil registration and public health systems. This data serves as a key source for understanding population dynamics and public health conditions, as well as a basis for sustainable development planning. Without consistent data from the Village, it is challenging for the government to prioritize health issues, population size, and the community's basic needs. A functioning civil registration system is crucial for establishing legal identity and collecting vital statistics, which enable a country to compare its estimated total number of births with the actual number registered. However, systematic birth registration

remains a challenge in many countries, highlighting the need for improvement and strengthening. Data coverage has improved over time, mainly due to investments in low- and middle-income countries through household surveys. These surveys are the primary source of data for monitoring birth registration rates and trends.(UNICEF, 2019)

Updating or extending birth and death data at the village level is essential to ensure the availability of valid and up-to-date information. Data is not only the basis for health decision-making, but can also influence human resource allocation, program implementation, mortality rates, and community socio-economic planning. The absence of registration data can

have an impact on health systems that are weak in health system and community administration. Almost 20% of registered births in countries with incomplete birth registration are not registered after 12 months, with this figure increasing to over 50% in some countries, especially in South Asia. To improve the timeliness of birth registration, strengthening legislation for mandatory registration before 12 months and increasing health sector involvement are two ways to improve registration timing. (Adair & Li, 2023)

The parties responsible for updating the master data are local leaders and health workers assigned to health posts established in the village. Local government leaders and administrative posts at the center are responsible for integrating data through the health information system with the population. Civil registration is crucial for individuals to obtain legal identity, family relationships, citizenship, and rights like social protection and inheritance. It facilitates access to essential services like health, education, and social welfare, and contributes to activities like employment, voting rights, property transfer, and bank account opening. In crises or natural disasters, a lack of registration can lead to statelessness. New technologies in resource-constrained environments offer opportunities for efficient information systems. (World Bank/WHO, 2014).

Data updating activities are carried out at the village level, which is the smallest unit in the government system and closest to the community. Villages are the basis for birth and death registration before being reported to administrative offices, cities, and the national level. These findings show that the use of perinatal health services can increase the likelihood of birth registration, even though there is no formal integration between the vital registration system and the health sector. The use of community-based health workers and existing formal perinatal services can increase registration rates in remote areas, (Jackson et al., 2014).

Data checks must be carried out on time. It is important to check whether a person is deceased or still alive. The United Nations Statistics Division (UNSD) is working to improve the availability, timeliness, and quality of vital statistics. The goal is to increase the knowledge of government statisticians, civil registration officials, and other stakeholders about international principles and recommendations for compiling, processing, and disseminating vital statistics. The aim is to enhance their capability in identifying gaps and challenges in applying international standards to improve their vital statistics system. (United Nations Statistics Division, 2025). Registration is carried out through community reporting by local leaders to health workers, which is then forwarded to the country's National Statistical System, particularly in Timor-Leste. It is essential to enhance this process through information technology systems, provide training to local leaders, and increase community awareness about the registration procedure when someone dies or is born in a Sucu or village. The study

aimed to find out the birth and death registration in villages in Timor-Leste.

➤ *Birth Registration*

Birth registration is an official record of a child's birth kept by authorized authorities that includes basic information such as name, gender, date of birth, location of birth, and parents' identities. The key objective of birth registration is to establish legal acknowledgment of a person's existence, protect civil rights, and act as a foundation for the collection of demographic data and vital statistics. Birth registration is an important and undervalued process that can help countries monitor progress towards improved health outcomes, and help the most underserved break harmful cycles of disadvantage (Jackson et al., 2014). Birth registration establishes the existence of a child under the law and provides the foundation for ensuring many of his/her rights (Abay & Gebre-Egziabher, 2020). Birth registration marks a child's right to identity and is the first step to establishing citizenship and access to services. At the population level, birth registration data can inform effective programming and planning (Reed et al., 2021). Accurate information on live births, stillbirths, and deaths is required for public health tracking, improvements in maternal-child health, and progress towards Sustainable Development Goals (SDGs) (Kasasa et al., 2021).

➤ *Death Registration*

A death registry is a formal record of a person's death kept by an authorized body that includes the individual's name, date and location of death, and (if applicable) cause of death. Death registration provides legal confirmation of a person's passing and is an important source of mortality statistics for health, social, and economic planning. Data has various functions and benefits, such as serving as a basis for decision-making, as a reference for carrying out certain activities, and as evaluation data. Data can be used to easily and accountably make decisions based on the problem. It also serves as a basis for planning. (Ximenes et al., 2025). Increasing the capacity to provide quality, timely, and reliable data is one of the targets of the SDGs, especially in small island states like Timor-Leste. (Carvalho et al., 2024). The development of information systems in the health sector is progressing rapidly, and the need for data management in all health organizations is increasing. (Pereira et al., 2025). Effective health policy formulation requires sound information on the numerical data and causes of deaths in a population. (Tahsina et al., 2022).

II. RESEARCH METHODS

The methods used in this study are a qualitative descriptive method. According to Adiputra et al. (2021), Qualitative researchers attempt to understand or interpret phenomena through the meanings that respondents attribute to them. Qualitative descriptive research techniques are a type, design, or research plan that is typically used to examine natural research objects or in real-world settings rather than set-ups like

experiments. Descriptive indicates that the study results will be described as simply as possible, depending on the research that has been conducted, without drawing any conclusions. The research was conducted at 14 municipalities in Timor-Leste. Sampel in the study from Aileu (139), Ainaro (1173), Atauro (394), Baucau (1278), Bobonaro (1230), Covalima (847), Dili (1800), Ermera (1156), Lautem (1271), Liquica (456), Manatuto (310), Manufahi (980), RAEOA (4539), and

Viqueque (845). The instruments used for data collection included a questionnaire inserted into the mWater application, accessed via an Android phone, for interviews with family heads. Technical Analysis uses descriptive statistics supported by the Statistical Package for the Social Sciences (SPSS) 22, to describe the distributions of frequency and percentage of indicators in this survey.

III. RESULTS AND DISCUSSION

Table 1. Characteristics of the Respondents

Aged	Alternative Response	
	F	%
20-29	1812	11.0%
30-39	3538	21.5%
40-49	3421	20.8%
50-59	3323	20.2%
>60	4324	26.3%
Education Level		
Illiterate	5949	36.2%
Pre-Primary	1478	9.0%
Primary	1926	11.7%
Junior high school	1384	8.4%
Senior High School	3895	23.7%
University	1786	10.9%
Occupation		
Agriculture	11246	68.5%
Public employee	2253	13.7%
Private employee	735	4.5%
Street Vendor	267	1.6%
Others	1917	11.7%

This study found that the majority of respondents were over 60 years old (26.3%), and a minority of respondents participating in this study were aged 20-29 years (11%). The majority of respondents in this study were unable to read and write (36.2%), and the minority with the lowest level of education were those who had not completed preschool (9.0%). Most of the respondents worked as farmers (68.5%), and a small number were street vendors (1.6%).

Table 2. Communities' Perception of the Birth Registration Data in Timor-Leste

Municipalities	Alternative		Total
	No	Yes	
Aileu	20	119	139
	14.4%	85.6%	100.0%
Ainaro	167	1006	1173
	14.2%	85.8%	100.0%
Atauro	8	386	394
	2.0%	98.0%	100.0%
Baucau	122	1156	1278
	9.5%	90.5%	100.0%
Bobonaro	311	919	1230
	25.3%	74.7%	100.0%
Covalima	118	729	847
	13.9%	86.1%	100.0%

Dili	524	1276	1800
	29.1%	70.9%	100.0%
Ermera	160	996	1156
	13.8%	86.2%	100.0%
Lautem	266	1005	1271
	20.9%	79.1%	100.0%
Liquica	100	356	456
	21.9%	78.1%	100.0%
Manatuto	26	284	310
	8.4%	91.6%	100.0%
Manufahi	120	860	980
	12.2%	87.8%	100.0%
RAEOA	675	3864	4539
	14.9%	85.1%	100.0%
Viqueque	206	639	845
	24.4%	75.6%	100.0%
Total	2823	13595	16418
	17.2%	82.8%	100.0%

This study found that the community had registered their children's data with village or community leaders in Aileu (85.6%), Ainaro (85.8%), Atauro (98.0%), Baucau (90.5%), Bobonaro (74.7%), Covalima (86.1%), Dili (70.9%), Ermera (86.2%), Lautem (79.1%), Liquica (78.1%), Manatuto (91.6%), Manufahi (87.8%), RAEOA (85.1%), and Viqueque at (75.6%). Birth registration, encompassing live births, stillbirths, and deaths, is a foundational child right and critical for national planning. Current surveys primarily measure live birth registration completeness, neglecting stillbirths and deaths. Registration coverage is low across the board, with stillbirths and neonatal deaths being particularly underreported. Enhancing registration within health facilities could improve coverage for all birth outcomes, but this necessitates improved coordination between civil registration and health sectors, which are often strained. Investment and innovation are essential for strengthening birth and death recording systems in health facilities and communities (Jackson et al., 2014). The previous study found that a significant portion of respondents lacked knowledge regarding birth registration and its benefits, leading to only 30% registering their children and obtaining certificates. Major obstacles cited included inaccessible registrar offices, insufficient manpower, and a lack of government political will. Maternal education and urban residence were positively associated with higher registration rates. Children from Muslim households were more likely to be

registered than those from Orthodox Christian families. Mothers without their own birth certificates were 86% less likely to register their children's births (Abay & Gebre-Egziabher, 2020).

The previous study found that the standard national birth registration procedure at Muhimbili Hospital involves families receiving notification and being advised to obtain a birth certificate from RITA after two months at a certain cost. In-depth interviews revealed that although birth registration is considered important, both the standard and pilot processes in Tanzania are perceived as complicated, burdensome, and costly for families and health workers. (Reed et al., 2021). Birth registration, encompassing live births, is recognized as a fundamental child right and is crucial for national planning. Factors contributing to low registration rates include restricted service access, insufficient personnel, minimal public awareness, elevated costs, and complex administrative processes. Key determinants for higher registration likelihood involve maternal education, urban residency, religious affiliation, and prior birth certificate ownership by parents. To enhance birth registration coverage within health and community settings, increased investment, promotion of innovation, procedural simplification, and improved collaboration between health and civil registration sectors are imperative.

Table 3. Communities' Perception of the Death Registration Data in the Villages in Timor-Leste

Municipalities	Alternative Response		Total
	No	Yes	
Aileu	22	117	139
	15.8%	84.2%	100%
Ainaro	376	797	1173
	32.1%	67.9%	100%
Atauro	2	392	394

	.5%	99.5%	100%
Baucau	375	903	1278
	29.3%	70.7%	100%
Bobonaro	442	788	1230
	35.9%	64.1%	100.0%
Covalima	169	678	847
	20.0%	80.0%	100%
Dili	871	929	1800
	48.4%	51.6%	100%
Ermera	363	793	1156
	31.4%	68.6%	100%
Lautem	400	871	1271
	31.5%	68.5%	100%
Liquica	164	292	456
	36.0%	64.0%	100%
Manatuto	73	237	310
	23.5%	76.5%	100%
Manufahi	365	615	980
	37.2%	62.8%	100%
RAEOA	1389	3150	4539
	30.6%	69.4%	100%
Viqueque	323	522	845
	38.2%	61.8%	100%
Total	5334	11084	16418
	32.5%	67.5%	100%

This study found that the public's perception of registering their family's death data with village or community leaders in Aileu (84.2%), Ainaro (67.9%), Atauro (99.5%), Baucau (70.7%), Bobonaro (64.1%), Covalima (80.0%), Dili (51.6%), Ermera (68.6%), Lautem (68.5%), Liquica (64.0%), Manatuto (76.5%), Manufahi (62.8%), RAEOA (69.4%), and Viqueque (61.8%). Estimates of completeness of death registration are crucial to produce estimates of life tables and population projections and to estimate the burden of disease. They are an important step in assessing the quality of data. In the case of subnational data analysis in Brazil, it is important to consider spatial and temporal variation in the quality of mortality data. (Queiroz et al., 2020). The death registration is very important for the local leaders to understand the projection of the population. These mortality statistics rely on registered mortality data, disaggregated by age and sex. This allows, for example, age-standardization of mortality rates and the construction of mortality tables. Analyzing mortality risk by age and sex can also reveal many issues relevant to population health policy, even in the absence of reliable data on causes of death. (Adair & Lopez, 2021).

There are significant disparities in registration completeness at the district and provincial levels. Socioeconomic conditions, the implementation of specific initiatives to improve registration, and the availability and

quality of health services are the main factors underlying the observed geographical variations. A more strategic approach, with more in-depth research, is needed to identify the main reasons for underreporting of deaths, especially in counties with poorer performance, to guide corrective action. (Zeng et al., 2020). The previous study shows that a low registration rate is associated with social norms and religious traditions. Barriers include same-day burials, cultural taboos surrounding the disclosure of infant, neonatal, twin, and suicide deaths, and burial practices in which women are buried in their parents' homes due to dowry issues. Religious institutions also hinder registration by withholding funeral prayers for inactive members. In addition, families with mixed religions experience disputes that hinder death registration, and traditional practices of avoiding medical care in hospitals further limit registration at these facilities. (Habaasa, 2022).

The government and local leaders need to improve the community's awareness about the importance of the death registration in the village office. Some studies suggest the need for focused and region-specific interventions to improve death registration, taking into account the social determinants of death registration, and increasing public awareness about it. (Singh et al., 2025). Reliable and timely mortality data from the civil registration and vital statistics (CRVS) system is crucial for generating policy evidence and monitoring progress towards

national and global development goals. (Pandey & Adair, 2022). However, in Timor-Leste, the death registration system is not used to generate mortality statistics because it does not provide village data, and also sometimes does not report to the community leaders, and is not registered in the village.

IV. STUDY FINDING

The study's findings show that low birth and death registration coverage is caused by a lack of knowledge, complex procedures, and poor coordination among the health sector, authorities, and civil registries. Increasing coverage necessitates more investment, innovative registration systems, streamlined procedures, and improved cross-sector collaboration in health institutions and communities.

V. CONCLUSIONS AND RECOMMENDATIONS

The study found that Birth registration is a fundamental child right vital for national planning, yet low registration rates in Timor-Leste are attributed to limited-service access, insufficient staffing, low public awareness, and complex administrative processes. Conversely, higher registration rates correlate with maternal education, urban residency, religious affiliation, and parental prior birth certificate possession. Death registration within Timor-Leste's districts is suboptimal, influenced by social, cultural, and economic factors, healthcare accessibility, and religious norms, all of which create barriers to completeness. The general populace demonstrates a limited understanding of the significance of registering births and deaths at the Suco Office. Accurate death registration is crucial for producing reliable population data necessary for mortality tables, population projections, and evidence-based health policy development. To improve birth registration coverage in health and community settings, increased investment, promotion of innovation, simplification of procedures, and enhanced coordination between health and civil registration sectors are needed. The government and local leaders are encouraged to bolster public awareness, strengthen the Civil Registration and Vital Statistics system, and deploy context-specific strategies addressing local socio-cultural realities.

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