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Incompleteness in filling out the tuberculosis notification form among indigenous people in Rondônia

Incompletude no preenchimento da ficha de notificação de tuberculose entre indígenas em Rondônia

Incompletitud en el llenado del formulario de notificación de tuberculosis entre indígenas en Rondonia

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Abstract
Introduction: Notification of tuberculosis is essential for epidemiological surveillance, especially among vulnerable populations such as Indigenous people. Objective: To assess the incompleteness of TB notification among Indigenous people in Rondônia - Brazil. Method: A descriptive epidemiological study with a quantitative approach, based on tuberculosis records stratified by age group (child, adolescent, adult, and elderly) in the Notifiable Diseases Information System from 2008 to 2020 and incompleteness was assessed using percentage variation. Results: 305 TB cases were analyzed. Among the mandatory variables, two were more than 50% incomplete in all age groups: sensitivity test (75.43%) and transfer destination (100%). Among the essential variables, there was an incompleteness between 20% and 50% in the 6th month of sputum smear microscopy and the occupation variable. Conclusion: Incompleteness was predominated among the variables entered after 2014 and the essential variables were identified as crucial for epidemiological calculations and the organization of case management.
Keywords: Data Reliability; Secondary Data Analysis; Health Information System; Indigenous People.

Resumo
Introdução: A notificação da tuberculose é essencial para a vigilância epidemiológica, especialmente entre populações vulneráveis, como os indígenas. Objetivo: Avaliar a incompletude das notificações de tuberculose entre indígenas em Rondônia, Brasil. Método: Estudo epidemiológico descritivo, com abordagem quantitativa, baseado em registros de tuberculose estratificados por faixa etária (criança, adolescente, adulto e idoso) no Sistema de Informação de Agravos de Notificação, de 2008 a 2020. A incompletude foi avaliada por meio da variação percentual. Resultados: Foram analisados 305 casos de tuberculose. Entre as variáveis obrigatórias, duas apresentaram mais de 50% de incompletude em todas as faixas etárias: teste de sensibilidade (75,43%) e destino de transferência (100%). Entre as variáveis essenciais, a incompletude variou entre 20% e 50% no exame de baciloscopia no 6º mês e na variável ocupação. Conclusão: A incompletude predominou entre as variáveis inseridas após 2014, e as variáveis essenciais foram identificadas como cruciais para cálculos epidemiológicos e organização do manejo dos casos.
Palavras-chave: Confiabilidade dos Dados; Análise de Dados Secundários; Sistema de Informação em Saúde; Povos Indígenas.

Resumen
Introducción: La notificación de la tuberculosis es esencial para la vigilancia epidemiológica, especialmente entre poblaciones vulnerables como los indígenas. Objetivo: Evaluar la incompletitud de las notificaciones de tuberculosis

entre indígenas en Rondônia, Brasil. Método: Estudio epidemiológico descriptivo, con enfoque cuantitativo, basado en registros de tuberculosis estratificados por grupo de edad (niño, adolescente, adulto y anciano) en el Sistema de Información de Enfermedades de Notificación Obligatoria, de 2008 a 2020. La incompletitud se evaluó mediante la variación porcentual. Resultados: Se analizaron 305 casos de tuberculosis. Entre las variables obligatorias, dos presentaron más del 50% de incompletitud en todos los grupos de edad: prueba de sensibilidad (75,43%) y destino de transferencia (100%). Entre las variables esenciales, la incompletitud varió entre el 20% y el 50% en la baciloscopia del 6º mes y la variable ocupación. Conclusión: La incompletitud predominó entre las variables ingresadas después de 2014, y las variables esenciales fueron identificadas como cruciales para los cálculos epidemiológicos y la organización del manejo de casos.
Palabras clave: Confiabilidad de los Datos; Análisis de Datos Secundarios; Sistema de Información en Salud; Pueblos Indígenas.

1. Introduction

Tuberculosis (TB) is an infectious disease caused by the Mycobacterium tuberculosis bacillus (MTb). To understand the extent of this disease in the population, notification becomes essential, as it is through this process that essential epidemiological and operational calculations are carried out. This allows us to understand that the incidence of TB varies between populations, not following a uniform pattern, as indicated by the World Health Organization (WHO) (WHO, 2023).

In 2022, TB affected approximately 10.6 million people globally, resulting in 1.3 million deaths, consolidating itself as one of the main causes of mortality in the world. In Brazil, the incidence was 36.3 cases per 100 thousand inhabitants (Brasil, 2023). In Rondônia, although the general rate was lower (26.9 cases per 100 thousand inhabitants), studies reveal that in the state's indigenous population, the average was eight times higher (201.5 cases per 100 thousand inhabitants) (Ferreira et al., 2020).

Since the 90s, the Notifiable Diseases Information System (SINAN) has become the main tool to support the analysis of TB data in Brazil, through mandatory notification of cases, and has undergone several improvements since its implementation to improve them (Ministério da Saúde et al., 2009). However, factors such as professionals' lack of knowledge on how to use them correctly, irregularity in sending data, lack of feedback, and professionals' lack of understanding regarding the importance of these records, contribute to the low completeness of notifications and constitute limitations that impact the accurate and timely analysis of the epidemiological situation (Ministério da Saúde et al., 2007).

The form used to record TB cases has 66 variables. The sections are divided into different types, such as automatic, mandatory, essential, and conditional fields, to guarantee the collection of data necessary for case investigation and the construction of health indicators (Brasil, 2019).

Currently, one of the main factors that contribute to the lack of information in the records concerns the filling of fields considered essential, such as the category referring to race/color, fundamental to understanding the manifestation of the disease in specific populations, such as Indigenous people (Rocha et al, 2020).

Failure to complete the TB form results in an inaccurate representation of the real magnitude of the disease in each area, especially among special populations, for which smaller amounts of data are captured, which compromises planning actions and formulating strategies for controlling and coping with the disease (Oliveira et al, 2012).

At the same time, it makes it difficult to develop health actions, preventive measures, and the efficient allocation of resources, making monitoring even more complex as an essential part of the epidemiological surveillance work process, especially in populations with high incidence (Canto & Nedel, 2020; Rocha et al., 2020).

This study aims to evaluate TB notification incompleteness among Indigenous people in Rondônia, Brazil.

2. Methodology

This is a descriptive epidemiological study carried out using a quantitative approach (Pereira et al., 2018) and simple

descriptive statistics with absolute and percent relative frequencies (Shitsuka et al., 2014) in the state of Rondônia, which is in the Northern Region of Brazil. Partial data from 2023 show that the state has an area of 237,754.1 km2, a population of 1,581,016 people, and a demographic density of 6.65 inhabitants/km. (Brasil, 2023; IBGE, 2025).

The Indigenous territory is strategically divided between the Special Indigenous Health Districts (SIHD), of which there are two in Rondônia - Porto Velho and Vilhena. Each district houses Indigenous Health Houses (IHH), designed to serve the indigenous population in the villages. Indigenous Health Agents (IHA), who operate in the villages, refer indigenous individuals suspected of having TB to the Indigenous Health Units. In more complex cases that are difficult to diagnose, these individuals are then referred to IHH and transferred to secondary units in Rondônia for diagnostic elucidation, which plays a crucial role in the notification and management of TB cases in the Indigenous population.

In this scenario, the notifying process of diseases and illnesses related to TB adopts a mixed approach. In primary units and private services, the form is filled out manually on paper and sent, via mailing bag, to the municipal TB coordinator to register cases in SINAN. On the other hand, in secondary units, this functionality occurs through the epidemiological surveillance services inserted within these locations.

The population of this study consisted of all TB records among Indigenous people reported in Rondônia on SINAN from 2008 to 2020. Indigenous people were classified by the variable race/color present in the notification form. Children were those aged up to 10 years, adolescents aged between 10 and 19, adults aged between 20 and 59, and elderly people aged 60 or over (WHO, 2009).

Data collection was carried out by surveying sociodemographic, and clinical variables, exams, contact investigation, and treatment monitoring in SINAN (Table 1).

Table 1 - Survey of variables used in this study, from the SINAN database, Rondônia, in the period between 2008 and 2020.

Type	Variables
Sociodemographic	race/color, age, area of residence, beneficiary of a government income transfer program, education, occupation, diseases, and associated problems.
Clinics	type of entry, clinical form, and tests performed for diagnosis (diagnostic sputum smear microscopy, sputum culture, Rapid Molecular Test (RMT-TB), sensitivity test, histopathology, and chest radiography).
Exams and contact investigation	tuberculin skin test, HIV serology, contacts identified and examined.
Follow-up Treatment	monitoring (monthly sputum smear microscopy, Federative Unit of transfer, directly observed treatment (DOT), date of start of treatment and closure, health unit of notification and treatment, and closure status

Source: Prepared by the authors (2023).

To analyze the incompleteness of the selected variables, the mandatory fields were explored, defined as those whose absence of data makes investigation in SINAN impossible, and the essential field which, despite not being mandatory, records data necessary for calculating the epidemiological indicator or operational, according to the SINAN NET Data Dictionary version 4.0 and 5.0 (Ministério da Saúde, 2006).

Like other variables, the differences between both denominations mentioned above were classified.

As a criterion for evaluating incompleteness, the percentage variations of variables without any filling in (blank) were quantified and calculated and categorized as excellent (less than 5.0% incompleteness), good (from 5.0 to <10%), regular (from 10.0 to <20.0%) and bad (20.0% to <50%) and very bad (greater than 50%) (Romero e Cunha, 2006).

In compliance with the recommendations of resolution 466/12 of the National Health Council (Conselho Nacional de Saúde, 2012), the matrix project entitled "Tuberculosis in the state of Rondônia: a health assessment study" was approved by the Research Ethics Committee of the Fundação Universidade Federal de Rondônia, according to opinion 3,939 .112.

3. Results and Discussion

In the period from 2008 to 2020, 9,205 cases of TB were registered in the state of Rondônia. Of these, 180 (1.9%) were excluded due to lack of information on race/color, while 9,025 were identified as non-indigenous. Of the 353 cases (3.8%) identified as indigenous, 48 were excluded because they lived in other states (21 cases from Amazonas, 26 from Mato Grosso, and one from Roraima), totaling 305 cases considered in this study.

Regarding the integrity of the data related to the mandatory variables in the TB notification form, it was observed, consistently in all age groups, an incompleteness only in the variables inserted from the year 2014 onwards, a sensitivity test with a rate greater than 50 % and transfer destination with 100% incompleteness (Table 2).

Table 2 - Description of incompleteness and its respective classification of mandatory variables in the TB case notification form among Indigenous people in SINAN, according to age group, Rondônia, the period between 2008 and 2020.

	CHILD (41)			ADOLESCENT (41)			ADULT (175)			ELDERLY (48)			Total
Field/variable	(N)	Incomplete empty field n (%)	Classification	(N)	Incomplete empty field n (%)	Classification	(N)	Incomplete empty field n (%)	Classification	(N)	Incomplete empty field n (%)	Classification	Classification (%)
Input type	41	-	E	41	-	E	175	-	E	48	-	E	E (-)
Form	41	-	E	41	-	E	175	-	E	48	-	E	E (-)
Culture	41	-	E	41	-	E	175	-	E	48	-	E	E (-)
Diagnostic sputum smear microscopy	41	-	E	41	-	E	175	-	E	48	-	E	E (-)
Sensitivity test **	12	10 (83.3)	VB	13	8 (61.53)	VB	73	56 (76.71)	VB	16	12 (75.0)	VB	VB (75.43)
HIV	41	-	E	41	-	E	175	-	E	48	-	E	E (-)
Closing date	41	1 (2.4)	E	41	-	E	175	3 (1.7)	E	48	-	E	E (-)
Closing status	41	-	E	41	-	E	175	1 (0.5)	E	48	-	E	E (-)
Transfer destination * (**)	7	7 (100)	VB	3	3 (100.0)	VB	13	13 (100)	VB	13	13 (100)	VB	VB (100.0)
Total cases identified	41	-	E	41	-	E	175	-	E	48	-	E	E (-)

*Only cases that were transferred were considered (1 - Same municipality 2 - Different municipality (same Federative Unit) 3 - Different Federative Unit 4 - Different country 9 - Ignored) **Included from 2014 onwards in the SINAN form.
Legend: E = Excellent (<5.0%), G= Good (5.0 to <10%), R = Regular (10.0 to <20%), B= Bad (20.0 to <50%) and VB= Very bad (above 50%).
Source: SINAN (2019); Adapted from Romero and Cunha, 2007.

Concerning the essential variables, it appears that, regardless of age group, the chest X-ray, diseases and conditions associated with AIDS, alcoholism, diabetes, mental health, and the date of start of treatment showed excellent completeness. On the other hand, the use of illicit drugs, smoking, ODD, and beneficiaries of the income transfer program were identified as areas with greater incompleteness, especially among the elderly (Table 3).

It was also observed that other diseases and conditions had higher rates of incompleteness among adults and the elderly. As for the variables related to the total number of contacts examined, RMT-TB and sputum smear microscopy for monthly control, presented higher incompleteness rates, regardless of age group, except for sputum smear microscopy, which achieved excellent completeness among adolescents (Table 3).

Table 3 - Description of incompleteness and its respective classification of essential variables in the TB case notification form among Indigenous people in SINAN, according to age group, Rondônia, the period between 2008 and 2020.

	CHILD (41)			ADOLESCENT (41)			ADULT (175)			ELDERLY (48)			Total
Field/variable	(N)	Incomplete empty field n (%)	Classification	(N)	Incomplete empty field n (%)	Classification	(N)	Incomplete empty field n (%)	Classification	(N)	Incomplete empty field n (%)	Classification	Classification (%)
Sputum smear microscopy 1st month*	30	2 (6.6)	G	38	-	E	154	12 (7.7)	G	44	7 (15.9)	R	G (7.8)
Sputum smear microscopy 2nd month*	30	4 (13.3)	R	38	-	E	154	12 (7.7)	G	44	12 (27.2)	B	R (10.5)
Sputum smear microscopy 3rd month*	30	4 (13.3)	R	38	-	E	154	14 (9.0)	G	44	14 (31.8)	B	R (12.0)
Sputum smear microscopy 4th month*	30	4 (13.3)	R	38	-	E	154	21 (13.6)	R	44	14 (31.8)	B	R (14.6)
Sputum smear microscopy 5th month*	30	4 (13.3)	R	38	-	E	154	28 (18.8)	R	44	15 (34.0)	B	R (17.6)
Sputum smear microscopy 6th month*	30	5 (16.6)	R	38	1 (2.6)	E	154	31 (20.1)	B	44	17 (38.6)	B	B (20.3)
Histopathology **	13	2 (15.3)	R	3	-	E	26	-	E	4	-	E	E (4.3)
Chest X-ray	41	-	E	41	-	E	175	2 (1.1)	E	48	-	E	E (0.6)
Rapid Molecular Test (RMT-TB)***	12	1 (8.3)	E	13	3 (23.1)	R	73	8 (10.9)	R	16	1 (6.25)	G	R (11.2)
Associated diseases and conditions - AIDS	41	1 (2.4)	E	41	-	E	175	1 (0.5)	E	48	-	E	E (0.3)

Associated diseases and conditions - Alcoholism	41	2 (4.8)	E	41	-	E	175	3 (1.7)	E	48	-	E	E 1.6(-)
Associated diseases and conditions - Diabetes	41	2 (4.8)	E	41	-	E	175	3 (1.7)	E	48	1 (2.0)	E	E (1.9)
Associated diseases and conditions – Mental illness	41	2 (4.8)	E	41	-	E	175	5 (2.8)	E	48	1 (2.0)	E	E (2.6)
Associated diseases and conditions – Use of illicit drugs***	11	-	E	9	-	E	60	1 (1.6)	E	14	1 (7.1)	G	E (2.1)
Associated diseases and conditions - Smoking***	11	-	E	9	-	E	60	1 (1.6)	E	14	1 (7.1)	G	E (2.1)
Associated diseases and conditions – Others	41	4 (9.7)	G	41	1 (2.4)	E	175	22 (12.5)	R	48	5 (10.4)	R	G (10.4)
Treatment start date	41	-	E	41	-	E	175	-	E	48	-	E	E (-)
Directly observed treatment (DOT) performed	41	-	E	41	1 (2.4)	E	175	8 (4.5)	E	48	3 (6.2)	G	E (3.9)
Total contacts examined	41	9 (21.9)	G	41	2 (4.8)	E	175	13 (7.4)	G	48	7 (14.5)	R	G (10.1)
Beneficiary of the government's income transfer program ***	11	-	E	9	-	E	60	2 (3.3)	E	14	1 (7.1)	G	E (1.6)

*Cases with extrapulmonary form were excluded ** Only cases with extrapulmonary form were considered *** Included from 2014 onwards in the SINAN form.
Legend: E = Excellent (<5.0%), G= Good (5.0 to <10%), R = Regular (10.0 to <20%), B= Bad (20.0 to <50%) and VB= Very bad (above 50%).
Source: SINAN (2019); Adapted from Romero and Cunha, 2007.

The variables related to the notification unit, treatment unit, and area of residence were highly complete. While schooling was incomplete among adults and the tuberculin skin test among adolescents, occupation was the variable with the greatest incompleteness, regardless of age group (Table 4).

Table 4 - Description of incompleteness and its respective classification of other variables in the TB case notification form among Indigenous people in SINAN, according to age group, Rondônia, the period between 2008 and 2020.

	CHILD (41)			ADOLESCENT (41)			ADULT (175)			ELDERLY (48)			Total
Field/variable	(N)	Incomplete empty field n (%)	Classification	(N)	Incomplete empty field n (%)	Classification	(N)	Incomplete empty field n (%)	Classification	(N)	Incomplete empty field n (%)	Classification	Classification (%)
Notification unit -	41	-	E	41	-	E	175	-	E	48	-	E	E (-)
Treatment unit	41	1 (2.4)	E	41	-	E	175	-	E	48	-	E	E (0,3)
Occupation*	30	26 (86.6)	VB	32	7 (21.8)	R	115	41 (35.6)	B	34	12 (35,2)	B	Ru (40,7)
Education	41	1 (2.4)	E	41	-	E	175	12 (6.8)	G	48	-	E	E (4,2)
Tuberculin Skin Test*	30	-	E	32	2 (6.2)	G	115	5 (4.3)	E	34	1 (2,9)	E	E (3,7)
Area of residence	41	2 (4.8)	E	41	-	E	175	4 (2.2)	E	48	1 (2,0)	E	E (2,2)

*Data collected up to 2014 in the SINAN file.
Legend: E = Excellent (<5.0%), G= Good (5.0 to <10%), R = Regular (10.0 to <20%), B= Bad (20.0 to <50%) and VB= Very bad (above 50%).
Source: SINAN (2019); Adapted from Romero and Cunha, 2007.

The incompleteness of the notification forms in the indigenous population compromises the reliability of the data, making it difficult to conduct scientific research that compares indigenous and non-indigenous people between different pathologies, and the elaboration of evidence-based information. This also leads to problems in calculating epidemiological and operational indicators that are fundamental for planning and properly managing resources, which increases health inequities (Wright, 2022).

The lack of data on race/color represents the first barrier to the completeness of the information. Without this data, it becomes unfeasible to assess the health conditions of the population in this category. In addition, the absence of the ethnicity variable in the Indigenous self-declaration makes it difficult to carry out in-depth studies and to understand the evolution of the disease in each Indigenous community, which is important due to the influence of social determinants on the health and disease process (Basta & Viana, 2019).

The inclusion of TB cases in the SINAN is performed manually, and only four variables are essential for the inclusion of the case: disease, date, municipality, and notification (Brasil, 2019). The other variables, even if classified as mandatory, do not compromise the insertion of the case in the system if they remain incomplete (WHO, 2012). In other words, in trying to ensure full completion, it is necessary that these were indispensable for the inclusion of the case. However, this approach could also increase the number of unreported cases.

The literature highlights the excellent completeness of notification data on drug-resistant TB (DR-TB) cases in the Tuberculosis Surveillance System (Silva et al., 2020). However, it is essential to highlight that the identification of these cases depends on carrying out the RMT-TB, responsible for detecting resistance to rifampicin and isoniazid, together with the sensitivity test, which expands the detection of resistance and enables the diagnosis of multi-resistant cases (Brasil, 2019) to there is no underreporting (Silva et al., 2020; Tourinho et al., 2020). Our study corroborates the data obtained by Silva et al. (2021) which showed low completeness in both tests, raising significant concerns associated with the increase in antibiotic resistance. Research conducted by Hadi and collaborators (Hadi et al., 2021) identified variants in the Mycobacterium tuberculosis genome with genes related to DR-TB in the Guarani-Kaiwá indigenous population. Therefore, not requesting tests, not providing the results or lack of knowledge about the care protocol contribute to the perpetuation of the transmission of already resistant bacilli (Who, 2012).

The lack of the real number of DR-TB cases often requires estimates, compromising assessments, and the organization of the system for the adequate management of DR-TB (Silva et al., 2020; Tourinho et al., 2020; Hadi et al., 2021; Bartholomay et al., 2020). This scenario substantially harms the therapeutic process and poses considerable challenges for effective control and coping with the disease, as proposed by the WHO for the eradication of TB by 2035 and endorsed by the Ministry of Health (MH) in Brazil (Who, 2012; Silva, 2021).

Completeness of the monthly sputum smear variable among adolescents was consistently excellent across all months, in contrast to other age groups where incompleteness of up to 38% was observed. This disparity can be attributed to the structure of the Rondônia Tuberculosis Program, where the diagnosis and treatment of childhood TB cases, both indigenous and non-indigenous, are centralized in specialized secondary health units, equipped with their laboratories (Souza et al., 2024). On the other hand, adults and the elderly are served in the primary network, spread throughout the state, where most municipalities lack adequate laboratory infrastructure, depending on storage and transport of samples, which are often insufficient. This may explain why many professionals do not request this exam (Ferreira et al., 2022). However, it is important to highlight that incompleteness among Indigenous people was lower than that indicated among non-indigenous people in other studies (Canto & Nedel, 2020; Jordana et al., 2009) showing more careful attention when filling out this item when it comes to this population.

Another striking point is the lack of filling in the transfer destination, possibly because it is a field that is generally filled in after the case is entered into SINAN, during data feedback. Furthermore, there is a need for these transfers to avoid loss of

follow-up at the destination unit to which the person with TB was referred ((Brasil, 2017; Rocha et al., 2020). It would be beneficial to include periodic alert mechanisms in the system to indicate that the variable is pending completion, thus preventing professionals from forgetting to include it, even due to an overload of functions. Adequate monitoring of cases is an essential part of health surveillance actions, and alert resources would facilitate this process.

Regarding the contacts examined, children presented the most worrying results. This variable is crucial for controlling the disease since children are important sentinels, and finding and treating index cases contributes to reducing the incidence in this population (Brasil, 2019).

The notification process varies between states, and in the specific context of Rondônia, several challenges impact the process. Long distances, precarious infrastructure, shortage of professionals, difficulties in accessing the internet, and the isolation of Indigenous villages are factors that influence notification (Ferreira et al., 2022; Oliveira et al., 2010). Furthermore, due to lack of knowledge, stigma, or lack of affinity, considering that many health professionals are not interested in working in TB programs, they impact the micropolitics of health work, requiring an approach focused on seeking worker adherence (Órfão et al., 2022).

In this scenario, notifications occur centrally, under the responsibility of the Municipal TB Coordinator. In other words, the process is conducted on paper, with the forms being delivered via pouch to the Municipal Health Department and subsequently received by the coordinator, who qualifies them, and a third person digitizes the data in the information system. This flowchart can result in delays in the notification of cases in the system, and execution by different people can cause the loss of various information throughout the process, especially considering that whoever produces the data initially may be different from the person who computerizes it.

The organization of transfers, the adequate allocation of resources, and the prioritization of actions to control the disease are closely linked to the degree of completeness of notification data and should, therefore, be treated as priorities, as recommended by the Rondônia State Health Plan (2020 to 2023) (Malta & Merhy, 2003; Plano Estadual de Saúde de Rondônia, 2020). Furthermore, these actions are recognized by managers as fundamental and protagonists within surveillance, including the need for adjustments in human resources, training, and financial and material support for the planning and execution of actions (Plano Estadual de Saúde de Rondônia, 2020).

In this context, although the SINAN feed is centralized and monitoring bulletins are sent periodically to update data (Rocha et al, 2020), it is highlighted that feedback cannot always occur consistently on the part of health teams and units. Given this scenario, it is imperative to think about strategies to raise awareness and highlight TB as a priority in the actions carried out, especially in the completeness of notifications, with the focus on Primary Health Care (PHC).

Most Indigenous villages are in rural areas, and if any information is neglected by the professionals who fill out the form, contact to obtain the missing information becomes even more complex. Furthermore, the inclusion of the case's area of residence is important for organizing treatment, since indigenous villagers, when they receive the DOT, need to stay at the IHH to receive the medicine and request transportation in advance for follow-up appointments (Souza et al., 2024).

One of the reasons for data not being completed in SINAN was investigated by Jordana de et al. (2009) in a qualitative study conducted in six municipalities in the state of Paraíba, which identified that professionals face difficulties in filling out notification forms, as well as in using and managing the System. Such aspects are the result of lack of knowledge and/or lack of training, with the implementation of different systems only vertically, without any clarifications and support to professionals (Who, 2012; Silva et al., 2021; Jordana et al., 2009; Órfão et al., 2022).

Furthermore, this study revealed that educational interventions, such as training, promote a deeper understanding of the purpose of the information described when filling out the forms and contribute to improving the completeness of the data (Silva et al., 2021).

Silva et al. (2021) highlights that 57% of health professionals in Porto Velho had not participated in any training on TB. Furthermore, 48% of these professionals have already worked and were responsible for TB cases, highlighting the need for initiatives such as providing training and training, establishing supervision and monitoring practices, as well as introducing incentives and recognition as potential for transforming similar scenarios (Tourinho et al., 2020; Who, 2012; Silva et al., 2021; Jordana et al., 2009; Órfão et al., 2022)

This raises a reflection on the crucial importance of recording as a fundamental raw material in planning, which is the essence of health surveillance. The act of recording must be truly seen as an inherent responsibility of health professionals, fully integrating into their work process, which covers not only the generation of reports but also extends to care management, ensuring the quality and safety of the assistance provided (Who, 2012).

The limitations of this study are related to data obtained through secondary sources. The ignored data were not considered in the analysis, which, although completed, did not add relevant information. Furthermore, the impossibility of fully understanding the incompleteness of specific data for the different indigenous ethnicities stands out.

4. Conclusion

The mandatory variables in the notification form were filled out almost completely, while weaknesses were observed in the essential variables and others, showing greater incompleteness in vulnerable groups, such as children and the elderly.

The comprehensive analysis of TB notification highlights the urgency in addressing the challenges associated with the lack of completeness of the notification form, especially concerning the indigenous population. This highlights the need to increase the number of professionals involved in TB notification and control actions, both within the scope of case management and assistance, ensuring the team's commitment to filling out the form. It is also important to implement periodic alarms to avoid forgetting data at the end of the case.

The compromised reliability of data creates obstacles in the calculation of epidemiological and operational indicators, which are fundamental for planning and effective resource management, aiming to effectively control the disease.

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