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Analysis of Secondary Data Utilization for Hypertension Prevention in Maubara Community Health Centre, Liquiça Municipality

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A B S T R A C T

Hypertension is a circulatory disorder causing high blood pressure, with 74,5 billion cases in America. The main cause of death worldwide is 22-36%. In 2023, there were 4.5 million cases in Timor-Leste, with 2,490 cases in 2021-2024. This research aims to analyze secondary data utilization for the prevention of hypertension disease. This study uses a quantitative method to investigate a population using a representative sample of 26 respondents. Data analysis is a quantitative descriptive method, conducted at the beginning of the research period. Interview responses are analyzed using SPSS version 22.0, ensuring credible data and a systematic and rational approach to finding the right answer. The results show that among 26 respondents interviewed for data utilization systems related to hypertension prevention, poor data utilization was 42.3%, good data utilization was 57.7%, good prevention was 46.2%, and bad prevention was 53.8%. The hypothesis test showed a chi-square P value of 0.014, indicating a significant relationship between secondary data utilization and hypertension disease prevention, indicating a positive relationship.The study highlights the link between data utilization and hypertension prevention, suggesting that accurate, complete, and timely data can improve disease prevention. Enhancing health personnel training and investing in data infrastructure can enhance health outcomes and public health strategies

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INTRODUCTION

Hypertension was diagnosed when blood pressure measurements were taken within two days and a systolic blood pressure of 140 mmHg or more a diastolic blood pressure of 90 mmHg or more was obtained. An estimated 1.28 billion adults aged 30–79 years worldwide have hypertension, most (two-thirds) living in low-and middle-income countries, an estimated 46% of adults with hypertension are unaware that they have the condition, Less than half of adults (42%) with hypertension are diagnosed and treated, Approximately 1 in 5 adults (21%) with hypertension have it under control, Hypertension is a major cause of premature death worldwide, (WHO, 2023). Hypertension is usually asymptomatic until complications develop in the target organs. Headache or heaviness in the neck, dizziness, palpitations, fatigue, blurred vision, ringing in the ears (tinnitus), and nosebleeds are some of the signs and symptoms of hypertension. (Debora et al., 2023).

According to National Hospital Guido Valadares-Timor-Leste (2015), inpatients at HNGV were 229 aged 15-45. Compared to 2016, hypertension is the highest, and this disease can affect children aged 1-45 years, the productive age, with a total of 963 people. (Pinto, Dos Santos, et al., 2022). The Overall prevalence of undiagnosed hypertension in 3 rural in aldeias of 3 municipalities was 15 % of these 63 % were males, and 37 % were females, the most affected age group was 59-78, suggesting age-related risk, and also poor health care for the aging population, Interestingly, we found that 76 percent of the hypertensive individual were underweight. Factors associated with undiagnosed hypertension were education level, age, and knowledge about hypertension. (Pinto, Dos Santos, et al., 2022).

The current health status and health-seeking behaviors of the study population regarding high blood pressure were evaluated by asking participants about their blood pressure history and medication use. Additionally, consenting participants had their blood pressure measured by trained health workers. In the study population, 87.3% had never had their blood pressure checked by a doctor or other health professional, with a higher proportion among men (91.5%) than women (79.7%). The prevalence of self-reported hypertension (diagnosed within the past 12 months) was 2.8% across both genders. Of those with self-reported hypertension, only 47.7% were currently taking prescribed blood pressure medication (46.6% of men and 48.7% of women). This proportion was higher in the 45-69 age group (total: 53.9%; men: 47.8%; women: 60.5%) compared to younger age groups, (Marcos Carvalho, Levi Anatolia S.M. Exposto, 2024; Martins & World Health Organization. Regional Office for South-East Asia, n.d.). Some risk factors that can cause hypertension are human characteristics such as age, gender, diet, low food intake, high salt, sodium, calcium intake, tobacco consumption, coffee, lack of physical exercise, and frequent stress, or often occur together with other risk factors such as obesity, high cholesterol, and diabetes which can increase health risks. (Roza Agustin, 2019).

Some studies found the level of knowledge of patients about the use of captopril drugs for patients with hypertension at the Suai Vila Health Center. The results of this research are divided into 2 parts: general and specific data. It shows that the level of knowledge, the highest percentage is the level of knowledge of the category sufficient, with a percentage of 37 (79%), followed by the level of knowledge, and the lowest category less with a percentage of 6 (8%). Based on the results, the level of knowledge that they understand about the use of captopril drugs for the patient with the highest percentage of higher is the level of knowledge of the category, sufficient with a percentage of 34 (47%). The lowest percentage is the level of knowledge in the category, less than 9 (13%) (Tilman, 2024).

Implementing effective prevention methods is crucial for tackling Hypertension. That's Health promotion and education are essential for enhancing community awareness and encouraging healthy behaviors. Initiatives by the Ministry of Health aim to change community behaviors related to the prevention of Hypertension, and a strategic plan for health education is necessary to ensure effective communication and engagement with the community. Using reliable data is crucial for informing health policies and programs aimed at combating hypertension. Data-driven approaches facilitate the development of effective guidelines and interventions, ensuring that health promotion activities have a meaningful impact (WHO, 2020). Establishing a robust health data infrastructure is vital to support these initiatives. (Correia et al., 2025).

Improving the quality of health data is critical for effective clinical decision-making and for evaluating health programs. Ensuring the quality of health data presents a significant challenge in public health. The development of information systems in the health sector is progressing rapidly, and the need for data management in all health organizations is increasing. Graduates of the Health Management Information Systems program will answer the need for health data and information for decision-making. (Carvalho et al., 2024).

The study target is Maubara Community Health Center, which serves a total population of 24,821 people from 50 villages composed of seven (7) villages in Maubara Post Administrative, Liquiça Municipality, and also registers cases of hypertension every year. Data shows that in 2021, total cases amounted to 715, in 2022, total cases amounted to 678, in 2023, total cases amounted to 900, and in 2024 Q1, total cases amounted to 197. (Health Management Information System, CHC Maubara). The objective of this research analysis of secondary data utilization for hypertension disease prevention.

LITERATURE REVIEW

Secondary Data

Secondary data is data that comes from institutions or related data sources that are processed or prepared when researchers conduct research. Secondary data is usually obtained directly from institutions such as the Central Bureau of Statistics in the form of evidence, records, or reports (Saputra, 2013). According to Sugiyono (2017), secondary data can be in the form of documents, archives, annual reports, or data that has been published by related agencies. Sekaran and Bougie (2016) also explain that secondary data functions as a source of additional information that can assist in research analysis. Data utilization refers to the process of effectively using data to gain insights, make informed decisions, and optimize processes (Ackoff, 1989). This process involves collecting, processing, analyzing, and applying data across multiple domains (McKinsey Global Institute, 2011). Theories and frameworks related to data utilization span multiple disciplines, including data science, information theory, and decision-making models (Shannon, 1948; Power, 2002).

Hypertension

Hypertension, or high blood pressure, is a common medical condition that leads to heart disease, stroke, and other cardiovascular complications. It is often referred to as the "silent killer" because it does not cause symptoms until it is severe or life-threatening. Uncontrolled and resistant hypertension can affect up to 50% of all hypertensive patients. Collaboration between general practitioners and clinical specialists is essential to improve the clinical management of hypertensive patients (Koracevic et al., 2023; Romano et al., 2023). Hypertension prevention involves three levels: primary prevention, secondary prevention, and tertiary prevention. Primary prevention involves health promotion and specific prevention; secondary prevention includes early diagnosis and treatment, and tertiary prevention prevents disability and rehabilitation. These levels are interconnected for effective implementation (Nasry Noor, N, 2014).

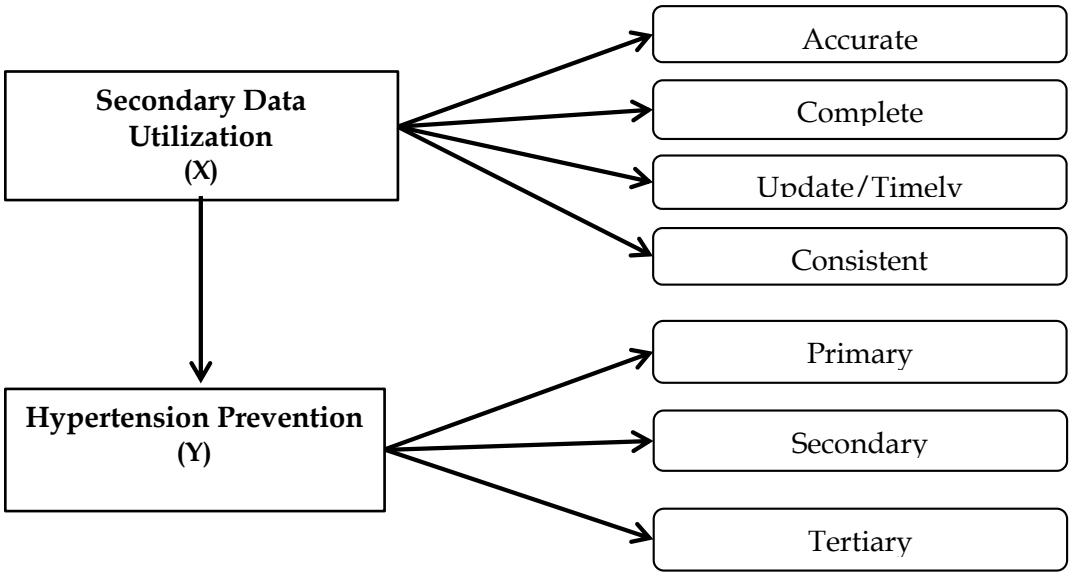

Figure 1. Theoretical Framework

METHODOLOGY

Research is a process of finding a problem that is carried out systematically and rationally to obtain the right answer through the questions described. Therefore, the research method used in this study is a quantitative method with a cross-sectional approach, which is a survey technique that aims to investigate the population or research sample through data collection using research instruments. Data analysis in quantitative or statistical form to test the established hypothesis (Sugiyono, 2013). A sample is a subset of the elements of a population. A representative sample that maintains the characteristics of the population (Ridwan, 2010). Given the small population, this study is a population study, meaning that the entire population is used as respondents or samples in this study, a total of 26 respondents. Data analysis in this study is a quantitative descriptive analysis, which is carried out at the beginning of data collection during the research period. When conducting interviews, researchers must analyse the answers from the interviews themselves, so that the answers from the interviews that are analysed are considered satisfactory to continue to ensure credible data. Analysing data using SPSS version 22.0.

RESULTS

Characteristics of Respondent

The results of the research conducted at the Maubara Community Health Center, Maubara Post Administrative, Liquiça Municipality, with the distribution of respondent characteristics in this research composed of sex, age, marital status, education level, and profession of respondents, as in the following tables:

Table 1. Respondent Characteristics

Nu.	Sex	Frequency	Percent (%)
1	Women	16	61,5
2	Men	10	38,5
Aged			
1	18-24	1	3,8
2	25-29	2	7,7
3	30-34	5	19,2
4	35-39	5	19,2
5	40-44	5	19,2
6	45-49	3	11,5
7	>50	5	19,2
Profession			
1	General Medical Doctor	6	23,1
2	Nursing	9	34,6
3	Nutrition	3	11,5
4	Midwife	5	19,2
5	Pharmacist	1	3,8
6	Tek. Laboratory	1	3,8

7	SIS	1	3,8
Education Level			
1	Licenciado/a	21	80,8
3	D3	5	19,2
Marital status			
1	Single	4	15,4
2	Married	22	84,6
Total		**26**	**100**

Based on the results of the characteristics of the respondents, the majority of respondents' age were 30-44 years and > 50 years, the majority of professions were nurses at 34.6%, the majority of education levels were Bachelor's degrees at 80.8%, and the majority of marital status was married at 84.6%.

Table 2. Analysis of the Use of Secondary Data and Prevention of Hypertension in Maubara Community Health Center, Year 2024

Used secondary data	**Prevention of Hypertension**		**Total**	**P=value**	**X²**	**CI**
	Bed Prevention	Good Prevention				
Not used	9 (34.6%)	2 (7.7%)	11 (42.3%)	0,014	9	95%
Used	5 (19.2%)	10 (38,5%)	15 (57.7%)			
TOTAL	14 (53.8%)	12 (46.2%)	26 (100%)			

Based on the results of the cross-table analysis show that the respondents interviewed for the hypertension prevention data utilization system were 26 people. Bad data utilization was 42.3%, good data utilization was 57.7%, good prevention was 46.2%, and bad prevention was 53.8%. In addition, the results of the hypothesis test showed a chi-square value (X2) = 9,000, also showed a P value of 0.014, this result shows that it is smaller than the alpha value (α) = <0.05. It is concluded that the acceptance of the Alternative Hypothesis means that there is a significant analytical relationship between the utilization of secondary data and hypertension prevention.

DISCUSSION

The study found that respondents who were interviewed for the data utilization system with hypertension prevention. Poor data utilization was 42.3%, good data utilization was 57.7%, Good Prevention was 46.2%, and bad prevention was 53.8%. The study found that significant relationship between the secondary data utilization for the prevention of hypertension disease. The factors that contribute to hypertension include family history, BMI, smoking habits, physical activity, and alcohol consumption. The goal of hypertension treatment is to decrease the risk factors for hypertension. (Debora et al., 2023). The results compare with the study conducted by (Pinto, Belo, et al., 2022). The results show that stress factors, salt, and alcohol consumption have an effect on the incidence of hypertension in the people of Baucau City, Timor-Leste.

The study found that data utilization has the potential for improvement in its application for disease prevention. This aligns with Mosley's (2008) findings that data must be accurate, complete, and timely for effective health interventions. The discussion calls for enhanced training for health personnel in data management and investment in health data infrastructure to ensure reliable data collection and reporting, ultimately leading to better health outcomes and improved public health strategies. The Usage of data to become a source of information is the importance of getting actions and reactions based on reality in that place. Only based on data helps us to coordinate every decision to control and react to it, to how the effect is related to this work. Based on the data, we can commit to the decision to give control and action to the affected form related to the workflow. Secondary data is data that comes from relevant institutions or data sources that have been elaborated or prepared when the researcher conducted the research.

This study examines the importance of statistical data in health facilities, especially for the prevention and treatment of hypertension in Timor-Leste. This study is in line with (Dewi & Ayuningtyas, 2023) This states that preventive health interventions for controlling hypertension include physical activity, stress reduction, smoking cessation, avoidance of alcoholic beverages, a balanced diet, and lifestyle education. Health services can provide routine blood pressure control, information on lifestyle, and the availability of antihypertensive drugs and referral services. Using data from health facilities such as the public and private health sectors as evidence, based on strategies for hypertension interventions to reduce the burden of hypertension on individuals and communities. Secondary data can be used for prevention and health promotion efforts to reduce the prevalence of hypertension.

CONCLUSIONS AND RECOMMENDATIONS

The study reveals a significant relationship between data utilization and hypertension prevention. Factors contributing to hypertension include family history, BMI, smoking habits, physical activity, and alcohol consumption. The goal of hypertension treatment is to decrease these risk factors. The study suggests that data utilization can improve disease prevention by ensuring accuracy, completeness, and timeliness. Enhancing training for health personnel and investing in health data infrastructure can lead to better health outcomes and improved public health strategies. Secondary data, obtained from relevant institutions or sources, is crucial for coordinating decisions and controlling the affected form.

FURTHER STUDY

The further research needs to use more secondary data from many sources to monitor and intervene for hypertension risk in society.

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