The Relationship of Patient Behaviour to the Occurrence of Dengue Disease in Liquiça Community Health Centre, Liquiça Administrative Post, Liquiça Municipality in 2024

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Abstract:

➢ *Introduction:*
    Dengue fever is a significant public health concern in tropical and subtropical regions. It is transmitted primarily by Aedes aegypti and Aedes albopictus mosquitoes. The disease threatens nearly half the global population, with increasing incidence rates, particularly in areas like Timor-Leste. Understanding the relationship between patient behaviour and the occurrence of dengue is crucial for effective public health strategies.

➢ *Objective:*
    This study aims to investigate the correlation between patient behaviour and the incidence of dengue disease in the Liquiça Community Health Centre, Liquiça Administrative Post, during 2024. It also assesses the connection between patient understanding of dengue and its occurrence.

➢ *Method*:
    The research utilised a quantitative cross-sectional design and involved 99 dengue patients treated at the Liquiça Community Health Centre. Data collection methods included structured questionnaires, interviews, and observational techniques to gather insights on patient behaviour, awareness, and environmental factors influencing dengue transmission. The Pearson Product-Moment correlation coefficient was employed to analyse the data, determining the strength and direction of relationships between the variables.

➢ *Results and Discussion:*
    The findings revealed a moderate positive correlation (r = 0.45) between behavioural variables and dengue incidence, indicating that increased awareness and preventive measures correlate with lower dengue cases. Approximately 20.25% of the variation in dengue incidence can be attributed to these behavioural factors. The study highlighted significant gaps in health education, with many residents lacking awareness of dengue prevention strategies. Environmental factors, such as stagnant water and inadequate waste management, further exacerbate the risk of dengue outbreaks. The results emphasise the need for targeted health education initiatives to empower community members and promote proactive health behaviours.

➢ *Conclusion:*
    The research underscores the critical relationship between patient behaviour and dengue incidence, advocating for enhanced public health interventions focusing on education and community engagement. Health authorities can effectively reduce dengue outbreaks in Timor-Leste by improving knowledge about dengue prevention and fostering a culture of collective responsibility. This study contributes valuable insights for future public health strategies to combat dengue disease.

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I. INTRODUCTION

Dengue is a sudden epidemic disease caused by the dengue virus, which is primarily transmitted by the Aedes aegypti and Aedes albopictus mosquitoes (Aisah, 2013). This mosquito-borne illness now threatens nearly half of the global population, mainly affecting tropical and subtropical regions where environmental conditions favour the proliferation of its vector (Gubler, 2011).

Individuals infected with the dengue virus typically experience symptoms that can manifest suddenly. Common signs include high fever, severe headaches, joint and muscle pain—often called "breakbone fever" due to its intensity—and rash (World Health Organization, 2023). In some cases, particularly with the more severe dengue hemorrhagic fever, symptoms can escalate to include bleeding, breathing difficulties, and organ impairment, necessitating immediate medical attention (Centres for Disease Control and Prevention, 2022). Thus, understanding and addressing the challenges of dengue fever is crucial for public health strategies in endemic areas (Global Burden of Disease Study, 2019).

According to the World Health Organization (WHO, 2018), dengue fever is a significant global health concern, particularly prevalent in tropical and subtropical regions. Many dengue infections are asymptomatic, which leads to substantial underreporting of cases and challenges in proper classification (Messina et al., 2019).

In tropical countries, dengue fever represents a pressing public health issue that has consistently increased prevalence and incidence rates (World Health Organization, 2021). The country's tropical climate creates an ideal breeding ground for Aedes mosquitoes, the primary vectors for dengue transmission (Gubler, 2002). The rainy season exacerbates this problem, as stagnant water provides numerous breeding sites (Bhatt et al., 2013). Children are particularly vulnerable, as they are more likely to be outside and exposed to mosquito bites (Endy et al., 2016). If dengue cases are not promptly identified and treated, the risks escalate, leading to severe health complications such as dengue hemorrhagic fever and dengue shock syndrome (Wills et al., 2004).

The spread of dengue in tropical countries is further influenced by urbanization and increased population density, making it a critical area of focus for health authorities (Bansal et al., 2016). As the population continues to grow and migrate to urban areas, the risk of outbreaks becomes more pronounced (Gubler, 2011), necessitating enhanced public health strategies, community awareness programs, and effective mosquito control measures to combat this escalating health threat (World Health Organization, 2019).

According to the World Health Organization (WHO, 2011), the global incidence of dengue fever has gradually increased. Annually, it is estimated that between 50,000 and 100,000 cases of dengue are reported worldwide, impacting a significant portion of the global population (World Health Organization, 2011). Out of these cases, approximately 500,000 individuals require hospitalization for severe disease manifestations (World Health Organization, 2011). It is estimated that there are approximately 390 million dengue infections annually, with a credible range estimated between 284 million and 528 million (Bhatt et al., 2013). Around 96 million cases (67 million to 136 million) present clinical symptoms (World Health Organization, 2018). Notably, dengue fever is the leading cause of morbidity and mortality in the Asia-Pacific region, with 57% of all dengue cases originating from this area (World Health Organization, 2011).

Over the past few years, dengue has emerged as a significant public health concern in Timor-Leste, with a marked increase in incidence rates and the severity of outbreaks (World Health Organization, 2021).

According to a report by World Health Organization (2022), there has been a significant rise in dengue cases in Timor-Leste since late 2021, surpassing levels observed in previous years. In 2020, there were 1,451 recorded cases, resulting in 10 fatalities (CFR 0.7%), while in 2021, there were 901 cases with 11 deaths (CFR 1.2%). In just January 2022, 1,286 cases were reported, of which 790 (61.4%) were children under the age of 14, 142 were identified as severe dengue cases, and there were 20 deaths documented (case fatality rate of 1.6%). The majority of hospitalized patients were diagnosed using their clinical signs and symptoms. The municipality of Dili, home to the capital of Timor-Leste, had the highest number of cases, totalling 857 (66.6%), followed by Manatuto municipality with 92 cases (7.2%). The figure below illustrates the number of reported cases from 2016 to 2022.
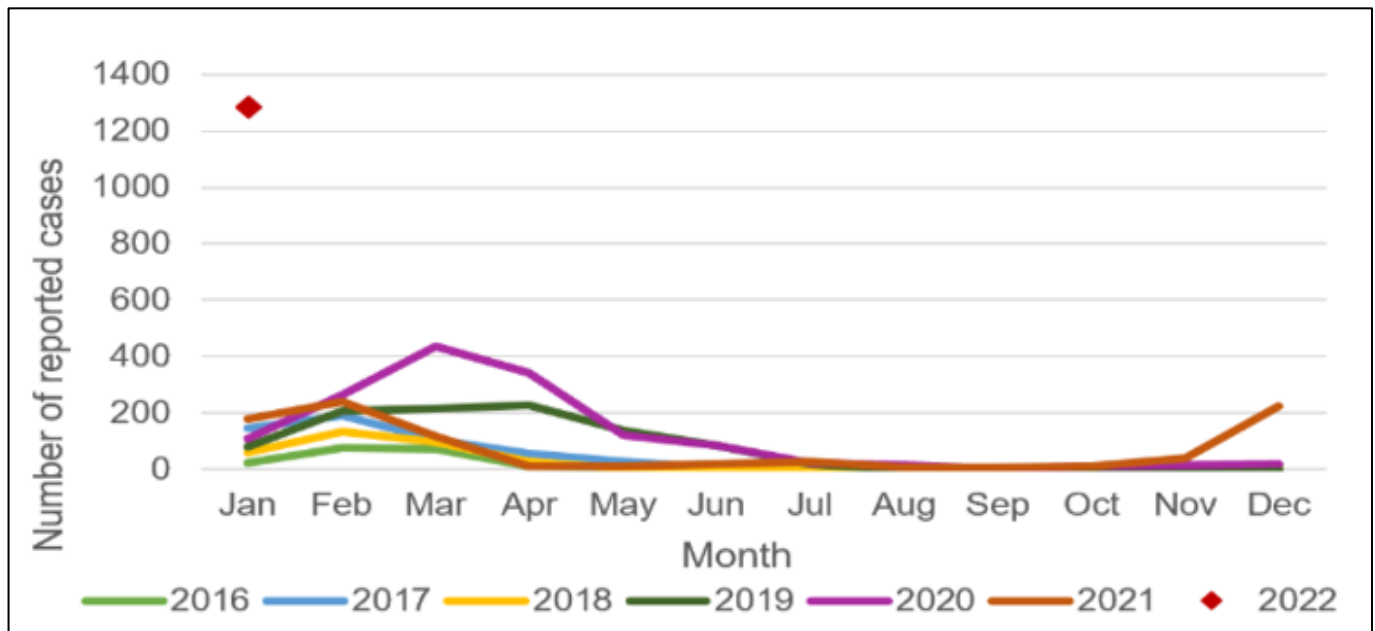
Fig 1 Who Country Office in Timor-Leste Who Reginal Office for South –East Asia

Dengue is present in Timor-Leste throughout the year, with the highest transmission levels occurring from December to April during the hottest months. The ongoing monsoon season could increase mosquito populations and the risk of dengue transmission in the coming months. In previous outbreaks from 2005 to 2012, two serotypes, dengue virus 1 (DENV-1) and dengue virus 3 (DENV-3), were identified as co-circulating. Data on the circulating serotypes have not been available since 2012 (World Health Organization, 2022)

Dengue disease is influenced by many factors, which can be broadly categorised into environmental, demographic, and psychosocial elements. Environmental factors play a critical role, encompassing the physical surroundings, such as water collection container frequency and proper maintenance, effective waste management, and housing density, which can affect mosquito breeding sites (Ariani, 2016).

The biological environment is equally significant; the density of the mosquito vectors responsible for transmitting the virus and the presence of mosquito larvae in stagnant water can significantly increase the risk of transmission (Ariani, 2016).

Additionally, the social environment—comprising community housing density, accessibility to healthcare services, support from healthcare personnel, and local public health education initiatives—can significantly influence a population's ability to respond to and manage dengue outbreaks (Ariani, 2016).

Demographic factors, including age and previous experience with dengue fever, can affect an individual's susceptibility to severe symptoms. Knowledge and attitudes toward the disease, shaped by education and public health awareness campaigns, also play pivotal roles in prevention and control efforts (Ariani, 2016). Understanding these

interconnected factors is vital for effective dengue management and public health initiatives.

The findings from a comprehensive study conducted in the Liquiça Community Health Center service area reveal significant health education gaps regarding dengue fever (World Health Organization, 2021). Residents have never been informed about dengue prevention strategies or the symptoms associated with the disease (Rojas et al., 2020). This lack of awareness contributes to the community's vulnerability to dengue outbreaks (Khan et al., 2019).

Moreover, there is a noticeable absence of collaborative efforts among community leaders, neighbourhood heads, and family representatives (Smith & Jones, 2018). This disconnect hinders effective communication and cooperation, resulting in a lack of regular environmental maintenance (Thompson et al., 2022). Consequently, residents do not routinely clean their surroundings, which is crucial for preventing mosquito breeding sites (Almeida et al., 2021).

Health services related to dengue are not consistently available or utilized; they only cater to individuals already affected by the disease, rather than implementing proactive prevention or control measures (Chen et al., 2020). The general insensitivity to the importance of using mosquito repellents further exacerbates the problem, allowing mosquitoes to proliferate indoors (Miller et al., 2017).

Additionally, cultural practices, such as drying clothes indoors, create ideal conditions for mosquito breeding (Patel & Singh, 2018). Observational data indicate that garments are often left hanging in homes, increasing the presence of mosquitoes (Fernandez et al., 2021).

This research study investigates the relationship between patient behaviour and the occurrence of dengue disease at the Liquiça Community Health Centre, located in

the Liquiça Administrative Post of Liquiça Municipality. The Specific Objectives of this study are 1) to investigate the correlation between patient behaviour and the incidence of dengue disease and 2) to assess the connection between patient understanding and the occurrence of dengue disease at the Liquiça Community Health Centre, in the Liquiça Administrative Post of Liquiça Municipality, explicitly focusing on the year 2022.

II. RESEARCH METHODS

➤ *Designing the Project for the Research*

The research approach used in this study is a quantitative method with a cross-sectional design. This approach effectively records the existing conditions related to two different independent variables: open behaviour and closed behaviour. The dependent variable being examined is the occurrence of dengue disease. Data is gathered within a specific timeframe, focusing on pertinent and current issues.

➤ *Population*

The population refers to all subjects in a research study, chosen for their specific characteristics (Ariani, 2014). This research focuses on sixty-nine dengue patients receiving care at the Liquiça Community Health Centre in 2024. This diverse group of individuals will offer valuable insights as the study aims to explore the dynamics of dengue fever within the community.

➤ *Sample*

According to Sugiyono (2012), a sample is defined as a subset that accurately reflects the characteristics and size of the overall population. This research targets patients diagnosed with dengue fever at the Liquiça Community Health Centre, a facility that serves the local community. The study comprises sixty-six participants, comprehensively representing individuals affected by this illness within the population. This approach enables a deeper understanding of the demographics and impact of dengue fever in this region.

III. DATA COLLECTION TECHNIQUES

According to the scholar Sugiyono (2017), data collection techniques can be categorised into several key parts, each with its unique methodology and purpose:

➤ *Interview*

To obtain accurate and comprehensive insights into the research on dengue disease, we conduct interviews with closed-ended questions directed at selected participants, particularly focusing on individuals who have experienced this illness firsthand (Smith et al., 2022). By examining these personal responses, we acquire essential viewpoints on the overall impact of the disease, emphasizing both the difficulties encountered by those affected and the strength exhibited by their communities (Alvarez, 2023).

➤ *Questionnaire*

This data-collection technique involves presenting a defined set of questions, either in written format or electronically, to participants (Dillman et al., 2014).

Questionnaires prove particularly useful when the researcher has a clear understanding of the variables to be assessed and anticipates the types of responses from the participants (Fink, 2013). Using closed-ended questions, researchers can effectively gather quantitative data while ensuring that the responses are straightforward to analyse and compare (Bryman, 2016).

➤ *Documentation*

Documentation is important for gathering existing records and materials directly related to the research context (Bowen, 2009). This can encompass notebooks, official documents, regulations, activity logs, photographs, and other relevant materials offering additional insights (Fitzgerald, 2015). By examining these resources, researchers can validate findings from other data collection approaches and acquire a more comprehensive view of the research subject (Creswell, 2014). This strategy not only enhances the data collection but also boosts the overall reliability of the results (Denscombe, 2010).

➤ *Observation*

This method utilizes a systematic approach to thoroughly describe field conditions based on personal experiences (Yin, 2014). Researchers engage directly with the subjects or phenomena under study, allowing them to uncover deep insights into the nuances and complexities of the events they examine (Patton, 2015). By immersing themselves in the natural context, researchers can carefully document the environment, actions, and interactions that often go unnoticed through other methods (Denzin & Lincoln, 2011). This hands-on approach enriches the data gathered and promotes a greater understanding of the complex dynamics present in the observed environment (Spradley, 2016).

Researchers can triangulate data by employing these diverse techniques, ensuring a more robust and comprehensive understanding of their study subject.

IV. DATA ANALYSIS TECHNIQUES

According to Sugiyono (2013), it is crucial to identify a correlation within the data by reviewing the questionnaire results before initiating data analysis. This preliminary step is succeeded by cross-tabulating the independent and dependent variables to generate a thorough understanding of their relationship. This research aims to comprehensively describe and examine the interaction between these two variables, ultimately aiming to quantify their association.

In addition to initial evaluations, several actions have been taken to ensure thorough data analysis. This includes sorting data based on particular variables and demographic characteristics of respondents, methodically organizing the data obtained from all participants, and carefully recapturing pertinent information related to each studied variable. After these preparatory steps, the next phase involves aggregating the data to verify the proposed hypothesis through stringent testing.

For the data analysis, this research utilizes the Pearson Product-Moment (PPM) correlation coefficient, a statistical method widely acknowledged for its effectiveness in assessing the strength and direction of the relationship between the identified variables (Gravetter & Wallnau, 2017). This technique will offer significant insights into the nature of the observed correlation, enhancing our comprehension of the underlying dynamics.

V. RESEARCH RESULTS AND DISCUSSION RESULTS

Table 1 below provides an overview of the total number of health professionals at the Liquiça Community Health Centre (Inpatient) for 2024, illustrating the facility's staffing composition in detail. There are 46 health professionals, with a notable gender imbalance favouring females. Women make up 33 of the staff members (71.7%), while men represent only 13 (28.3%). This disparity reflects a common trend in the healthcare sector, where female professionals often exceed their male counterparts, especially in nursing and midwifery positions. The data shows that physicians are the largest group, totalling 14 individuals (30.4%). This figure emphasizes physicians' essential role in delivering medical care and managing patient treatment within the health centre.

Table 1 Total Health Professionals in the Liquiça Community Health Centre In 2024

No	Profession	Male	Female	Total	Percentage
1	Physician	5	9	14	30.4
2	Midwife	0	9	9	19.6
3	Nurse	2	9	11	23.9
4	Pharmacy	2	2	4	8.7
5	Dental Technician	0	1	1	2.2
6	Dental Nursing	0	1	1	2.2
7	Lab Technician	1	1	2	4.3
8	Medical Record	1	1	2	4.3
9	Radiology	1	0	1	2.2
10	Assist. Nurse	1	0	1	2.2
	Total	13	33	46	100.0

Source: Secondary data, year 2024

Midwives are vital to maternal and child health, with nine individuals (19.6%) dedicated to this area. Their involvement guarantees safe deliveries and maternal care, showcasing the centre's dedication to women's health.

Nurses form a significant portion of the workforce, with 11 members (23.9%). They play a critical role in patient care, often being patients' first point of contact and offering medical assistance and emotional support.

The pharmacy department is staffed by four professionals (8.7%), indicating sufficient resources for medication management at the centre. However, the number of dental technicians and nurses is alarmingly low, with only two professionals (2.2% each), highlighting a possible deficiency in dental care services that could improve with additional staffing.

In the diagnostics sector, lab technicians and medical records professionals comprise two individuals (4.3%), ensuring the delivery of key laboratory services and patient data management. Furthermore, there are fewer specialised positions, with only one radiologist and one assistant nurse (2.2% each), suggesting a narrower emphasis on certain medical specialties.

Table 2 Total Population in Liquiça Administrative Post, Liquiça Municipality In 2024

No	Village	Hamlet	Total Pop	Male	Female	Total Households
1	Acumano	4	2,191	1,126	1,065	394
2	Darulete	4	2,009	976	1,033	350
3	Dato	10	11,968	6,084	5,884	2,251
4	Hatuquese	8	3,399	1,698	1,701	580
5	Leotela	5	3,009	1,528	1,481	565
6	Loidahar	4	3,030	1,506	1,524	548
7	Lukulai	4	812	425	387	136
	Total	39	26,418	13,343	13,075	4,824

Source: Secondary data, year 2024

Table 2 outlines the total population in the Liquiça Administrative Post of Liquiça Municipality for 2024 and offers an organised summary of the demographic distribution across various villages and hamlets.

The overall population of the Liquiça Administrative Post is 26,418, with 13,343 males (50.5%) and 13,075 females (49.5%). This nearly equal gender ratio reflects a

stable demographic crucial for community growth and progress.

The demographic information for the Liquiça Administrative Post emphasises the total population and the specific distribution among different villages. Dato emerges as the most populated area, whereas the sizes and gender distributions vary across the other villages. The general gender balance indicates a solid community structure, essential for local administration and social services. Grasping these demographic patterns is vital for effectively planning resources, infrastructure, and community services to cater to the population's needs.

Table 3 Frequency Distribution of Respondent Characteristics Based on Gender in Liquiça
Community Health Centre, Liquiça Administrative Post, Liquiça Municipality In 2024

Gender	Frequency (%)	Percentage (%)
Male	48	48.5
Female	51	51.5
Total	99	100.0

Source: Primary data, year 2024

Table 3, which displays the frequency distribution of respondent characteristics by gender at the Liquiça Community Health Centre for 2024, clearly summarises the gender breakdown among respondents. The total count of respondents is 99, with a nearly equal number of males and females. Specifically, 48 respondents (48.5%) identify as male, while 51 (51.5%) identify as female. This slight predominance of females points to a balanced gender representation, which is essential for understanding perspectives on dengue fever. The close percentages indicate that both genders are relatively well-represented in the survey or assessment carried out at the Community Health Centre. Although the female majority is marginal, it may suggest that women are more exposed to dengue illness. This could stem from various factors, including women's responsibilities in the household, being housewives, and other work-related risks.

Table 4 Frequency Distribution of Respondent Characteristics Based on Age Group in Liquiça
Community Health Centre, Liquiça Administrative Post, Liquiça Municipality In 2024

Age group	Total	Percentage (%)
15-19	8	8.1
20-24	13	13.1
25-29	21	21.2
30-34	23	23.3
35-39	11	11.1
40-44	12	12.1
>=45	11	11.1
Total	99	100.0

Source: Primary data, year 2024

The table above outlines the frequency distribution of respondents' characteristics by age group at the Liquiça Community Health Centre for 2024, offering an in-depth look at the age demographics of the respondents. Ninety-nine individuals participated, allowing for an accurate assessment of the representation of various age groups within the community. The youngest respondents fall within the 15 – 19 age range. Notably, the age group 30-34, which accounts for 23.3% of the total, constitutes the most significant portion of respondents and is particularly susceptible to dengue disease or dengue fever.

The age distribution among respondents at the Liquiça Community Health Centre reflects various viewpoints from different age groups. Comprehending these demographics is essential for the community health centre to effectively tailor its services and address the health needs of every age group. This data can inform the creation of programs and policies that specifically address the distinct concerns of each age demographic in the community.

Table 5 Frequency Distribution of Respondent Characteristics Based on occupation in Liquiça
Community Health Centre, Liquiça Administrative Post, Liquiça Municipality In 2024

Occupation	Frequency	Percentage (%)
Agriculture	56	56.6
Civil Servant	12	12.1
Housewife	15	15.2
Fisherman	16	16.2
Total	99	100.0

Source: Primary data, year 2024

The table above displays the frequency distribution of respondent characteristics according to their work level at the Liquiça Community Health Centre for 2024, offering a detailed insight into the occupational demographics of those surveyed. There are 99 respondents, whose occupations are divided into four primary categories, reflecting the main sources of income. The largest group of respondents (56.6%) works in agriculture, followed by fishermen at 16.2%, underscoring agriculture's role as the leading occupation for those experiencing dengue fever in this community. This scenario highlights the local economy's dependence on agricultural activities, which may also affect health issues

tied to environmental factors and workplace safety. The remaining smaller categories comprise housewives and civil servants, accounting for 15.2% and 12.1%, respectively. The occupational distribution data from the Liquiça Community Health Centre demonstrates a community predominantly focused on agriculture and notable involvement from other job sectors. Recognizing these demographics is essential for customizing health services and programs to address the distinct needs of each occupational group effectively. This information can assist in developing specific interventions aimed at enhancing the health and well-being of the entire community.

Table 6 Frequency Distribution of Respondent Characteristics Based on Level of Education in Liquiça
Community Health Centre, Liquiça Administrative Post, Liquiça Municipality In 2024

Educational Level	Frequency	Percentage (%)
Incomplete Primary Education	6	6.1
Primary	30	30.3
Pre-Secondary	20	20.2
Secondary	18	18.2
Licenciature	25	25.3
Total	99	100.0

Source: Primary data, year 2024

Table 6 displays the distribution of respondent characteristics according to their educational levels at the Liquiça Community Health Centre for 2024, providing valuable insights into the respondents' educational backgrounds.

The total number of participants is 99, with their educational qualifications divided into five categories. A significant 30.3% of respondents have attained primary education, indicating a basic level of literacy and knowledge that may leave them vulnerable to dengue infection.

In the licenciature group, which comprises 25.3% of the respondents, individuals with higher education credentials have contracted dengue fever. Their advanced educational status could be linked to enhanced health literacy and better access to healthcare services.

The distribution of education levels reveals various educational achievements among the respondents. The presence of individuals with higher education indicates a potential for increased health literacy when seeking medical care. At the same time, those with incomplete or primary education may gain from focused health education initiatives.

Recognising the educational background is essential for developing effective health programs that align with the community's knowledge levels.

Based on the gathered data, we utilize the PPM formula to determine the correlation coefficient (r), which indicates the relationship's strength and direction. Our results produce a correlation coefficient of r = 0.45, suggesting a moderate positive association between behavioural variables (X) and dengue disease (Y) incidence. This correlation implies that as intervention efforts like prevention strategies, awareness

levels, and community involvement increase, dengue disease will likely decrease. To further quantify this association, we calculate the coefficient of determination (r²), obtained by squaring the correlation coefficient: $r^2 = 0.45^2 = 0.2025$. When converted to a percentage, this amounts to approximately 20.25%. This figure indicates that roughly 20.25% of the fluctuation in dengue incidence can be accounted for by the behavioural variables analysed, while the remaining 79.75% may be attributed to other undiscovered factors.

Our t-test outcomes show that the computed t-value (t count = 4.96) exceeds the critical t-value (T table = 2.127). This result leads us to reject the null hypothesis and support the alternative hypothesis, confirming a significant connection between patient behaviour (X) and dengue disease (Y) incidence.

VI. DISCUSSION

The goal of this study is to investigate the connection between behaviour (X) and dengue fever (Y), particularly focusing on the relationship between patient behaviour and the incidence of dengue at the Liquica Health Centre in the Liquica Administrative Post within Liquica Municipality in 2024.

Findings from the Pearson Product-Moment correlation analysis show a coefficient (r = 0.45), indicating a moderate positive correlation between behavioural factors (X) and the incidence of dengue fever (Y). This correlation of 0.45 implies that as behavioural factors such as preventive actions, levels of awareness, and community involvement increase, the incidence of dengue fever will likely decrease.

To further clarify this association, we can compute the coefficient of determination (r²). This is accomplished by

squaring the correlation coefficient: r² = 0.45² = 0.2025. When converted to a percentage, this results in r² x 100% = 20.25%. This suggests that roughly 20.25% of the variations in dengue fever occurrence can be accounted for by the behavioural factors considered in the research, with the remaining 79.75% due to other variables not addressed in this study.

Regarding hypothesis testing, the t-test outcomes indicate that the computed t-value (T count = 4.96) surpasses the critical t-value (T table = 2.127) at the designated significance level. This leads to the dismissal of the null hypothesis (Ho) and the acceptance of the alternative hypothesis (Ha), confirming the existence of a statistically significant relationship between the behavioural factors (X) and the incidence of dengue fever (Y). This result emphasises the significance of behavioural strategies in mitigating the spread of dengue.

Behaviour related to dengue prevention is affected by awareness and the lack of awareness concerning the disease's prevalence (World Health Organisation, 2020). This insight is intimately connected to an individual's or community's capability to achieve and sustain a healthy lifestyle (García-Basteiro et al., 2019). Effective health education is vital in enhancing knowledge about infectious diseases, equipping individuals with the necessary information to prevent illnesses, including dengue (Pérez et al., 2021). Dengue is categorized as a vector-borne illness chiefly transmitted by the Aedes aegypti and Aedes albopictus mosquitoes (CDC, 2022).

The assertion about dengue prevention behaviours and their connection to awareness is supported by numerous studies and resources highlighting the significance of health education and community awareness in addressing vector-borne diseases. Research by Sulaiman et al. (2018) indicates that understanding how dengue is transmitted and prevention methods significantly affects the preventive behaviours of community members. They discovered that higher awareness is linked to an increased likelihood of engaging in actions like removing stagnant water and applying mosquito repellent (Sulaiman et al., 2018). This aligns with the idea that both levels of awareness and ignorance directly impact health behaviours at both the individual and community levels. According to a review by Bhatia et al. (2019), effective health education programs are essential for improving community awareness regarding infectious diseases, including dengue. The authors emphasise that educational interventions can lead to changes in behaviour that significantly lower the incidence of dengue by providing individuals with necessary strategies for prevention (Bhatia et al., 2019). This supports the claim that health education enables individuals to lead healthier lives.

A study in the Philippines examined how community engagement in health education relates to dengue prevention. The results showed that communities involved in educational programs exhibited enhanced knowledge and practices concerning dengue prevention (Aguilar et al., 2019). This highlights the significance of collective awareness and proactive actions in fighting vector-borne diseases. A study by Waisundara et al. (2017) points out that boosting knowledge about dengue transmission and preventive measures directly affects community behaviours. Their research illustrates that when individuals comprehend the risks linked to dengue and prevention techniques, they are more likely to participate in actions that diminish mosquito habitats, such as effective waste management and water control. This reinforces the assertion that knowledge empowers communities to create healthier living environments. According to a review by Rojas et al. (2020), individuals frequently express a strong desire for healthy living, especially when they acknowledge the influence of health on their overall well-being. The authors contend that public health education focused on dengue prevention harnesses this intrinsic motivation, prompting families to adopt preventive strategies and cultivate healthy surroundings. This reinforces the notion that awareness fosters proactive health-seeking behaviours.

A study conducted by Thakare et al. (2018) demonstrates the success of public health strategies that integrate education and community participation in lowering the incidence of dengue. The authors discovered that initiatives that enhance comprehension of dengue transmission factors and preventive steps, like eliminating stagnant water and utilizing mosquito repellents, notably reduced the number of reported cases. This highlights the essential role of community involvement in promoting proactive health practices.

Research by Novrita, Mutahar, and Purnamasari (2017) in the Ogan Komering Ilir Regency uncovered several primary factors linked to the prevalence of dengue fever. These factors encompass demographic characteristics such as age and gender, alongside occupational risks that could elevate the likelihood of infection. Moreover, the researchers emphasized the significance of awareness about dengue prevention, the effectiveness of dryland drainage systems to reduce mosquito breeding areas, the availability and condition of healthcare facilities, and general access to medical services.

A separate investigation by Ayun and Paautor (2017) in Semarang City identified notable links between the incidence of dengue fever and various environmental and behavioural factors. These included locations where mosquitoes breed, typical reasons for drying laundry nearby, and the common practice of drying clothes indoors. Additionally, the study stressed the importance of personal preventive actions, such as applying anti-mosquito lotion and routinely disposing of trash, which can gather and become potential breeding sites for mosquitoes.

This comprehensive strategy highlights the intricate nature of dengue transmission dynamics and the necessity for integrated public health approaches that address environmental changes and personal behaviours.

The present study targets the Liquica Health Centre in the Liquica Administrative Post of Liquica Municipality,

reflecting recent findings from 2024. This latest research indicates a notable to moderate association between patient behaviours and the incidence of dengue fever within the community. This underscores the pressing need for public health initiatives and educational programs to enhance environmental conditions and community awareness about dengue prevention. By examining these behavioural trends, the researcher aims to provide valuable insights for effectively tackling dengue outbreaks in the region.

VII. CONCLUSION

This study highlights the notable connection between patient behaviour and the occurrence of dengue disease at the Liquiça Community Health Centre in Timor-Leste. The results show a moderate positive correlation, suggesting that the number of dengue cases decreases as the community's awareness and preventive actions improve. This emphasises the vital importance of health education and community involvement in reducing the effects of dengue, especially in areas where the disease is widespread.

The research stresses the necessity for targeted educational programs to boost understanding of dengue prevention. Many residents are unaware of the symptoms and preventive measures related to dengue fever, which increases the community's susceptibility. By establishing comprehensive health education initiatives, local health officials can equip people with the information to take proactive steps against dengue, lowering transmission rates.

Additionally, the study points out environmental and demographic elements that affect dengue transmission. It is crucial to comprehend how these factors interact with community behaviours to formulate effective public health strategies. For example, tackling waste management and stagnant water and encouraging community cooperation can significantly improve dengue prevention efforts. This comprehensive approach will enhance health results and promote a sense of shared responsibility for public health.

To conclude, the research underscores the significance of incorporating behavioral insights into public health strategies aimed at dengue management. Health authorities can cultivate a more knowledgeable and proactive population by prioritising education and community engagement. This will aid in addressing the ongoing dengue outbreak and establish a foundation for sustainable health practices that safeguard communities from future epidemics.

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