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DISTRIBUTION AND DETERMINANTS OF NON-TUBERCULOSIS RADIOGRAPHIC ANOMALIES IN REGION 2, PHILIPPINES: ANALYZING AGE, GENDER, AND LOCALITY-SPECIFIC PATTERNS

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ABSTRACT

This study focuses on age, sex, and locality-specific differences in the distribution and features of non-pulmonary tuberculosis (non-PTB) radiographic abnormalities in Region 2 of the Philippines. It looks at abnormalities by anatomical location using data from TB screening programs, exposing increased occurrence in some places, women, and the elderly. The report emphasizes how successful treatment of these inequalities requires customized healthcare treatments. Results show that elderly persons are more likely to have current PTB cases, which emphasizes the need of focused TB control initiatives. Customized approaches are needed because of gender differences in screening participation and positive PTB cases. Regional differences highlight the need of focused interventions and resource distribution. The paper promotes risk factor analysis, long-term investigations, and specialized care for the elderly. In the end, resolving these differences can guide workable strategies to control radiographic abnormalities other than PTB and enhance regional public health outcomes.

Keywords: *TB screening, Epidemiology, Non-pulmonary, Tuberculosis, Sex-specific differences*

INTRODUCTION

Understanding the health dynamics of Region 2 in the Philippines depends critically on research on radiographic abnormalities unrelated to pulmonary tuberculosis (non-PTB). The goal of this study is to carefully examine the age, sex, and geographic differences in the distribution, prevalence, and features of non-PTB abnormalities. The study aims to find patterns across various age cohorts by examining age-specific trends, therefore illuminating how ageing affects anomaly incidence and complementing findings from Fernandes et al. (2018) on age-related susceptibility to tuberculosis. Moreover, using the results of Chawla (2020), gender-specific variations in anomaly incidence and kinds will be investigated in order to comprehend any discrepancies in health consequences between men and women.

Apart from gender and age, the study will explore geographical differences inside Region 2 in order to pinpoint locations with disproportionate anomalous loads and unique trends. Using information from regional groups such as the Philippine Tuberculosis Society Inc., the study will clarify regional variations in health outcomes and allow for focused treatments suited to certain areas. The more general

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objective of reducing health disparities and advancing fair access to healthcare services is in line with such a strategy. By supporting specialized healthcare plans and focused screening programs, as suggested by Anand et al. (2018), the study ultimately seeks to influence public health policies and practices and lessen the effects of non-PTB anomalies on the general health and well-being of the people in Region 2.

For public health initiatives in Region 2 and beyond, the study's results will be highly significant. The study seeks to address the effect of non-PTB abnormalities on the health of the local populace by highlighting the necessity of customized healthcare strategies and targeted screening programs. This is consistent with more general worldwide initiatives to combine disease prevention and management techniques, as noted by Creswell et al. (2011), in order to achieve fair health outcomes for all people, regardless of their location or financial situation. With important new information on their frequency, distribution, and related characteristics, the study will add to the corpus of knowledge on non-PTB abnormalities.

Further knowledge of the intricate interactions between age, gender, and geographic differences in health outcomes will also be made possible by the study. The study attempts to find subtle trends that can guide focused actions and policy decisions by examining gender-specific disparities and age-specific trends. Gaining knowledge from the study will help healthcare professionals and legislators create evidence-based plans to successfully handle non-PTB abnormalities. This strategy emphasizes the need of customized healthcare treatments that consider the particular requirements and conditions of the various demographic groups in Region 2.

Understanding the health dynamics of Region 2 of the Philippines and guiding focused public health initiatives depend on research on non-PTB abnormalities in that area. Through an examination of age, gender, and geographic differences, the study seeks to identify trends and contributing variables to the frequency of non-PTB abnormalities. The results of this study will help to create evidence-based healthcare plans catered to the particular need of the people living in Region 2, therefore advancing fair access to healthcare and enhancing the health outcomes for every person.

Objectives of the Study

The aim of this study is to investigate in detail the distribution, frequency, and features of radiographic anomalies unrelated to pulmonary tuberculosis (non-PTB) in Region 2 of the Philippines. To better grasp the complex variables affecting the prevalence of these anomalies, it concentrates on age, sex, and locality-specific variations. Through the examination of age-specific trends, the study aims to find patterns of anomalies among various age groups, so illuminating the influence of ageing on the frequency and kinds of anomalies noted. Aiming to identify any differences between boys and females in terms of incidence and kinds of discovered abnormalities, the study also looks at gender-specific variations in the prevalence and severity of non-PTB radiographic abnormalities. Moreover, regional differences inside Region 2 are investigated to pinpoint particular areas with greater loads and distinctive abnormality patterns, offering important new information on spatial differences in health outcomes. In the end, the results of this study will guide public health actions by emphasizing the need of customized

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healthcare plans and focused screening programs to efficiently treat the abnormalities found and lessen their effects on the general health of the people in Region 2, Philippines.

MATERIALS AND METHODS

Research Design

An analytical investigation was performed utilizing existing data from individuals who took part in the 2022 active tuberculosis (TB) case-finding operations in Region 2, which were supported by GF-PBSP.

Sampling Technique

Methodology for selecting a subset of individuals or items from a larger population for the purpose of studying or analyzing them. The study conducted a comprehensive count of individuals who had CXR screening as part of the active tuberculosis case detection program sponsored by GF-PBSP in 2022. The size of the sample was 15,120.

Locale of the study

The research was carried out in Region 2, using data from ongoing tuberculosis case detection initiatives supported by GF-PBSP.

Research Instruments

Information was obtained from the Philippine Business for Social Progress (PBSP) through the Department of Health (DOH) Region 2 National Tuberculosis Program (NTP) coordinator. The printed data comprised radiographic findings, patient age and sex, as well as the province/city where the CXR was conducted.

Data Gathering Procedure

The data were acquired from the DOH NTP office and were not accessible to the public. The researchers were provided with a hard copy of the data, excluding any incomplete individual data and focusing solely on the initial CXR finding for those getting TB therapy.

Analysis of the Data/ Statistical treatment

Descriptive statistics were employed to compute demographic profiles, frequency of tuberculosis (TB) and non-TB chest X-ray (CXR) diagnoses, and frequency by anatomical site. Participant characteristics were computed using frequency, medians, or percentages. The frequency of diagnosis was calculated by dividing the total number of participants who received CXR. Proportions were compared in a certain manner across different categories.

RESULTS AND DISCUSSION

Table 1a. Frequency & Percentage distribution of all Non- PTB Radiographic Findings in terms of age and locality

AGE	AGE												Total	
	1 year old and below		2-12		13-17		18-39		40-59		60 and above			
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%

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Cagayan	0	0	2	22	2	20	16	18	68	17	182	18	270	18
Isabela	0	0	1	11	6	60	35	39	137	34	349	35	528	35
Nueva Vizcaya	1	100	3	33	0	0	13	14	46	12	166	17	229	15
Quirino	0	0	3	33	2	20	11	12	112	28	229	23	357	24
Tuguegarao	0	0	0	0	0	0	11	12	7	2	5	0	23	2
Santiago	0	0	0	0	0	0	1	1	5	1	9	1	15	1
Cauayan	0	0	0	0	0	0	3	3	24	6	58	6	85	6
Ilagan	0	0	0	0	0	0	0	0	1	0	4	0	5	0
Total	1	100	9	100	10	100	90	100	400	100	1002	100	1512	100

The table provides valuable information on the distribution of non-PTB radiographic findings cases, supporting public health efforts to address and manage these cases in different age groups and localities.

In this table, majority of patients with non-PTB radiographic findings belong to adult population, with most numbers belonging to 60 and above age group (older adults) followed by 40-59 age group. As to number, majority of the population with non-PTB radiographic findings comes from Isabela followed by Quirino province. Among the cities, Cauayan City has the greatest number.

In their 1992 study, Taylor et al. explored health disparities between urban and rural populations in three Pacific countries, uncovering notable differences in health outcomes. The study found that urban residents displayed a higher rate of obesity, which could be linked to their lifestyle choices including decreased physical activity and increased access to commercial amenities like fast-food restaurants. This urban lifestyle was also associated with a greater prevalence of non-communicable diseases such as diabetes and hypertension. Additionally, urban dwellers were found to have generally higher cholesterol levels. The study implies that the convenience and abundance of less nutritious food options in urban settings, coupled with sedentary habits, may contribute significantly to the rise of cardiovascular diseases.

Table 1b. Frequency & Percentage distribution of all Non- PTB Radiographic Findings in terms of sex and locality.

LOCALITY	SEX				Total	
	Male		Female			
	Freq.	%	Freq.	%	Freq.	%
Cagayan	78	14	192	20	270	18
Isabela	212	38	316	33	528	35
Nueva Vizcaya	93	17	136	14	229	15
Quirino	126	23	231	24	357	24

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Tuguegarao	13	2	10	1	23	2
Santiago	6	1	9	1	15	1
Cauayan	32	6	53	6	85	6
Ilagan	0	0	5	1	5	0
Total	560	100	952	100	1512	100

From the above table, it can be seen that there is a discernible gender imbalance in the incidence of non-PTB cases, with females notably outnumbering males—952 instances in females compared to 560 in males. This discrepancy may suggest that women are either more susceptible to non-PTB conditions or more likely to seek medical attention compared to their male counterparts.

Furthermore, the data reveals an interesting exception in Tuguegarao, where male cases surpass those of females. This outlier suggests the presence of local factors or behaviors influencing the prevalence of non-PTB conditions, warranting further investigation into regional health practices, access to healthcare, or environmental influences that might contribute to this anomaly.

The overall higher number of non-PTB cases in women across most localities necessitates a closer examination of gender-specific health interventions and education programs to address and understand the underlying causes of this imbalance. The regional variation highlighted by Tuguegarao indicates that a one-size-fits-all approach may not be suitable.

Table 2. Frequency distribution of different non-PTB radiographic findings as to anatomic location & of age in Region 2

Location	Patients Screened	Non-PTB Findings	Heart & Great Vessels (%)	Lung Parenchymal (%)	Spinal & Thoracic Cage (%)	Mixed Findings (%)
Cagayan	3,510	347	53.03	13.26	17.58	15.27
Isabela	4,689	716	47.49	25.42	11.73	12.85
Nueva Vizcaya	1,853	272	59.19	12.13	11.03	15.81
Quirino	2,265	407	69.04	7.62	12.29	9.83
Tuguegarao City	713	24	37.50	16.67	37.50	8.33
Santiago City	1,491	15	0.00	33.33	6.67	53.33
Cauayan City	433	104	62.50	8.65	14.42	14.42
Ilagan City	166	5	20.00	80.00	0.00	80.00
Total	**12,428**	**1,875**	**53.07**	**14.53**	**12.15**	**15.33**

Among the screened populations, the chest X-ray (CXR) TB screening in many locations—Cagayan, Isabela, Nueva Vizcaya, Quirino, Tuguegarao City, Santiago City, Cauayan City, and Ilagan City—showed a range of non-pulmonary tuberculosis (non-PTB) radiographic abnormalities. Screening 12,428 patients in all, 1,875 showed non-PTB abnormalities. Most anomalies were detected alone, not in combination with other anomalies. All areas reported the highest frequency of heart and great vessel

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anomalies, which were most common in older age groups. Abnormalities of the lung parenchyma, the spine and thoracic cage, and, less often, the pleural and mediastinum came next. Significantly, of the 347 non-PTB findings in Cagayan, 53.03% were anomalies of the heart and major vessels. Isabela also saw 47.49% of its 716 non-PTB cases fall into this group. Of 272 instances in Nueva Vizcaya, 59.19% had anomalies of the heart and major vessels. In this category Quirino had 69.04% of its 407 non-PTB finds. Of the 24 non-PTB results in Tuguegarao City, 37.5% involved anomalies of the heart and major vessels. Less instances occurred in Santiago City and Ilagan City; mixed lung parenchymal and heart and great vascular anomalies were more common in Santiago City, while Ilagan City had less non-PTB findings. These results emphasize the importance of thorough healthcare assessments in these areas and the need of CXR TB screens not only in detecting TB but also in identifying other serious medical disorders.

Table 3. Frequency distribution of different non-PTB radiographic findings as to anatomic location & sex in Region 2

Location	Anatomic Location	Category	Male	Female	Total	%
Cagayan	Heart & Great Vessels	Single	61	123	184	53.03
		Mixed	7	38	45	12.97
	Parenchymal	Single	18	28	46	13.26
Isabela	Heart & Great Vessels	Single	137	203	340	47.49
		Mixed	10	48	58	8.10
	Parenchymal	Single	84	98	182	25.42
Nueva Vizcaya	Heart & Great Vessels	Single	69	92	161	59.19
		Mixed	7	24	31	11.40
	Parenchymal	Single	18	15	33	12.13
Quirino	Heart & Great Vessels	Single	107	174	281	69.04
		Mixed	3	29	32	7.86
	Parenchymal	Single	15	16	31	7.62
Tuguegarao City	Heart & Great Vessels	Single	5	4	9	37.50
		Mixed	0	2	2	8.33
	Spinal & Thoracic	Single	6	3	9	37.50
Santiago City	Parenchymal	Single	2	3	5	33.33
		Mixed	2	5	7	46.67
Cauayan City	Heart & Great Vessels	Single	25	40	65	62.50
		Mixed	1	8	9	8.65
	Parenchymal	Single	3	6	9	8.65
Ilagan City	Heart & Great Vessels	Single	0	1	1	20.00
	Parenchymal	Mixed	0	4	4	80.00

Non-PTB radiography results from many Philippine regions and cities are analyzed to uncover significant trends in the prevalence of anomalies according to anatomical location and sex. Non-PTB discoveries are more common in women in Cagayan (198 single and 44 mixed) than in men (96 single and 9 mixed). Single anomalies are most often seen in the heart and major arteries. A comparable tendency is seen in Isabela, where the heart and major vessels are the most prevalent sites of anomalies and females are more likely to have them. Though men had a greater frequency of parenchymal

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anomalies, Nueva Vizcaya follows the same pattern with most discoveries in females. Additionally, indicating a female predominance, the heart and major arteries are the most impacted regions in Quirino.

The pattern changes at Tuguegarao City, where more men are seen, especially in the heart and major arteries as well as the spinal and thoracic areas. In contrast, Santiago City has a little higher percentage of mixed results than single ones, particularly in parenchymal anomalies. The overall tendency of female preponderance and anomalies of the heart and major vessels is followed by Cauayan City. Uniquely, all mixed anomalies seen in females are present in Ilagan City, mostly in the parenchyma, heart, and large arteries.

Apart from Tuguegarao City, where men exhibit a greater prevalence, the data generally highlights a continuous trend of non-PTB anomalies being more common in females, mostly affecting the heart and major veins.

Table 4a. Frequency & Age Specific Proportion of Different Non-PTB Radiographic Findings as to Anatomic Location

Age in years	Anatomic Location													
	Parenchymal Abnormality		Pleural Abnormality		Heart and Great Vessels Abnormality		Mediastinal Abnormality		Spinal and Thoracic cage Abnormality		Other Non-PTB Abnormalities		TOTAL	
	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion
1 year old and below (n=7)	0	0	0	0	0	0	1	14.29 %	0	0	0	0	1	14.29 %
2-12 (n=638)	3	0.47 %	0	0	5	0.78 %	0	0	3	0.47 %	0	0	11	1.72%
13-17 (n=745)	3	0.40 %	1	0.13 %	2	0.27 %	0	0	7	0.94 %	0	0	14	1.88%
18-39 (n=4411)	33	0.75 %	1	0.02 %	32	0.73 %	0	0	28	0.63 %	0	0	95	2.15%
40-59 (n=5348)	101	1.89 %	8	0.15 %	269	5.03 %	2	0.04 %	67	1.25 %	1	0.02 %	455	8.51%

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60 and above (n=4071)	238	5.85 %	14	0.34 %	910	22.35%	4	0.10 %	148	3.64 %	9	0.22 %	1329	32.65 %
Total (n=15120)	378	2.50 %	24	0.16 %	1218	8.10 %	7	0.05 %	253	1.67 %	10	0.07 %	1890	12.50 %

**Proportion is the frequency divided by the total population specific for that age group*
**Proportion is expressed in percent: parts/whole x 100 = percent*

The above data shows that heart and great vessels abnormality has the highest frequency (1,218) followed by non-TB parenchymal abnormalities (378) then spinal and thoracic cage abnormalities (253). As to the frequency according to age, those belonging to the 60 and above age groups are always highest in all the anatomic locations.

As to the rate specific for that age group (denominator is the total of those who availed of the CXR TB screening specific to that age group), the same was observed, that it is highest in 60 and above years of age, followed by 40-59 years of age except in mediastinal abnormality.

Table 4b. Frequency & Sex Specific Proportion of Different Non-PTB Radiographic Findings as to Anatomic Location

SEX	Anatomic location													
	Parenchymal Abnormality		Pleural Abnormality		Heart and Great vessel Abnormality		Mediastinal Abnormality		Spinal and Thoracic Cage Abnormality		Other Non-PTB Abnormality		TOTAL	
	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion
Male (n=5723)	159	2.78 %	14	0.24 %	432	7.55 %	3	0.05 %	107	1.87 %	3	0.05 %	718	12.55 %
Female (n=9397)	219	2.33 %	10	0.11 %	786	8.36 %	4	0.04 %	146	1.55 %	7	0.07 %	1175	15.50 %
Total (n=15120)	378	2.50 %	24	0.16 %	1218	8.06 %	7	.05%	253	1.67 %	10	0.07 %	1890	12.50 %

**Proportion is the frequency divided by the total population specific for sex*
**Proportion is expressed in percent: parts/whole x 100 = percent*

The data shows that sex specific rate of occurrence of abnormalities in the different anatomic

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locations are always higher in males except radiographic abnormalities in the heart and great blood vessels. According to Vitale et. al., 2009, he stated that women are at high risk when they are about 10 years older than men and typically after menopause. Menopause is an important cardiovascular risk factor both for the negative effect of ovarian hormone deprivation on cardiovascular function and for the consequences worsening of cardiovascular risk factors.

In both sexes, frequency and rates of occurrence are highest in heart and great blood vessel abnormalities followed by parenchymal abnormalities and third are spinal and thoracic cage abnormalities.

Table 4c. Frequency & Locality Specific Proportion of Different Non-PTB Radiographic Findings as to Anatomic Location

LOCALITY	Anatomic location													
	Parenchymal Abnormality		Pleural Abnormality		Heart and Great vessel Abnormality		Mediastinal Abnormality		Spinal and Thoracic Cage Abnormality		Other Non-PTB Abnormality		TOTAL	
	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion	Freq.	Proportion
Cagayan (n=3510)	53	1.51 %	0	0	229	6.52 %	1	0.03%	62	1.77 %	2	0.06 %	347	9.89 %
Isabela (n=4689)	210	4.48 %	15	0.32 %	398	8.49 %	3	0.06 %	85	1.81 %	5	0.11 %	716	15.27 %
Nueva Vizcaya (n=1853)	42	2.27 %	4	0.22 %	192	10.36 %	2	0.11 %	31	1.67 %	1	0.05 %	272	14.68 %
Quirino (n=2265)	38	1.68 %	4	0.18 %	313	13.82 %	1	0.04%	50	2.21 %	1	0.04 %	407	17.97 %
Tuguegarao city (n=713)	4	0.56 %	0	0	11	1.54 %	0	0	9	1.26 %	0	0	24	3.37 %
Santiago City (n=1491)	12	0.80 %	1	0.07 %	0	0	0	0	1	0.07 %	1	0.07 %	15	1.01 %
Cauayan city (n=433)	15	3.46 %	0	0	74	17.09 %	0	0	15	3.46 %	0	0	104	24.02 %
Ilagan	4	2.41	0	0	1	0.60	0	0	0	0	0	0	5	3.01

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City (n=166)		%				%								%
TOTAL (n=151200)	378	2.50 %	24	0.16 %	1218	8.06 %	7	0.05 %	253	1.67 %	10	0.07 %	1890	12.50 %

**Proportion is the frequency divided by the total population specific for location*
**Proportion is expressed in percent: parts/whole x 100 = percent*

As to frequency and rates of occurrence, the above table shows that the presence of parenchymal abnormality X-ray findings is highest in Isabela province. As to frequency, second is Cagayan but as to rate, second is Cauayan city. As to presence of X-ray findings with pleural abnormality, rate and number are highest in Isabela.

As to presence of X-ray findings with heart and great vessel abnormality and spinal and thoracic cage abnormality, frequency is highest in Isabela but rate specific for locality is highest in Cauayan City.

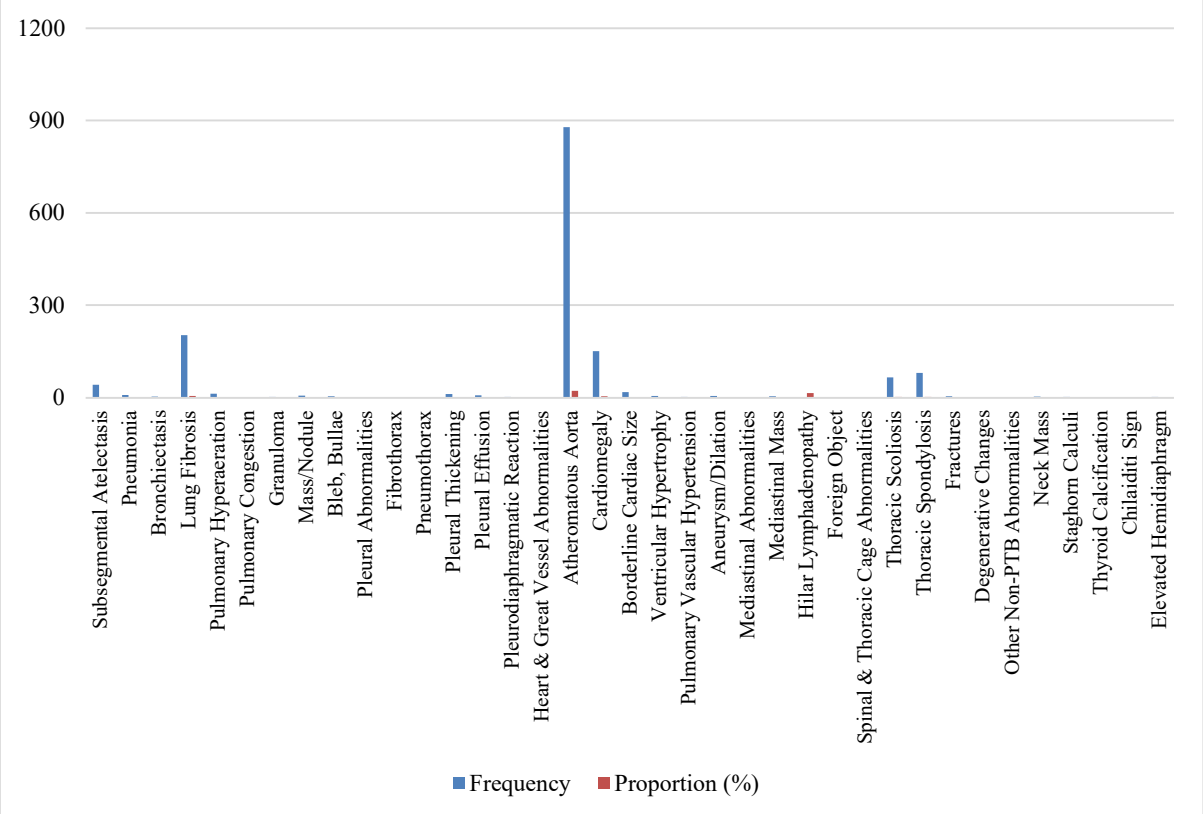

Figure 1a. Frequency and Age Specific Proportion of Medical Abnormalities

Considerable age-related tendencies are shown in figure 1a by analyzing radiography anomalies in different age groups. Subsegmental atelectasis, lung fibrosis, and pulmonary hyperaeration are examples of parenchymal anomalies whose incidence and percentage significantly rise in those 60 years of age and above. Remarkably, in this age group pulmonary fibrosis accounts for the largest percentage

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(4.99%). beyond people are also more likely to suffer from pleural abnormalities, such as pleural thickening and pleural effusion; those 60 years of age and beyond have the greatest incidences. Similar patterns are seen by cardiovascular problems; cardiomegaly and atheromatous aorta are more common in older populations; in the 60+ age group, the percentage of atheromatous aorta is noteworthy at 21.57%. While hilar lymphadenopathy is only seen in babies, mediastinal abnormalities including mediastinal mass mostly affect the elderly. Age-related anatomical changes are reflected in the rise of spinal and thoracic cage abnormalities, such as thoracic scoliosis and thoracic spondylosis, which are again greatest in the oldest age group. Among other non-PTB abnormalities, those 60 years of age and older are more likely to have uncommon disorders such thyroid calcification, staghorn calculi, and neck mass. This thorough study emphasizes the need of more monitoring and preventative care in older people by demonstrating the major influence of ageing on the frequency and kind of radiographic abnormalities.

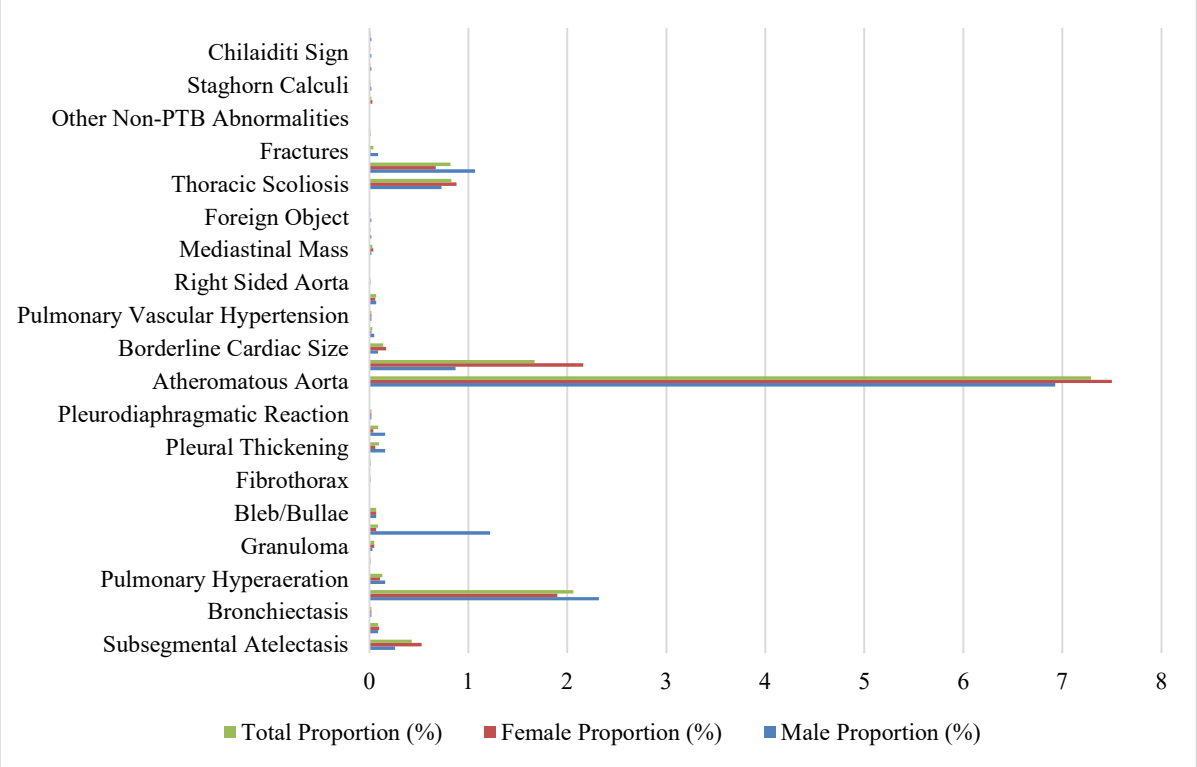

Figure 1b. Frequency and Age Specific Proportion of Medical Abnormalities

The analysis of sex-specific frequency and proportion of abnormalities detected through chest X-ray (CXR) screenings reveals that females had higher absolute numbers of abnormalities, reflecting their greater participation in screenings as shown in figure 1b. Nonetheless, a greater percentage of specific disorders—fibrosis (2.32% vs. 1.90%), pulmonary hyperaeration (0.16% vs. 0.11%), and masses or nodules (1.22% vs. 0.07%)—in males suggested a greater relative severity or clinical importance in men. Males also had greater percentages of pleural effusion (0.16% vs. 0.04%) and pleural thickening (0.16% vs. 0.06%). Whereas males were more likely to have thoracic spondylosis (1.07% vs. 0.67%), females were more likely to have cardiomegaly (2.16% vs. 0.87%). These results underline the requirement of customized medical therapies and the significance of understanding sex-specific health hazards by

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considering both raw numbers and proportions.

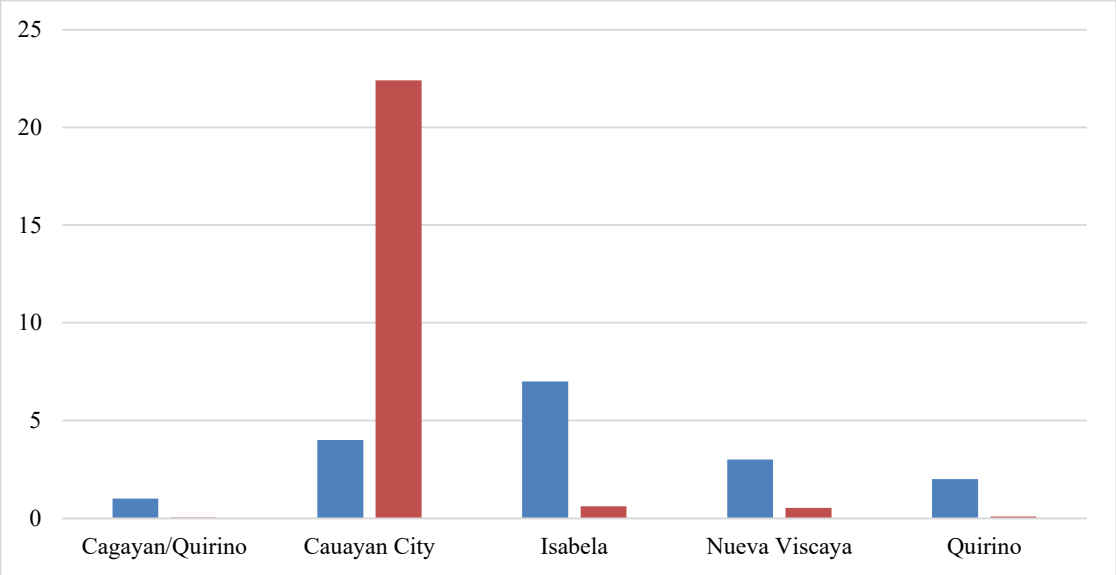

Figure 1c. Frequency and Locality Specific Proportion of Medical Abnormalities

As shown in figure 1c, Isabela regularly has a large number of instances across a range of anomalies, suggesting a substantial health burden in this area. This pattern raises the possibility that effective treatment of common diseases may need focused healthcare initiatives and resources. On the other hand, proportions reveal particular regional differences in predominance even if Isabela exhibits large absolute figures. For example, Quirino has greater percentages of pneumothorax and fibrothorax, which suggests that these disorders are more common there than in other places given the population. More precisely, the proportions of pneumothorax and fibrothorax are 0.04%. Similar high percentages of cardiomegaly and atheromatous aorta—15.47% and 3.46%, respectively—showcased in Cauayan City point to a vital focal area for cardiovascular health measures. Furthermore, Nueva Viscaya is notable for having the greatest percentages of aneurysm/dilation and pulmonary vascular hypertension—0.20% and 0.16%, respectively—which highlights the necessity for customized healthcare plans in this area. The results emphasize the need of considering proportions as well as absolute numbers in order to fully comprehend regional health inequalities and guide focused public health initiatives. More study on the fundamental causes of these geographical differences can help shape more efficient health programs and policies meant to lessen the prevalence of these anomalies in impacted regions.

CONCLUSIONS

This study has conducted a thorough examination of abnormal radiographic findings related to tuberculosis (TB) that do not affect the lungs (non-pulmonary TB) in Region 2 of the Philippines. The analysis has yielded valuable information on the patterns, occurrence rates, and distinguishing features of these anomalies. The results suggest that non-PTB anomalies are primarily observed in older individuals, namely those who are 60 years old and above. The most prevalent anomalies are related to the heart and major vessels. Additionally, there is a significant disparity between genders. Females tend to have a larger occurrence of non-PTB results in general, whereas males have a higher proportion of particularly severe illnesses.

Regional disparities were apparent, with Isabela continuously exhibiting the largest number of

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cases across different irregularities, emphasising a significant health burden in this region. Particular regions, such as Cauayan City and Quirino, exhibited distinct trends in the occurrence of specific diseases, indicating the impact of localised influences on health results.

These findings emphasise the need for focused healthcare policies and screening programmes customised for certain age cohorts, genders, and geographical areas. It is crucial for public health programmes to provide priority to older persons, particularly in the management of cardiovascular and parenchymal disorders. Additionally, these treatments should also address the increased vulnerability of females to non-PTB aberrations. Moreover, it is crucial for regional healthcare planning to take into account the distinct health profiles of each community in order to efficiently distribute resources and enhance health outcomes.

To summarise, this study emphasises the urgent requirement for tailored healthcare strategies and focused screening programmes to effectively address the varied and intricate health requirements of the people in Region 2, Philippines. The findings obtained from this research will provide valuable information for public health interventions targeted at reducing the effects of non-PTB abnormalities and improving the general health and well-being of the population.

RECOMMENDATIONS

The location, prevalence, and characteristics of non-pulmonary tuberculosis (non-PTB) radiography abnormalities in Region 2 of the Philippines were examined in this study. Analyzing abnormalities by anatomical location, age, sex, and location, it used data from TB screening programs. Higher incidence was seen in particular places, women, and elderly persons. Regional differences and gender differences made specialized healthcare interventions even more necessary. Longitudinal studies, risk factor analysis, qualitative study, and focused treatments for senior populations are among the recommendations. In the end, filling these gaps can guide practical plans to handle non-PTB radiographic anomalies and enhance public health results in the region.

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