

Recognition and Management of Hereditary Lung Cancer in Brazil: A National GBOT (*Grupo Brasileiro de Oncologia Torácica*) Survey

Malu V.R. Barbosa^{1,2*}, Viviane Alencar^{2,3*}, Ana Caroline Zimmer Gelatti^{2,4}, Eldsamira Mascarenhas^{2,5,6}, Wolfgang William Schmidt Aguiar^{2,7,8},
Lilian Faroni^{2,9}, William Nassib William Jr.^{2,10}, Danielli Matias^{2,11}, Carlos Henrique Andrade Teixeira^{2,12}, Janice Rodrigues Farias^{2,1,3},
Aline Fusco Fares^{2,14}, Milena Perez Mak^{2,15}, Vladimir Cordeiro Lima^{2,1,7}

¹ Sunnybrook Health Sciences Centre, University of Toronto, Toronto, Canada; ² Grupo Brasileiro de Oncologia Torácica (GBOT), Brazil; ³ Oncoclínicas, São José dos Campos, SP, Brazil; ⁴ Centro de Pesquisa em Oncologia (CPO), Hospital São Lucas da PUCRS, Porto Alegre, Brazil; ⁵ Hospital São Rafael – Oncologia D’Or BA, Salvador, Brazil; ⁶ Instituto D’Or de Pesquisa e Ensino (IDOR), Salvador, Brazil; ⁷ HUOC-UFPE, Recife, Brazil; ⁸ HUCAM-UFES, Vitória, Brazil; ⁹ Oncologia D’Or Rio de Janeiro, Brazil; ¹⁰ Centro Paulista de Oncologia (CPO), Hospital São Paulo, Brazil; ¹¹ Oncologia D’Or, Grupo Oncoclínicas, Natal, Brazil; ¹² Hospital Alemão Oswaldo Cruz, São Paulo, Brazil; ¹³ Grupo Oncoclínicas, Brasília, Brazil; ¹⁴ University of Florida, Gainesville, FL, USA; ¹⁵ Instituto do Câncer do Estado de São Paulo (ICESP) – Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil; ¹⁶ Instituto D’Or de Pesquisa e Ensino (IDOR), São Paulo, Brazil; ¹⁷ A.C. Camargo Cancer Center, São Paulo, Brazil.

BACKGROUND

Hereditary predisposition to lung cancer is increasingly recognized and may be associated with distinct epidemiologic and molecular features. However, there is still no consensus regarding which patients may benefit from germline genetic testing, and hereditary risk assessment remains inconsistently incorporated into routine lung cancer care.

Understanding current knowledge, access, referral patterns, and clinical practices is essential to identify gaps and opportunities for implementing hereditary lung cancer assessment in Brazil.

OBJECTIVE

To assess the knowledge, perceptions, and clinical practices of Brazilian healthcare professionals dedicated to lung cancer care regarding hereditary lung cancer.

METHODS

STUDY DESIGN

National, anonymous, cross-sectional electronic survey.

POPULATION & DATA COLLECTION

Healthcare professionals involved in lung cancer care across Brazil. Data were collected between February and March 2025.

QUESTIONNAIRE

A 20-item questionnaire assessed respondent demographics and clinical practice, access to germline genetic testing and genetic counseling, referral criteria, and knowledge and perceptions regarding hereditary lung cancer.

STATISTICAL ANALYSIS

Descriptive statistics were used to summarize survey responses. Associations between categorical variables were assessed using Pearson’s chi-square test or Fisher’s exact/Fisher–Freeman–Halton test, as appropriate. All tests were two-sided, and $p < 0.05$ was considered statistically significant.

AI USE DISCLOSURE

ChatGPT (OpenAI) was used to assist with language refinement, content organization, and poster preparation. All scientific content, data, analyses, and interpretations were reviewed and verified by the authors.

CORRESPONDING EMAIL

malu.viter@yahoo.com.br

FUNDING

This study received institutional support from GBOT and no external grant funding.

RESULTS

1 WHO RESPONDED?



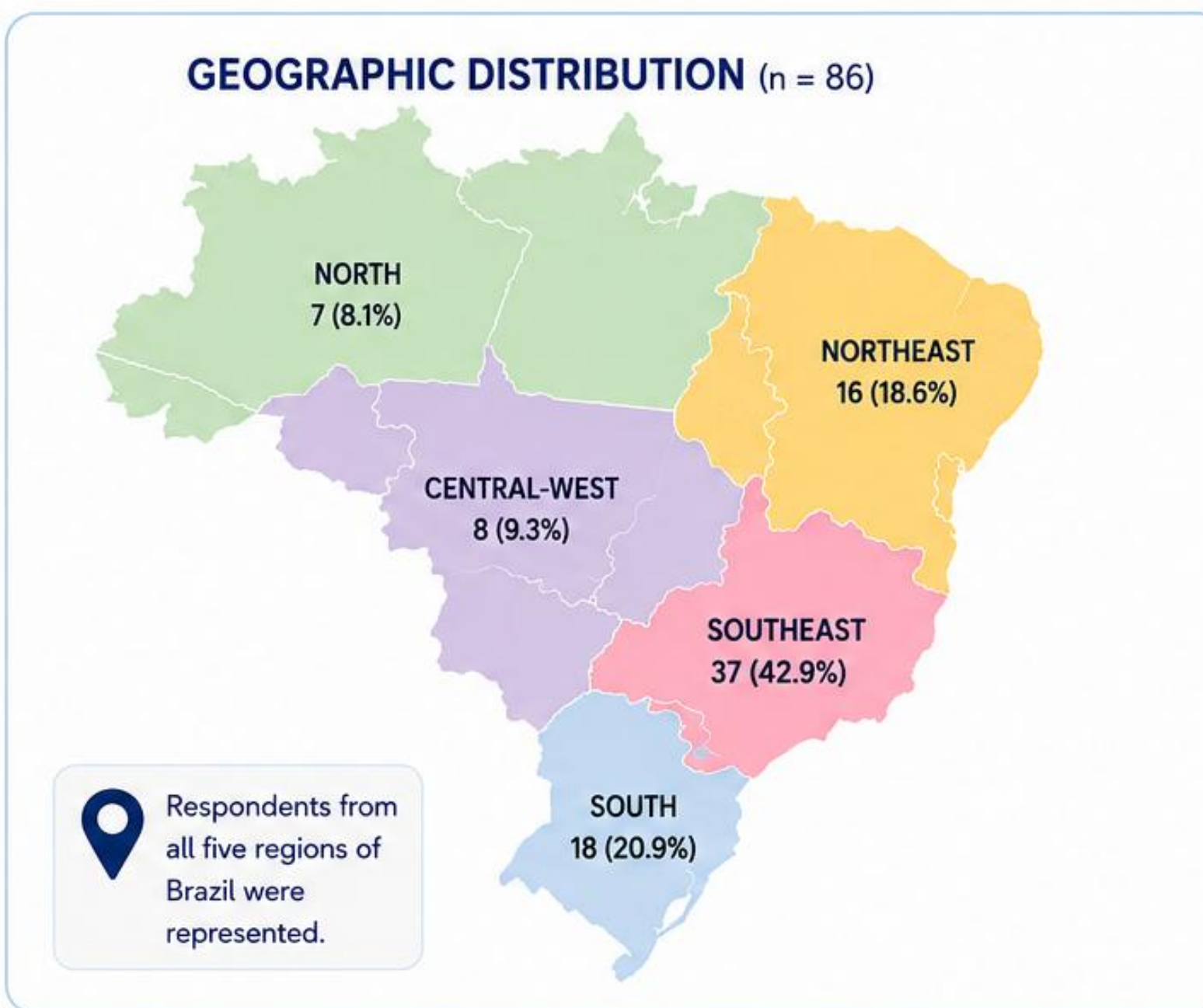
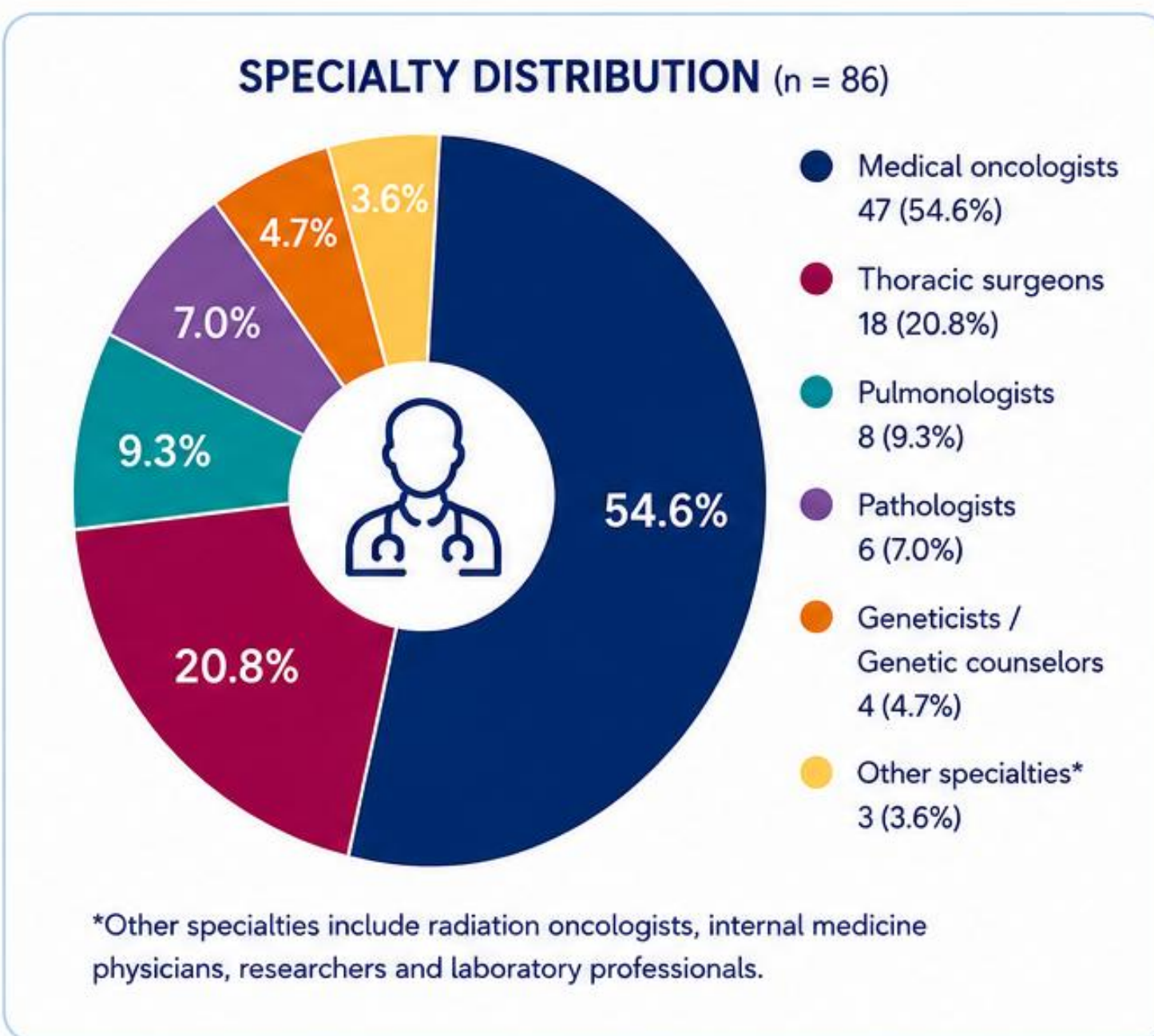
A total of **86** healthcare professionals completed the survey.



Most respondents were aged **30–50 years (76.7%)**, and **94.7%** were actively treating patients with lung cancer.

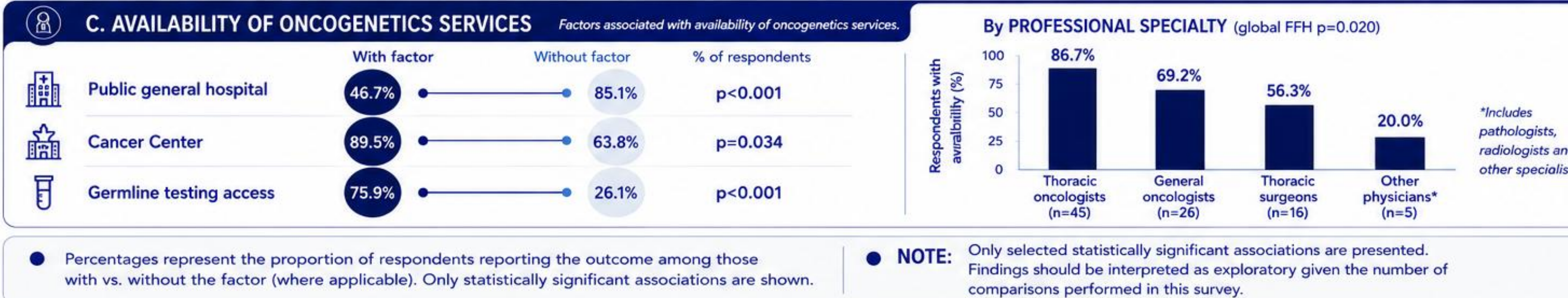
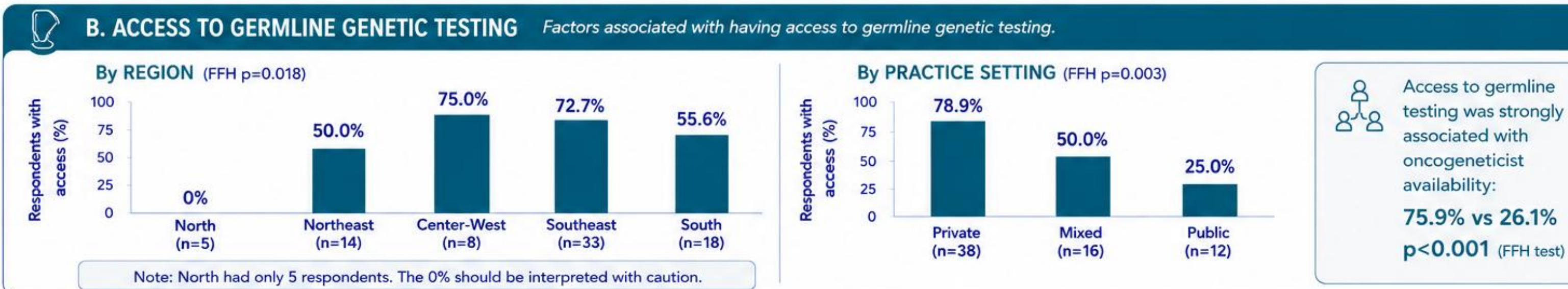
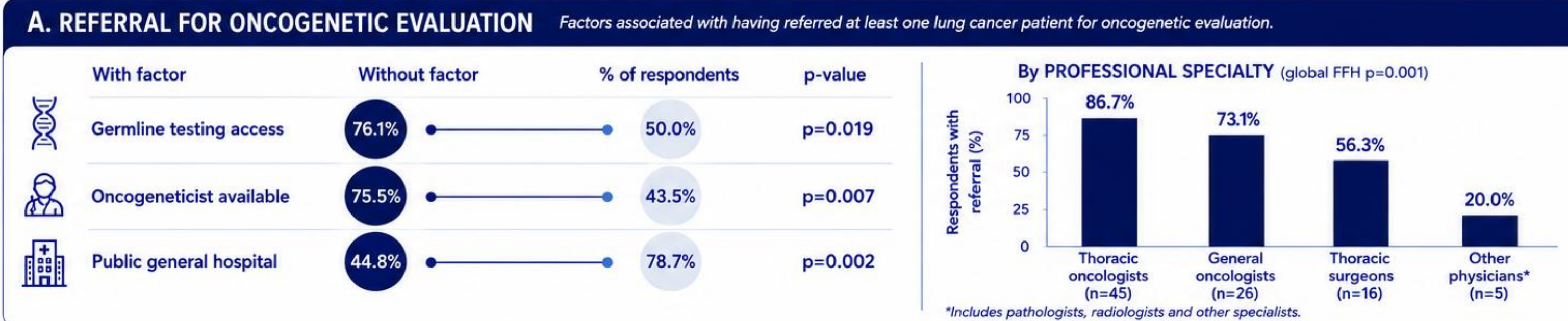


Nearly **90%** worked in private or mixed practice settings.



3 FACTORS ASSOCIATED WITH REFERRAL AND ACCESS TO GENETIC SERVICES

• **Statistical approach:** Associations between categorical variables were assessed using Pearson’s χ^2 test or Fisher’s exact/Fisher–Freeman–Halton (FFH) test, as appropriate. Two-sided $p < 0.05$ was considered statistically significant.



2 WHAT HAPPENS IN CLINICAL PRACTICE?

The majority of respondents (**96%**) believe lung cancer may have a hereditary component, and **97%** routinely collect family history in clinical practice. Most (**85.7%**) have treated patients with a family history of lung cancer.

Approximately **60%** report access to germline genetic testing, **50%** have managed patients with known pathogenic germline variants, and **70%** have access to genetic counseling.

Overall, **65.8%** have referred at least one lung cancer patient for genetic evaluation.

CRITERIA USED FOR REFERRAL TO GENETIC EVALUATION

(Respondents could select more than one option) n (%)

	Family history of lung cancer	68.0%
	Diagnosis before age 50 years	67.0%
	Ashkenazi ancestry	67.0%
	Multiple primary tumors	64.8%
	Never-smoking status	62.6%

KNOWLEDGE OF GENES AND SYNDROMES

The most commonly cited genes associated with hereditary lung cancer were **TP53 (62.6%)**, **EGFR (53.8%)**, and **BRCA1/2 (44.0%)**. Other genes were mentioned by **21.0%** of respondents.

Li–Fraumeni syndrome was the most recognized hereditary syndrome, cited by **62.6%** of respondents.

CONCLUSION

- Brazilian lung cancer specialists widely recognize the hereditary component of lung cancer; however, **access to germline testing and oncogenetic services remains uneven.**

- Referral and access were associated with **professional specialty, geographic region, practice setting, and availability of genetic services**, highlighting the need for **more equitable and integrated oncogenetic care** across Brazil.

