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# TP53 genetic variants identified in Brazilian women with hereditary breast cancer: a systematic review of the literature

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**Objective:** This study aimed to describe the genetic variants of TP53 in Brazilian patients with hereditary breast cancer. **Methods:** The systematic review was registered in the International Prospective Register of Systematic Reviews (PROSPERO; under CRD420250656510), and conducted following the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) recommendations. The database consulted was PubMed, and the search strategy was (familial OR hereditary) breast cancer AND Brazil. Articles that investigated TP53 genetic variants in hereditary breast cancer patients using genetic sequencing or polymerase chain reaction were included. **Results:** Initially, 566 articles were identified, of which 25 were included in the study. The selected studies comprised 7,730 participants and were carried out in the South (n=4), Southeast (n=17), Northeast (n=2), and Central-West (n=2) regions of the country. The studies described 31 pathogenic variants of TP53, and the most common was p.(Arg337His), described in 22 studies. The p.(Arg273His) variant was reported in three studies, and p.(Gly245Ser) and p.(Arg248Gln) in two studies. The p.(Arg337His) variant, described in 22 studies (296 patients), resulted in an approximate frequency of 3.8%, and appears to have been introduced into the Brazilian population through a founder effect. Its prevalence is high among inhabitants of the South and Southeast regions, with frequencies ranging from 0.9% to 12.0%, according to the age and geographic origin of patients. Most of the included studies focused on the South and Southeast regions. **Conclusion:** This literature review demonstrates the profile of TP53 pathogenic variants described in the Brazilian population with hereditary breast cancer and reflects the inequality of gene sequencing resources in the country, reflecting the concentration of studies in the South and Southeast regions. It also highlights the importance of making genetic tests available in the Unified Health System, given the socioeconomic vulnerability of a large portion of Brazilian women.

**Keywords:** genetic testing; neoplastic syndromes, hereditary; gene P53.