

## RISK FACTORS AND MODELING

<https://doi.org/10.29289/259453942020V30S1052>

# RISK OF BREAST CANCER IN THE BRAZILIAN POPULATION

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**Background:** Breast cancer is the second most common malignancy in female patients, thus becoming an important topic for public health. The current Gail model, already validated for other populations (*e.g.* White, African American, Native American, Asian), has been applied in other regions (*e.g.* Turkey, Qatar, Iran, Korea), however, without reflecting the ethnic diversity that the Brazilian population brings with it, through the intense miscegenation that occurred over centuries of civilization after the arrival of the Portuguese. Mobile applications are also part of the clinical practice, helping and streamlining clinical decisions, bringing benefits to healthcare professionals and patients. **Objective:** To translate, culturally adapt, and validate a tool for estimating the risk of developing breast cancer and to create an application for calculating the risk of developing breast cancer. **Methods:** Translation of the tool available on the National Cancer Institute (NCI) website from English to Portuguese (including backtranslating). Cultural adaptation through a questionnaire consultation with mastologists. Validation of the tool in a prospective observational study conducted through an interview, using the translated tool. Patients who were users of the Brazilian Unified Health System (*Sistema Único de Saúde* – SUS) were approached at the special clinic of *Hospital Samuel Libânio*, Pouso Alegre, Minas Gerais. Patients with a history of Lobular or Ductal Carcinoma *in situ* were interviewed, as well as those with mutations in the BRCA1 and BRCA2 suppressor genes and other hereditary syndromes associated with an increased risk of breast cancer (*e.g.* Cowden Syndrome, Li Fraumeni Syndrome). The risk of developing breast cancer over 5 years and throughout life has been calculated. **Result:** It is observed that 61.9% of the evaluating professionals were females, with a mean age of 35.9 years (SD=7.1 years), 76.2% were white, 95.2% were specialized in Mastology, and 66.7% had from 1 to 5 years of experience in the area. It is also observed that 100% attended the screening and 85.7% said they had no difficulty in identifying the risk factor. The mean age of the patients submitted to the interview was 49.9 years (SD=13.4 years), with a minimum age of 35 years and a maximum of 79 years. 62.5% of women were white, 50% had their menarche between 12 and 13 years old, 31.3% had their first term pregnancy before the age of 20 and 56.3% did not report first-degree relatives with breast cancer. The risk calculated using the tool for eligible patients was 1.3% over the next five years (Standard Deviation±0.86) and 12.41% over life (Standard Deviation±8.72), with no significant difference compared to the general population. **Conclusion:** The tool has been translated, culturally adapted, and validated according to international protocols for successful tool validation. The application for Android platform was developed.