Objective: Women with mutations in breast cancer predisposition genes have a significantly higher lifetime risk of developing breast cancer and can opt for risk-reducing mastectomy. Women with positive family history of cancer can also opt for prophylactic surgery as a preventive method in selected cases. Current studies showed reduced risk of developing breast cancer after prophylactic nipple-sparing mastectomy; however, despite the good clinical outcomes, one of the main concerns regarding nipple-sparing mastectomy (NSM) is the oncologic safety and nipple-areola complex preservation. In this study, we aimed to evaluate the indications, complication rates and unfavorable events of 62 Brazilian patients who underwent 124 risk-reducing NSM from 2004 to 2018. Methods: Patient data was reviewed retrospectively and descriptive statistics were utilized to summarize the findings. Results: The mean patients’ age was 43.8 years. The main indication for risk-reducing NSM was the presence of pathogenic mutation (53.3%), followed by atypia or lobular carcinoma in situ (25.8), and family history of breast cancer and/or ovarian cancer (20.9%). There were four (3.2%) incidental diagnosis of ductal carcinoma in situ and one invasive ductal carcinoma (0.8%). From the 124 prophylactic NSM performed, two (1.6%) complications occurred: one (0.8%) infection and one (0.8%) partial nipple necrosis. In a mean follow-up of 50 months, there was one (1.6%) newly diagnosed breast cancer in the 62 patients undergoing prophylactic NSM. Conclusions: Our findings demonstrated efficacy and safety to perform NSM as prophylactic surgery with good oncologic outcomes and low complication rates in a case series of Brazilian patients.