

The Concerning Lack of Mammography in the Early Detection of Breast Cancer in Romania A Cross-Sectional Analysis of 2,500 Patients Diagnosed with Breast Cancer

Alexandru Blidaru^{1,2}, Maria-Teodora Popa^{1,2}, Octav Ginghină^{1,2}, Bogdan Severus Gașpar^{1,3}, Teodora-Mihaela Peleașă^{1,2}, Mihaela Năstase^{1,2}, Andreea Preda^{1,2}, Cristian Bordea^{1,2}

¹Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

²Department of Surgical Oncology, Prof. Dr. Al. Trestioreanu, Institute of Oncology, Bucharest, Romania

³Department of General Surgery, Clinical Emergency Hospital Bucharest, Romania

Abstract

Background: Breast cancer is the most common malignancy among women and represents a leading cause of worldwide cancer-related mortality. Mammographic screening substantially reduces breast cancer-specific mortality by enabling its early detection. Organized mammographic screening is recognized as the most effective strategy for early detection, mortality reduction, and for improving quality of life. Romania currently lacks an organized, functional, invitation-based system. National data regarding the utilization of mammography remain limited and poorly characterized.

Materials and Methods: A cohort of 2,500 women aged 40-90 years diagnosed with breast cancer was analyzed. The study was conducted in four medical centers in Bucharest, Romania: the Prof. Dr. Alexandru Trestioreanu Institute of Oncology, Medicover Pipera Hospital, Profmedica Clinic, and CIB Medical Clinic, between June and December 2025. Information regarding mammographic examinations performed prior to diagnosis was obtained through a structured interview and subsequently validated by reviewing medical records. The sociodemographic variables analyzed included age, place of residence, and educational level. Patients were categorized into two groups according to their pre-diagnostic mammography status: those who had never undergone mammography in their lifetime and those who had undergone at least one mammographic examination prior to breast cancer detection. For patients in the latter group, the interval between the most recent mammography and the time of diagnosis was recorded and analyzed.

Results: Overall, 76% of the patients had not undergone any mammographic examination prior to diagnosis. Among those who had undergone at least one mammography, 37.3% had their most recent examination more than four years before diagnosis. When these two subgroups were combined, it was found that 85% of patients diagnosed with breast cancer had not received a recent mammographic evaluation within the four years preceding diagnosis that might have enabled earlier detection of the disease.

Conclusion: This study highlights the limited use of mammography for the early detection of breast cancer in Romania through periodic examinations within an opportunistic screening setting. Consequently, most cases are diagnosed only after the onset of signs and symptoms. This finding reflects insufficient public awareness of the benefits of early detection of this disease. Among the 2,500 women with breast cancer who were interviewed in this study, 76% had never undergone a mammographic examination in their lifetime. Moreover, 85% had not undergone any mammography within the four years preceding diagnosis. The development and consolidation of public information and medical education initiatives are essential to increase participation and improve population-level understanding of the benefits of early detection for breast cancer. However, even when it is widely implemented, opportunistic screening alone is unlikely to achieve a meaningful population-level impact. A reduction in breast cancer mortality through early diagnosis can only be achieved through the implementation of an organized, national screening program.

Keywords: breast cancer, mammography, screening, early detection, opportunistic screening