

Cost-effectiveness of breast cancer screening in Turkey, a developing country: Results from Bahçeşehir mammography screening project

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Objective: We used the results from the first three screening rounds of Bahcesehir Mammography Screening Project (BMSP), a 10-year (2009-2019) and the first organized population-based screening program implemented in a county of Istanbul, Turkey, to assess the potential cost effectiveness of a population based mammography screening program in Turkey.

Materials & Methods: Two screening strategies were compared: BMSP (includes three biennial screens for women between 40-69) and Turkish National Breast Cancer Registry Program (TNBCRP) which includes no organized population based screening. Costs were estimated using direct data from the BMSP project and the reimbursement rates of Turkish Social Security Administration. The life years saved by BMSP were estimated using the stage distribution observed with BMSP and TNBCRP.

Results: A total of 67 women (out of 7234 screened women)

were diagnosed with breast cancer in BMSP. The stage distribution for AJCC stages 0, I, II, III, IV was 19.4%, 50.8%, 20.9%, 7.5%, 1.5% and 4.9%, 26.6%, 44.9%, 20.8%, 2.8% with BMSP and TNBCRP, respectively. The BMSP program is expected to save 279.46 life years over TNBCRP with an additional cost of \$677.171, which implies an incremental cost-effectiveness ratio (ICER) of \$2.423 per saved life year. Since the ICER is smaller than the Gross Domestic Product (GDP) per capita in Turkey (\$10.515 in 2014), BMSP program is highly cost-effective and remains cost-effective in the sensitivity analysis.

Conclusion: Mammography screening may change the stage distribution of breast cancer in Turkey. Furthermore, an organized population-based screening program may be cost effective in Turkey and in other developing countries. More research is needed to better estimate life years saved with screening and further validate the findings of our study.

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