Disparities in Mammography Screening in a Welfare-State Healthcare System: Data from 100,000 Women in Israel

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Introduction

- Breast cancer is the most common malignancy among women; early detection via mammography reduces mortality.
- Israel provides universal healthcare and organized mammography invitations, yet disparities persist.
- Existing studies are outdated or limited in scale; this study provides large-scale, updated evidence.

AIM : To evaluate adherence to national mammography guidelines among Israeli women and identify sociodemographic and clinical predictors of adherence

Methods and Materials

- Retrospective cohort using “Clalit Health Services” data (2006–2020).
- Sample: 100,000 women aged 45–75, excluding prior breast cancer or high-risk mutations, 2006-2020
- **Adherence:** Adherence to mammography screening was evaluated monthly by measuring intervals between consecutive mammograms. For each woman, follow-up began at age 50 (or earlier if screened before 50). Months exceeding a 24-month interval between mammograms were classified as non-adherent. The adherence rate was calculated as the proportion of adherent months over total follow-up time. Participants were categorized into four adherence levels: poor (<0.2), low (0.2–<0.5), moderate (0.5–<0.8), and full (≥0.8).
- Preventive health behaviors also assessed: Pap smear, vaccines, FOBT, colonoscopy.
- Analysis: ANOVA, chi-square tests by the national institute of statistics

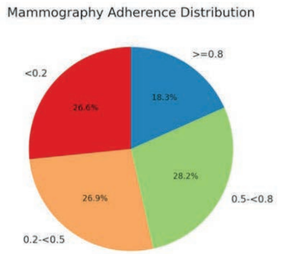
Results

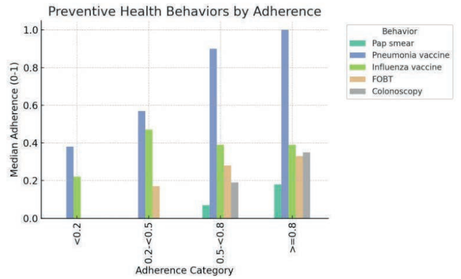
- 95,603 women met eligibility criteria. 53.5% were categorized as poor or low adherers, while only 18.3% achieved full adherence.
- Higher adherence was associated with younger age (mean 63.9 → 50.8 years, p<0.0001) and longer follow-up (14.3 → 17.4 years, p<0.0001).
- Adherence varied significantly by sector (p<0.0001) - general secular women consistently showed the highest adherence (82.6% in ≥0.8 group), Arab women increased modestly across categories (9.4% → 13.0%), while ultra-Orthodox women declined slightly (4.9% → 4.1%)*****.
- Adherence varied significantly by geography (p<0.0001) - women from central and northern regions exhibited higher adherence (37.0% and 29.8%, respectively), compared to Jerusalem (11.4%).
- Higher adherence correlated with healthier profiles (*all* p<0.0001):
  BMI: decreased from 29.1 → 27.8 kg/m²
  Dementia: 25.1% → 4.5%
  Diabetes: 43.4% → 33.8%
  Hypertension: 70.0% → 54.1%
  CVA: 19.1% → 5.2%
  Depression/anxiety: 33.1% → 26.7%
- Risk-based screening factors increased with adherence (p<0.0001):
  Family history of breast cancer: 2.9% → 21.4%
  HRT use: 18.3% → 51.0%
- Engagement in other preventive services rose in parallel with mammography adherence (*all* p<0.0001): PAP smear, Pneumococcal vaccination, Colorectal screening
- Mortality declined sharply with increasing adherence (p<0.0001): 43.2% in the poor adherence group vs. 3.8% in the full adherence group.

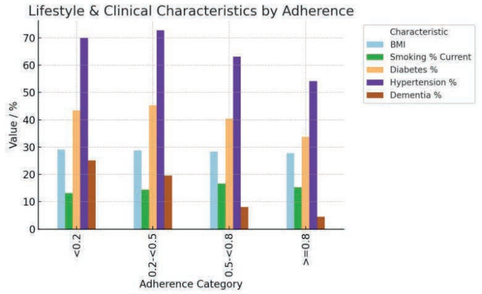
*** Arrows (→) indicate changes from poor to full adherence.**

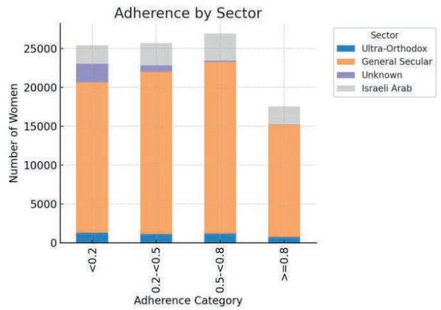
Conclusions

- Despite universal healthcare coverage, significant disparities in mammography adherence persist.
- Large-scale population data highlight distinct sociodemographic and health-behavioral patterns that place certain groups at risk for non-adherence.
- These findings emphasize that access alone does not ensure equitable participation in screening.
- Multifaceted strategies-combining education, culturally sensitive outreach, and active patient engagement-are essential to close the gap and improve early detection outcomes.









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