# Illiteracy and Utilization of Breast Cancer Screening : A Case Study of Saudi Women over 60 Years of Age

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# Disclosure

- None

# SA Population Size (2014)*

- Total Population 29 million

- TFR is about  3.1, BR 23/1000 population

- Male: Female LE 74:78 years

- 40.2 million by 2025

* World Bank. *World Databank: World Development Indicators (1960 - 2014)*. 2014 04/13/2015]; Available from: http://databank.worldbank.org/data.

# Introduction

- Female population > 60 years: 7%

- 65 to 70% are illiterate

- Health indicator: facing challenges

- One of the important health care needs is cancer-screening

# BC in Saudi Arabia *

- 22.4/100,000 (the most common)

- One in every 4 cases

- Presentation: Advanced stages

- No national screening programs

- Dependent on education campaigns

- Younger women > better health literacy

* Al Diab A, Qureshi S, Al Saleh K.,  Al Qahtani F, Aleem A, Alghamdi M, Alsaif A, Bokhari A, Qureshi V, Qureshi M. Review on Breast Cancer in the Kingdom of Saudi Arabia. Middle-East Journal of Scientific Research 14 (4): 532-543, 2013.

# Objective

- To determine if *illiteracy* among Saudi women over 60 years of age affect utilization of breast cancer screening (CBE & Mammography)?

# Data

- Saudi Elderly National Survey (SENS)

- To assess the health needs for > 60 years

- Cross sectional population based, MOH

- Sample size was calculated for cluster sampling adjusted for DE and non-response

- A RCST using probability to proportion to size to select participants

# Methodology

- Analysis: survey command in STATA 13.1

- Sampling design and weight

- Logistic regression with binary outcome, adjusted for age, income, region & comorbidities

# Results

- 1461 women were eligible

- 1328 (88%) were illiterate

- Regression(multivariate) showed a statistical significant effect of illiteracy on the utilization of breast cancer screening (OR=0.54, 95% CI: 0.30- 0.97, p= 0.038)

# Table 1. Participates Characteristics

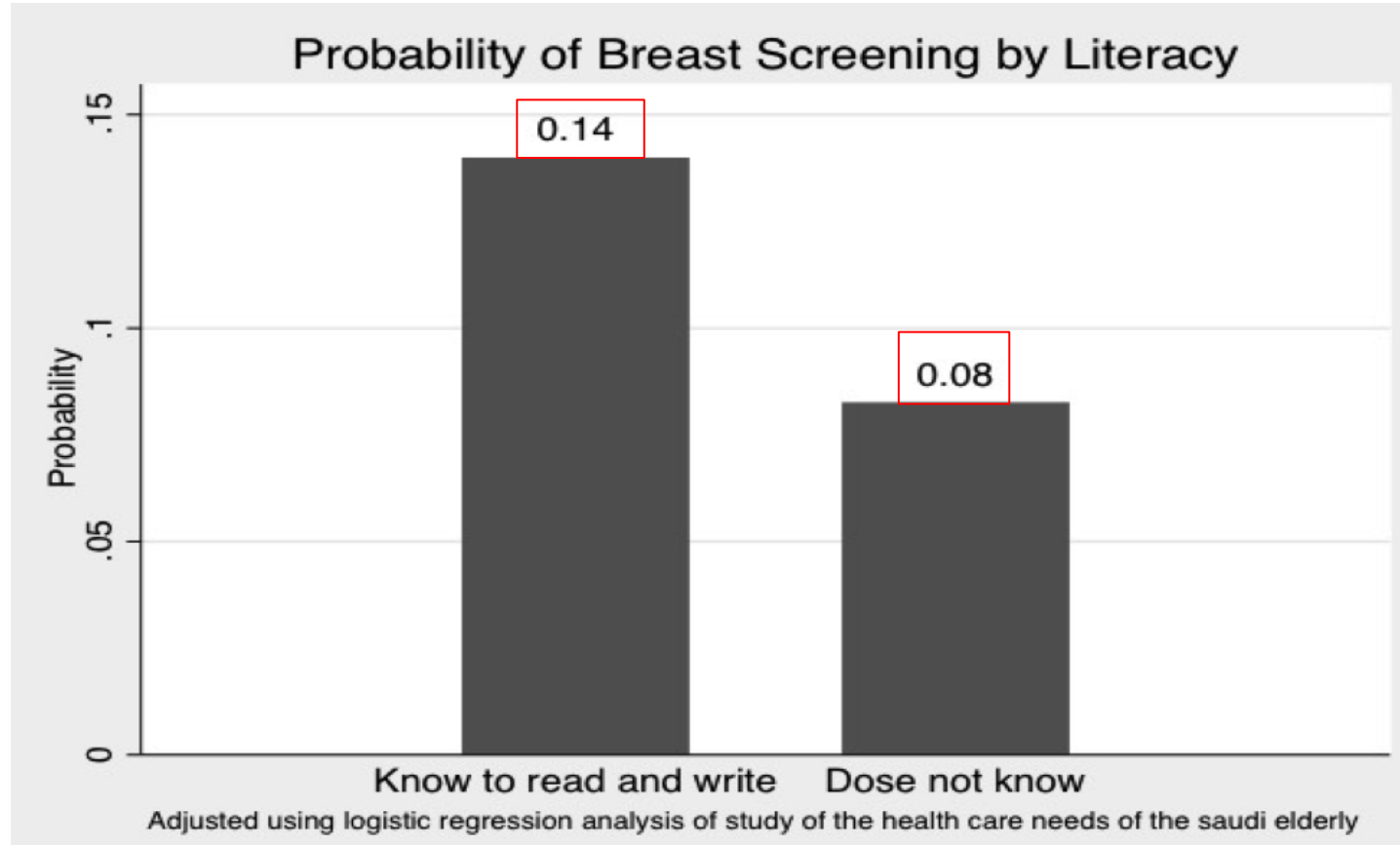| | Illiterate | Not illiterate | |
|---|---|---|---|
| | n= 1328 (88.2%) | n= 133 (11.8%) | P-value |
| | | | |
| **Age (years)** | | | <0.001 |
| 60-65 | 430.91 (41.38) | 85.8 (65.34) | |
| 66-70 | 220.71 (21%) | 18.48 (14.01) | |
| 71-75 | 147.14 (14.13) | 21,12 (16.10) | |
| 76-80 | 115.61 (11.37) | 5.01 (3.84) | |
| 81-85 | 63.06 (5.95) | 1.32 (0.71) | |
| 86-90 | 31.53 (3.25) | 0% | |
| >90 | 22.59 (2.15) | 0% | |
| **Monthly Income (SR)** | | | <0.001 |
| >10000 | 399.2 (3%) | 32.6 (14%) | |
| 7,500-9,999 | 322.4 (2%) | 25.4 (3%) | |
| 5,000-7,499 | 170.4 (5%) | 30.2 (13%) | |
| 2,500-4,999 | 108.4 (17%) | 40.8 (24%) | |
| <2,500 | 50.6 (73%) | 3 (45%) | |
| | | | |
| **Comorbidities** | | | |
| DM | 133.5 (56%) | 14.3 (63%) | 0.4059 |
| HTN | 98 (33%) | 9.3 (23%) | 0.7736 |
| IHD | 56 (11%) | 6.4 (14%) | 0.0853 |

Note: Sample size varies across different variable because of incomplete/missing data. Survey weight was used in our calculation. Multiple imputation was used for missing data

# Table 2. Regression Model

| | Univariate Analysis (Unadjusted) | | Multivariate Analysis (Adjusted) | |
|---|---|---|---|---|
| | OR (95% CI) | P Value | OR (95% CI) | P Value |
| | | | | |
| **Illiterate** | 0.58(0.33-1.02) | 0.056 | 0.54 (0.30- 0.97) | **0.038*** |
| | | | | |
| **Age** | | | | |
| 60-65 | Ref. | | Ref. | |
| 66-70 | 1.05 (0.63- 1.72) | 0.854 | 1.35 (0.78-2.34) | 1.36 |
| 71-75 | 1.36 3(0.71 -2.54) | 0.356 | 1.45 (0.81- 2.73) | 1.49 |
| 76-80 | 1.142 (0.64- 2.04) | 0.65 | 1.52 (0.79- 2.85) | 1.49 |
| 81-85 | 0.54 (0.18- 1.61) | 0.266 | 0.88 (0.31- 2.48) | 0.88 |
| 86-90 | 0.67 (0.149- 2.98) | 0.593 | 0.50 (0.07- 3.44) | 0.51 |
| >90 | 2.027 (0.59- 6.95) | 0.257 | 2.99 (0.79- 11.22) | 2.99 |
| | | | | |
| **Monthly Income** | | | | |
| >1000 | Ref. | | Ref. | |
| 9,999-7,500 | 0.65 (0.11-3.88) | 0.635 | 0.72 (0.11- 4.97) | 0.72 |
| 7,499-5,000 | 0.71 (0.31-1.61) | 0.405 | 0.71 (0.29- 1.70) | 0.71 |
| 4,999-2,500 | 0.51 (0.18-1.39) | 0.185 | 0.54 (0.18- 1.67) | 0.54 |
| <2,500 | 0.44 (0.16-1.24) | 0.12 | 0.54 (0.18- 1.65) | 0.55 |
| | | | | |
| **Comorbidities** | | | | |
| DM | 1.89 (0.95-3.76) | 0.07 | 1.89 (0.91- 3.91) | 1.89 |
| HTN | 1.20 (0.64- 2.27) | 0.57 | 0.96 (0.53- 1.72) | 0.96 |
| IHD | 1.64 (0.48- 5.60) | 0.42 | 0.98 (0.25- 3.83) | 0.98 |

# Adjusted Probability



Probability of Breast Screening by Literacy

# Conclusion

- Illiteracy among Saudi women over 60 years of age may contribute to low level utilization of breast cancer screening

# Recommendations

- For the first time

- Health initiatives for women > 60 years should include (+/-) illiteracy as a factor that might interfere with improving health of elderly women

- Age is a major risk factor, all women over 50 years should be screened

- Future studies to assess illiteracy effect on health

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- KFSH-Dammam (@KFSHDammam)

# References

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