

Quality of Economic Evaluations of Breast Cancer for Diagnostics, Screening, and Therapeutics in Middle East: A Targeted Literature Review

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Introduction and objectives

- Breast cancer (BC) is the most common cancer diagnosed in females and the fifth leading cause of death due to cancer globally.¹ BC has become a major concern in the Arab world.^{2,3} Among Arab women, the prevalence of diagnosed cases of BC among all cancers is in the range of 14%–42%.^{2,3}
- The International Agency for Research on Cancer estimated that the age-standardised incidence rate (per 100,000) of BC in 2020 was 78.3, 59.5, 58.5, 54.8, 54.5, 50.3, 46.6, and 44.2 in Israel, Jordan, the United Arab Emirates, Lebanon, Iraq, Kuwait, Turkey, and Bahrain, respectively.⁴
- The objective of this targeted literature review (TLR) were to evaluate the quality of published economic analyses focusing on BC screening, diagnosis, and treatment in the Middle East (ME) and Turkey as well as provide insights on the design, implementation, and presentation of economic evaluations.

Methodology

- Searches were run on Embase® and MEDLINE® from database inception to 21 June 2023 using a combination of Emtree/MeSH terms and keywords.
- All the identified studies were screened based on the title/abstracts, followed by full-text screening against the eligibility criteria (**Table 1**). Following the full-text screening, potentially relevant studies were chosen for data extraction and quality evaluation. Each step was carried out by one reviewer and checked by another reviewer.
- The Drummond checklist⁵ was used to assess the quality of economic evaluations. It contains 35 statements or criteria (seven for study design, 14 for data collection, and 14 for analysis and interpretation of results). If a criterion was met, 1 point was awarded (range of 0–35 points).
- In this TLR, a study was considered high quality if it scored ≥21 points.⁶

Results

- A total of 1,574 unique records were obtained from databases and additional searches.
- Of 1,574 publications, 17 were included in this review. Among these studies, ten were conducted in Iran, followed by two each in Turkey and Israel, and one each in Lebanon, Saudi Arabia, and Qatar.
- Approximately 90% of the included studies conducted cost-effectiveness analyses using Markov models. The majority were focused on screening and therapeutic interventions. The payer perspective was predominant.
- Time horizons varied from eight months to a lifetime, and discount rates ranged from 1.5% to 5% for costs and outcomes.
- All studies were assessed to be of good quality, except one study, which was rated as low quality (score of 19/35).⁷
- Discounting of costs and ignoring productivity losses were noted as key methodological weaknesses.
- Statistical tests and confidence intervals, variability ranges for sensitivity analyses, methods used for valuing health states and other benefits, populations from which these valuations were derived, and analysis perspectives were commonly unreported.
- The percentage scores of the included studies, as per the domain, are presented in **Figure 1A-C**.

Conclusions

Overall, the studies were rated as of good quality, but a few methodological weaknesses highlighted might have implications for optimal decision-making.

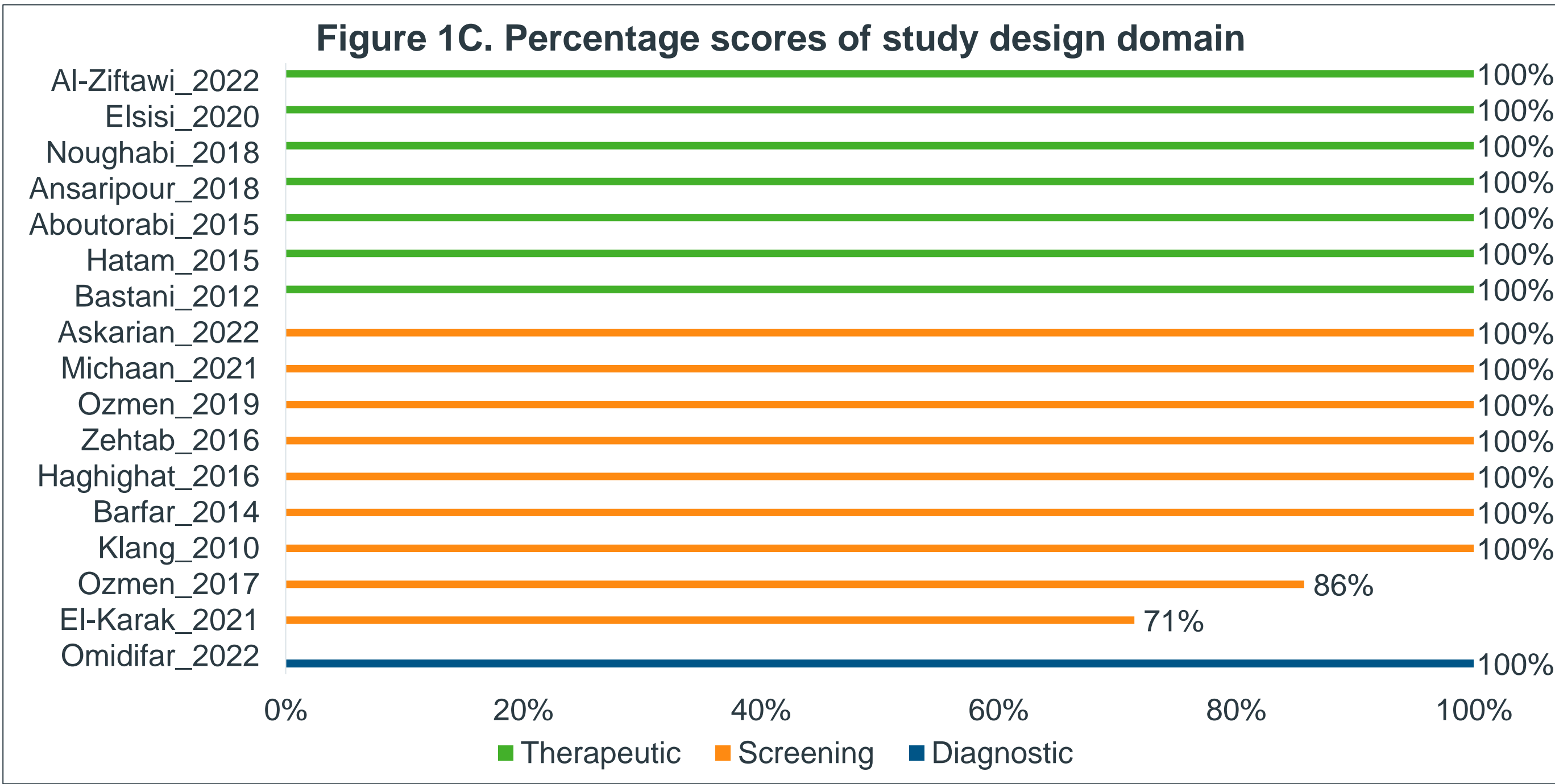
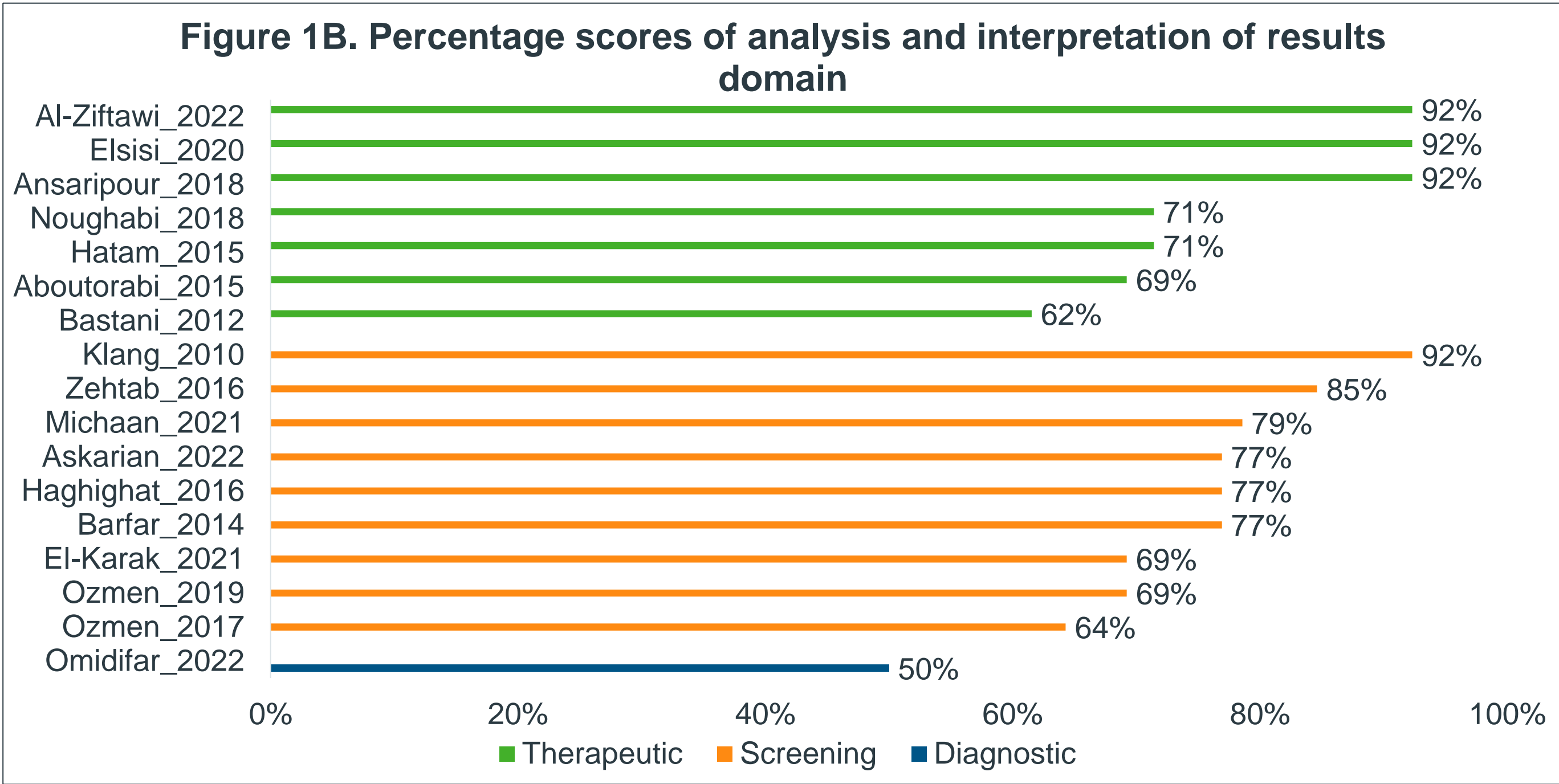
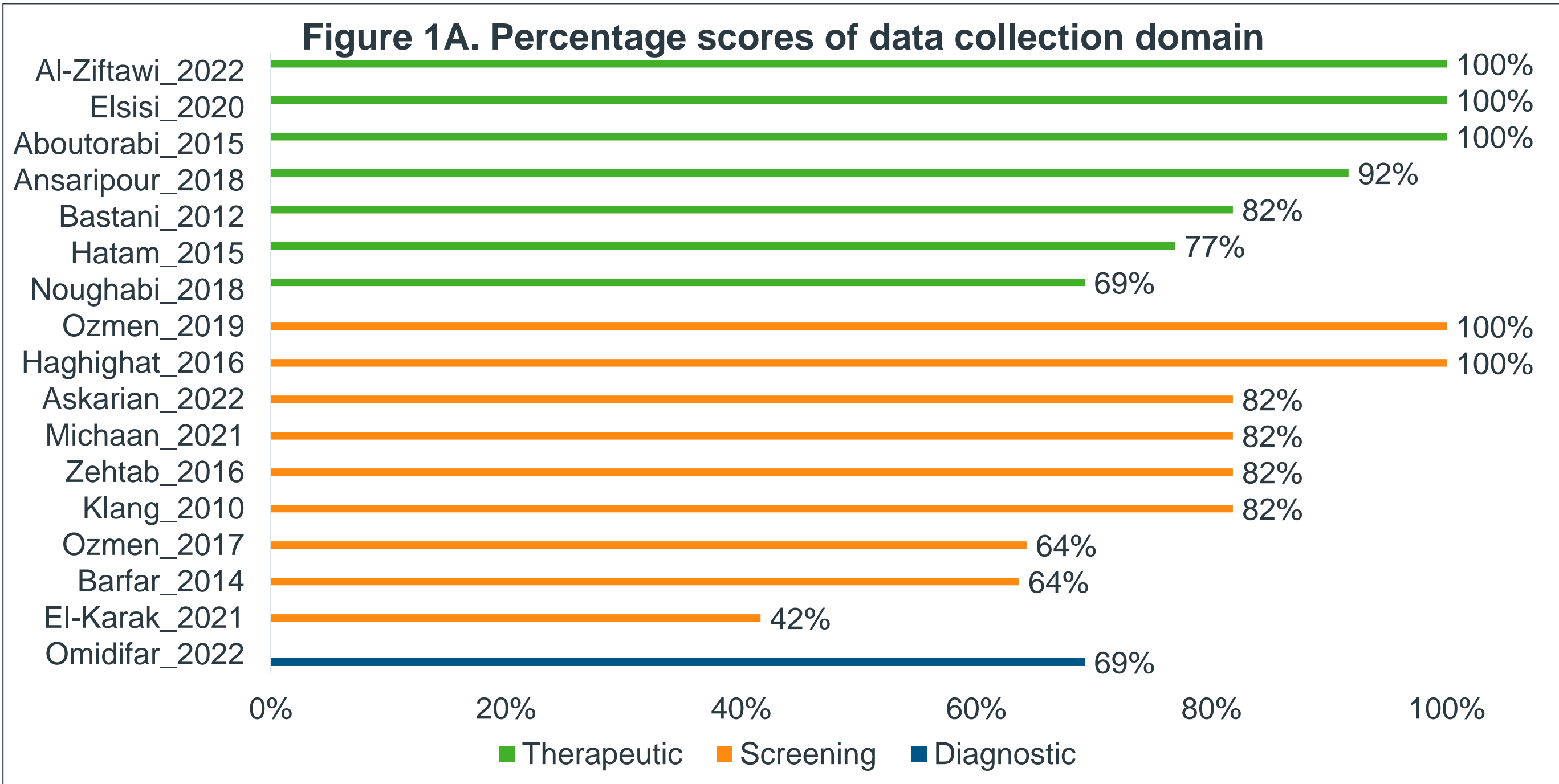
The findings will help researchers in planning and reporting health-economic evaluations.

Table 1: Study eligibility criteria

PICOS	Inclusion criteria
Populations	Female patients diagnosed with BC (no age restriction)
Interventions/Comparators	No restriction
Outcomes	Economic analyses such as CEA, CUA, CMA, and CBA
Study design	Economic evaluations
Limits	Language: English Publication date: No limitation Geography: Middle East Publication type: Full-text articles

CEA, cost-effectiveness analysis; CUA, cost-utility analysis; CMA, cost-minimisation analysis; CBA, cost-benefit analysis.

Figure 1A-C: Domain-wise percentage scores



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