

Newcastle-Ottawa Scale (NOS) Assessment

NOS assessment for the study by Schwarzman *et al* (5)

Selection (Maximum 4 stars)

1. Representativeness of the Exposed Cohort (1 star):

The cohort is representative of the general population as it includes a large, population-based cohort from a tertiary medical center covering a wide geographic area (Southern Israel).

Star awarded

2. Selection of the Non-Exposed Cohort (1 star):

The non-exposed cohort consisted of women who had only vaginal deliveries, which is a valid and appropriate comparison group.

Star awarded

3. Ascertainment of Exposure (1 star):

Data were collected from two linked computerized databases: perinatal and hospitalization databases. The exposure (CS) was clearly recorded as part of routine data collection.

Star awarded

4. Demonstration that Outcome of Interest Was Not Present at Start (1 star):

Women with known malignancies prior to inclusion were excluded, ensuring that the outcome was not present at the start of the study.

Star awarded

Comparability (Maximum 2 stars)

1. Comparability of Cohorts on the Basis of the Design or Analysis (2 stars):

The study controlled for several confounders, including age, parity, diabetes mellitus, hypertension, obesity, and fertility treatments, through Cox proportional hazards models.

2 stars awarded

Outcome (Maximum 3 stars)

1. Assessment of Outcome (1 star):

The outcomes were ascertained using hospital databases with reliable coding and recording methods.

Star awarded

2. Was Follow-Up Long Enough for Outcomes to Occur (1 star):

The maximum follow-up duration was 26 years, which is sufficient for assessing long-term cancer risks.

Star awarded

3. Adequacy of Follow-Up of Cohorts (1 star):

Follow-up was adequate and complete, as the data were collected from a single tertiary medical center, minimizing the risk of loss to follow-up.

Star awarded

Total NOS Score: 9/9 (High Quality)

NOS assessment for the study by Oğuz *et al.* (7)

Selection (Maximum 4 stars)

1. Representativeness of the Exposed Cohort (1 star):

The cohort consisted of breast cancer patients treated at Ankara University Hospitals, representing a single-center hospital-based cohort, which may not fully represent the general population.

Star not awarded

2. Selection of the Non-Exposed Cohort (1 star):

The non-exposed cohort consisted of breast cancer patients without a history of cesarean delivery, appropriately matched within the same hospital setting.

Star awarded

3. Ascertainment of Exposure (1 star):

Exposure (history of cesarean delivery) was ascertained through patient medical records, which is a reliable source.

Star awarded

4. Demonstration that Outcome of Interest Was Not Present at Start (1 star):

The study included only patients diagnosed with breast cancer after delivery, ensuring that the outcome was not present at the start of the study.

Star awarded

Comparability (Maximum 2 stars)

1. Comparability of Cohorts on the Basis of the Design or Analysis (2 stars):

The study controlled for relevant confounders, such as age, parity, menopausal status, and estrogen receptor (ER) status, by subgroup analysis and statistical modeling.

2 stars awarded

Outcome (Maximum 3 stars)

1. Assessment of Outcome (1 star):

The outcomes (tumor characteristics and prognosis) were assessed based on medical records and pathology reports, ensuring objective and accurate data.

Star awarded

2. Was Follow-Up Long Enough for Outcomes to Occur (0 stars):

The study did not include long-term follow-up for survival outcomes, which limits the assessment of prognosis over time.

Star not awarded

3. Adequacy of Follow-Up of Cohorts (1 star):

Follow-up was sufficient to assess the association between delivery mode and breast cancer characteristics, but it lacked long-term survival data.

Star awarded

Total NOS Score: 7/9 (High Quality)

NOS assessment for the study by Kalan *et al.* (9)

Selection (Maximum 4 stars)

1. Representativeness of the Exposed Cohort (1 star):

The cohort consists of breast cancer patients from a single tertiary oncology center (Hacettepe University Institute of Oncology), which may limit generalizability to broader populations.

Star not awarded

2. Selection of the Non-Exposed Cohort (1 star):

The non-exposed cohort consisted of breast cancer patients without a history of cesarean delivery, drawn from the same clinical setting, ensuring consistency.

Star awarded

3. Ascertainment of Exposure (1 star):

Exposure to cesarean delivery was obtained from medical records, which is a reliable source of information.

Star awarded

4. Demonstration that Outcome of Interest Was Not Present at Start (1 star):

The study included only breast cancer patients after the delivery event, ensuring that the cancer outcome was not present at the start of exposure.

Star awarded

Comparability (Maximum 2 stars)

1. Comparability of Cohorts on the Basis of the Design or Analysis (1 star):

The study controlled for some confounders such as estrogen receptor (ER) status and hormone therapy use through multivariate logistic regression analysis. However, not all potential confounders were addressed.

1 star awarded

Outcome (Maximum 3 stars)

1. Assessment of Outcome (1 star):

Outcomes related to tumor characteristics and prognosis were assessed based on pathology reports and medical records.

Star awarded

2. Was Follow-Up Long Enough for Outcomes to Occur (0 stars):

The study did not provide long-term follow-up data to assess survival outcomes.

Star not awarded

3. Adequacy of Follow-Up of Cohorts (1 star):

Although long-term follow-up was not conducted, data on tumor characteristics and progression were adequately reported within the study timeframe.

Star awarded

Total NOS Score: 7/9 (High Quality)

NOS assessment for the study by Kang *et al.* (8)

Selection (Maximum 4 stars)

1. Representativeness of the Exposed Cohort (1 star):

The cohort is representative of the general population as it used nationwide health insurance data covering 97% of the population in Korea.

Star awarded

2. Selection of the Non-Exposed Cohort (1 star):

The non-exposed cohort consisted of women without postpartum breast cancer, selected from the same nationwide database, ensuring comparability.

Star awarded

3. Ascertainment of Exposure (1 star):

Exposure to cesarean delivery and postpartum breast cancer was ascertained using reliable ICD-10 diagnostic codes from the national database.

Star awarded

4. Demonstration that Outcome of Interest Was Not Present at Start (1 star):

Women diagnosed with breast cancer before childbirth were excluded, ensuring that the outcome of interest (breast cancer) was not present at the start.

Star awarded

Comparability (Maximum 2 stars)

1. Comparability of Cohorts on the Basis of the Design or Analysis (2 stars):

The study adjusted for key confounding variables such as maternal age, parity, and other pregnancy-related factors using multivariate logistic regression models.

2 stars awarded

Outcome (Maximum 3 stars)

1. Assessment of Outcome (1 star):

Outcomes were identified through national health insurance claims data, providing reliable and comprehensive coverage.

Star awarded

2. Was Follow-Up Long Enough for Outcomes to Occur (1 star):

The maximum follow-up period was 4 years, which is adequate to capture the development of postpartum breast cancer.

Star awarded

3. Adequacy of Follow-Up of Cohorts (1 star):

The follow-up was complete and adequate due to the comprehensive nature of the national insurance database.

Star awarded

Total NOS Score: 9/9 (High Quality)