

# Prevalence of Obstructive Sleep Apnea Following Cleft Palate Repair – A Systematic Review

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## INTRODUCTION

Cleft palate (CP) is a common defect which is associated with changes in facial structures and a smaller upper airway.

As a result, infants and children with CP have an increased risk of obstructive sleep apnea (OSA).

## OBJECTIVES/AIMS

To evaluate the prevalence of obstructive sleep apnea (OSA) in the cleft palate population perioperatively

Investigative polysomnography studies for OSA screening as a baseline for preoperative cleft palate repair along with grading and classifications of cleft palate.

To review the literature for OSA severity in presurgical and postsurgical results for children who underwent cleft palate repair.

## METHODOLGY

A systematic review of all publications addressing the incidence of obstructive sleep apnea post-surgical repair of cleft palate or lip prior to July 2020 was conducted.

Data were collected from online medical databases—PubMed, Cochrane Library, and Google Scholar following the PRISMA guidelines.

Literature databases were searched using MeSH terms and keywords for all studies on Cleft Palate and OSA

### Methodolgy: Inclusion and Exclusion Criteria



All articles that reported airway obstruction or sleep disordered breathing.

Cleft Patients with overnight sleep studies and PSG diagnosed OSA.



We excluded articles involving adults, review articles, case series, and foreign articles.

OSA diagnosed by questionnaires.

## RESULTS

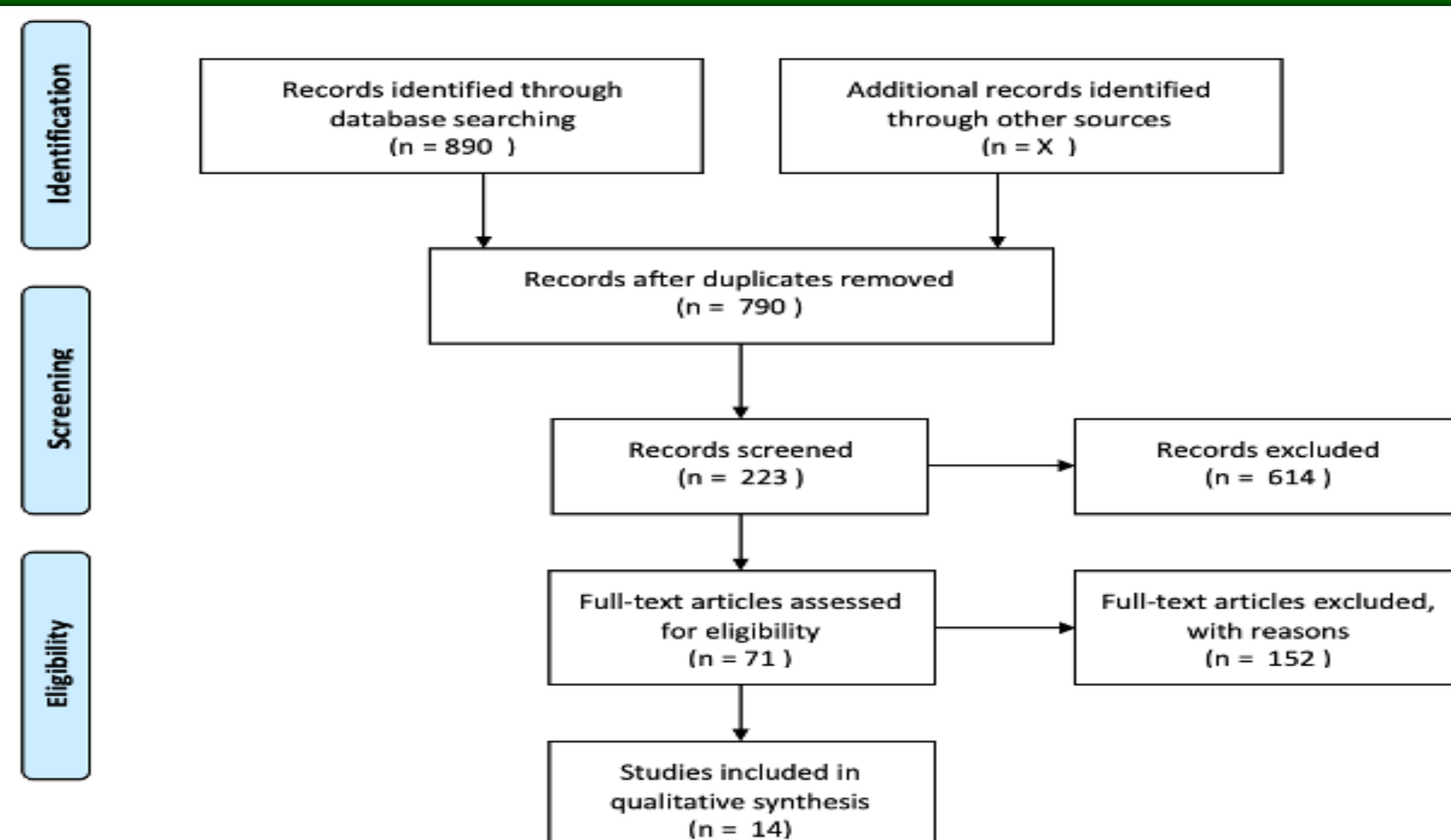


Figure 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram of the search strategy for retrieving relevant articles.

## RESULTS

### Population and Demographics Repair

| Studies  | Total Number of Patients | Mean Age |
|----------|--------------------------|----------|
| Included |                          |          |
| 5        | 278                      | 4.8      |

### Screening

| Studies Included | Total Number of Patients | Mean Age |
|------------------|--------------------------|----------|
| 6                | 1058                     | 6.2      |

### Cleft Palate Grade Preoperatively

| Cleft Palate Grade    | Total (705) | (%)   |
|-----------------------|-------------|-------|
| Soft Only             | 27          | 3.83  |
| Soft & Hard/ Complete | 678         | 96.17 |

### Prevalence of OSA Preoperatively and Postoperatively

|                                       | Preoperatively (11) | Postoperatively (7) |
|---------------------------------------|---------------------|---------------------|
| Total of CP patients with PSG testing | 563                 | 243                 |
| PSG diagnosed OSA                     | 403                 | 129                 |
|                                       | 71.58%              | 53.01%              |

## DISCUSSION

| Total Number of Patients |             |               |
|--------------------------|-------------|---------------|
| Time 0 (Preop)           | T1 (1 week) | T3 (6 months) |
| 0 (0%)                   | 10 (100%)   | 1 (10%)       |

Liao, Y. F. (n.d.). Longitudinal follow-up of obstructive sleep apnea following furlow palatoplasty in children with cleft palate: A preliminary report.

## CONCLUSION

We recommend that preoperative baseline sleep investigations be performed for all children undergoing palate repair, so that the procedure can be timed appropriately to reduce postoperative morbidity.

Despite the fact that overnight PSG is the gold standard for diagnosing OSA, few studies of cleft repair have reported PSG results but rather have reported their findings based solely on clinical symptoms, we recommend the screening of all cleft patients