

1 **RESEARCH**

2

3 **REVIEW ARTICLE**

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5 **Facelift Randomized Controlled Trials Compliance With CONSORT Checklist: A**
6 **Systematic Review**

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12

13 **ABSTRACT**

14 **Background:** Randomised controlled trials (RCTs) in facelift surgery remain few and variably
15 reported; transparent, reproducible methods are essential to interpret efficacy and safety.

16 **Objectives:** To assess the methodological quality and reporting standards of facelift RCTs
17 using the Consolidated Standards of Reporting Trials (CONSORT) and CONSORT-NPT
18 guidelines, identifying patterns of adherence and areas for improvement.

19 **Methods:** We conducted a PRISMA-guided systematic review of RCTs evaluating facelift
20 techniques or perioperative strategies. RCTs focusing on facelift techniques were included
21 based on study design and relevance. Adherence to the CONSORT 2010 or CONSORT-NPT
22 2017 checklist was retrospectively assessed for each included study. Risk of bias was assessed
23 using the Cochrane RoB 2.0 tool, and evidence quality was appraised via GRADE.

24 **Results:** Ten RCTs (n=457; mean sample 46) met inclusion. Mean CONSORT adherence was
25 56%, with high for intervention description and statistical analysis (both 100%) but poor for
26 tailored interventions (10%), trial registration (20%), and trial protocol (30%). Adherence
27 showed weak correlations with journal impact factor ($R^2=0.0024$) and author count

1 (R²=0.171). Only 3 trials were low risk of bias; GRADE certainty was largely low-moderate,
2 limited by imprecision and suspected publication bias.

3 **Conclusions:** Facelift RCTs show variable, often suboptimal reporting, leaving the evidence
4 base thin despite rising demand. Strengthening trial quality requires field-wide pre-registration
5 and protocol publication, validated outcome measures, and consistent CONSORT
6 enforcement; a standardized minimum dataset and registry-based reporting would further
7 bolster evidence for facial rejuvenation surgery.

8

9 Facelift surgery, or rhytidectomy, is one of the most commonly performed cosmetic procedures
10 aimed at improving facial aesthetics and restoring youthful appearance.¹ According to the
11 American Academy of Facial Plastic and Reconstructive Surgery (AAFPRS), in 2023,
12 members performed an average of 48 facelifts or partial facelifts per surgeon, representing a
13 60% increase since 2017.² This is further supported by the 2023 American Society of Plastic
14 Surgeons (ASPS) Procedural Statistics Report, where the number of facelift procedures
15 performed in 2023 increased by 8% compared to 2022, indicating a notable year-over-year
16 growth in demand for surgical facial rejuvenation.³ Despite its widespread use, high-quality
17 evidence guiding best practices remains limited. Case series and expert opinion have
18 traditionally dominated the field, making it difficult to draw strong, generalisable conclusions
19 about surgical efficacy and safety.⁴

20 Randomised controlled trials (RCTs), considered the gold standard for establishing causality
21 in clinical research, are increasingly being applied in plastic and reconstructive surgery.^{4,5}
22 Their role is particularly important in a field like facial aesthetic surgery, where outcomes are
23 nuanced, subjective, and influenced by multiple variables.⁶ However, RCTs in surgery present
24 unique challenges, including variability in surgical skill, complexity of procedures, and ethical
25 considerations around blinding and control groups.^{7,8} To improve the transparency and quality
26 of RCT reporting, the Consolidated Standards of Reporting Trials (CONSORT) statement was
27 developed in 1996, with a 2008 extension for non-pharmacological treatments (CONSORT-
28 NPT) addressing surgical interventions.⁹ Despite these guidelines, studies continue to show
29 suboptimal adherence, especially in surgical specialties like plastic surgery.¹⁰

1 Given the increasing use of RCTs in facelift research and the methodological challenges they
2 entail, evaluating compliance with the CONSORT-NPT guidelines is crucial.¹¹ As a diverse
3 speciality, it presents unique challenges for surgeons. Policymakers, patients and insurers seek
4 evidence-based answers, and systematic reviews and meta-analyses provide the highest
5 quality evidence. They summarize and critically appraise the available evidence to inform
6 practice guidelines, identify knowledge gaps, define surgical quality metrics, and guide
7 resource allocation.¹¹ In the specific area of facelift articles with high-level evidence are still
8 lacking.¹²

9 As no systematic review has specifically evaluated CONSORT compliance in facelift RCTs,
10 this review aims to assess the quality of RCT reporting across all eligible studies—regardless
11 of their adherence level—to provide a critical appraisal of methodological transparency in the
12 field, by identifying common deficiencies, analysing adherence patterns, and highlighting
13 areas where improved reporting may enhance the utility of RCTs in informing clinical
14 practice.⁸ Addressing these gaps can help improve methodological rigour, enhance
15 reproducibility, and ultimately strengthen the quality and reliability of the researchbase that
16 informs surgical practice.¹¹

17 Importantly, the outcomes that matter most in facial aesthetic surgery are often subjective by
18 nature. Our intent is not to privilege ‘objective’ endpoints over expert observation or patient-
19 reported experience, but to assess whether trials, regardless of endpoint type, report their
20 methods with sufficient clarity to enable appraisal, replication, and synthesis. In this sense,
21 CONSORT provides a flexible framework that can accommodate subjective aesthetic
22 outcomes when they are pre-specified, measured in a standardized manner, and assessed with
23 appropriate safeguards against bias.

24

25 **METHODS**

26 **Overview and Registration**

27 This systematic review was conducted following the guidelines set forth by Preferred
28 Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and AMSTAR-2.^{13,14}
29 A detailed search strategy was employed across Pubmed and Cochrane to identify relevant

1 literature. Before the review, the protocol was registered on the Prospective Register of
2 Systematic Reviews (PROSPERO ID: CRD42025648513).¹⁵

3 **Selection Criteria**

4 The inclusion criteria emphasized randomized controlled trials (RCTs) investigating facelift
5 interventions in human subjects, published in academic, peer-reviewed journals. Eligibility
6 was determined solely by study design and topic relevance. The assessment of CONSORT or
7 CONSORT-NPT checklist adherence was conducted retrospectively for the included studies
8 to evaluate the quality of reporting, not as a basis for inclusion or exclusion. The exclusion
9 criteria comprised non-randomized trials, observational research, case reports, and non-
10 interventional study designs involving non-human subjects or those not specifically focused
11 on facelift procedures. RCTs were eligible irrespective of publication year; adherence was
12 assessed using CONSORT 2010 (pre-June 20, 2017) or CONSORT-NPT 2017 (on/after June
13 20, 2017), as appropriate. This methodology guaranteed that only pertinent RCTs focusing on
14 surgical and non-surgical facelift procedures and reporting standards were included.

15 **Search Strategy**

16 An extensive literature search was conducted to locate studies published from inception to the
17 5th of February 2025. The searches were conducted across PubMed and Cochrane Library.
18 The Peer Review of Electronic Search Strategies (PRESS) framework informed our search
19 strategy development.¹⁷ It included terms such as "rhytidoplasty," "facelift," "deep plane
20 facelift," and "Rhytidectomy" using truncations, Medical Subject Headings (MeSH), and
21 Boolean operators to ensure comprehensive retrieval of relevant articles. The reference
22 sections of the included articles were reviewed to identify further relevant publications.
23 English language, human and RCT restrictions were applied.

24 **Study Selection**

25 Retrieved articles were initially exported to a reference management software EndNote
26 (Clarivate, Philadelphia, PA) (version 20) for deduplication before being imported into Rayyan
27 (Qatar Computing Research Institute, Doha, Qatar) (version 3.0) for screening. Eligibility was
28 determined by two reviewers (E.B. and R.P.) who independently screened the titles and
29 abstracts. In the next phase, full-text articles of potentially relevant studies underwent detailed

1 assessment based on the inclusion and exclusion criteria. Any discrepancies were resolved
2 through discussion with a third reviewer (Y.Y.) until a consensus was reached.

3 **Data Collection and Analysis**

4 The data extraction process was conducted independently by two reviewers (Y.Y. and W.J.)
5 using a standardized data extraction form, Microsoft Excel (Microsoft Corp., Redmond, WA)
6 (version 16.54). Data collected included the following variables: study details (author, journal,
7 publication date, and geographical origin), participant demographics, details of facelift
8 interventions, and CONSORT-NPT 2017 adherence for papers published on/after June 20,
9 2017, and CONSORT 2010 adherence for papers published before that date. All included
10 studies were measured against the criteria outlined in the updated 25-item CONSORT
11 checklist. Full credit for multi-part items requires all sub-parts to be met. A cumulative
12 'CONSORTscore' was calculated on a 25-point scale. For each checklist item, compliance was
13 represented by the percentage of studies fulfilling that specific criterion.

14 Overall CONSORT scores were evaluated against study characteristics, including year of
15 publication, geographical origin, number of authors, and journal indexing status to identify
16 potential correlations. To ensure accuracy, a second reviewer independently verified the
17 scoring. Discrepancies were resolved through discussion or by seeking input from the lead
18 author. Descriptive statistics were used to summarize compliance patterns and identify
19 prevalent reporting deficiencies.

20 Continuous variables are summarized as mean (SD) or median (IQR). Correlation between
21 CONSORT adherence (%) and journal impact factor and number of authors were tested with
22 Pearson correlation and simple linear regression (adherence as the dependent variable). Two-
23 sided $\alpha=0.05$ was prespecified. We report R^2 , the correlation coefficient r , and p-values from
24 the t-test of the regression slope = 0 (equivalently, test of $r=0$). 95% CIs for r were obtained
25 via the Fisher z transformation; when distributional assumptions were questionable, we ran a
26 prespecified Spearman rank correlation as a sensitivity check (conclusions unchanged). For
27 descriptive summaries of author count, 95% CIs for the mean were computed using the t
28 distribution ($df = n-1$). Analyses were performed in R v4.3.2 (R Foundation for Statistical
29 Computing, Vienna, Austria).

1 Further Critical Appraisal

2 The Cochrane Risk of Bias 2.0 tool (RoB) was employed to assess the risk of bias in the
3 included studies and the AMSTAR-2 tool was applied to appraise the methodological quality
4 of systematic reviews.^{14,16} Additionally, results were organized into a table, showcasing the
5 methodological strengths and limitations of each study. Any discrepancies in the quality
6 assessments were resolved via discussion with the lead author (W.J.). The Grading of
7 Recommendations, Assessment, Development, and Evaluation (GRADE) framework was
8 applied to assess the overall quality of evidence.¹⁷

9

10 RESULTS

11 The initial database search found 80,614 records, after which 12,515 duplicates were removed,
12 and 68089 studies' abstracts were screened. The selection process narrowed the pool to 26
13 papers, which were then subjected to full-text screening. During this stage, 16 studies were
14 excluded because they either were not addressing clinical outcomes related to facelift or
15 lacking clear, descriptive information about the population characteristics or clinical
16 outcomes. The study selection process is summarised in Figure 1 using the PRISMA flow
17 chart.

18 Table 1 summarises the characteristics of 10 facelift RCTs published between 1995 and 2025
19 that were included in this review.¹⁸⁻²⁷ USA contributed to 6 studies. The average impact factor
20 of the journals that studies were published in was 2.658 with 2 studies published in journals
21 without an assigned impact factor. Total number of study participants across all studies was
22 457 with an average of 46 participants per study. The mean age of study participants was 57.6
23 years. Based on data from 7 studies reporting sex distribution, the pooled proportion of female
24 patients was 96.2%. The pooled mean age, also calculated from 7 studies reporting age, was
25 56.89 years. Substantial between-study heterogeneity was observed in both pooled analyses
26 (pooled proportion of female patients: $I^2 = 53.1\%$, $\tau^2 = 0.6345$; pooled mean age: $I^2 = 96.0\%$,
27 $\tau^2 = 29.4973$; Q-test $p < 0.01$ for each). Random-effects models were applied, and pooled
28 estimates should be interpreted with caution given the magnitude of heterogeneity. Forest plots

1 illustrating the proportion of female patients and the pooled mean age across the included
2 studies are shown in Figures 2 and 3, respectively.

3 The included RCTs evaluated a clinically heterogeneous range of facelift-related interventions,
4 including traditional rhytidectomy with pharmacologic adjuncts (e.g., tranexamic acid,
5 steroids, atenolol), varied anesthesia methods (e.g., intravenous vs. inhalational), midface lifts
6 with lipofilling, nasolabial fold correction via cheek volume restoration versus thread lifting,
7 absorbable suspension sutures, and autologous fibrin glue/platelet-poor plasma versus suction
8 drainage.

9 **Percentage Adherence to CONSORT Criteria**

10 Figure 4 illustrates the percentage adherence to each CONSORT checklist item, with a mean
11 compliance of 56%. 70% of studies identified as RCTs in the title along with 60% of studies
12 providing a structured abstract. 100% of studies provided detailed descriptions of interventions
13 for each group to allow replication. Similarly, 100% of studies provided detailed descriptions
14 of statistical methods used to compare groups for primary and secondary outcomes. Notably,
15 90% of the studies disclosed their funding resources. Compliance to external validity and
16 generalizability (50%), mechanism for allocation concealment (50%), how sample size was
17 determined (50%) and method used to generate random allocation sequence (40%) were
18 suboptimal. The lowest reported compliance was with tailored interventions (10%), trial
19 registration (20%), and trial protocol (30%) rising concerns regarding risks of selective
20 reporting bias, and reduced transparency and reproducibility. These findings are summarized
21 in Table 2.

22 **Relationship Between CONSORT Compliance Score and Journal Impact Factor**

23 As shown in Figure 5, analysis of the relationship between CONSORT compliance scores and
24 journal impact factors among the ten included facelift RCTs revealed a lack of a statistically
25 significant relationship ($p = 0.892$) and only a very weak positive correlation ($R^2 = 0.0024$;
26 $r=0.05$; $p=0.893$; 95% CI for r -0.60 to 0.66). The mean journal impact factor was 2.36 (range:
27 1.3 to 4.67), while the mean CONSORT compliance score was 56% (range: 16% to 84%).
28 Notably, the study with the highest CONSORT compliance (84%) was published in a journal
29 with an impact factor of 2.5, while the study in the highest impact journal (impact factor 4.67)

1 also achieved the maximum compliance score (84%). Overall, there was no clear trend linking
2 higher journal impact factors to improved reporting quality, as studies with both high and low
3 compliance scores were distributed across the spectrum of journal impact factors. These
4 findings indicate that, within this sample, publication in higher impact journals does not
5 necessarily correspond to superior adherence to CONSORT guidelines for RCT reporting in
6 facelift research.⁷

7 **Relationship Between CONSORT Adherence and the Number of Authors**

8 A linear regression analysis was performed to assess the association between the number of
9 authors and CONSORT compliance across facelift RCTs. Although a positive trend was
10 observed, the relationship did not reach statistical significance. Each additional author was
11 associated with a 3.93 percentage point increase in CONSORT adherence (95% CI: -3.13 to
12 10.98; $p = 0.235$). The model explained 17.1% of the variance in reporting quality ($R^2 = 0.171$;
13 **$r = 0.413$; $p = 0.235$; 95% CI for r -0.29 to 0.83**). A regression plot is presented in Figure 6.
14 These findings suggest that increasing the number of authors may be associated with a modest
15 improvement in reporting quality, but it is not a strong predictor of CONSORT adherence in
16 facelift RCTs.

17 **RoB, GRADE and AMSTAR**

18 The Cochrane RoB assessment found three studies to have a low risk of bias, 6 studies raising
19 some concerns and one classified as high risk. The GRADE system was used to assess
20 evidence quality, with five studies rated as “Low to Moderate”, two studies rated as “Low”
21 and three studies rated as “High”. Out of the 5 criteria, Publication Bias was more
22 predominantly compromised, as 70% ($n = 7$) of studies had “Some Concerns”. This can skew
23 the overall evidence base and lead to overestimation of treatment effects. Imprecision domain
24 showed 40% of the studies ($n = 4$) to have “Some Imprecision” and 40% ($n = 4$) to have
25 “Significant Imprecision”. The GRADE framework emphasizes that imprecision can arise
26 from wide confidence intervals and small sample sizes, which may lead to uncertainty in the
27 effect estimates. A total of 70% ($n = 7$) of the imprecise studies had small sample sizes which
28 can result in insufficient data to provide precise estimates of the effect, thereby increasing
29 uncertainty.²⁸ However, no studies were downgraded for Indirectness or Inconsistency,

1 supporting the generalizability of the findings. Supplemental Table 1 better summarizes our
2 GRADE assessment.

3 Concerning AMSTAR-2 evaluation of our own systematic review, we prospectively registered
4 a protocol, performed independent duplicate screening and data extraction, conducted a
5 structured, database-driven search informed by Peer Review of Electronic Search Strategies
6 (PRESS), and assessed risk of bias for all included RCTs and considered RoB in our
7 interpretation. Domains related to meta-analysis and small-study effects were not applicable
8 because no quantitative synthesis was undertaken. A detailed summary of the AMSTAR 2
9 assessment results is provided in Supplemental Table 2.

10

11 **DISCUSSION**

12 Despite the global popularity and routine performance of facelift surgery, this review
13 highlights a significant gap in high-level evidence supporting its efficacy and safety. Only 10
14 RCTs were identified in the published literature, a surprisingly low number for a procedure
15 that is both widely practised and technically diverse.

16 Several factors may contribute to this evidence gap. First, ethical and practical challenges
17 make RCTs difficult to conduct in aesthetic surgery. As facelifts are elective and patient-
18 driven, randomising individuals to different surgical techniques, particularly those perceived
19 as superior or inferior, can raise ethical concerns and hinder patient enrolment. Surgeons may
20 also be reluctant to deviate from their preferred techniques for the sake of trial standardisation.
21 Second, the heterogeneity of facelift techniques and outcomes presents methodological
22 barriers. Variations in surgical approach, surgeon expertise, and patient anatomy make it
23 difficult to design studies with consistent interventions. Furthermore, aesthetic outcomes are
24 inherently subjective and lack universally accepted measurement tools, complicating the
25 establishment of standardised endpoints necessary for high-quality trials. Together, these
26 challenges demonstrate the need for alternative study designs, such as well-conducted
27 prospective cohort studies, expert consensus guidelines, or the development of validated
28 aesthetic outcome measures, to strengthen the evidence base in facelift surgery. This disparity
29 highlights the persistent gap between surgical practice and evidence-based standards in

1 aesthetic surgery, where innovations are frequently adopted without rigorous scientific
2 validation or standardised reporting, as noted by Wood et al. in their appraisal of evidence
3 generation in plastic surgery research.²⁹

4 While the number of studies per country was limited, preliminary observations suggested some
5 variability in adherence rates. These differences may reflect disparities in institutional research
6 culture, regulatory expectations, or journal editorial standards across regions. Further
7 investigation into national trends could reveal whether certain countries consistently produce
8 higher-quality surgical trials, potentially setting a benchmark for global reporting practices in
9 aesthetic surgery.³⁰

10 Building upon these observations, our analysis shifts focus from the number of existing facelift
11 RCTs to their reporting quality. Using the CONSORT-NPT 2017 checklist as a reference, we
12 evaluated each study's methodological transparency to better understand the current evidence
13 landscape in aesthetic facial surgery.

14 Our systematic review revealed a mean CONSORT adherence score of 56%. While domains
15 such as intervention descriptions and statistical analyses were consistently well reported, key
16 elements, including trial registration (20%) and protocol availability (30%), remained
17 underrepresented. These gaps raise concerns about transparency, selective reporting, and
18 reproducibility, even in a high-visibility and innovation-driven field such as aesthetic facial
19 surgery.^{31,32}

20 When pooling the proportion of female patients and the pooled mean age, heterogeneity was
21 substantial. This likely reflects clinical and methodological diversity. Differences in
22 techniques/adjuncts, surgeon experience and learning curves, case mix and baseline anatomy,
23 outcome definitions/timepoints, and limited blinding/measurement tools. With few trials,
24 subgroup analysis or meta-regression was not feasible. We therefore interpret pooled estimates
25 cautiously and recommend standardising endpoints, capture protocols, and timepoints in
26 future studies to reduce between-study variance.

27 Our quality appraisal using the Cochrane RoB tool and GRADE framework further
28 highlighted the fragility of the existing evidence. Only three of the ten studies were rated as
29 having low risk of bias, while seven showed either high risk or some concerns—particularly

1 in the domains of publication bias and imprecision. Notably, small sample sizes were a
2 common contributor to lower GRADE ratings, reinforcing concerns about the robustness and
3 reproducibility of available facelift RCTs.

4 Given that our review is, to the best of our knowledge, the first to address this specific question,
5 no other systematic reviews were available for comparative analysis or inclusion. AMSTAR-
6 2 domains were used to inform our methodological transparency and adherence to best
7 practices, not as a formal self-assessment tool.

8 The observed variability in reporting is consistent with findings in other surgical
9 subspecialties, including ophthalmology and general plastic surgery. Yao et al. (2014) reported
10 similarly poor compliance in ophthalmic surgical trials, with an average score of 8.9/23
11 (~39%), emphasizing that inadequate reporting is not unique to the aesthetic domain.³
12 Moreover, prior reviews in plastic surgery have highlighted systemic gaps in adherence to
13 CONSORT, particularly in non-pharmacological interventions, despite the availability of
14 tailored guidelines since 2008.^{8,32}

15 Interestingly, this review identified only weak correlations between CONSORT adherence and
16 both journal impact factor ($R^2 = 0.0024$) and number of authors ($R^2 = 0.171$). These findings
17 suggest that neither prestige nor author counts are reliable predictor of methodological
18 transparency. This echoes similar conclusions from studies in orthopaedic and cardiovascular
19 surgery, where journal metrics and team size failed to significantly influence reporting
20 quality.^{33,34} While the CONSORT statement remains the recognised standard for reporting
21 randomised trials, prior studies have found that even top-tier journals such as New England
22 Journal of Medicine (NEJM), Journal of the American Medical Association (JAMA) and The
23 Lancet report variable adherence rates—ranging from 66% to 89%—with gaps in blinding,
24 randomisation, and outcome transparency still observed.³⁵ Collectively, these indicate that
25 internal study design practices, rather than external prestige, may be more determinative of
26 reporting quality.

27 The persistent underreporting of key trial components has direct consequences for clinical
28 translation. Without clear documentation of randomisation, allocation concealment, and
29 sample size justification, the internal validity of RCTs is compromised. In facelift surgery,
30 where procedural nuances and patient expectations are uniquely high, methodological rigour

1 becomes crucial not only for evidence synthesis but also for informing ethical patient
2 counselling and resource allocation.^{31,36}

3 To translate these insights into practice, we propose a practical roadmap for future facelift
4 RCTs. First, mandatory pre-registration on platforms like ClinicalTrials.gov or PROSPERO
5 should be enforced by journals and funding bodies to mitigate selective reporting bias and
6 enhance transparency. Second, trials should prioritize validated aesthetic outcome tools, such
7 as the FACE-Q scales or standardized photographic assessments with inter-rater reliability
8 metrics, to ensure subjective endpoints like patient satisfaction and facial rejuvenation are
9 measured meaningfully. Third, multicenter collaborations, potentially facilitated through
10 professional societies, can address sample size limitations by pooling diverse patient cohorts,
11 improving generalizability, and distributing expertise across institutions.

12 Improving methodological transparency requires journals to go beyond passive endorsement
13 of reporting guidelines. In aesthetic surgery, where robust RCTs remain limited, embedding
14 the CONSORT checklist into editorial workflows could serve as a critical safeguard for study
15 quality. Additionally, researchers must be trained in trial reporting standards, especially in
16 surgical disciplines where technical complexity may obscure methodological transparency.
17 Institutional mandates and funding bodies should also condition support on pre-registration
18 and protocol publication.³⁷⁻³⁹

19 The included RCTs encompassed a diverse range of facelift-related interventions, from
20 surgical techniques like traditional rhytidectomy with adjuncts (e.g., lipofilling, tranexamic
21 acid) and varied anesthesia methods, to minimally invasive approaches such as thread lifts,
22 fibrin glue, Arnica montana, atenolol, and corticosteroids. This clinical heterogeneity
23 highlights the challenge of standardizing outcomes and reinforces the importance of
24 transparent reporting to help surgeons interpret and apply the evidence in daily practice.

25 This review has several limitations. First, the relatively small number of eligible facelifts RCTs
26 ($n = 10$) may limit the generalizability of our findings, although it reflects the overall scarcity
27 of high-level evidence in this field. The paper focused on facelift RCTs reported in English,
28 potentially excluding relevant work from non-English-speaking countries. This language
29 restriction may introduce language publication bias by potentially excluding relevant work
30 from non-English-speaking countries, which could underrepresent diverse surgical techniques,

1 patient populations, or outcomes. We also did not assess unpublished or grey literature, which
2 may contain trials that were registered but not reported due to negative findings. While our
3 analysis provides valuable insights into current reporting practices, it is descriptive in nature
4 and not intended to support definitive clinical guidance. The small sample size, combined with
5 considerable heterogeneity in study interventions and outcomes, further limits the ability to
6 perform meta-analyses or draw robust comparative conclusions. Second, the evaluation of
7 CONSORT compliance was inherently subjective, despite the use of independent reviewers
8 and consensus discussions. The variability in CONSORT adherence may reflect journal policy
9 or author awareness rather than inherent trial quality. Third, our analysis did not assess the
10 clinical outcomes or effect sizes reported in the trials, focusing instead solely on
11 methodological reporting. Another notable limitation observed across the included studies is
12 the predominance of short-term, complication-focused outcome measures—such as edema,
13 bruising, and hematoma—rather than outcomes aligned with the primary goals of facelift
14 surgery, namely aesthetic improvement and patient satisfaction. Only a minority of trials
15 evaluated these patient-centred or appearance-related endpoints. This gap in outcome selection
16 limits the clinical applicability of the evidence, as complication rates alone do not reflect the
17 true success of aesthetic procedures. However, it is essential to distinguish between subjective
18 and objective assessments when quantifying results. Patient-reported outcomes, such as those
19 from validated questionnaires (e.g., FACE-Q), measure satisfaction and perceived
20 improvements but remain inherently subjective and do not provide a quantitative evaluation
21 of physical changes, such as how closely the result approximates an 'ideal normal' anatomy.
22 Although patient satisfaction is crucial for patient-centered care, relying solely on these
23 without complementary objective metrics (e.g., standardized imaging or anthropometric
24 measurements) may limit the ability to objectively assess surgical efficacy. Future facelift
25 RCTs should incorporate standardised, validated aesthetic outcome measures and patient-
26 reported outcome instruments to better capture the multidimensional impact of surgery. This
27 aligns with broader calls within the surgical literature for more meaningful and reproducible
28 endpoints in aesthetic research.^{29,40} Additionally, while studies were excluded if they lacked
29 fundamental information such as population characteristics or outcome data, this was done
30 solely to ensure that CONSORT adherence could be objectively and consistently assessed. We
31 acknowledge that this may introduce a degree of selection bias toward more completely

1 reported studies, and we have highlighted this as a potential limitation in interpreting overall
2 compliance rates. Moreover, most trials prioritised short-term complications (e.g., oedema,
3 bruising) rather than the outcomes that matter most, the overall aesthetic improvement and
4 patient satisfaction. While inherently subjective, these endpoints can be assessed rigorously
5 by pre-specifying outcomes and timepoints; standardizing photography and rating rubrics;
6 using blinded, calibrated multi-rater panels with reported inter-rater reliability (e.g., ICC);
7 incorporating validated patient-reported measures with MCIDs; and powering studies
8 accordingly. Embedding these practices within CONSORT enhances transparency while
9 preserving the central role of expert judgment and patient perception. Lastly, while the
10 inclusion of studies published before 2017 allowed us to analyse reporting trends over time, it
11 introduced variability due to evolving guideline standards. While this review focuses on RCTs
12 and CONSORT adherence, it is important to recognise that randomised trials account for fewer
13 than 5% of published studies in plastic surgery.⁴¹ The majority of studies in the field are
14 observational and thus subject to the Strengthening the Reporting of Observational Studies in
15 Epidemiology (STROBE) reporting guidelines. Agha et al. (2016) found that reporting quality
16 in observational plastic surgery studies was similarly suboptimal, with poor adherence to key
17 STROBE items.⁴² This parallel highlights a broader issue of inadequate methodological
18 transparency across study designs in plastic surgery and reinforces the need for more rigorous
19 enforcement of reporting standards by journals, editors, and peer reviewers alike. It is also
20 important to note that an updated version—the CONSORT 2025 extension—was released
21 during our project. While our assessment reflects adherence to the 2017 framework, future
22 research should consider aligning with the latest 2025 recommendations to ensure up-to-date
23 reporting standards and methodological rigour.⁴³

24 Ethical constraints and technical heterogeneity will always complicate surgical RCTs, yet
25 these barriers do not excuse inadequate documentation of the methods that are used. Robust
26 prospective registries, standardized aesthetic outcome measures, and well-powered cohort
27 studies can complement RCTs, but only if they, too, meet high reporting standards. To narrow
28 the gap between clinical practice and evidence-based care, stakeholders must act in concert.
29 Investigators should pre-register trials, publish protocols, and adopt CONSORT checklists as
30 routine practice. Journals and peer reviewers should enforce adherence as a condition of
31 publication, and funding bodies should require compliance as part of grant oversight. By

1 embracing these measures, the facelift community can move beyond tradition-driven
2 innovation toward a transparent, reproducible, and patient-centred body of clinical research
3 that truly informs surgical decision-making.

4

5 CONCLUSIONS

6 This systematic review highlights an important opportunity in contemporary aesthetic surgery:
7 while demand for facelift procedures continues to rise and progress has been made through
8 the conduct of a small but growing number of RCTs, the supporting evidence base remains
9 limited and inconsistently reported, underscoring the need for continued methodological rigor.
10 Even within this small cohort (10 RCTs), mean adherence to the CONSORT checklist was just
11 56%, and particularly low compliance in areas such as tailored interventions (10%), trial
12 registration (20%), and trial protocol (30%). These omissions compromise transparency,
13 restrict reproducibility, and hinder reliable evidence synthesis.

14

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- 11

12 **FIGURE LEGENDS**

13
14 **Figure 1.** PRISMA flow chart of the selected studies.

15
16 **Figure 2.** Forest plots of proportion of female patients; squares show study estimates (size \approx
17 study weight), along with the diamond pooled estimate from a random-effects model.

18
19 **Figure 3.** Forest plots of the pooled mean age; squares show study estimates (size \approx study
20 weight), along with the diamond pooled estimate from a random-effects model.

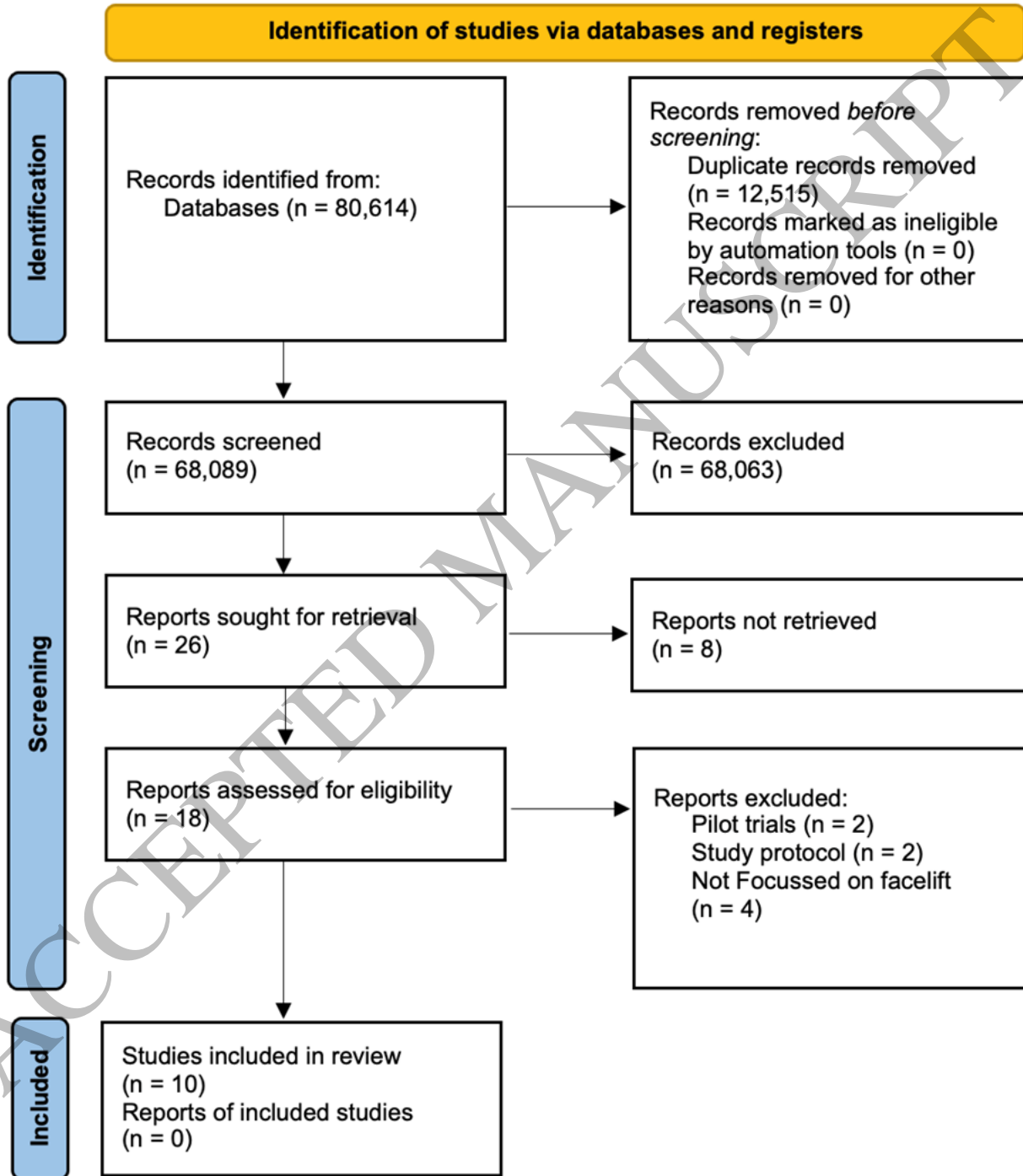
21
22 **Figure 4.** Bar chart showing the percentage adherence to each CONSORT checklist item
23 across the included studies.

24
25 **Figure 5.** Scatter plot showing the relationship between CONSORT compliance scores and
26 journal impact factors, with a regression line. Spearman correlation was concordant and non-
27 significant.

28
29 **Figure 6.** Scatter plot showing the relationship between CONSORT compliance scores and
30 the number of authors, with a regression line. Interpretation: numerically higher adherence

1 with more authors, but not statistically significant; results should be interpreted cautiously
2 given small sample size.

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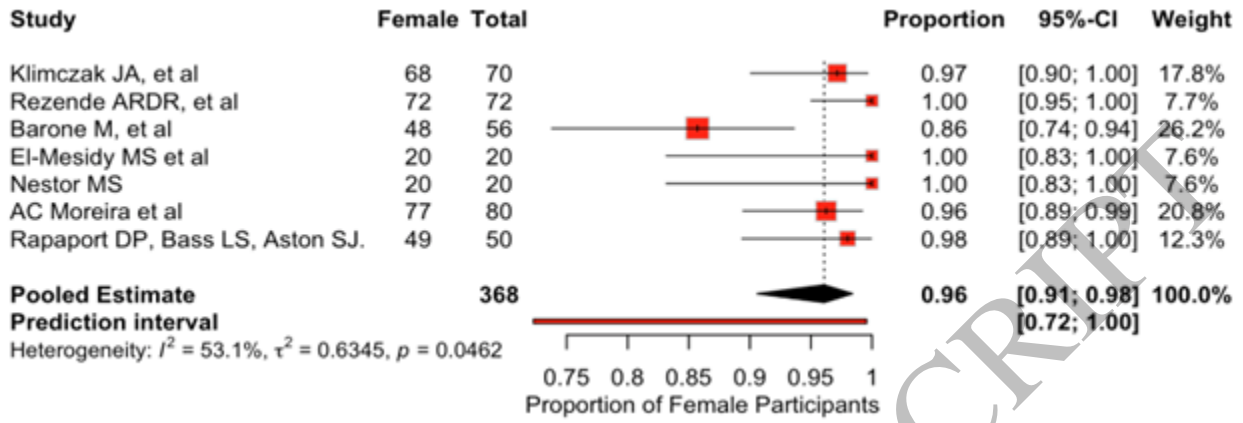
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Figure 1
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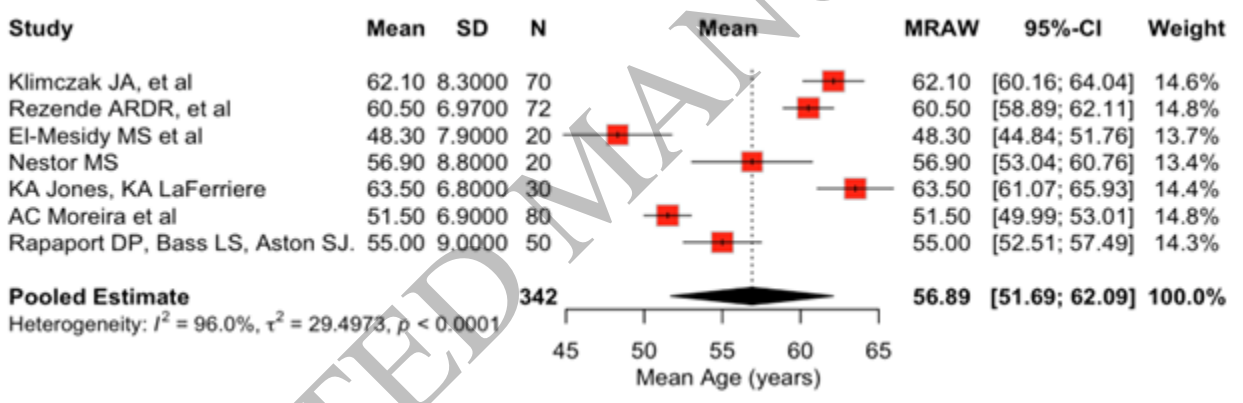
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Figure 2
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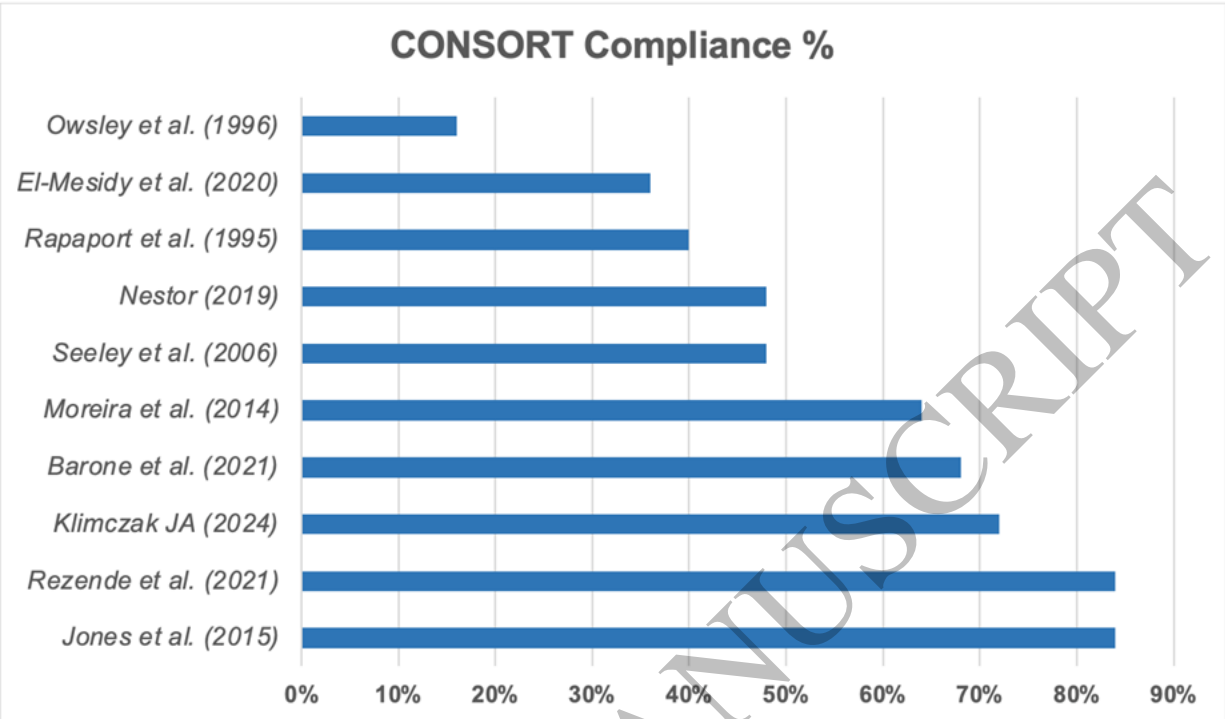
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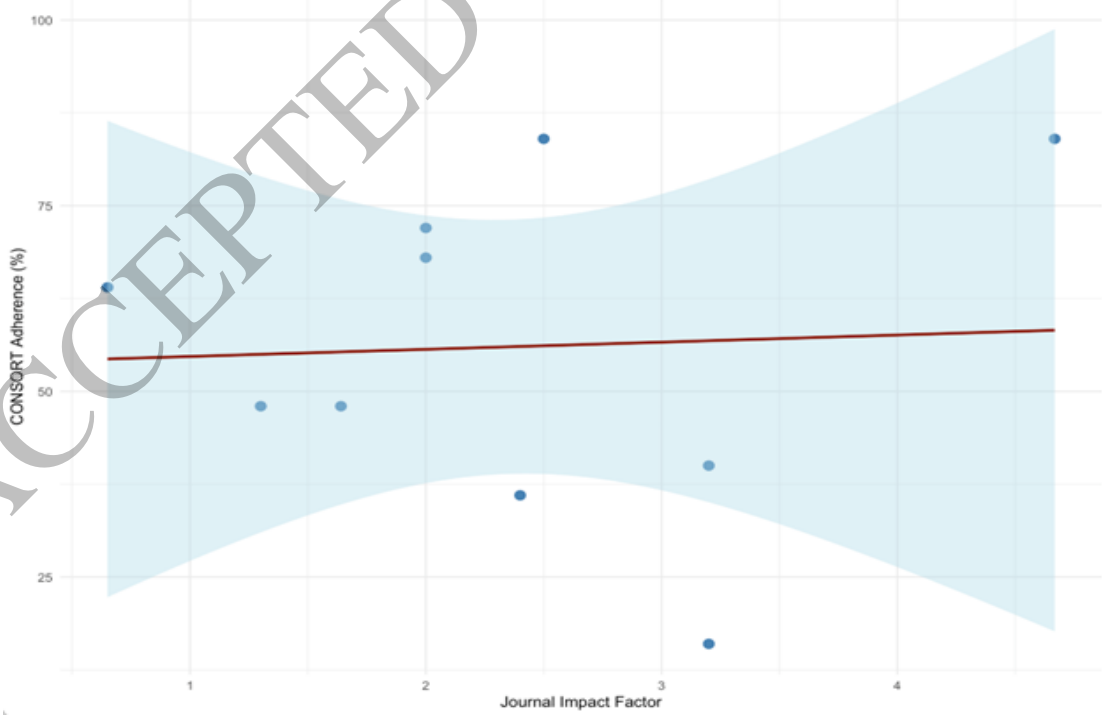
Figure 3
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Figure 4
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Figure 5
165x123 mm (x DPI)

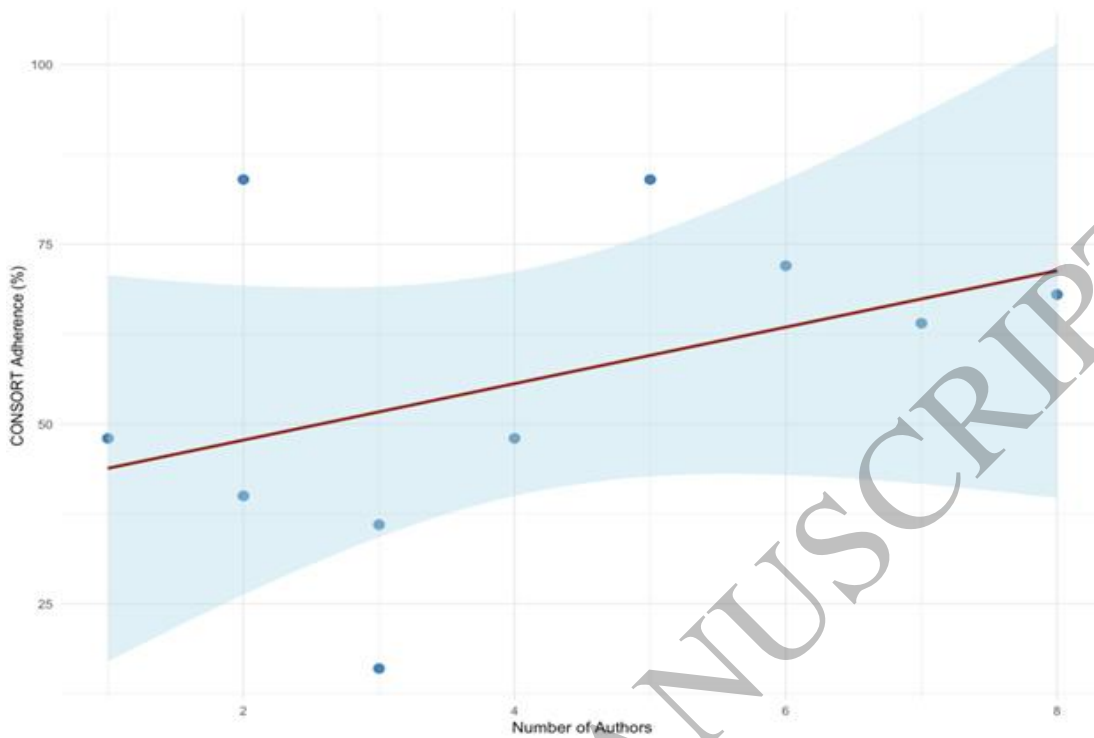


Figure 6
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Study	Country	Sample (n)	Mean Age	M:F	Journal	Author(s) (n)	Focus
Klimczak JA (2024)	USA	70	62.1 ± 8.3	2:68	<i>Facial Plastic Surgery & Aesthetic Medicine</i>	6	Evaluating the effectiveness of TXA added to tumescent anesthetic in reducing postoperative ecchymosis in rhytidectomy patients
Rezende et al. (2021)	Brazil	72	60.5 ± 6.97	0:72	<i>Journal of Plastic, Reconstructive & Aesthetic Surgery</i>	5	Comparing the efficacy of autologous fibrin glue/PPP versus suction drainage in preventing hematoma

							and seroma following rhytidectomy procedures
Barone et al. (2021)	Italy	56	56.5	8:48	<i>Aesthetic Plastic Surgery</i>	8	Comparing the outcomes of midface lift alone vs midface lift combined + lipofilling in patients with negative lower eyelid vectors.
El-Mesidy et al. (2020)	Egypt	20	48.3 ± 7.9	0:20	<i>Archives of Dermatological Research</i>	3	Comparing the efficacy of HA cheek fillers and thread lifting in improving the appearance of nasolabial folds.
Nestor (2019)	USA	20	56.9 ± 8.8	0:20	<i>The Journal Of Clinical And Aesthetic Dermatology</i>	1	Focusing on evaluating the short- and long-term effects of absorbable suspension sutures on facial lift and patient satisfaction.
Jones et al. (2015)	USA	30	63.5 ± 6.8	Not mentioned	<i>JAMA Facial Plastic Surgery</i>	2	Comparing postoperative outcomes in patients undergoing lower rhytidoplasty using two anesthesia methods: combined propofol and ketamine hydrochloride anesthesia with bispectral index monitoring (PKA-BIS

							protocol) versus inhalational anesthesia (IA), focusing on nausea, vomiting, pain, recovery time, and cost.
Moreira et al. (2014)	Brazil	80	51.5 ± 6.9	3:77	<i>The Journal of the Brazilian College of Surgeons</i>	7	Evaluating the effectiveness of perioperative atenolol in reducing the incidence of hematoma after rhytidoplasty by comparing heart rate, blood pressure, and hematoma formation in patients who received atenolol versus those who did not.
Rapaport et al. (1995)	USA	50	55 ± 9	1:49	<i>Plastic and Reconstructive Surgery</i>	2	Investigating the effectiveness of steroids in reducing postoperative swelling after facialplasty
Seeley et al. (2006)	USA	29	Not mentioned	Not mentioned	<i>Archives of Facial Plastic Surgery</i>	4	Evaluating the efficacy of homeopathic Amica montana as an antiechymotic agent in reducing bruising during face-lift surgeries.
Owsley et al. (1996)	USA	30	56	Not mentioned	<i>Plastic and Reconstructive Surgery</i>	3	Investigating whether corticosteroid medication reduces

1 **Table 1:** Characteristics of Included facelift RCTs.

- 2 Abbreviations:
3 n: number.
4 M:F: male:female numbers.
5 TXA: tranexamic acid.
6 PPP: Platelet-Poor Plasma.
7 HA: hyaluronic acid.

8
9

Checklist Item	Compliance (%)
Detailed intervention description for replication	100
Statistical methods used for primary and secondary outcomes	100
Pre-specified primary and secondary outcomes, how and when assessed	90
Scientific background and explanation of rationale	90
Blinding of participants, care providers, and outcome assessors	90
Study limitations, addressing potential biases	90
Sources of funding and role of funders	90
Description of trial design (parallel, factorial, etc.) and allocation ratio	80
Eligibility criteria for participants and care providers	80
Address issues related to comparator choice, lack of blinding, and expertise differences	80
Identification as a randomized trial in the title	70
Structured summary of trial design, methods, results, and conclusions	60
Recruitment dates and follow-up periods	60
How sample size was determined	50
Mechanism for allocation concealment	50
Flow of participants, losses and exclusions	50
External validity and generalizability	50
Method used to generate random allocation sequence	40

Generalizability according to care providers and centers involved	40
Full trial protocol	30
Trial registration number and registry	20
Details on tailoring interventions to individual participants, standardization, and adherence	10
If blinding was not possible, describe methods to limit bias	N/A
Report the delay between randomization and intervention initiation	N/A

1 **Table 2:** Per-Item Compliance (%) (sorted by percent compliant, highest to lowest)

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