The Concept of Platform Switching to Preserve Peri-implant Bone Level: Assessment of Methodologic Quality of Systematic Reviews

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Purpose: *To assess the methodologic quality of systematic reviews on the effect of platform switching upon peri-implant marginal bone loss.* ***Materials and Methods:*** *An electronic literature search of several databases was conducted by two reviewers. Articles were considered for quality assessment if they met the following inclusion criterion: systematic reviews that aimed at investigating the effect of platform switching/mismatch on marginal bone levels around dental implants. Two independent examiners evaluated the review publications using two quality-ranking scales (assessment of multiple systematic reviews [AMSTAR] and Glenny checklist). Descriptive statistics were used to summarize the results, and Cohen's kappa coefficients were calculated to appraise interrater agreement of each checklist.* ***Results:*** *Overall, five systematic reviews (including three of them with meta-analysis) were evaluated. The mean AMSTAR score ± standard deviation was 8.4 ± 2.6 (range, 4 to 11), and the mean Glenny score was 10.8 ± 2.9 (range, 6 to 14), showing high statistical correlation (r_s = 0.98, P = .005). Cohen interexaminer test yielded values of κ = 0.88 and κ = 0.86 for the AMSTAR and Glenny checklist, respectively. The AMSTAR items rated positive in 78%, whereas 18% met the criteria for "no" and 4% were "not applicable." Only one review article met all criteria. Items of the Glenny checklist rated positive in 73% and negative in 27%. All but one study with the lowest quality scores (finding no difference) demonstrated a clinical benefit of implant platform switching in preserving the peri-implant marginal bone loss.* ***Conclusion:*** *According to the quality-ranking scales appraised, substantial methodologic variability was found in systematic assessment of benefits with the platform switching concept to preserve peri-implant bone level. High-quality systematic reviews, however, generally favored platform switching over platform matching.*
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Key words: *bone regeneration, dental implants, dental implant-abutment design, evidence-based dentistry, platform switching, systematic review*

The concept of platform switching was proposed to preserve peri-implant marginal bone loss.[1–4] This concept is based on the theory that a narrower abutment, and the consequent mismatch established with the implant neck, may reduce the vertical component of the biologic width by introducing a horizontal distance to harbor the inflammatory cell infiltrate.[5] Furthermore, as finite element analysis showed, the inward portion of the abutment might distribute the biomechanical stress toward the central axis of the implant.[6] According to these facts and as long as it enhances the final functional and esthetic outcomes, it seems reasonable that platform switching may enable dental implants to be placed in a closer horizontal position to adjacent teeth or implants than previously recommended.[7–11]

Both systematic reviews and meta-analyses aimed to identify, assess, and summarize the in vivo research findings to establish a guideline or a useful decision-making tree.[12] Both types of studies show the effectiveness of the established approaches.[13,14] Assuming that randomized controlled trials represent the highest level of evidence within interventional studies, systematic reviews must be regarded as having the highest quality in evidence-based science. Nonetheless, these are not always meticulously conducted, and thus may carry a potential risk of bias. Accordingly, guidelines such as Preferred Reporting for Systematic

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Reviews and Meta-Analyses (PRISMA) have been proposed to assist the researcher in designing and conducting systematic reviews to stress the importance of the methodology to the final outcome. This fact is of paramount importance inasmuch as clinicians frequently rely on data from systematic reviews in daily practices.[15] Strikingly, 87% of clinicians who are not necessarily related to research modify their practice after reading scientific publications.[16] Therefore, the responsibility of researchers is to provide the most accurate and reliable evidence.

Not all systematic reviews are of sufficient methodologic quality, and hence often mislead clinicians in decision making. Indeed, numerous topics in dentistry remain to be explored, and thus, no well-designed studies have been carried out. In these cases, systematic reviews might be helpful not only to show the current status but also to encourage clinicians and researchers to investigate a particular matter. Consequently, the quality of systematic reviews must also be assessed to ascertain the real value that might be provided to the scientific community. As such, numerous guidelines have been developed. In 1996, the Quality of Reporting of Meta-Analyses (QUOROM) conference addressed a standard for systematic reviews because of the increasing number of such reviews performed.[17] Since then, many others have been proposed but because of their questionable interexaminer reliability, they are rarely used in dentistry. The assessment of multiple systematic reviews (AMSTAR) tool[18] and the checklist developed by Glenny and coworkers[19] have overcome these shortcomings as well as proven to be accurate when applied by more than one referee. Hence, this study aimed to assess the methodologic quality of systematic reviews on the preservation of marginal bone level around dental implants applying the platform switching concept. Results from this study may assist the clinician in accurately interpreting the value of this novel, and as such, controversial concept in implant dentistry.

MATERIALS AND METHODS

Information and Screening Processes

The present authors conducted an independent, calibrated, electronic literature search of several databases, including MEDLINE, EMBASE, Web of Science, Cochrane Central Register of Controlled Trials, and Cochrane Oral Health Group Trials Register databases for articles written in English from January 2000 to November 2013. Combinations of controlled terms (MeSH and EMTREE) and key words were used whenever possible. A PubMed search was conducted in which "[mh]" represented the MeSH terms and "[tiab]" represented title and/or abstract. The search terms were as follows: ("Dental Implant-Abutment Design" [mh] OR "Dental Implant Platform Switching" [ti] OR ("Dental Implants" [mh] AND ("Platform Switching" [tiab]) AND (Dental Abutments [tiab]) AND English [la] NOT (letter [pt] OR comment [pt] OR editorial [pt]) NOT ("animals" [mh] NOT "humans" [mh]). In addition, a manual search was performed of implant-related journals, including *Clinical Implant Dentistry and Related Research*, *International Journal of Oral & Maxillofacial Implants*, *Clinical Oral Implants Research*, *Implant Dentistry*, *Journal of Dental Research*, *Journal of Clinical Periodontology*, *Journal of Periodontology*, and *The International Journal of Periodontics & Restorative Dentistry*, from January 2013 up to March 2014, to ensure a thorough screening process. This screening process methodology has been reported in previous systematic reviews performed by the present authors.[20–22]

Eligibility Criteria

Articles were included in this qualitative assessment if they clearly met the following inclusion criterion: systematic reviews aimed at investigating the effect of implant platform switching/mismatching on marginal bone levels. Original clinical and animal trials were excluded. In addition, narrative literature reviews were also excluded (defined as those without a systematic approach to literature search and selection). References of the excluded articles were also checked to seek studies that fulfilled the present inclusion criteria.

Quality Assessment

The qualitative evaluation was conducted by using two different analyses as proposed by recent assessments in periodontics and oral implantology.[23–25] First, the checklist advocated by Glenny and coworkers[19] in 2003 was used, which consists of 15 criteria. In addition, the AMSTAR[18] tool was used to study not only the quality of the available systematic reviews on implant platform switching, but also the reliability of this evaluation approach. Both examiners scored these analyses, and in case of disagreement, discussed the issue until a consensus was reached.

Data Analyses

For the primary purpose, all items that had a score of "yes" for both qualitative assessments were summarized. Thus, each item counted as 1. The rest of the scores ("no," "no applicable," or "can't tell") were included in the analyses but not in the final scores, or in other words, counted as 0. According to this approach to the assessments, which coincides with the original proposals,[18,19] the maximum score that could be obtained was 11 with the AMSTAR and 15 with the Glenny et al checklist. The latter checklist has no range

Table 1 Characteristics and Summary of the Systematic Reviews Included in the Present Quality Assessment

Author(s)	Journal (JCR publication year IF)	Studies included (n)	Design of studies included	Purpose
Annibali et al (2012)[3]	JCP (2.99)	10	RCT	To compare implant survival rate and marginal bone loss around PS and PM implants
Al-Nsour et al (2012)[36]	IJOMI (1.77)	9	PCT + RCT	To evaluate the effect of PS on marginal bone loss
Atieh et al (2010)[4]	JP (2.19)	10	CCT + RCT	To compare implant survival rate and marginal bone loss around PS and PM implants
Bishti et al (2014)[37]	AOS (1.41)	23	CCT + RCT	To determine the effect of PS and abutment materials upon peri-implant tissue response
Strietzel et al (2014)[35]	COIR (3.43)	22	PCT + RCT	To compare marginal bone level around PS and PM implants

JCR = journal citation reports; IF = impact factor at the year of publication; JCP = *Journal of Clinical Periodontology*; IJOMI = *International Journal of Oral & Maxillofacial Implants*; JP = *Journal of Periodontology*; AOS = *Acta Odontologica Scandinavica;* COIR = *Clinical Oral Implants Research*; RCT = randomized clinical trials; CCT = comparative clinical trials, PCT = prospective clinical trials; PS = platform switching; PM = platform matching.

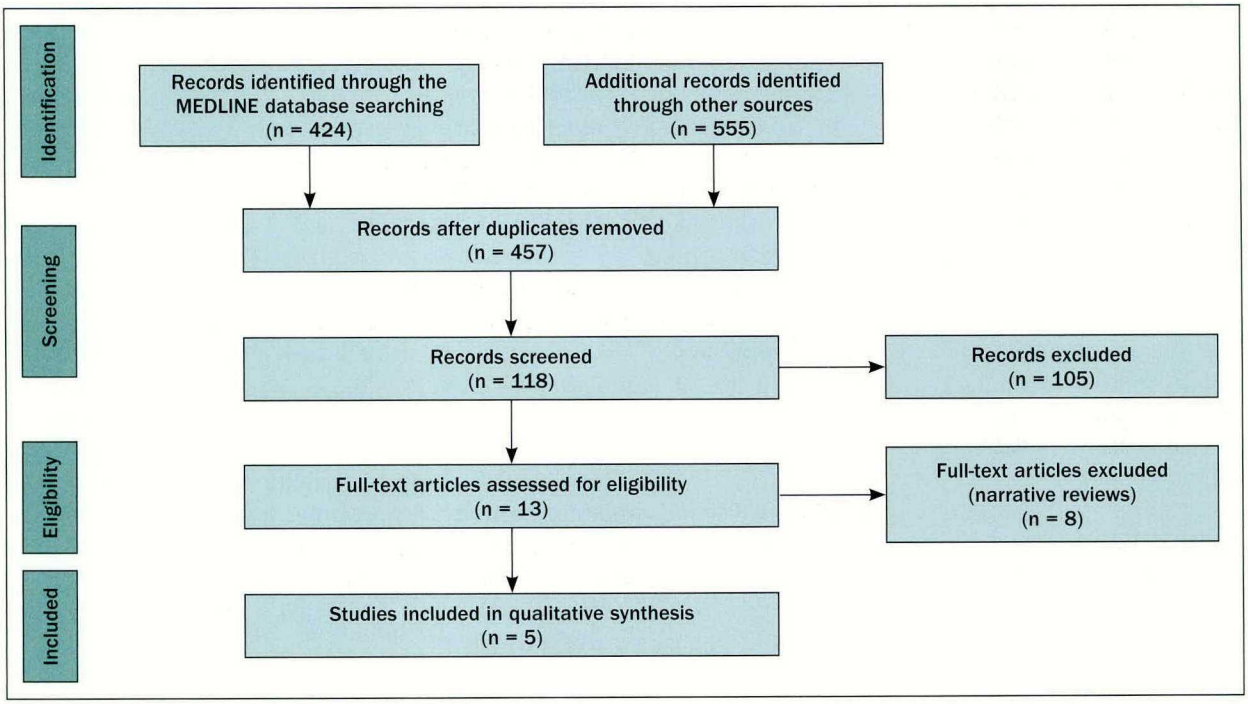

Fig 1 Flow chart of the screening process.

for determining quality, but the AMSTAR characterizes quality at three levels depending on the overall score obtained: high (8–11), medium (4–7), and low (0–3).[26] For better understanding, descriptive statistics were used to summarize the results. Also, to appraise the initial interrater agreement of each checklist, Cohen kappa coefficients were calculated accordingly, with $\kappa = 1$ indicating complete concordance and $\kappa = 0$ indicating that no match was found.

Results	Main conclusion	AMSTAR checklist score (11 items)	Glenny checklist score (15 items)
No statistically significant differences for survival rate between PS and PM, but smaller amount of bone loss around PS implants	PS is useful in limiting bone loss Interpretation should be cautiously exercised	11	14
Seven of the nine studies included showed the benefits of PS to preserved marginal bone	PS is effective in preserving bone loss Cautions must be exercised when interpreting the results	7	9
PS decreases marginal bone loss compared to PM implants, but no differences in survival rates Implant-abutment diameter difference of ≥ 0.4 mm better bone response	PS assists to preserve marginal bone and soft tissue levels Bone loss is inverse to the implant-abutment mismatch	10	12
Tissue biotype and architecture, implant abutment design, and abutment material might play a role in preserving marginal bone	Current evidence fails to provide enough evidence about the effectiveness of different implant-abutment designs	4	6
Less marginal bone loss around PS implants A meta-analysis on RCT showed statistically significantly less bone loss around PS implants	PS is effective in preserving bone loss High risk of bias Still scarcity of long-term studies	10	13

RESULTS

Study Selection

A total of 989 records were identified through all the electronic searches (434, 291, 259, and 5 articles were found in the MEDLINE, EMBASE, Web of Science, and Cochrane Oral Health Group Trials Register databases, respectively). After duplicates were excluded, there were 457 records of potential interest. After excluding articles based on their titles and abstracts, 118 articles were reviewed. Finally, 13 full-text articles were assessed for eligibility. Of these, eight were eventually excluded for not meeting the inclusion criteria.[27–34] In other words, literature/narrative reviews were removed from the final assessment list (Fig 1).

Characteristics of the Reviews Included (Table 1)

Four systematic reviews[3,4,35,36] clearly aimed at studying the effect of platform switching on peri-implant bone, and one did not focus explicitly on the platform switching concept.[37] Nevertheless, all reviews included randomized controlled trials (RCT). In addition, four also included nonrandomized, comparative (prospective/retrospective), controlled, clinical trials.[4,35–37] The range of included studies varied from 9[36] to 23,[37] which was directly related to the year of publication ($P = .03$). This fact points to the increased research on the effect of implant platform switching. Three studies included were systematic reviews with meta-analyses,[3,4,35] and the other two were only systematic reviews.[36]

Interrater Agreement

Cohen's kappa (κ) coefficient was used for both checklists to statistically measure the interrater agreement for qualitative items.[38] For the AMSTAR checklist, the κ coefficient was 0.88, and for the Glenny et al checklist 0.86, showing almost perfect interexaminer agreement.[39] A second rating yielded $\kappa = 0.98$ and $\kappa = 0.97$ for the AMSTAR and Glenny et al checklists, respectively. In cases of disagreement, consensus was reached by discussion between the two examiners. Accordingly, both quality assessments could reliably assess the quality of systematic reviews on the effect of platform switching in preserving peri-implant bone loss.

Quality Assessment

Tables 2 and 3 and Figs 2 and 3 display the quality assessment scores obtained in the present study using AMSTAR and Glenny et al checklists.[19,40] The mean AMSTAR score was 8.4 ± 2.6 (range, 4 to 11), and the mean Glenny-score 10.8 ± 2.9 (range, 6 to 14), showing a high correlation ($r_s = 0.98$, $P = .005$). Only three items on the AMSTAR checklist were found in all the systematic reviews assessed ("Was a priori design provided? The research question and inclusion criteria should be established before the conduct of the review," "Were the characteristics of the included studies provided?" and "Was the conflict of interest included?").[40] The other three items were found in 80% of the studies included ("Was there duplicate study selection and data extraction?" "Was the scientific quality of the included

Table 2 AMSTAR Checklist and Percentage of Systematic Reviews that Met the Criteria Established

AMSTAR checklist	Yes (%)	No (%)	Can't answer(%)	NA (%)
1. Was a priori design provided? The research question and inclusion criteria should be established before the conduct of the review.	100	0	0	0
2. Was there duplicate study selection and data extraction? There should be at least two independent data extractors, and a consensus procedure for disagreements should be in place.	80	20	0	0
3. Was a comprehensive literature search performed? At least two electronic sources should be searched. The report must include years and databases used (eg, Central, EMBASE, and MEDLINE). Key words and/or MESH terms must be stated, and where feasible the search strategy should be provided. All searches should be supplemented by consulting current contents, reviews, textbooks, specialized registers, or experts in the particular field of study, and by reviewing the references in the studies found.	60	40	0	0
4. Was the status of publication (ie, grey literature) used as an inclusion criterion? The authors should state that they searched for reports regardless of their publication type. The authors should state whether or not they excluded any reports (from the systematic review), based on their publication status, language, etc.	60	40	0	0
5. Was a list of studies (included and excluded) provided? A list of included and excluded studies should be provided.	60	40	0	0
6. Were the characteristics of the included studies provided? In an aggregated form such as a table, data from the original studies should be provided on the participants, interventions, and outcomes. The ranges of characteristics in all the studies analyzed, eg, age, race, sex, relevant socioeconomic data, disease status, duration, severity, or other diseases should be reported.	100	0	0	0
7. Was the scientific quality of the included studies assessed and documented? A priori methods of assessment should be provided (eg, for effectiveness studies if the author(s) chose to include only randomized, double-blind, placebo-controlled studies, or allocation concealment as inclusion criteria); for other types of studies, alternative items will be relevant.	80	20	0	0
8. Was the scientific quality of the included studies used appropriately in formulating conclusions? The results of the methodologic rigor and scientific quality should be considered in the analysis and the conclusions of the review, and explicitly stated in formulating recommendations.	80	20	0	0
9. Were the methods used to combine the findings of studies appropriate? For the pooled results, a test should be done to ensure the studies were combinable, to assess their homogeneity (ie, chi-squared test for homogeneity, I2). If heterogeneity exists, a random effects model should be used and/or the clinical appropriateness of combining should be taken into consideration (ie, is it sensible to combine?).	60	0	0	40
10. Was the likelihood of publication bias assessed? An assessment of publication bias should include a combination of graphical aids (eg, funnel plot, other available tests) and/or statistical tests (eg, Egger regression test).	60	40	0	0
11. Was the conflict of interest included? Potential sources of support should be clearly acknowledged in both the systematic review and the included studies.	100	0	0	0

NA = not applicable.

Table 3 Glenny et al[19] Checklist and Percentage of Systematic Reviews That Met the Criteria Established

Glenny et al checklist	Yes (%)	No (%)	Can't tell (%)
A. Did review address a focused question?	100	0	0
B. Did authors look for appropriate articles?	100	0	0
C. Do you think authors attempted to identify all relevant studies?	100	0	0
D. Search for published and unpublished literature?	20	80	0
E. Were all languages considered?	20	80	0
F. Was any hand searching carried out?	100	0	0
G. Was it stated that the inclusion criteria were carried out by at least two reviewers?	100	0	0
H. Did reviewers attempt to assess the quality of the included studies?	80	0	0
I. If so, did they include this in the analysis?	60	40	0
J. Was it stated that the quality assessment was carried out by at least two reviewers?	20	80	0
K. Are the results given in a narrative or pooled statistical analysis?	100	0	0
L. If the results have been combined, was it reasonable to do so?	60	0	0
M. Are the results clearly displayed?	80	20	0
N. Was an assessment of heterogeneity made and reasons for variation discussed?	60	40	0
O. Were results of review interpreted appropriately?	100	0	0

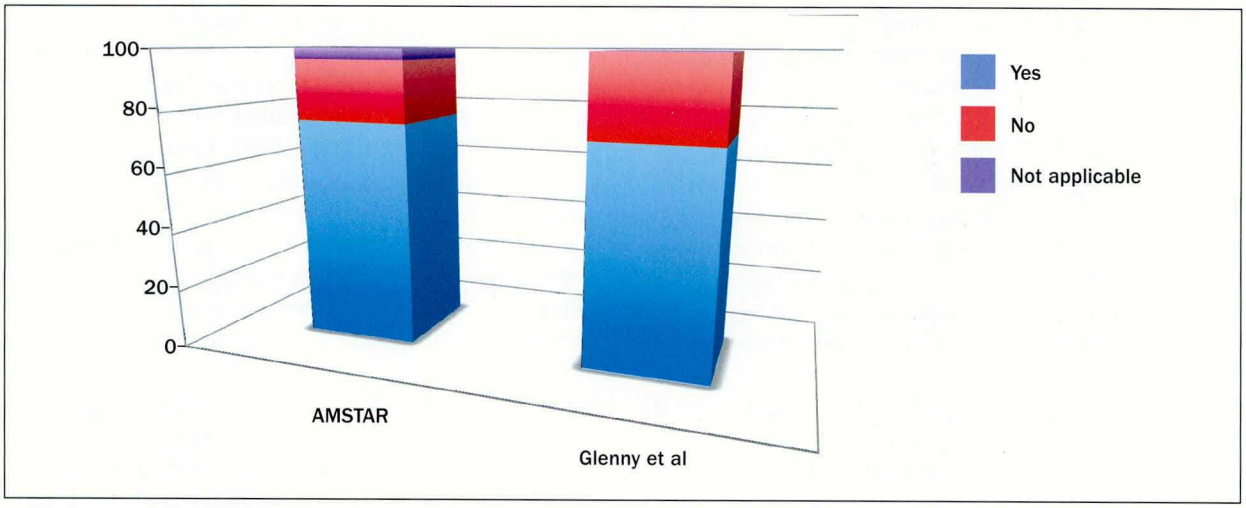

Fig 2 Bar graphs displaying the percentage (%) of items that met the criteria for both checklists.

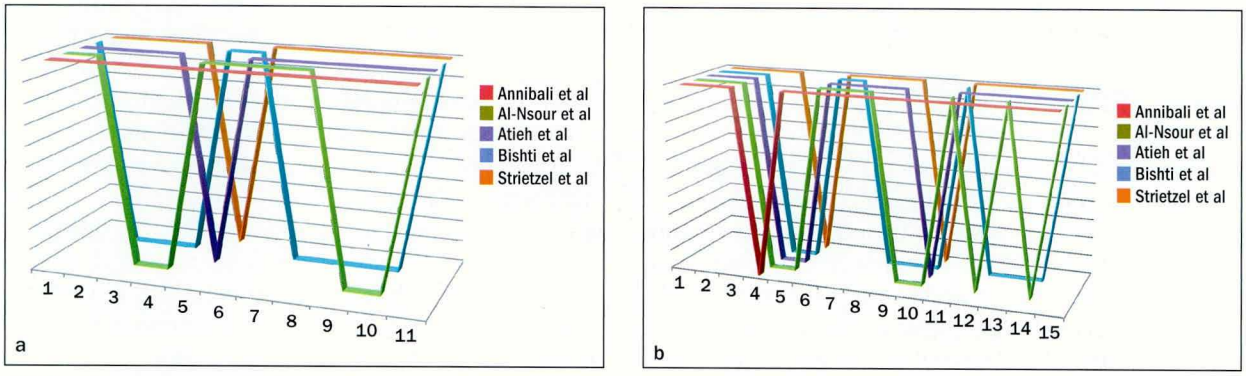

Fig 3 Three-dimensional graphs displaying the weaknesses and strengths of the studies assessed: (*a*) AMSTAR checklist and (*b*) Glenny et al checklist. Horizontal axis displays each item from the checklist. Vertical axis displays score for that particular item (10) or not (0).

studies assessed and documented?" and "Was the scientific quality of the included studies used appropriately in formulating conclusions?").[40] The rest of the items were only seen in 60% of the articles included ("Was a comprehensive literature search performed?" "Was the status of publication used as an inclusion criterion?" "Was a list of studies provided?" "Were the methods used to combine the findings of studies appropriate?" "Was the likelihood of publication bias assessed?").[40] It is also worth noting that although three articles were scored as > 7,[3,4,35] the other two obtained scores of < 7,[36,37] displaying high (60%) to medium (40%) quality.[26] Only one study[3] met all the criteria and two failed in one item.[4,35] The authors' understanding is that the two less than ideal articles[36,37] failed to reach higher quality because the results were not pooled, and hence systematic evaluation could not be conducted. This matter is reflected in the nonapplicability of item 9 ("Were the methods used to combine the findings of studies appropriate?")[40] to these two less than ideal studies.[36,37] Thus, an overall 78.14% of the articles screened met the criteria to be classified as "yes", and 20.23% and 3.63% met the criteria for "no" and "not applicable," respectively (Table 2).

Seven items on the Glenny et al[19] checklist were included in 100% of the studies ("Did the review address a focused question?" "Did authors look for appropriate papers?" "Do you think authors attempted to identify all relevant studies?" "Was any hand searching carried out?" "Was it stated that the inclusion criteria were carried out by at least two reviewers?" "Are the results given in a narrative or pooled statistical analysis?" and "Were results of the review interpreted appropriately?").[19] The following two items were included in 80% of systematic reviews ("Did reviewers attempt to assess the quality of the included studies?" and "Was it stated that the quality assessment was carried out by at least two reviewers?").[19] Three items were included

in 60% of the articles ("If so did they include this in the analysis?""If the results have been combined was it reasonable to do so?" and "Was an assessment of heterogeneity made and reasons for variation discussed?").[19] The remaining three items were included in only 20% of studies ("Search for published and unpublished literature?" "Were all languages considered?" and "Was it stated that the quality assessment was carried out by at least two reviewers?").[19] Ultimately, a total of 73.33% of the articles were included in the "yes" group and the remaining 26.66% were "no." Likewise, three articles (≥ 10 items scored "yes")[3,4,35] yielded 87% "yes" answers and two (≤ 10 items) scored studies[36,37] obtained only 50% "yes" (Table 3).

A positive correlation was found between the studies' journal citation report impact factor in the year of publication and their qualitative assessment (Pearson's $R^2 = 0.69$ and $P = .07$, and $R^2 = 0.79$ and $P = .043$ for AMSTAR and Glenny et al checklists, respectively).

DISCUSSION

Systematic reviews and meta-analyses represent the pinnacle of evidence-based science.[26] In the healthcare arena, clinicians develop their daily practice from such study findings.[16] Consequently, comprehensive guidelines must be followed to standardize the methodology to avert biases triggered by unsuitable performance. The development of the AMSTAR[18,40] and Glenny et al[19] checklists have permitted qualitative appraisals of systematic reviews in implant dentistry and periodontology.[24,25,41,42] This fact becomes of paramount importance when a specific topic presents controversy from RCTs,[1,43–45] and is even more meaningful when several systematic reviews with and without meta-analyses are conducted similarly. The present assessment focused its goal on evaluating the quality of systematic reviews on how implant platform switching can preserve marginal bone level based on the controversial results found in the clinical trials.[1,46–49] The results of the present study showed that the findings vary considerably, as reflected in the studies' methodology. One study[37] ranked as the lowest quality based on both guidelines found insufficient evidence to claim a positive effect of implant platform switching on peri-implant bone preservation; however, the remaining four systematic reviews showed a totally opposite conclusion. Based on the quality assessment and results obtained with both checklists, narrower diameter abutments might be beneficial to minimize physiologic peri-implant bone loss. It is important to note that, although minimal, a few limitations were found when conducting systematic reviews with high standards: lack of long-term RCTs, heterogeneity among the studies, and dearth of multifactorial analyses. Hence, findings from the systematic reviews analyzed as well as from the present study must be interpreted cautiously.

As mentioned before, other quality assessment studies using the same guidelines have been conducted in periodontics and implantology.[23–25,41,50] The vast majority of evaluations found high disparity and low quality in the methodology of systematic reviews.[23,24,50] One quality appraisal study demonstrated that the later the systematic review was conducted, the higher was the quality with which it was carried out.[25] This fact might be explained, as discussed by De Buitrago and coworkers,[25] by the rigorous standard established by the journals indexed in the electronic databases. As a matter of fact, the present study found that the higher the journal citation impact factor, the higher was the quality for both guidelines used (Pearson $R^2 = 0.69$ and $P = .07$, and $R^2 = 0.79$ and $P = .043$ for AMSTAR and Glenny et al checklists, respectively). This implies that some journals may more consistently include evidence-based studies on dentistry. This is in partial agreement with previous findings.[25] Results from the present study suggest that overall systematic reviews with and without meta-analyses were of relatively high quality. Nonetheless, it is of paramount importance to remark two facts: *(1)* data to draw and compute systematically clear conclusions are insufficient, and *(2)* items included in the systematic reviews from both checklists were highly variable.

The present data pointed out the inconsistency of some works to be named systematic reviews. As stated by Chambrone and coworkers,[50] "Even if a paper has used some systematic methods to appraise the available source of evidence or to conduct a meta-analysis, an evidence-based approach does not make a study a systematic review." The present study found that the weakness of two[36,37] of five systematic reviews analyzed resided in item 9 of the AMSTAR checklist ("Were the methods used to combine the findings of studies appropriate?"),[40] which could not be applied (not applicable). Consequently, conclusions from both systematic reviews must be interpreted with caution. On the contrary, the strength of all analyzed studies were found to be in accordance with inclusion criteria and aimed question, the characteristics of the included studies, and in providing potential conflicts of interest (AMSTAR items 1, 6, and 11, respectively).[18] Again, this is in partial agreement with previous findings.[23–25] On the other hand, the Glenny et al checklist displays the weaknesses of all the studies. First, only one study searched for unpublished literature (item D),[35] one considered all the languages (item E),[3] and in one the quality assessment was conducted by two reviewers (item J).[3] The rest of the items were included in > 60%

of the studies. As seen with the AMSTAR guideline, two articles[36,37] demonstrated a lower level of evidence; specifically,[37] one study only included 47% of the items. Therefore, future systematic reviews must adopt a methodology to fulfill these crucial requirements to avoid potential risk of bias.

As a secondary aim, the interrater agreement for both guidelines was investigated. This is of paramount importance, because when used in developing systematic reviews, items must be clearly agreed upon by at least two examiners (as stated in Glenny et al checklist item J).[19] As shown in previous studies,[23–25,41] both checklists have high interexaminer agreement (> 85%), making it possible to reliably appraise the quality of systematic reviews. Nevertheless, some limitations existed. First, as evidenced in this study, systematic reviews with meta-analyses must be separated from those with no meta-analytic data. This is of greater relevance in the AMSTAR checklist because it is more focused on the outcome presentation than in the methodology itself (as evaluated by the Glenny et al checklist). Moreover, as generally stated, outstanding literature must be published in an English-language journal. Accordingly, the need to search in other languages should not be an essential prerequisite when performing quality assessments; otherwise as stated earlier, the quality level might decrease. Lastly, it was difficult to evaluate some items on the AMSTAR checklist because of the amount of information included in each question. Consequently, future guidelines should be aimed at precluding biases in interpreting systematic reviews.

Although the effectiveness of platform switching has been demonstrated by high-scoring systematic reviews, further multivariable long-term studies may be performed and analyzed systematically to verify these preliminary findings. In addition, as shown in previous methodologic assessment studies in periodontology and implant dentistry,[23–25,41] the AMSTAR and Glenny et al checklists have proven to be accurate in assessing quality. Future systematic reviews must pay special attention to following the PRISMA, AMSTAR, and Glenny et al guidelines to address the current state of the art. Furthermore, it must be mentioned that systematic reviews also encourage researchers to conduct well-designed clinical trials to clarify the validity of the subjects studied.

CONCLUSIONS

Substantial methodologic variability was found in systematic assessment of the benefits of the platform switching concept to preserve peri-implant bone level, according to the quality-ranking scales appraised. Hence, only findings of high-scoring systematic reviews, which generally favored platform switching over platform matching, can be trusted. Future systematic reviews in the implant dentistry and periodontology arenas must to be conducted following these guidelines (AMSTAR and Glenny et al checklists) to avoid the risk of bias.

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