

Effectiveness of Psychological Nursing Interventions for Reducing Postpartum Anxiety and Stress Among Primiparous Women: Narrative Review and Nurse-Led Preventive Framework

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Received: 4th Aug, 2026; Revised: 15th Sep 2026; Accepted: 23th Oct, 2026; Available Online: 1st Nov, 2026

ABSTRACT

Background: Postpartum anxiety and psychological stress are important but comparatively unrecognized components of perinatal mental health. First-time mothers may experience additional uncertainty related to infant care, breastfeeding, maternal role transition, sleep deprivation and parenting confidence. Nurses are well positioned to identify psychological vulnerability and provide or coordinate preventive and early interventions.

Objective: To critically synthesize contemporary evidence on psychological interventions relevant to nursing practice for reducing postpartum anxiety and stress among primiparous women and to propose a practical nurse-led stepped preventive framework.

Methods:

An updated narrative review was undertaken using PubMed/MEDLINE, Scopus, CINAHL, Web of Science Core Collection and Google Scholar, supplemented by reference-list screening. The search strategy combined terms for postpartum/perinatal anxiety and stress, primiparity/first-time motherhood, nursing and psychological interventions, prevention and maternal psychological outcomes. Foundational studies were retained and contemporary systematic reviews, meta-analyses, guidelines and high-quality intervention studies were prioritized. Because this was a narrative review, findings were synthesized thematically rather than quantitatively pooled.

Results:

Contemporary evidence indicates that psychological interventions can reduce perinatal anxiety symptom severity, although evidence that they prevent the onset of diagnosed anxiety disorders is less consistent. A 2023 systematic review and meta-analysis of 36 studies found a small reduction in anxiety symptom severity (SMD -0.31, 95% CI -0.46 to -0.16) and found beneficial effects for mindfulness and cognitive behavioural therapy (CBT), while four studies assessing anxiety-disorder incidence did not show significant preventive effects. A 2025 systematic review of 20 preventive interventions identified CBT and mindfulness as the most frequently studied approaches, with face-to-face group CBT showing particularly favourable results. Peer-support and digital interventions provide promising complementary delivery models. Current guidance supports standardized screening linked to assessment, treatment, monitoring and follow-up.

Conclusion:

Psychological nursing care should be conceptualized as a stepped, integrated pathway rather than a single intervention. Routine screening, psychoeducation, CBT-informed coping strategies, mindfulness/relaxation, peer and family support, referral and longitudinal follow-up can be integrated into maternal-health services. Future research should prioritize nursing-specific randomized trials, standardized intervention protocols, longer follow-up, culturally adapted programs and evaluation in low-resource settings.

Keywords: postpartum anxiety; perinatal mental health; primiparous women; nursing intervention; cognitive behavioural therapy; psychoeducation; mindfulness; peer support; maternal mental health; narrative review

How to cite this article: Prajapati D, Patel V, Effectiveness of Psychological Nursing Interventions for Reducing Postpartum Anxiety and Stress Among Primiparous Women: Narrative Review and Nurse-Led Preventive Framework. *Int J Drug Deliv Technol.* 2026;16(7):2229-2237. DOI: 10.25258/ijddt.16.7..228

Source of support: Nil

Conflict of interest: None

INTRODUCTION:

Pregnancy, childbirth and early parenthood constitute a major biopsychosocial transition. Although majority of women adapt the situation successfully, but many women can also be accompanied by anxiety, stress, depression and other mental-health problems. Postpartum anxiety is increasingly known as a clinically important condition. A 2025 state-of-the-art review estimated global postpartum-anxiety prevalence at approximately 12.3% and reported associations with primiparous mother and younger maternal age. The same review highlighted continuing gaps in definitions, screening, longitudinal assessment and treatment evidence.

Primiparous women may be particularly at high risk because they are experiencing infant care and maternal-role transition for the first time. Concerns about infant health, feeding, sleep, breastfeeding, parenting competence and changes in family relationships may contribute to excessive worry and stress. These concerns can develop with depression, but anxiety should not be treated simply as a secondary feature of postpartum depression.

Persistent anxiety may interfere with daily living activity, quality of life, maternal confidence and the early mother-infant relationship. Recent evidence therefore supports a broader perinatal mental-health approach that includes early identification, prevention, symptom reduction and timely referral.

Nurses and midwives come frequently and repeatedly contact with women during antenatal care, childbirth, postnatal hospitalization, discharge and community follow-up. This creates opportunities for psychological assessment, psychoeducation, supportive counselling, brief evidence-informed interventions, family engagement and care coordination. WHO guide specifically supports integration of perinatal mental health into maternal and child health services, including workforce training and contextually adapted care.

The original review identified CBT-based interventions, psychoeducation, mindfulness, peer support and home-based psychological nursing care as intervention. The updated review retains these categories but reframes the evidence more cautiously. In particular, reducing anxiety symptoms should be distinguished from preventing the onset of a clinically diagnosed anxiety disorder.

Need for the Review:

Postpartum anxiety remains less extensively studied than postpartum depression, and the evidence base is heterogeneous in intervention content, timing, outcome measurement and delivery model. Recent systematic reviews have improved understanding of psychological interventions, but nursing-specific evidence remains comparatively limited. A contemporary narrative synthesis is therefore useful for translating multidisciplinary evidence into a practical nursing framework for first-time mothers.

A further rationale is the need to avoid overstatement of preventive effectiveness. The available evidence supports symptom reduction and improved psychological well-being more consistently than universal prevention of anxiety disorders. This distinction is central to the interpretation of the present review.

Objectives:

- To synthesize recent evidence on postpartum/perinatal anxiety and stress relevant to primiparous women.
- To examine psychological interventions that can be delivered, facilitated or coordinated within nursing and maternal-health services.
- To compare the evidence, practical delivery characteristics and limitations of CBT-informed interventions, psychoeducation, mindfulness/relaxation, peer support, home-based care and digital/tele-nursing.
- To identify implications for screening, nursing practice, education, research and health-system integration.
- To propose a nurse-led stepped preventive framework for early identification, intervention, referral and follow-up.

Methods

Design:

An updated narrative review was conducted. The review was designed to provide a clinically oriented synthesis rather than a formal systematic review with quantitative meta-analysis. The structure was informed by contemporary evidence-synthesis principles, while retaining the narrative-review design of the original manuscript.

Data Sources:

The databases searched were PubMed/MEDLINE, Scopus, CINAHL, Web of Science Core Collection and Google Scholar. Reference lists of relevant systematic

reviews, guidelines and key studies were also examined. The search was updated in August 2026.

Search Concepts and Strategy:

The search combined four concepts: population (primiparous/first-time mothers), condition/outcome (postpartum or perinatal anxiety, stress and maternal

psychological well-being), intervention (nursing, CBT, psychoeducation, mindfulness, relaxation, peer support, home visits and digital/telehealth) and prevention/management. Database-specific subject headings and free-text terms were adapted to the indexing requirements of each database.

Table 1. Literature-search strategy. Exact database-specific strings and record counts should be retained in a supplementary search appendix if required by the target journal.

Search component	Representative terms	Purpose
Population	primiparous; primipara*; first-time mother*; first-time parent*; nulliparous	Identify the target population
Condition/outcome	postpartum anxiety; postnatal anxiety; perinatal anxiety; maternal anxiety; postpartum stress; psychological stress	Identify psychological outcomes
Intervention	nursing intervention; nurse-led; nurse-supported; counselling; CBT; psychoeducation; mindfulness; relaxation; peer support; home visit; telehealth	Identify relevant intervention approaches
Prevention/management	prevention; preventive; early intervention; reduction; coping; psychological well-being	Identify preventive and symptom-reduction studies
Databases	PubMed/MEDLINE; Scopus; CINAHL; Web of Science Core Collection; Google Scholar	Maximize biomedical, nursing and multidisciplinary retrieval
Supplementary searching	Reference-list screening and citation tracking	Identify relevant studies missed by database searching

Inclusion Criteria:

Eligible evidence included studies involving pregnant or postpartum women, with preference given to primiparous or predominantly primiparous populations; psychological, behavioural, educational, supportive or nursing-related interventions; outcomes related to anxiety, stress, coping, self-efficacy or maternal psychological well-being; randomized and quasi-experimental studies; systematic reviews and meta-analyses; and recognized clinical guidelines. English-language evidence was included for the present review.

Exclusion Criteria:

Evidence was excluded when it focused exclusively on pharmacological treatment without a psychological or nursing component, non-perinatal populations, or outcomes unrelated to maternal psychological health. Editorials, opinion pieces and conference abstracts without adequate empirical information were not used as primary evidence.

Evidence Synthesis:

Evidence was synthesized thematically according to intervention type, timing, delivery mode, outcomes, nursing relevance and limitations. Recent systematic

reviews and meta-analyses were given greater interpretive weight than individual small studies. Foundational studies were retained where they provided direct evidence among primiparous women or established an intervention model relevant to current nursing practice.

Because this is a narrative review, no pooled effect estimate was calculated by the authors. Quantitative estimates reported below are taken from published systematic reviews and meta-analyses and are clearly identified as such.

RESULTS

Proven facts and scientific data:

The updated literature indicates that postpartum anxiety is common, clinically meaningful and associated with primiparity. The 2025 Lancet Psychiatry state-of-the-art review estimated a global prevalence of 12.3% and identified primiparity and younger maternal age among associated factors. It also concluded that CBT has promising evidence, while emphasizing substantial gaps in screening, longitudinal assessment and treatment research.

The strongest contemporary synthesis directly relevant to prevention is the 2023 systematic review and meta-

analysis by Zimmermann and colleagues, which included 36 studies. Four studies examining incident perinatal anxiety disorders did not demonstrate significant preventive effects. In contrast, 30 studies evaluating symptom severity produced a small but statistically significant pooled effect favouring psychological intervention (SMD -0.31, 95% CI -0.46 to -0.16). Mindfulness and CBT approaches both showed benefit.

A 2025 systematic review of preventive psychological interventions included 20 studies published from 2015 to 2025. Twelve interventions were indicated-prevention programs and eight were universal programs. Most were delivered during pregnancy; mindfulness and CBT were the most frequently used approaches, and CBT delivered face-to-face in groups showed particularly favourable results. The interventions ranged from four to fourteen sessions.

Peer support is also supported by contemporary nursing literature. A 2024 systematic review and meta-analysis of 12 randomized controlled trials found that peer-support interventions reduced depression and anxiety levels and produced benefits across follow-up periods of one to six months. This supports peer support as a complementary rather than stand-alone clinical pathway.

Digital health is an emerging delivery option. A 2024 systematic review and meta-analysis of randomized trials evaluated digital health interventions for postpartum depression or anxiety. The evidence supports digital delivery as a potentially useful adjunct, although intervention heterogeneity and the combined depression/anxiety evidence base mean that digital approaches should not yet be presented as a universally established postpartum-anxiety treatment.

Cognitive Behavioural Therapy and CBT-Informed Nursing Care:

CBT targets maladaptive thoughts, excessive worry, avoidance and unhelpful behavioural patterns. Components relevant to nursing-supported care include identification of anxiety triggers, cognitive reframing, problem solving, behavioural coping, relaxation and self-monitoring.

The 2021 randomized controlled trial by Liu and Yang directly contributes nursing-specific evidence. Primiparous women at risk for postpartum depression were randomized to routine postpartum care or routine care plus cognitive-behavioural intervention. The study provides support for structured psychological nursing intervention in first-time mothers. However, it should be interpreted alongside the broader meta-analytic evidence and its specific population and intervention design.

The updated evidence therefore supports CBT as a promising approach for reducing anxiety symptoms. It

does not justify assuming that every nurse-delivered CBT program is equivalent to specialist psychotherapy, and nurses should work within their professional scope, training and supervision arrangements.

Psychoeducation:

Psychoeducation addresses uncertainty about maternal role transition, infant behaviour, breastfeeding, sleep, self-care, coping and recognition of psychological warning signs. The foundational Fisher, Wynter and Rowe study among primiparous women evaluated a brief universal psychoeducational program involving first-time parents and found evidence of reduced de novo common postpartum mental-health problems.

Although this study is older, it remains directly relevant because it demonstrates the feasibility of integrating psychological prevention into routine maternal and child health nursing. Contemporary practice should build on this foundation using culturally appropriate education, structured screening and clear referral pathways.

Mindfulness and Relaxation:

Mindfulness-based interventions generally emphasize non-judgmental awareness, breathing, attention regulation and acceptance. The 2023 meta-analysis identified mindfulness among approaches associated with reductions in perinatal anxiety symptom severity, and the 2025 preventive review identified mindfulness as one of the most commonly studied preventive approaches.

For nursing practice, brief mindfulness and relaxation techniques can be integrated into antenatal education, postnatal counselling and follow-up. However, intervention duration, training requirements and fidelity vary between studies, and further research is needed to determine the most effective formats for primiparous women.

Peer Support:

Peer support provides opportunities for social connection, experience sharing and normalization of common parenting concerns. The 2024 meta-analysis of 12 randomized trials reported reductions in anxiety and depression and benefits across one-to-six-month follow-up periods. Both online and face-to-face formats have been studied.

Nurses can facilitate or coordinate peer groups while maintaining clear boundaries between peer support and clinical treatment. Women with significant symptoms should be assessed and referred rather than relying on peer support alone.

Home-Based and Continuity Nursing Care

Home-based care allows assessment of the maternal environment, family relationships, infant-care demands and practical barriers that may not be visible in facility-

based care. Home visits can combine psychological assessment, parenting guidance, family involvement, stress-management education and referral.

The evidence base specific to postpartum anxiety among primiparous women remains less developed than the evidence for general perinatal psychological interventions. Home-based nursing should therefore be presented as a promising continuity model rather than a conclusively proven anxiety-prevention intervention.

Digital and Tele-Nursing Support:

Digital interventions can extend care after discharge through telephone follow-up, video counselling, mobile education and online peer support. Contemporary systematic-review evidence indicates that digital health interventions have potential for postpartum depression and anxiety, but intervention designs are heterogeneous.

Digital care should therefore complement, rather than replace, clinical assessment and referral pathways.

Screening and Early Identification:

ACOG recommends standardized, validated screening for depression and anxiety during pregnancy and postpartum and emphasizes that screening should occur within systems capable of assessment, diagnosis, treatment, monitoring and follow-up. Commonly used tools include the GAD-7 and other validated perinatal instruments. Screening is not equivalent to diagnosis and should be followed by clinical assessment when indicated.

For nursing services, this means that screening should be embedded within a pathway: screening → psychosocial assessment → risk stratification → intervention → referral when indicated → follow-up and reassessment.

Table 2. Evidence Synthesis Table

Intervention	Evidence source	Main finding	Nursing relevance	Key limitation
CBT / CBT-informed care	Systematic reviews; RCT evidence	Generally favourable for reducing anxiety symptoms	Structured coping, problem solving, education and referral-supported care	Less consistent evidence for prevention of diagnosed anxiety disorders
Mindfulness	Meta-analysis; 2025 preventive review	Promising reduction in anxiety/stress symptoms	Brief breathing, mindfulness and relaxation can be integrated into care	Variation in format and intensity
Psychoeducation	Foundational primiparous study and broader preventive literature	Can reduce uncertainty and support adaptation	Highly feasible in antenatal/postnatal nursing	Heterogeneous content and outcome measures
Peer support	2024 systematic review/meta-analysis of 12 RCTs	Reduces anxiety/depression and improves psychosocial outcomes	Nurses can facilitate or coordinate groups	Optimal format and supervision uncertain
Home-based support	Community/postpartum intervention literature	Potential benefit through continuity and contextual assessment	Supports family engagement and early identification	Limited anxiety-specific primiparous evidence
Digital/telehealth	2024 systematic review/meta-analysis	Promising adjunct for postpartum depression/anxiety	Extends follow-up and access	Heterogeneity, privacy and adherence issues

Table 3. Evidence synthesis of psychological interventions relevant to nurse-led prevention and early management.

Intervention Comparison Table

Intervention	Core	Suggested timing	Delivery	Expected	Nurse role
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	components			benefits	
CBT-informed support	Cognitive reframing; problem solving; coping; relaxation	Antenatal + early postpartum	Individual/small group	Reduced anxiety symptoms; improved coping	Assessment, brief strategies, monitoring, referral
Psychoeducation	Role transition; infant behaviour; feeding; sleep; self-care	Antenatal + discharge + follow-up	Individual/group/digital	Knowledge, confidence, reduced uncertainty	Education and reinforcement
Mindfulness/relaxation	Breathing; grounding; guided relaxation	Antenatal + postpartum	Individual/group/digital	Reduced perceived stress; emotional regulation	Teach, coach and reinforce
Peer support	Experience sharing; emotional validation; social connection	Pregnancy through early postpartum	Group/online/blended	Reduced isolation; psychosocial support	Facilitate, monitor and refer
Supportive counselling	Active listening; validation; coping; problem solving	Across perinatal period	Individual	Emotional support and engagement	Therapeutic communication
Home-based care	Assessment; parenting guidance; family involvement	Early postpartum + follow-up	Home visit	Continuity; family support; early recognition	Assess, educate, counsel, refer
Tele-nursing	Follow-up; education; symptom monitoring	Post-discharge	Telephone/video/mobile	Continuity and access	Monitor, reinforce and escalate

Proposed Conceptual Framework:

Based on the evidence, a nurse-led stepped preventive framework is proposed. The framework integrates risk identification, screening, psychosocial assessment, intervention intensity, referral, family/peer support and longitudinal follow-up.

Figure 1. Nurse-led preventive framework for postpartum anxiety and stress among primiparous women:

RISK FACTORS

Routine screening → psychosocial assessment → risk stratification

NURSING ASSESSMENT

Primiparity | prior psychological vulnerability | sleep disruption | breastfeeding difficulties | low social support

INTERVENTION INTENSITY

Low risk: psychoeducation + maternal preparation + relaxation
Moderate risk: counselling + CBT-informed strategies + mindfulness + peer support
High risk: specialist mental-health assessment + collaborative care

CONTINUITY OF CARE

Family support + home/community follow-up + tele-nursing + reassessment

EXPECTED OUTCOME Reduced anxiety/stress symptoms + improved coping + maternal self-efficacy + psychological well-being + maternal adaptation

The framework is conceptual and has not itself been clinically validated. It is intended to organize evidence and guide future testing rather than to replace local clinical protocols.

DISCUSSION:

This updated narrative review supports a shift from viewing postpartum anxiety as an isolated postpartum symptom toward recognizing it as a clinically important component of perinatal mental health requiring prevention, early identification and stepped management. The most important finding is that psychological interventions help to decrease anxiety symptom and its severity, but the evidence for preventing new-onset anxiety disorders is less consistent.

The 2023 systematic review and meta-analysis offer an important anchor for interpretation. Among 36 studies, no study assessing incident perinatal anxiety disorders found a significant intervention effect, whereas the pooled analysis of symptom severity showed a small but significant benefit. This means that manuscript language should avoid equating improvement in symptom scores with prevention of a formal anxiety disorder.

The 2025 systematic review further supports CBT and mindfulness as most effective preventive approaches. Most interventions were implemented during pregnancy, emphasizing that psychological intervention should begin before or around childbirth rather than waiting until severe postpartum symptoms develop. For primiparous women, antenatal preparation may be particularly important because it can address uncertainty and coping before the demands of newborn care intensify.

CBT can strongly fit with anxiety because it directly focuses on maladaptive cognitions and behavioural responses. However, nursing implementation requires attention to scope of practice, training and supervision. Nurses can provide CBT-informed education and coping strategies where appropriately trained, specialist

psychotherapy and mental-health care should be given in collaboration with qualified professionals.

Psychoeducation remains particularly relevant to primigravida mothers. The Fisher et al. study provides direct evidence from a primiparous population and demonstrates the feasibility of a brief, universal psychoeducational approach.

Mindfulness and relaxation are interesting because they can be delivered in brief formats and may be added into routine antenatal and postnatal care and follow up. Their role is best understood as one component of a broader intervention package rather than a substitute for assessment or specialist treatment.

Peer support provides an important social integration into routine care. The 2024 meta-analysis supports reductions in anxiety and depression and suggests benefits across several months of follow-up. This is particularly relevant to primiparous women who may experience isolation or uncertainty. Professional facilitation can help ensure that peer groups remain supportive while allowing timely escalation for women with clinically significant symptoms.

Digital care may help in continuity of care, especially when women face geographic, financial or scheduling barriers. Nevertheless, digital interventions should be implemented with attention to privacy, digital literacy, accessibility, cultural fit, adherence and escalation procedures.

The proposed framework is consistent with WHO guidance to integrate perinatal mental health into maternal and child health services. It also aligns with ACOG guidance emphasizing standardized screening linked to assessment, treatment, monitoring and follow-up. Thus, the nurse's role is not only administering a screening tool but nurses can also serve as assessors, educators, intervention providers within scope, care coordinators and continuity providers.

The framework also has relevance for low- and middle-income settings. In systems with limited specialist mental-health resources, task-sharing and integration into maternal-health services may increase access. However, implementation should be culturally adapted and supported by training, supervision and referral mechanisms. Evidence from high-income settings should not automatically be assumed to transfer without contextual evaluation.

Strengths of the Updated Review:

- Prioritizes current systematic reviews, meta-analyses and clinical guidance while retaining directly relevant foundational studies.
- Distinguishes reduction of anxiety symptoms from prevention of diagnosed anxiety disorders.

- Translates multidisciplinary evidence into nursing-specific intervention and implementation considerations.
- Provides a structured search strategy, evidence-synthesis table, intervention comparison table and conceptual framework.
- Identifies research gaps, particularly nursing-specific trials and evidence from low-resource settings.

Limitations:

- The review is narrative rather than a formal systematic review and therefore does not provide a pooled analysis conducted by the authors.
- Interventions, populations and outcome measures were heterogeneous across the literature.
- Some evidence concerns the broader perinatal population rather than exclusively primiparous women.
- The independent effect of nursing delivery is difficult to determine when interventions are multidisciplinary.
- The proposed nurse-led framework is conceptual and requires empirical validation.

Implications for Nursing Practice:

- Integrate standardized anxiety and depression screening into antenatal and postpartum care.
- Use psychoeducation to reduce uncertainty about maternal-role transition, infant care, sleep, feeding and self-care.
- Provide brief CBT-informed coping and problem-solving strategies within scope.
- Incorporate brief mindfulness and relaxation strategies into routine antenatal visits.
- Develop professionally facilitated peer-support group for first-time mothers.
- Use home visits and tele-nursing to strengthen continuity of care after discharge where services permit.
- Establish clear referral pathways for where severe symptoms exist in mothers.
- Provide nurses with training, supervision and competency-based education in perinatal mental-health care.

Implications for Nursing Education:

Undergraduate and postgraduate nursing education should include recognition of perinatal anxiety, validated screening instruments, therapeutic communication, psychoeducation, basic evidence-informed psychological strategies, risk assessment, referral and documentation. Simulation and case-based teaching can help nurses distinguish normal adjustment from clinically concerning anxiety and identify situations requiring escalation.

Implications for Research:

- Conduct adequately powered randomized controlled trials of nurse-led interventions among primiparous women.
- Use standardized intervention manuals and report intervention fidelity, training and supervision.
- Separate anxiety symptom outcomes from incidence of diagnosed anxiety disorders.
- Include follow-up after immediate postpartum period.
- Compare face-to-face, group, home-based and digital delivery models.
- Evaluate culturally adapted interventions in South Asian and other low-resource settings.
- Assess cost-effectiveness, feasibility, acceptability and implementation outcomes.
- Examine maternal confidence, sleep, mother-infant relationship and family outcomes alongside anxiety.

CONCLUSION:

Postpartum anxiety and stress are important maternal mental health concerns because primiparous women may experience particular vulnerability during the transition to motherhood. The updated evidence indicates that psychological interventions can reduce anxiety symptom severity and improve aspects of psychological well-being, with CBT and mindfulness among the most leading preventive approaches. Psychoeducation, peer support, supportive counselling, home-based care and digital follow-up provide complementary mechanisms for improving coping, knowledge regarding mental conditions.

The evidence does not justify claiming that psychological interventions universally prevent the onset of postpartum anxiety disorders. A more defensible interpretation is that structured psychological nursing care can support prevention, early identification, symptom reduction and timely management. Nurses are strategically positioned to deliver or these components within integrated maternal-health services.

The proposed nurse-led framework combines screening, psychosocial assessment, risk stratification, universal prevention, targeted intervention, specialist referral, family and peer support, and longitudinal reassessment. Future research should validate this framework and determine which intervention combinations are most effective, feasible, culturally acceptable and sustainable across different healthcare settings.

Declarations for Journal Submission:

Ethics approval: Not applicable because this article is a narrative review of published literature.

Consent to participate: Not applicable.

Funding: To be completed by the authors.

Conflict of interest: To be completed by the authors.

Author contributions: To be completed according to the target journal's requirements.

Data availability: Not applicable; the review is based on published literature.

ACKNOWLEDGEMENTS: TO BE COMPLETED IF APPLICABLE.

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