

Postnatal depression: an underestimated humanistic burden in maternal health

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Introduction

- Postnatal depression (PND) affects up to 20% of women within first six weeks of postpartum with the risk of developing PND varying significantly due to factors such as lifestyle and socioeconomic status.¹
- Routine screening for PND is recommended as part of peripartum care, with validated tools such as the Edinburgh Postnatal Depression Scale (EPDS) aiding in the early identification of women at risk.¹
- Insufficient medical support for women with PND can impact maternal neurocognitive function and behavior, reducing quality of life (QoL) and highlighting the humanistic burden of the disease.^{1,2}
- A 2018 systematic literature review (SLR) on the humanistic burden of PND revealed a paucity of data on women in Europe, as majority of the studies focused on fathers, children, or mothers in non-European regions.³
- In response to this gap, we conducted a targeted literature review (TLR) to evaluate the evolving humanistic burden of PND in adult women who experienced childbirth across the United States, the United Kingdom, and Europe.

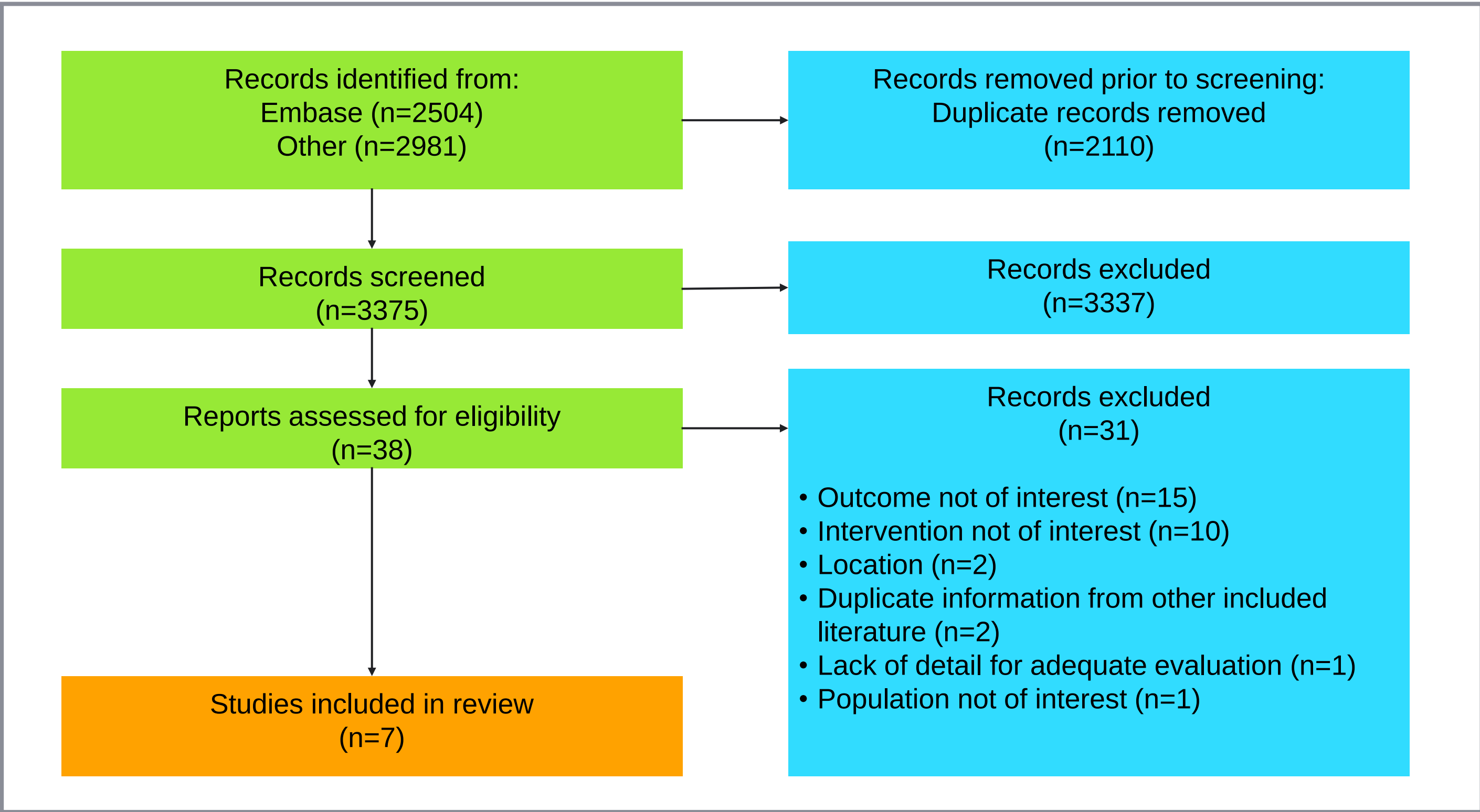
Methods

Literature searches were performed in Embase (January 2018-May 2024) and the ISPOR presentations database to identify publications evaluating the burden of illness in PND. The primary search terms included "peripartum depression," "postnatal depression," "postpartum depression," "burden of illness," "disease burden," "patient outcomes," "medical outcomes survey," and "quality of life." Title and abstract screening were conducted using an artificial intelligence (AI)-assisted approach on the Nested Knowledge, a web-based systematic review platform, combining human expert review with AI model. The AI model was trained on a sample of 100 articles, where relevance (inclusion/exclusion) had been determined by human reviewers. This training ensured that the AI model could accurately predict study relevance, thereby improving the precision of the screening process. Articles that passed both AI and human screening underwent a final review by human reviewer for quality assurance, with only those confirmed as meeting the inclusion criteria retained for further analysis.

Results

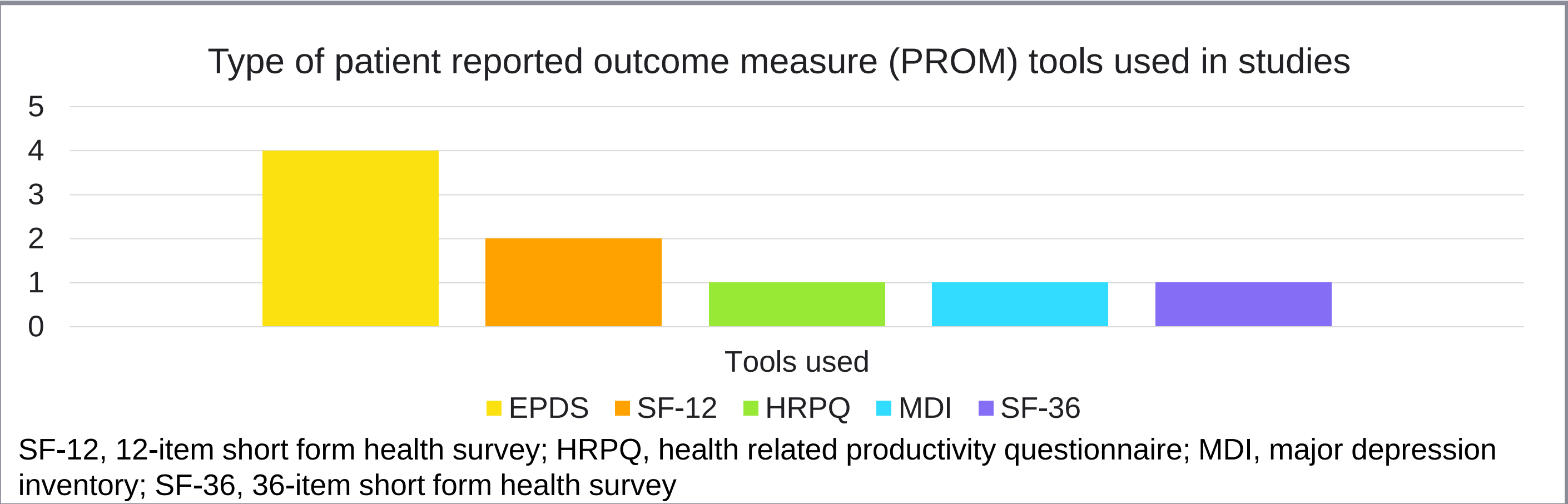
The literature search identified 3,375 articles, and seven studies were included in this review. Three studies conducted in the United States and four studies in Europe were identified. Of these, four studies employed the EPDS, either alone or in combination with a generic tool, to assess the QoL in adult women diagnosed with PND.

Figure 1: PRISMA flow diagram for the search process



Both disease-specific screening tool (eg, EPDS) and generic instruments (eg, General Information Questionnaire, General Well-Being Scale, and 12-item Short Form Health Survey Version 2 (SF-12v2)) were used to assess QoL of women with PND.

Figure 2: Number of studies utilizing different types of PROMs



Mothers of extremely low birth weight (ELBW) infants show higher PND levels at three months postpartum, with a reduction in symptoms over time compared to mothers of very low birth weight (VLBW) and full term (FT) infants. Women with PND had “below-average health,” indicated by Mental Component Score (MCS) below 50 (from SF-12), as shown in Table 1.^{4,7} Women who had a cesarean or preterm birth reported higher PND levels. Mothers who had an urgent cesarean in the past year also showed increased PND severity, as measured by EPDS.^{5,7} However, women with PND reported better psychosocial HRQoL compared to their physical and global HRQoL.¹⁰

Table 1: List of studies included in the TLR

Author	Inclusion criteria	Results
Sardana et al. 2022 ⁴	Women with a childbirth event	SF-12-v2 MCS (average score): with PND (44.4) vs without PND (52.5) SF-12-v2 PCS (average score): with PND (52.5) vs without PND (52.3)
Sega et al. 2021 ⁵	Mothers with cesarean within the previous 12 months	EPDS scores: unplanned cesarean (10.7 ± 6.4 with 68.5% scoring >8) vs planned cesarean (8.96 ± 5.7, with 52.7% scoring >8)
Huang et al. 2020 ⁶	Women with PND symptoms	EPDS mean: 19.9 (SD 4.8), and 65% (92/142) of women indicated severe depression (≥19)
Mautner et al. 2022 ⁷	Mothers with • Extremely to very preterm birth • Moderate to late preterm birth • Term birth	SF-12 PCS (mean ± SD): early preterm (41.62 ± 7.23) vs moderate to late preterm (35.71 ± 7.43) and term birth (37.02 ± 6.90) (p<0.01) SF-12 MCS (mean ± SD): early preterm (36.82 ± 6.32) vs moderate to late preterm (46.58 ± 7.20) and term birth (43.31 ± 6.20) EPDS: early preterm (11 ± 6) vs moderate to late preterm (12 ± 6) and term birth (8 ± 6)
Neri et al. 2020 ⁸	Mothers with preterm ELBW, VLBW, FT infants	EPDS scores at 3, 9, 12 months (mean ± SD) ELBW: 7.83 ± 0.70, 5.71 ± 0.52, 4.11 ± 0.58 VLBW: 5.66 ± 0.59, 4.44 ± 7.43, 4.32 ± 0.49 FT: 5.19 ± 0.45, 4.76 ± 0.40, 4.19 ± 0.38
Ertmann et al. 2019 ⁹	Postpartum women	MDI score of >20 at 8 weeks: 6.6%
Martinez-Galiano et al. 2019 ¹⁰	Postpartum women	SF-36 Depression: Global HRQoL adjusted mean (SD): -12.40 (-10.79, -14.01)

MCS, mental component summary; PCS, physical component summary; SD, standard deviation

Discussion

In this research, the EPDS was found to be the most frequently used depression screening tool in perinatal care when compared to other PROM instruments. The validity of other available PROM instruments was assessed, and EPDS was reported to be the best available PROM for PND.¹¹ Interestingly, a new 99-item digital questionnaire being developed in Spain aimed to holistically assess and empower women to manage their psychosocial health.¹² In contrast to studies that utilized PROM instruments, an unconventional study used mothers' perceived birth experience as a reliable predictor of PND, while another US study used EPDS screening at delivery discharge as a predictor of PND.^{13,14} Moderate correlation was found between EPDS scores and utility values in an EQ-5D-3L mapping study, although the tool allows for the estimation of health utility values. While it has good external validity, it is likely to perform better in studies involving patients with higher health status.¹⁵ The Hamilton Depression (HAMD-17) rating scale has also been used in recent years in studies involving brexanolone and zuranolone, which are indicated for adult women with PND, to assess the severity of their PND symptoms.^{16,17}

Conclusions

Building on prior research, this study reaffirmed that women with PND experience a substantial humanistic burden mainly attributed to their mental health; and all studies show that PND is associated with a decline in maternal QoL due to various factors such as birthing experiences and methods (ie, cesarean sections, or experience preterm births), regardless of the tools and instruments used. Raising awareness about PND, reducing stigma, and ensuring access to mental health resources are essential steps in supporting new parents and promoting healthy family dynamics. The paucity of PND burden of illness studies conducted in the US, UK, and Europe underscores the necessity for additional longitudinal investigations to delineate risk factors, enhance treatment strategies, and develop first-in-class treatments.

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