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# Arts-based interventions for maternal well-being: a systematic review

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**Abstract**
Supporting mothers to maintain good physical and mental health is a key public health concern because of the long-term social and economic implications for them and their children. Arts and health programmes offer a positive social return on investment and provide healthcare commissioners with lower-cost alternatives to clinical models of care. This systematic review examines published studies that examine the relationship between arts-based activity and maternal health and/or wellbeing. The objective was to provide a comprehensive picture of the ways in which arts-based practices were already being used; some of the outcomes that had been identified; and the way in which outcomes were being measured, evaluated and documented. The review followed the PRISMA guide for systematic reviews. Studies were assessed using the Quality Assessment Tool for reviewing Studies with Diverse Designs (QATSDD). A meta-synthesis of data from the qualitative studies was carried out to generate themes. Eleven studies were identified as meeting the inclusion criteria. It was found that there is a lack of peer-reviewed research into the impact of arts-based interventions on maternal populations. Whilst the published research is of varying degrees of methodological rigour and reporting of data, some common themes around the social, psychological, and emotional benefits were identified. The results suggest that there is a role for arts-based interventions to be used (i) as social support for women during the transition to motherhood; (ii) to facilitate recovery from diagnosed mental disorders such as postnatal depression; (iii) to prevent stress, anxiety and isolation.

**Keywords** Arts-based · Maternal wellbeing · Arts and wellbeing · Arts interventions

## Introduction

Maternal wellbeing has been on the world public health agenda for the last decades. Globally one in ten women experience mental ill health during pregnancy and after birth, with many undiagnosed due to the symptoms like fatigue also being associated with motherhood itself (WHO, 2008). Pregnancy, childbirth, and the postpartum period represent a period of intense emotional, physical, and psychological change for women. Perinatal mental health problems including depression and anxiety affect up to one fifth of all women, with maternal ill health known to impact upon child development and long-term psychosocial outcomes. Therefore, in recent years, there has been greater focus on supporting the health of new mothers, with a number of different public health initiatives emerging to support families across the perinatal period. Arts and health interventions have been shown to enhance the wellbeing of individuals and communities by reducing GP and hospital attendance and offering individuals a way to manage their physical, psychological, emotional, and mental wellbeing. These interventions, whether they are art therapy or participatory arts practice, commonly utilise person-centred approaches, which can orientate individuals on "pathways to recovery, building the creative capacity that many in public health consider being central to well-being" (White & Robson, 2007, p.12). Arts and health programmes also offer a positive social return on investment and provide health care commissioners with lower cost alternatives to clinical models of care. Therefore, supporting mothers to maintain good physical and mental health is a key public health concern because of the long term social and economic implications for them and their children.

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Costs of perinatal distress are to the women themselves and their quality of life and have developmental consequences for children (Tu et al., 2021; Moreau et al., 2022; Antoniou et al., 2021). NHS England is explicit that this is a crucial time for infant development and notes antenatal issues such as postnatal depression, anxiety, postpartum psychosis, stress, and obsessive-compulsive disorder as significant, affecting up to 20% of women (Bauer et al., 2014). Around one in every seven maternal deaths currently is by suicide and the costs associated with perinatal mental health and social services costs 8.1 billion for each annual cohort of births. Therefore, developing interventions which are relatively affordable to support women in the perinatal period is crucial.

It is acknowledged that arts-based interventions can improve wellbeing and health outcomes within general adult populations (Angus, 2002; Staricoff, 2004; Spandler et al., 2007; White & Robson, 2007; Putland, 2008; Bungay & Clift, 2010; Stickley, 2012; Fancourt, 2017). Systematic reviews into the impact of arts participation on mental health and wellbeing have identified the potential of these approaches to contribute positively to the recovery approach to mental health. One of the ways this is achieved is by helping participants to develop meaning and purpose, coping mechanisms, and a sense of hope (Spandler et al., 2007); furthermore, such interventions reduce depression and social isolation by supporting cultural and community engagement (Tomlinson et al., 2018). Within healthcare, the arts are used for both their therapeutic effect on clinical outcomes and their effect on staff outcomes such as job satisfaction and education and training (Staricoff, 2004). Although our understanding of the contribution of the arts to health and wellbeing has grown considerably over the last few decades, there are still certain populations within which the benefits of participation in the arts or creativity is under-researched. Indeed, several systematic reviews exist that investigate participatory arts and their impact on health in adults and children (Chan et al., 2023; Jensen et al., 2024; Nathan et al., 2023; Shim et al., 2021; Williams et al., 2023), populations including women in the antenatal and postnatal periods has been neglected. Within a maternal population, studies are more heavily weighted in aspects of the maternal experience, such as neonatal or newborn outcomes and postnatal depression. There is far less research exploring the promotion of overall wellbeing, including contributory factors such as maternal self-efficacy (Barnes & Adamson-Macedo, 2007, 2022), life satisfaction or quality of life.

At the time of writing, there were limited systematic reviews of the evidence base for arts-based health interventions with mothers. Up to this point, the evidence base for arts and health interventions with a maternal population has consisted mainly of disparate, isolated pilot studies predominantly led from a practice-based perspective with little theoretical underpinning. Certainly, the number, quantity and range of arts-based methods used with maternal populations is unknown and is a major driver and reason for conducting this review. Therefore, this systematic review examines published studies that focus on the relationship between arts-based activity and maternal health and/or wellbeing. The question this review aims to answer is: 'What is the evidence base for arts-based interventions within a maternal population?' Furthermore, it aims to document and review: (i) the art practices currently in use with maternal populations, (ii) the rigour used in study design and evaluation, and (iii) the range of outcomes under investigation and their significance.

## Methods

### Protocol

The PRISMA statement (2020) has been used as a guide for the methods and reporting of this systematic review. The PRISMA statement includes a checklist of features that are considered important for completing a systematic literature review, including search strategy; screening methods; and reporting /discussion of results.

### Search strategy

Studies were identified through a search of the Library Plus electronic database, which covers a range of databases including Cochrane; Science Direct (Elsevier); CINAHL+; Medline; PsychInfo; EBSCO E-journals; JSTOR; and SCOPUS. Search terms and keywords were identified by the doctoral researcher, supported by two research supervisors and a health sciences subject librarian. Database searches were conducted from inception up to June 2023. Search terms were limited to title and abstract only, with filters applied for peer-reviewed articles in academic journals and the English language. The search strategy was split into three categories and their related terms: the arts (danc* OR movement OR sing* OR music OR "music making" OR "perform* art" OR art making" OR "art" OR creativity OR journaling OR "creative writing" OR drawing OR "arts and crafts" OR poetry); arts-based interventions ("arts for health" OR "arts and health" OR "participatory health" OR "community arts" OR wellbeing OR "well-being" OR "arts project"); maternal population (mother OR pregnan* OR postpartum OR prenatal OR antenatal OR postnatal OR neonatal).

### Eligibility criteria

The search results were first screened by title and, where necessary, the abstract to identify any studies meeting the criteria.

Studies were included if they were,

i. carried out with mothers during pregnancy, or any time postpartum up until 2 years (at the start of the intervention);
ii. the main focus was on the use of an arts-based practice to participate in, create or generate original works of art such as performance, spoken word, visual arts, sculpture, journals; and.
iii. the main focus of the study was to interrogate, evaluate, or discuss the effectiveness of the artistic or creative participation on maternal health and/or wellbeing.
iv. A fourth inclusion criterion was initially included: that the main intervention included dance and/or movement. However, as no studies met this criterion the decision was taken during screening to focus on any arts-based creative practice.

Studies were excluded if they,

i. came under 'grey literature' such as project reports and evaluations; online publications such as blogs or e-zines; or any published magazine or journal not subject to peer review;
ii. were interventions where artistically driven activities were used in the context of facilitating social interaction within a group, for example, nursery rhymes or sensory play;
iii. they were using the arts to look at the responses of babies such as crying, sleep or other areas of child development;
iv. they included autoethnographic research or practice-as-research whereby the practitioner/maker/performer was a mother making work about her own experience).

### Data screening and extraction

Once all studies had been screened by title and abstract, a full-text screen was carried out by the lead author, using the eligibility criteria above. 32 studies were screened and discussed to ensure consensus. 17 studies were excluded following a full screening of the text either because of (i) lack of discussion or poor reporting on outcomes; (ii) inseparable maternal-infant data; (iii) inseparable maternal-paternal data (mixed sample of mothers and fathers); or (iv) review article, conference paper or opinion piece. 11 studies remained for full data extraction. Please see PRISMA flow chart (Haddaway et al., 2022) in Fig. 1.

## Results

In this section we document and review (i) the art practices currently in use with maternal populations– with a summary provided in the Overview of included studies subsection and further details of intervention types in Table 1 (e.g. art form, duration, and maternal outcomes measured), (ii) the rigour of the included studies– the Quality Assessment (QATSDD) which appears in Table 2 and which is accompanied by a textual overview of the strengths and limitations in the subsection of the same name, and an assessment of study bias. The assessment of included study bias appears in the text and in Table 3. In both instances, a total score rating assessment is carried out, reported and– for bias– noted as whether there is a Low, Medium or High risk, and (iii) the range of outcomes under investigation and their significance– summarised in the Outcomes Measures subsection and in Table 1.

### Overview of included studies

The review identified eleven studies that met the inclusion criteria. The oldest paper to be included in the review was a study published in 2011, whilst the most recent was from 2021. As the included studies were all published in the last decade, this indicates that whilst arts and health practice within maternal populations is not a new practice, empirical research in the field has received limited attention. The included studies and their characteristics are presented (alphabetically by first author and date) in Table 1. The studies were conducted in the United Kingdom ($n=4$), Ireland ($n=1$), Australia ($n=1$), Germany ($n=2$), Columbia ($n=2$), and Finland ($n=1$). Three out of the four studies in the UK (Fancourt & Perkins, 2017, 2018; Perkins et al., 2018) were conducted by the same research team, with the Columbian studies (Ettenberger et al., 2017; Ettenberger & Ardila, 2018) also carried out by the same principal investigator, as was also the case for the two German studies (Wulff et al., 2021a, b). This demonstrates that the evidence base is growing thanks to a small number of researchers.

Participant demographic information and inclusion/exclusion criteria were not consistently reported, however, sample sizes ranged from six participants in a qualitative study (Carolan et al., 2012 to 391 participants in a quantitative study (Fancourt & Perkins, 2017). One study (Perry et al., 2008) did not report participant ages, with some studies reporting age ranges, and others reporting an average or mean. Three studies reported data from interventions

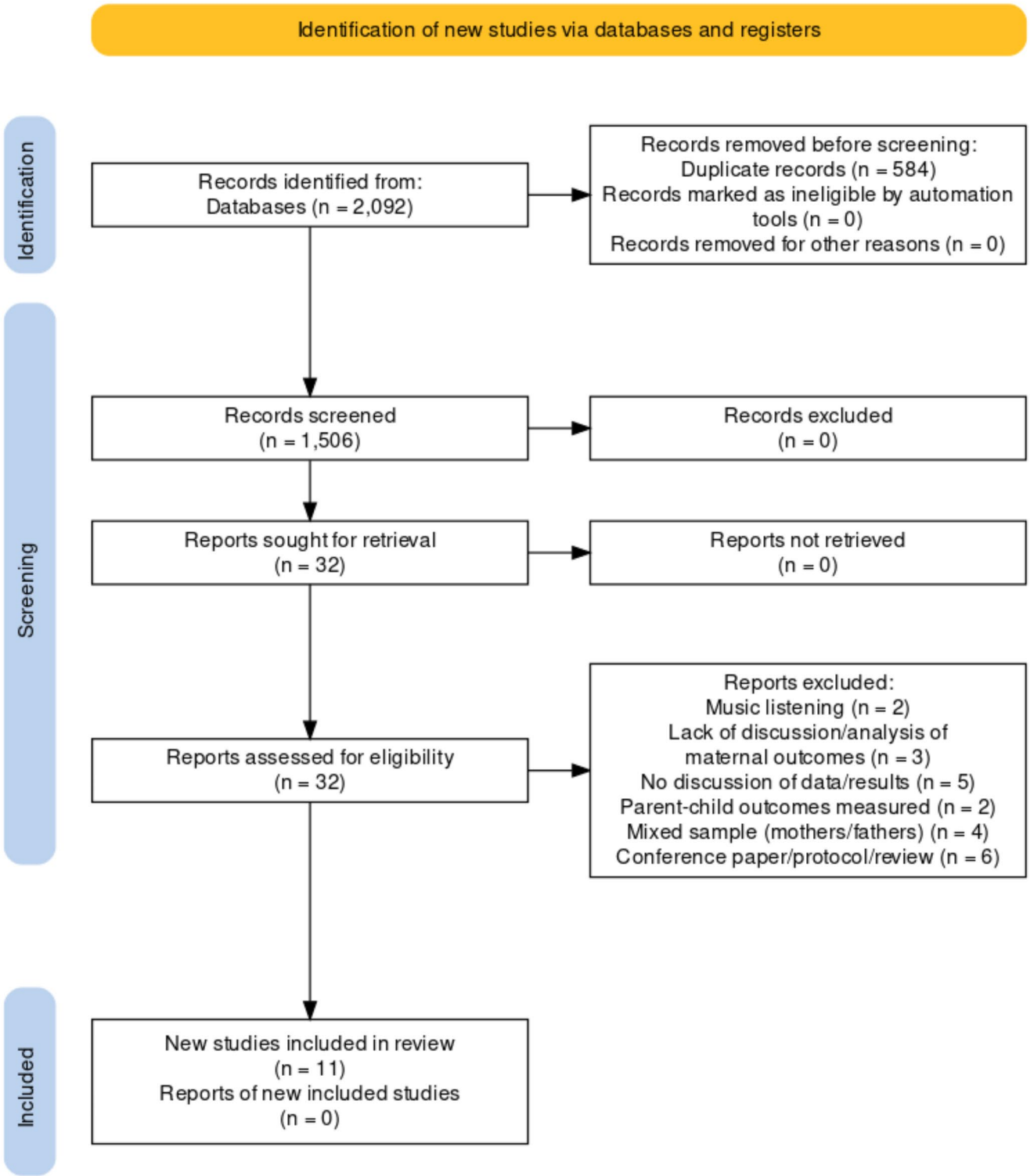


**Fig. 1** PRISMA diagram

**Table 1** Included studies

| First author (date) Country | Study design | Sample size | Age (mean) | Maternal stage | Art form | Duration (frequency) | Maternal outcomes measured | Scales used | Data collected | Control group |
|---|---|---|---|---|---|---|---|---|---|---|
| Carolan et al. (2012) *Ireland* | Qualitative | 6 | 29.7 | Pregnancy | Lullaby singing | 4 weeks | Emotional response to lullaby singing | None | Semi-structured interviews | No |
| Demecs et al. (2011) *Australia* | Qualitative | 7 | 32 | Pregnancy | Singing; dancing; storytelling; weaving | 2 months (6 × 2-hour sessions) | Holistic wellbeing | None | Participant diaries / Semi-structured interviews / Field notes / Questionnaire about programme structure / Social demographic data | No |
| Ettenberger et al. (2017) *Columbia* | Mixed methods | 33 | 25.9 | Postpartum | Music therapy | Not reported (Twice weekly) | Anxiety/bonding | State Trait Anxiety Index (STAI) / Mother Infant Bonding Scale (MIBS) | STAI and MIBS (pre / post) / Semi-structured interviews / Questionnaire | Yes |
| Ettenberger & Ardila (2018) *Columbia* | Mixed methods | 15 | 24.6 | Postpartum | Music therapy/ song writing | Not reported (4–6 sessions) | Bonding / depression / anxiety / mental wellbeing | Mother-Infant Bonding Scale (MIBS) / Short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS) / Hospital Anxiety Depression Scale (HADS) | MIBS, SWEMWBS and HADS (pre / mid / post) / Semi structured interviews / Information about music likes and dislikes | No |
| Fancourt & Perkins (2017) *UK* | Quantitative | 391 | 31.8 | Postpartum | Singing | Not reported | Symptoms of postnatal depression / wellbeing / bonding / singing to baby | Edinburgh Postnatal Depression Scale (EDPS) / Short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS) / Rosenberg self-esteem scale (RSE) / Mother-infant bond (Likert scale) | EDPS, SWEMWBS, RSE and mother-infant bond (pre / mid / post) | No |
| Fancourt & Perkins (2018) *UK* | Quantitative | 134 | 33.5 | Postpartum | Group singing workshops | 10 weeks (not reported) | Symptoms of postnatal depression | Edinburgh Postnatal Depression Scale (EDPS) | EDPS (pre / mid / post) / baseline demographic data | Yes |
| Kostilainen et al. (2021) *Finland* | Mixed methods | 36 | 32 | Postpartum | Singing | 7 weeks (Daily) | Maternal Anxiety / wellbeing / mother-infant relationship | State Trait Anxiety Index (STAI) / Self-report questionnaire (Likert scale) | STAI / participant diaries: duration and frequency of singing / Self-report questionnaire: maternal singing experiences | Yes |
| Perkins et al. (2018) *UK* | Qualitative | 134 | 33.5 | Postpartum | Group singing | 10 weeks (not reported) | Recovery from postnatal depression | None | Focus groups | Yes |
| Perry et al. (2008) *UK* | Qualitative | 9 | No data | Postpartum | Creative writing (poetry) / card making / collages / ceramics / music | Not reported (8 × 1.5 h sessions) | Recovery from postnatal depression/anxiety/ self-esteem and self-confidence | None | Semi-structured interviews | No |

**Table 1** (continued)

| First author (date) Country | Study design | Sample size | Age (mean) | Maternal stage | Art form | Duration (frequency) | Maternal outcomes measured | Scales used | Data collected | Control group |
|---|---|---|---|---|---|---|---|---|---|---|
| Wulff et al. (2021a) *Germany* | Quantitative | 172 | 34.03 | Pregnancy | Music and singing | Variable (Daily x 10–15 min) | Maternal wellbeing/mother-infant bonding | Maternal Antenatal Attachment Scale (MAAS) / General Self-Efficacy Scale (Allgemeine Selbstwirksamkeit Kurzskala, ASKU) / Edinburgh Postnatal Depression Scale (EPDS) / State Trait Anxiety Inventory (STAI) / Saliva samples for cortisol, alpha-amylase and oxytocin detection / Self-assessment manikin (SAM): emotional state / Visual analogue scale (VAS): perceived closeness to baby | EPDS / MAAS / ASKU / STAI / VAS / saliva sample / SAM: all collected pre- and post- | Yes |
| Wulff et al. (2021b) *Germany* | Quantitative | 120 | 34.31 | Postpartum | Singing | Variable (up to three sessions sessions, with daily self-directed activities) | Mother-infant bonding / maternal wellbeing / frequency of singing to baby | Edinburgh Postnatal Depression Scale (EPDS); Postpartum Bonding Questionnaire (PBQ); VAS (comfort with the maternal role); VAS (closeness to baby); / State Trait Anxiety Inventory (STAI) / Saliva samples for cortisol, | STAI / PBQ / VAS closeness / VAS wellbeing / Saliva sample / Use of music and singing | Yes |

delivered during pregnancy (Demecs et al., 2011; Carolan et al., 2012; Wulff et al., 2021a), with the remaining eight occurring in the postpartum period. Intervention timings–duration, frequency, time period– were not reported in any consistent way across the included studies.

Of the studies reviewed, music and singing are the most prevalent interventions employed, with all studies including this either as the main art form or as a key component within a programme of creative activities. One study (Carolan et al., 2012) looked specifically at lullaby singing whilst two studies (Ettenberger et al., 2017; Ettenberger & Ardila, 2018) investigated the effectiveness of music therapy on maternal outcomes, alongside those of infants. Another group of studies collected data taken from 391 mothers and analysed the difference in health and wellbeing outcomes between singing to babies, listening to music and group singing (Fancourt & Perkins, 2017, 2018; Perkins et al., 2018). Two studies (Perry et al., 2008; Demecs et al., 2011) adopted a creative programming approach, with singing and/or music alongside dancing, storytelling, and craft-making activities, such as weaving, poetry, and ceramics. The two studies that used multiple forms of creative activity (Perry et al., 2008; Demecs et al., 2011) also sought participant's feedback on their preferences, with participants articulating a preference for singing over other forms of creative activity and expressing greater enjoyment of the music sessions, compared to creative writing and crafts (Perry et al., 2008).

Although not consistently or clearly reported, it appeared that the interventions were delivered by both specialist and non-specialist arts practitioners. In some instances, a collaborative approach was adopted, with sessions conducted by creative or artistic practitioners working alongside health professionals such as midwives (Carolan et al., 2012) or health visitors (Perry et al., 2008). Where interventions used music, singing, or listening to music, music therapists played a role in guiding participants or facilitating sessions (Wulff et al., 2021a; Kostilainen et al., 2021; Wulff et al., 2021b).

## Study design and data analytic approaches

The studies included contained a range of approaches to data collection, both in terms of the variety of outcomes measured and the methods used. Four studies were solely qualitative, four were quantitative, and the remaining three engaged mixed methods approaches. Where quantitative or mixed methods approaches were taken, validated scales were used to measure maternal outcomes. All studies that gathered qualitative data utilised thematic analysis.

**Table 2** Quality Assessment (QATSDD)

| First author (date) | Study design | Explicit theoretical framework | Statement of aims / objectives in main body of report | Clear Descripti-on of research setting | Evidence of sample size considered in terms of analysis | Representative sample of the target group of a reasonable size | Description of the procedure for data collection | Rationale for choice of data collection tool(s) | Detailed recruitment data | Statistical assessment of reliability and validity of measurement tool(s) (Quan only) | Fit between stated research question and method of data collection (Quan only) | Fit between stated research question and format and content of data collection tool (Qual only) | Fit between research question and method of analysis | Good justification for analytical method selected | Assessment of reliability of analytical process (Qual only) | Evidence of user involvement in design | Strengths and limitations critically discussed | Total score [maximum that could have been achieved based on study design] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Perkins et al. (2018) | Qual | 3 | 3 | 3 | 1 | 2 | 3 | 3 | 2 | - | - | 3 | 3 | 3 | 3 | 0 | 2 | **34** *[42]* |
| Wulff et al. (2021b) | Quan | 1 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 2 | 3 | - | 3 | 3 | - | 0 | 3 | **34** *[42]* |
| Demecs et al. (2011) | Qual | 1 | 2 | 2 | 1 | 1 | 3 | 3 | 3 | - | - | 3 | 3 | 3 | 2 | 1 | 2 | **30** *[42]* |
| Kostilainen et al. (2021) | Mixed | 2 | 3 | 3 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 1 | 0 | 2 | **30** *[48]* |
| Wulff et al. (2021a) | Quan | 0 | 1 | 3 | 2 | 1 | 3 | 3 | 2 | 1 | 2 | - | 3 | 3 | - | 0 | 2 | **29** *[42]* |
| Fancourt & Perkins (2017) | Quan | 1 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 0 | 3 | - | 3 | 1 | - | 0 | 3 | **28** *[42]* |
| Ettenberger et al. (2017) | Mixed | 1 | 3 | 3 | 1 | 2 | 3 | 2 | 1 | 0 | 2 | 2 | 3 | 1 | 1 | 0 | 2 | **27** *[48]* |
| Ettenberger & Ardila (2018) | Mixed | 1 | 1 | 3 | 1 | 2 | 2 | 0 | 1 | 0 | 3 | 2 | 3 | 1 | 0 | 0 | 3 | **23** *[48]* |
| Fancourt & Perkins (2018) | Quan | 1 | 2 | 3 | 1 | 1 | 2 | 0 | 2 | 0 | 3 | - | 3 | 2 | - | 0 | 2 | **22** *[42]* |
| Perry et al. (2008) | Qual | 1 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | - | - | 2 | 2 | 1 | 0 | 0 | 1 | **18** *[42]* |
| Carolan et al. (2012) | Qual | 1 | 1 | 2 | 1 | 1 | 2 | 0 | 2 | - | - | 2 | 3 | 0 | 1 | 0 | 1 | **17** *[42]* |

**Table 3** Assessment of bias of included studies

| Study | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Total score | Risk of bias |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quantitative | | | | | | | | | | | | |
| Fancourt & Perkins (2017) | Yes | Yes | Unclear | Yes | Yes | Yes | Yes | Yes | - | - | 7 | M |
| Fancourt & Perkins (2018) | Yes | Yes | Yes | Yes | No | No | Yes | Yes | - | - | 6 | M |
| Wulff et al. (2021a) | Yes | Yes | Yes | Yes | No | No | Yes | Yes | - | - | 6 | M |
| Wulff et al. (2021b) | Yes | Yes | Yes | Yes | No | No | Yes | Yes | - | - | 6 | M |
| Qualitative | | | | | | | | | | | | |
| Carolan et al. (2012) | Yes | Yes | Yes | Yes | Yes | No | Unclear | Yes | Yes | Yes | 8 | L |
| Demecs et al. (2011) | Unclear | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | 8 | L |
| Perkins et al. (2018) | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | 9 | L |
| Perry et al. (2008) | Yes | Yes | Unclear | Yes | Yes | No | No | Yes | Yes | Yes | 7 | M |
| Mixed Methods (Quantitative/Qualitative) | | | | | | | | | | | | |
| Ettenberger et al. (2017) | Yes/Yes | Yes/Yes | Yes/Yes | Yes/Yes | No/Yes | No/No | Yes/Unclear | Unclear/Yes | -/Yes | -/Yes | 5/8 | M/L |
| Ettenberger & Ardila (2018) | Yes/Yes | Yes/Yes | Yes/Yes | Yes/Yes | No/Yes | No/No | Yes/Unclear | Unclear/Yes | -/Yes | -/Yes | 5/8 | M/L |
| Kostilainen et al. (2021) | Yes/Yes | Yes/Yes | Yes/Yes | Yes/Yes | No/Yes | No/No | Yes/Unclear | Yes/Yes | -/Yes | -/Yes | 6/8 | M/L |

### Quantitative

Four of the included studies conducted a randomised controlled trial to investigate the impact of singing and/or music on aspects of maternal wellbeing, including mother-infant bond and postnatal depression (Fancourt & Perkins, 2018; Wulff et al., 2021a; Kostilainen et al., 2021 [the quantitative component]; Wulff et al., 2021b). A fifth study (Fancourt & Perkins, 2017) adopted a comparative approach, investigating the associations between singing to babies and symptoms of postnatal depression, wellbeing, self-esteem and mother-infant bond, compared to listening to music. A range of validated scales was employed to measure anxiety, postnatal depression, mental wellbeing, mother-infant bond, self-esteem and self-efficacy.

### Qualitative

Four studies utilised a qualitative approach (Perry et al., 2008; Carolan et al., 2012; Demecs et al., 2011; Perkins et al., 2018). The qualitative studies favoured semi-structured interviews as the primary mode of data collection, with Demecs et al. (2011) triangulating this data with participant diaries and researcher field notes. Qualitative data were analysed using thematic analysis however this was reported in varying degrees of detail in terms of the reporting of both the methodology and the results.

### Mixed methods

Of the eleven included studies, three adopted a mixed methods methodology (Ettenberger et al., 2017; Ettenberger & Ardila, 2018; Kostilainen et al., 2021). These studies combined the use of psychometric scales with semi-structured interviews (Ettenberger et al., 2017; Ettenberger & Ardila, 2018), and parent diaries and questionnaires (Kostilainen et al., 2021). Qualitative data was analysed using thematic analysis.

## Outcomes measured

In the studies identified, a broad range of maternal outcomes was measured. Studies tended to favour measuring health outcomes for which there are existing clinical scales such as postnatal depression (PND), anxiety and mother-infant bonding. Whilst other studies did state that the intervention was measuring the impact on postnatal depression (Perry et al., 2008) no scales were used.

The Edinburgh Postnatal Depression Scale (EDPS) was adopted in three studies carried out in the UK (Fancourt & Perkins, 2017; Fancourt & Perkins, 2018; Perkins et al, 2018) and one in Germany (Wulff et al., 2021b), with the

short version of the Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS), used in two studies, one in Columbia (Ettenberger & Ardila, 2018) and one in the UK (Fancourt & Perkins, 2017). Other scales included the State-Trait Anxiety Index (STAI) (Ettenberger & Ardila, 2018; Kostilainen et al., 2021); the Mother-Infant Bonding Scale (MIBS) (Ettenberger et al., 2017; Ettenberger & Ardila, 2018); the Hospital Anxiety Depression Scale (HADS) (Ettenberger & Ardila, 2018); and the Rosenberg Self Esteem Scale (Fancourt & Perkins, 2017). One study (Fancourt & Perkins, 2017) also used a Likert scale (0–5) to measure self-reported mother-infant bond. In some cases, researchers designed specific questionnaires to collect information on behaviours, cultural activity or preferences (Demecs et al., 2011; Ettenberger et al., 2017; Fancourt & Perkins, 2017; Ettenberger & Ardila, 2018). Two later studies demonstrated developments in the field, as they collected saliva samples to measure cortisol levels (Wulff et al., 2021a, b).

## Quality assessment

Quality assessment was carried out using the Quality Assessment Tool for reviewing Studies with Diverse Designs (QATSDD) (Sirriyeh et al., 2012), a 16-item scale that allows for assessment of studies with different methodological approaches. Each item carries a maximum score of three, with 12 items applying to all studies, a further two applying to studies with a qualitative methodology, and the final two applying to qualitative studies. It is, therefore, possible for mixed methods studies to score more highly due to the nature of the study design incorporating both qualitative and quantitative approaches. This assessment (see table below) highlighted several limitations within the literature as a whole. Firstly, studies are rarely supported by explicit theoretical frameworks, with only one study (Perkins et al., 2018) referring explicitly to the theoretical underpinning, therefore meaning that subsequent analysis and discussion of results are not sufficiently or critically explored. The same applied to the application of research methodologies where samples were rarely representative of the larger population and description and rationale for chosen methods was not consistently provided. The most striking limitation revealed through quality assessment was that although pilot studies are relatively common, user involvement or co-design is often a feature of the research design. Whilst studies sought feedback from participants, this was carried out post-intervention with one single study (Demecs et al., 2011) inviting ongoing reflection on the process. None of the studies reported negative or neutral outcomes, however, the results need to be interpreted with caution given the methodological limitations in many studies including small sample sizes and lack of control or comparison group. Table 2 displays the final quality assessment scores, in descending order, starting with the highest score.

## Assessment of bias

In addition to using the QATSDD, we also used the Critical Appraisal Checklist for (i) Analytical Cross-Sectional Studies [quantitative] and (ii) Qualitative Studies to assess bias (Munn, 2020). These checklists provide a numeric rating score between 0 and 10 (where a higher number indicates a lower risk of bias) enabling researchers to determine the extent of risk (Score Cut-offs: ≤4 = High; 5–7 Moderate; >7 Low). The bias scores and ratings for the studies included in this review are illustrated in Table 3.

The Cross-Sectional Checklist contains eight items (1- Were the criteria for inclusion in the sample clearly defined? 2 - Were the study subjects and the setting described in detail? 3 - Was the exposure measured in a valid and reliable way? 4 - Were objective, standard criteria used for measurement of the condition? 5 - Were confounding factors identified? 6 - Were strategies to deal with confounding factors stated? 7 - Were the outcomes measured in a valid and reliable way? 8 - Was appropriate statistical analysis used? ) and the Qualitative Checklist has ten (1 - Is there congruity between the stated philosophical perspective and the research methodology? 2 - Is there congruity between the research methodology and the research question or objectives? 3 - Is there congruity between the research methodology and the methods used to collect data? 4 - Is there congruity between the research methodology and the representation and analysis of data? 5 - Is there congruity between the research methodology and the interpretation of results? 6 - Is there a statement locating the researcher culturally or theoretically? 7 - Is the influence of the researcher on the research, and vice-versa, addressed? 8 - Are participants, and their voices, adequately represented? 9 - Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body? 10 - Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data? ). Each item is rated as having met the criteria or not (Yes/No) or whether it was unclear. If a study has met the criteria, then it is awarded a point and none if it either didn't or was undetermined. Two reviewers assessed bias (ERC and CB) independently.

As can be seen in Table 3, all four quantitative/cross-sectional studies were at a moderate risk of bias (Fancourt & Perkins, 2017, 2018; Wulff et al., 2021a, b). Three of the qualitative studies were low (Carolan et al., 2012; Demecs et al., 2011; Perkins et al., 2018) and one was moderately (Perry et al., 2008) at risk. All three mixed methods studies were assessed as being moderate (quantitative/

cross-sectional) and low (Qualitative) for their respective components.

## Meta-synthesis

As all of the studies had utilised a thematic approach to analysis, this was also the method used to synthesise the findings and qualitative data. Although qualitative data was reported in very different ways, and in varying degrees of detail, the data was analysed, resulting in three overarching themes: *Social benefits*– incorporating the sub-themes *community/peer support* and *time out for mothers; Emotional benefits*– incorporating the sub-themes *fun and enjoyment*, *relaxation and calm*, and *relief from worries and anxieties*; and *Psychological benefits*– incorporating the sub-themes *skills for motherhood*, *overcoming challenges/aiding transition*, and *bond with baby.* Table 4 shows the themes alongside theme descriptors.

## Social benefits

### Community and peer support

The theme of *community and peer support* was consistent across all studies except for two in which parents participated in music therapy either individually or with their partner (Ettenberger et al., 2017; Ettenberger & Ardila, 2018). The thematic analysis within the studies themselves identified the themes "*seeking support"* and "*becoming connected"* (Demecs et al., 2011); *"reducing feelings of isolation"* (Perry t al., 2008); and *"singing as part of a group"* (Perkins et al., 2018).

> "The real reason I came along was to benefit from other people's experiences" (Demecs et al., 2011, p.116).

The quote above shows that whilst peer support was an outcome, it was also a motivator. Women used the interventions as an opportunity to interact with other mothers and share their experiences of motherhood (Perry et al., 2008; Demecs et al., 2011; Carolan et al., 2012; Perkins et al., 2018). Learning from other mothers' stories enabled women to better situate their own experiences within the wider context of maternal experience. This was particularly evident when this component was built into the intervention itself and women were given space and opportunity to voice their narratives through "storytelling" (Demecs et al., 2011).

Women also valued being in a group with other mothers experiencing similar mental health difficulties (Perry et al., 2008, p. 43). In many cases, the act of engaging in creative activity enabled them to be "more open towards each other"

**Table 4** Qualitative data themes

| Main theme | Sub-theme | Theme descriptors |
|---|---|---|
| Social benefits | Community/Peer support | Making/singing/moving together creates bonds between mothers: '*It brought everyone together… the music thing brought everyone closer'.* Learning from other mothers' stories: *'The real reason I came along was to benefit from other people's experiences'.* |
| | Time out for mothers | Something outside of the parental routine: '*Everything is for the baby… this [singing] is good for baby but at the same time its good for me'* A dedicated space for to enjoy motherhood– *'a space that was dedicated to my pregnancy… get in touch with that side of myself.'* |
| Emotional benefits | Fun and enjoyment | Participation elicits positive emotions: *'It was very uplifting. I leave here a lot happier than when I started.'* |
| | Relaxation and calm | Creative activities bring peace: '*As soon as I started singing, it seemed to relax me.'* Immersion in the activity is calming: *'…an opportunity to just switch off and think about the music.'* |
| | Relief from worries/ anxieties | Connecting with oneself and one's baby helps to resolve concerns: *'….if things weren't okay… I'd be able to deal with it.'* |
| Psychological benefits | Skills for motherhood | Intervention benefits extended outwards: *'I came home… feeling happy… then everyone else feels good.'* New skills are acquired and utilised within the maternal role: *'I found myself singing the lullaby… it made a difference to have that.'* |
| | Overcoming challenges/aiding transition | Participation impacts confidence: *'I've been able to go to lots of other groups… I don't think I would have….'* Intervention content and activities prepare women for motherhood: *'They helped to quiet the mind, prepared you emotionally.'* |
| | Bond with baby | Women enjoy when baby responds: *'He loves it when I sing.'* Bonds are created through creative activity before baby is born: *'I was thinking about the baby because the weaving was for the baby.'* |

(Demecs et al., 2011, p.116), encouraged group working and social interaction (Perry et al., 2008), and that meeting regularly and taking part in a creative activity together created "social cohesion" (Perkins et al., 2018, p.7).

Making, singing, moving and creating together all contributed to group bonding and cohesion. Song and dance can break down some of the awkwardness that can abound in groups of unfamiliar people, as demonstrated in the quote below:

> "It brought everyone together a bit more … the music thing brought everyone closer" (Perry et al., 2008, p.42).

The "shared space" (Demecs et al., 2011, p.119) created during the intervention also gave women a sense of belonging that strengthened their individual feelings of confidence and self-awareness. The sense of community and social support also fed into the psychological benefit, discussed below, of feeling more able to overcome the challenges that women faced during the "period of transition" (Demecs et al., 2011, p. 116) that women experience when they become mothers.

#### Time out for mothers

*Connecting with the self* (Demecs et al., 2011); *Distraction: outside of routine* (Ettenberger & Ardila, 2018); and *Singing time for mums* and *Singing as immersive* (Perkins et al., 2018) all captured the idea of the interventions as presenting an opportunity for women to do something for themselves outside of the usual parental routine. One participant, in a singing intervention, described how everything else she did outside of the singing sessions seemed to be for the baby:

> "Everything is for the baby. You go to a class and it's always for the baby … This [singing] is also good for the baby, but at the same time, it's something for us as well" (Perkins et al., 2018, p.6).

What she is expressing is that not only is she responsible for all of the baby's care needs, but when they do get out of the house to take part in a class, that is also aimed at the baby's needs and development. She appears to stress the value of having something that is aimed at the wellbeing of mothers, whilst indirectly benefiting the babies, who will listen to the singing:

Pregnancy is a pivotal rite of passage for women, that has different social and cultural rituals attached, in which women transition to the role of mother. Women valued having a dedicated place in which they could "indulge in being pregnant" (Demecs et al., 2011, p.116), and relaxing into an immersive activity created a sense of "me time" (Perkins et al., 2018, p.9).

> Consciously taking myself to a space that was dedicated to my pregnancy… get in touch with that side of myself…" (Demecs et al., 2011, p.118).

The quote above describes how the participant valued being able to have a *dedicated space* for her pregnancy, in which she could connect and get in touch with her maternal instincts. Creating this space for women within an intervention enables them to better enjoy the transitional phase of pregnancy. It can also give them time and space to connect to their new and evolving identity as a mother.

### Emotional benefits

#### Fun/enjoyment

Three studies highlighted enjoyment or pleasure as being important themes within their analysis: *Singing feels good* (Perkins et al., 2018); *Enjoying music therapy: feeling good; beautiful* (Ettenberger et al, 2017); and *Pleasant experience: satisfying; nice; fun* (Ettenberger & Ardila, 2018), with evidence in the discussion of data of others.

> "It was very uplifting. I leave here a lot happier than when I started" (Perkins et al., 2018, p.6).

The participant in the quote above describes the *uplifting* effect of taking part in a singing intervention by identifying a greater feeling of happiness at the end compared to how she felt at the beginning. Demecs et al. (2011) also described how moving to music was seen to create "positive emotions" and be an "uplifting exercise" (p.117), with dancing together facilitating a sense of fun, as women were observed to become more playful with one another (p.116). To be uplifted could also be viewed as feeling lighter, more hopeful or relieved from one's worries, a positive emotional impact that links to another key finding from the studies.

#### Relief from worries and anxieties

Although similar to the above sub-theme, *Time out for mothers*, this theme captures a different aspect of wellbeing, as it relates to the impact on mothers' fears and concerns. Carolan et al. (2012) calls this theme *Beyond words: music and the articulation of deep emotion*, describing the impact as *addressing and resolving concerns* and creating feelings of *safety and security.* Ettenberger et al. terms this *Distraction: forgetting everything* (2017) and *Distraction: forgetting worries* (2018). The interventions "allay[ed] anxiety"

(Carolan et al., 2012, p.323) and offered relief from the "practical and emotional concerns of early motherhood" (Perkins et al., 2018, p.9), as women forgot "concerns and worries for a while" (Ettenberger & Ardila, 2018, p.46) and could 'be in the moment', without having to think about the issues of everyday life that were troubling them (Kostilainen et al., 2021, p. 365). Perkins et al. (2018) posited that the emotional and social connection with the music created a relaxing environment, bringing about relief from symptoms of postnatal depression (p.10). The *beyond words* ability of music, suggested by Carolan et al. (2012) also allowed mothers to face their "subconscious fears and come to some resolution" (p.323).

One participant identified that one of her worries as a mother was fear about things not being *okay.* She identified that, by taking part in the singing intervention, she was able to connect to her baby and her internal coping resources to *overcome* her fears:

> "It was relaxing… I suppose what I had to overcome was that fear that if things weren't okay, that I'd be able to deal with it… [The singing] connected me to him … it didn't matter how I was going to cope with it" (Carolan et al., 2012, p.323).

#### Relaxation and calm

As identified in the discussion above, being relieved of worries and fear also helped mothers feel more relaxed, and this was a consistent theme found in the data and discussion across all studies. Carolan et al. (2012) described *A balm for the soul: relaxing* and *peaceful*, Ettenberger et al. *Parents can relax* (2017) and *Relaxation: calmness* and *peace* (Ettenberger & Ardila, 2018), and Kostilainen et al. simply described *Relaxation* in one sub theme, with another being *Improved mood.* However, Perry et al. (2008) and Perkins et al. (2018) highlighted the importance of the intervention setting as being *A supportive and relaxed environment* (Perry et al., 2008) and *Calm and inclusive singing environment* (Perkins et al., 2018). Women engaging in creative activities found "an inner peace and calm" when making a craft item for their baby (Demecs et al., 2011, p.119) and the ability to become relaxed and "absorbed" (Perkins et al., 2018, p.10) was seen as a key part of the impact on emotional wellbeing.

Singing and music were most commonly cited as mechanisms through which mothers felt the relaxation, with the two quotes below taken from participants within singing interventions. In the first quote, the participant is describing an almost instantaneous state of relaxation from the moment she starts singing, with the second quote describing a similar *switching off*, perhaps akin to a light switch, that enables her to *turn off* her worries and concerns during the period that she is engaged in singing.

> "As soon as I started singing, it seemed to relax me" (Perkins et al., 2018, p.6).

> "It's an opportunity to just switch off and think about the music" (Carolan, 2012, p.324).

The *switching off* discussed above describes the participant's conscious acknowledgement of how music and singing contribute to relaxation. There was also evidence that, as an activity, dancing was observed to be "especially useful" in helping women to relax, as they moved their bodies to music (Demecs et al., 2011, p.116).

### Psychological benefits

#### Skills for motherhood

A common outcome across studies was the finding that participants learnt or discovered new skills or "tools" (Perkins et al., 2018) that they could employ or call upon outside of the study environment. The study authors articulated these themes in different ways: Demecs et al. (2011) talked about *Taking the balance home*, which related to the after-effects of the intervention and the "transfer" of the "positive emotional and spiritual experience into their home environment" (p.119), whilst Kostilainen et al. (2021) described *The effects of maternal singing on the early relationship: Daily routine* and the creation of 'special rituals' and 'important moment[s] at home' (p. 366).

It is said that mothers are at the heart of every home. A participant in a creative arts programme was able to identify that the *happiness* she felt as a result of taking part in the intervention followed her home. Because her emotional state was improved, this had a positive impact on the rest of her household, and she recognised that by *feeling good* herself, this spread to her immediate family:

> "I came home you know feeling happy … if the mother of the house is feeling good then everyone else feels good" (Demecs et al., 2011, p.118).

It was also found, especially concerning singing, that women gained *new singing skills* (Perkins et al., 2018) and carried on with this practise independently at home: *Singing at home* (Perkins et al., 2018); *Empowerment: ways to use music at home* (Ettenberger & Ardila, 2018). Participants enjoyed learning new activities that they could do alone or with their babies. The *tool* of singing was used by parents in the home environment as an activity (Demecs et al., 2011;

Perkins et al., 2018; Kostilainen et al., 2021), but also at times when they were looking to soothe or calm their baby. Being able to utilise this skill with positive results increased their confidence and resulted in a sense of empowerment (Demecs et al., 2011; Carolan et al., 2012; Ettenberger et al., 2017; Ettenberger & Ardila, 2018; Perkins et al., 2018; Kostilainen et al., 2021).

Kostilainen provided evidence that participants felt empowered by having skills through which they could 'calm baby down' and 'affect [their] development' (p. 365). A concrete example of how skill acquisition assisted mothers in feeling empowered to use singing as a tool is demonstrated in the quote below. The mother describes being in hospital with her distressed daughter, and how she used one of the lullabies learnt during the singing intervention. She identifies the impact of having something she may not have had were it not for the intervention:

> "This weekend we were back in hospital… and she was going mental, and I found myself singing the [folk lullaby] song and it just gave me something that I might not have … it made a difference to have that" (Perkins et al., 2018, p.5).

#### Overcoming challenges/aiding transition

Related to the above sub-theme, women found that one of the impacts of participation was an ability to better overcome or face the challenges that they faced as new mothers. This impact was brought about in part by the cumulative effect of the aforementioned emotional and social benefits such as peer support and an ability to better mage worries and anxieties, but also as a result of increased self-esteem (Perry et al., 2008).

One example of the wider impact increased self-esteem can have on a participant's ongoing wellbeing is given by a participant who took part in a creative arts programme. She describes how going to the intervention group gave her a *push* that made her feel more confident and able to attend other mother and baby groups:

> "I've been able to go to lots of other groups … I don't think I would have gone to any of that if Time for Me [the intervention] hadn't given me that push" (Perry et al., 2008, p.41).

The study authors also reported other mechanisms at play that supported women's abilities to cope and transition to their role as new mothers. Perkins et a. (2018) suggested that singing supported a "reconnection with a sense of self and purpose that had been lost in the transition to pregnancy" (p.7), whilst Demecs et al. (2011) discussed how peer support and discussion enabled women to prepare for motherhood by facilitating a sense of *Being balanced in pregnancy* and *Being ready for the upcoming birth*, with the emotional balance participants felt from the activities affecting how they prepared for and "anticipated" labour and birth (Demecs et al., 2011, p.118).

Giving birth is part of the rite of passage to motherhood, but one that can come with many fears and concerns. Participants in a creative arts programme identified how important it felt to them to be *ready*, emotionally, psychologically and physically, for the birth. Having activities that prepared them for labour and birth were seen to be especially valuable at that juncture in their lives:

> When it boils down to labour, it is raw and emotional. It is important to be ready and in balance [Participant 1] (Demecs et al., 2011, p.118).

> The mind is important in birth… they [the activities] helped to quiet the mind, prepared you emotionally" [Participant 2] (Demecs et al., 2011, p.118).

#### Bond with baby

Except for one study (Perry et al., 2008) where there was no evidence of this as a finding within the data or discussion, all of the studies identified a significant outcome as being the improvement of the mother-infant bond. This was especially evident in studies where singing or music had been used as a technique with Perkins et al. (2018) identifying two key themes as *Singing supports bonding* and *Singing impact on babies (calming)* and Ettenberger recognising *Bonding: feeling connected* (Ettenberger et al., 2017) and *Bonding: connectedness; expressing emotions; relationships; long term bond* (Ettenberger & Ardila, 2018). Kostilainen et al. (2021) also identified *Effects of maternal singing on the early relationship: emotional closeness and enhanced early interaction.*

Singing was particularly helpful in facilitating a bond with mothers stating that their baby responded to the sounds of their voice (Demecs et al., 2011; Ettenberger & Ardila, 2018; Perkins et al., 2018) and that their relationship with their child "evolved" as they continued to sing and get to know them better (Ettenberger et al., 2017, p.221). Mothers expressed that they felt more connected during music therapy and were able to express themselves through song (Ettenberger & Ardila, 2018, p.46) and were able to use songs to "calm and soothe" their child (Perkins et al., 2018, p.8). Carolan et al. (2012) also acknowledged the mother-infant relationship and responsiveness within the theme of *Music and the facilitation of infant development.*

In the two quotes below, participants discuss their feelings when the baby responds to their singing. In the first quote, the mother describes her baby experiencing joy and pleasure as a result of her singing to him. Whilst she identifies that singing doesn't make him sleepy (often cited as a positive impact in the studies where lullabies have been used), she can recognise that listening to her voice creates a state for her and her baby to interact and experience pleasure and connection together as he responds to her:

> *"He loves it when I sing … he responds to me … he doesn't necessarily come over all sleepy"* (Carolan et al., 2012, p.324).

The feeling described by the first participant is echoed in the next quote. There is a sense of the experienced being heightened because it is shared by other mothers and their babies. The feedback from the interpersonal experience between the mother and their unborn child and the shared group experience also feeds into the activity, with the special nature of it coming through the singing itself:

> *"I was talking to the others about it, we were all feeling that our babies are responding, and I think that was coming across when we were singing, it seemed to be special for a lot of us and you could feel that in the group"* (Demecs et al., 2011, p.117).

In a creative arts programme where women were encouraged to take part in a weaving project to make something for their unborn child (Demecs et al., 2011), it was stated that this act helped them to feel more connected to them. One participant described how the act of weaving brought them closer to their baby:

> *"While I was weaving, I was thinking about the baby because the weaving was for the baby … it gave me a nice feeling"* (Demecs et al., 2011, p.117).

Making something for the baby before they are born allows mothers to visualise and prepare for the baby before they are physically in the world, which can strengthen their feelings of attachment and enhance the mother-infant bond once their child is born.

## Discussion

This systematic review aimed to examine the existing evidence base for arts-based interventions on maternal health and wellbeing outcomes. A total of eleven papers met the criteria, including qualitative, quantitative and mixed methods studies. Across the included studies, there were several common outcomes and themes identified within the analysis. These were (i) positive impact upon maternal self-esteem and increased confidence; (ii) a sense that interventions created 'time for me' for the participants and contributed towards maternal instinct; (iii) the reduction of symptoms of postnatal depression alongside improved mother-infant bonding; (iv) interventions facilitating social support between peers, including the sharing of knowledge and experience.

### Strengths of included studies

All studies reported positive results and suggested there was scope for further research. There was good evidence to suggest that arts-based interventions can reduce symptoms of postnatal depression (Fancourt & Perkins, 2017, 2018; Perkins et al., 2018) and enhance maternal wellbeing, mother-infant bond and self-efficacy (Fancourt & Perkins, 2017, 2018; Perkins et al., 2018; Wulff et al., 2021a). Participants' voices and views were represented well within the qualitative studies, particularly in studies where direct quotes were used to illustrate points and discuss themes (Carolan et al., 2012; Demecs et al., 2011; Perkins et al., 2018). However, several studies reported thematic analysis without the inclusion of participant data (Ettenberger et al., 2017; Ettenberger & Ardila, 2018) or a clear description of themes (Perry et al., 2008). User involvement in the form of co-design or pilot studies was also noticeably lacking as identified in the quality assessment. When assessing study bias almost all qualitative studies (or components of the mixed methods) were deemed to be of low or of moderate risk. Of the seven studies reviewed, only one (Demecs et al., 2011) had involved participants in the research process by asking them to keep a diary which, as well as informing interview topics at the end of the programme, allowed researchers to understand the women's experience of participation, therefore allowing data to be triangulated.

### Limitations of included studies

The studies used a range of methodological approaches and collected a range of different types of data. It was, therefore, difficult to measure the impact between studies, compare outcomes, or combine results to draw reliable conclusions. Outcomes were let down by small sample sizes and lack of diversity within recruited participants, meaning that many samples were not always necessarily representative of the wider population. Additionally, little consideration was given to continued impact post-intervention, raising questions about the long-term effectiveness of short-term interventions. In the majority of studies, the opportunity to look at how creative practice might help women to engage with the maternal experience by

reflecting through arts or creating based on their experience has been missed. The authors offered a limited discussion of the mechanisms within the intervention that may have resulted in the reported outcomes. Only one paper (Perkins et al., 2018) carried out a comparative study and discussed the differences between active participation in the arts-based intervention and another form of social activity.

## Outcomes of included studies

Findings from the quantitative studies indicate that arts-based interventions have a positive impact on symptoms of postnatal depression. Analysis suggested that not only did the interventions reduce symptoms overall, but women with postnatal depression might experience a faster recovery compared to if they receive standard care.

Findings from the qualitative studies provided a deeper understanding of some of the mechanisms at play during the interventions and how delivery and intervention content might influence outcomes. Several papers cited findings that engagement in arts-based or creative activity had been a positive experience for women as they had explored other cultures, learnt new skills, or tried something new. There were also psychological benefits as these positive experiences led to a sense of achievement and accomplishment, resulting in increased self-esteem and confidence. This finding concords with qualitative findings reported elsewhere that women experience a sense of personal volition via the manipulation of art materials, and that this can feel empowering (Hogan, 2015). Furthermore, being able to perform their new skills such as singing to the baby at home was seen by participants to be empowering (Ettenberger & Ardila, 2018; Perkins et al., 2018; Kostilainan et al., 2021). These musical interventions are significant in working together with mothers and their infants in tandem. It was also noted that the act of creating something new such as an object for their unborn child (Demecs et al., 2011) or composing songs about motherhood (Perkins et al., 2018) was a rewarding activity. This concords with qualitative data which notes that making and image with or for the new child can become precious. However, although participants reported feeling a "significant boost" to their confidence and self-esteem, it was not always evident that these feelings were maintained post-intervention with reports that feelings of isolation returned when women were no longer engaged in a programme (Perry et al., 2008). Further research needs to be conducted on this question of enduring benefit, but there is some compelling evidence outside of this set of literature to suggest enduring benefit (Hogan, 2025). For example, an interesting intervention which explored materials and taught participants artistic techniques gave women skills to take away and use, endowing them with an enduring 'artistic practice' (Hogan, 2015). The implications of that study were that women could continue to self-analyse, self-regulate and self-sooth through the use of art materials ongoingly (with concordant benefits for infants).

There was insufficient evidence to ascertain whether the type of art practice delivered during the intervention made a difference to maternal outcomes overall. It is important that further studies clearly define and describe the artistic intervention in depth. However, the results would suggest that singing especially can have a positive impact on the mother-infant bond (Demecs et al., 2011; Ettenberger et al, 2017; Ettenberger & Ardila, 2018; Perkins et al., 2018; Wulff et al., 2021a; Kostilainen et al., 2021; Wulff et al., 2021b). Whilst this is an important consideration, given the strong correlation between the mother-infant bond and postnatal depression, it was difficult in some studies where infants were part of the research environment to distinguish between outcomes for the parents and outcomes for the infants. Still, whilst singing– a low cost and easily-resourced activity– is an understandable choice, other factors need to be considered: lullabies typically have soothing melodies, a tempo similar to the rate of the human heartbeat and meaningful lyrics. These factors may also have contributed to the positive experience of the women. Furthermore, lullabies are a universal cultural practice for soothing babies and promoting sleep. This may have influenced the women's subconscious understanding of the benefits of the intervention. Without the use of a control group, it is therefore hard to distinguish whether it was the lullabies themselves or the act of singing that brought about the results. Addressing these blurred lines is, therefore, a challenge and an important consideration for future research in this area. Furthermore, we note that the absence of evidence does not necessarily mean other forms of creative activity or artistic engagement are any less beneficial to women in the perinatal period.

A more general, collective impact identified in the studies was how arts-based interventions could impact social cohesion or a sense of belonging. Belonging can be generated via participation. One finding of qualitative research projects (Hogan & Ashley, 2023) has been on women finding or recovering their voice following distressing birthing experiences, where the art making was found to be empowering for women who couldn't necessarily articulate their feelings in words. Another key feature of the interventions described in the studies above was the opportunity for participants to share knowledge and experience with other mothers and realise that feelings experienced are shared with others, and that as individuals they are not aberrant. Being able to share stories and experiences, engage in a shared activity or work towards a common purpose facilitated group cohesion and bonding. Examples were given of the creative activity informing the collective social identity of the participants and of increased self-esteem and self-confidence being attributed to time spent with others experiencing similar life events and difficulties (Perry et al., 2008; Demecs et al., 2011; Perkins et al., 2018).

## Recommendations, applications and implications

There is a developing specialist area emerging of arts-based perinatal care to which this systematic review makes an important contribution. This is timely as systematic care failures have been highlighted (Kirkup, 2015; Ockenden, 2022). Kirkup, in an interview, emphasised that he found women were not listened to, leaving them disempowered and distressed; in particular, their valid concerns about perceived changes to their pregnancies were not heard (Padhy, 2023). Women who have experienced birth trauma and post-natal distress, and subsequent difficulty in post-natal adjustment, do not necessarily get this reality acknowledged, let alone receive adequate psychological support at present. These issues are now being addressed. New services are being provided. High-quality research in this area is urgently needed.

Given that the current evidence base is limited by small samples and lack of diversity, consideration should be given to participant demographics during the recruitment stage to obtain a diverse sample. In addition, more attention should be paid to the clarity of inclusion and exclusion criteria to control for confounding factors. Factors to consider would be first-time motherhood; social and cultural background; education; existing levels of cultural engagement and social activity and social support. Recruitment methods such as snowball sampling, advertising through social media and specific community groups could be utilised to reach participants representative of the population. However, there is also an argument that excluding those already "on board" with creative engagement as a worthwhile activity would generate a less biased and more representative sample, so randomisation should be considered. Further, it is noted that there is little research addressing the impact of interventions on the wellbeing of fathers, who are arguably as affected by mothers when a baby is born. Whilst fathers were present in studies held on neonatal units, it would be a significant contribution to the field to see them included in studies outside of clinical settings.

Based on the findings from this review, there may be several important applications for policy and professional practice. For example, in terms of national or global policy change, this isn't easy to influence without a substantial evidence base. Our review has shown that there is a paucity of literature in this area involving maternal populations, though the results appear to be, on the whole, very positive. Nevertheless, local-level policies, such as those implemented by local governments, including services for parent-and-baby centres (such as at Family Hubs in the UK), can—and in some cases already do—embed arts-based activities, such as singing and crafting, within maternal healthcare services to enhance maternal well-being and reduce mental health problems.

This has certainly been possible for similar types of interventions that involve practices like therapeutic touch (e.g., baby massage and Kangaroo Care) in hospital settings (Barnes & Adamson-Macedo, 2022; Mrljak et al., 2022; Pathak et al., 2023) and in the perinatal period within community locations (Ariff et al., 2022), delivered by professionals as part of their standard practices. However, increased funding is needed to develop and sustain scalable, cost-effective programs that specifically address maternal mental health. Furthermore, in an increasingly multicultural society, these programs must target diverse populations, engaging mothers from different socioeconomic and cultural backgrounds as has been the case in green prescribing initiatives with migrant, refugee and disabled mothers (Hall et al., 2023a, b, 2024). Expanding eligibility to include fathers and other caregivers can foster family-wide benefits and acknowledge their role in supporting maternal and infant care too (Simmons & Barnes, 2023).

Finally, maternal voices must be central to policy design, recognising the empowering role of creative practices and addressing systemic gaps, constructions, and ideologies of modern motherhood (Simmons, 2020). Combining arts-based approaches with traditional therapeutic methods may create a more holistic way of empowering mothers, that fosters emotional resilience, and strengthens the mother-infant relationship (Hermida, 2022). The evidence provided in our review suggests that policy, programs, and service providers could offer diverse activities to cater to individual preferences, ensuring inclusivity and broad appeal with likely positive outcomes for mothers and their families.

## Limitations of this review and future recommendations

While valuable for synthesising evidence, systematic reviews can suffer some limitations that may impact the generalisability and interpretation of their findings. Our systematic review of arts-based interventions for maternal health exemplifies several of these challenges, though our approach– using rigorous and accepted methods, focusing on quality, and transparency– will negate these challenges to some extent. That being said, the heterogeneity of our included studies, with varied methodologies, participant demographics, and intervention types, may make it difficult to form robust conclusions. However, it is important to note that our review was more about being inclusive of all studies and reporting the scale of what work has been conducted to date. That being said, whilst the included studies were small in number, crucially the inclusion of these studies is the result of a standard, well-controlled and rigorous approach to the search, selection and screening inherent in all systematic reviews. Publication bias may have also

influenced the review, as positive results were prominently reported, while mechanisms underlying the interventions' success were often underexplored. Nevertheless, what this does indicate is that there is a substantial need for further rigorous, high-quality primary research to strengthen the evidence base and address gaps in understanding how and why arts-based interventions impact maternal health and wellbeing.

There is an opportunity for future interventions to consider what role creative practice plays on emotional, social and psychological wellbeing outcomes. Existing research into singing and postnatal depression has already identified five possible features that proved effective and contributed to enhanced wellbeing - creative experience, immersive 'me time', facilitating achievement and identity, calming baby and enhancing mother-infant bond (Perkins et al., 2018). Whilst not discussed as outcomes specific to the mode of the intervention itself, time for me and empowerment were recurring themes in the outcomes of other studies, suggesting that there may be a link between these and creative practice. In addition, whilst there is a developing understanding of the impact of singing and music on maternal wellbeing, there is a dearth of empirical evidence relating to other forms of creative practice such as dance, movement, journaling or artistic expression, though there is rich qualitative data which points to the usefulness of this (Hogan et al., 2017). Future comparative studies that evaluate art from specific mechanisms and their related outcomes would add considerably to the existing evidence base.

Finally, it was unclear to what extent improvements in wellbeing were maintained post-intervention. To address this, it would be of benefit if studies could include a post-intervention data collection point in their schedule. It might also be of value for intervention delivery to consider how women could be provided with self-directed or *top-up* sessions to maintain wellbeing on a longer-term basis. The lack of user involvement in the studies reviewed suggests that there is a gap for an intervention designed alongside mothers. This would be particularly important when taking into consideration intervention practicalities and legacy concerns such as duration and support post-intervention.

## Conclusion

This systematic review is the first to explore the impact of arts participation on psychosocial outcomes for maternal well-being, highlighting the potential role of arts-based interventions in enhancing maternal mental health during the transition to motherhood. This review also highlights that there is a paucity of well-controlled studies investigating the impact of arts-based interventions on maternal mental health and that there is typically a lack of research that directly compares modalities.

The evidence suggests that there is a role for arts-based interventions to be used: (i) as social support for women during the transition to motherhood; (ii) to facilitate recovery from diagnosed mental disorders such as postnatal depression; (iii) or to prevent stress, anxiety, and isolation. Social support is of crucial importance to women's sense of well-being, and its importance has been noted across multiple studies. Therefore, using arts-based techniques adds a further dimension, enabling some women who would not engage in verbal groups to benefit from a supportive intervention.

There is also the issue of arts-based interventions potentially being seen as less stigmatising than verbal therapy. Moreover, inchoate emotions cannot always be reached by verbal means, so arts-based interventions can provide a crucial route to reach mothers who might be defined as depressed, anxious, or traumatised. Arts-based interventions can operate on various levels, providing support to combat isolation and stress, and ranging to therapeutic arts interventions that help support women in crisis to remain in the community rather than move into institutional care. More work needs to be done on this continuum of practice. However, it is unclear from the work in this review exactly what types of intervention may be most efficacious. None of the studies in this review compared art formats, so it is not possible to make any evidence-based inferences solely from the information in the included studies.

Nevertheless, the evidence from other published reviews indicates that this is a discipline-wide issue with work by Barnish and Nelson-Horne (2023) demonstrating that– for group-based active artistic interventions - there is also a substantial lack of studies comparing different modalities. The effectiveness of a modality often depends on the mother's individual preferences, needs, and cultural context (Mani, 2022). However, the evidence from this review suggests that music, singing and the visual arts are among the most accessible and widely studied interventions, with strong evidence for improving depression, reducing anxiety, and fostering maternal-infant bonding. Dance and storytelling offer unique benefits for mothers dealing with trauma though they remain relatively scarce in the academic literature and for quantitative studies in particular. Combining modalities, such as a program integrating music, movement, and visual arts, may provide the most comprehensive benefits by addressing psychological, social, and physical aspects of well-being. However, as illustrated in the literature around touch-based sensory nurturing intervention, it becomes difficult to scientifically and methodologically disentangle which modality is the one producing the effect (Barnes & Adamson-Macedo, 2022).

As well as further multi-arm research, longitudinal studies are required to gauge the impact of arts-based interventions

for mothers. It can reasonably be expected that cost-benefit analysis and economic modelling would show a reduced level of service use by new mothers receiving enhanced arts-based support. Again, there is insufficient work in this area. However, given the small scale of the studies to-date (which as noted above, are sometimes lacking in detail about the precise nature of the intervention) and sufficient critical analysis (Kassgaard et al., 2024), this is an area in pressing need of research. There is a great deal of interest in embedding arts-based interventions into public health care, but persuasive research evidence would help new organisations such as the National Association for Social Prescribing (NASP) to make a case for interventions to be funded.

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## Declarations

**Conflict of interest** None.



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