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An antenatal intervention pilot service development project in a community perinatal team

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Abstract

Objective: The Adjustment to motherhood group was designed for women under the Hertfordshire Community perinatal team (CPT) in late 2021, as an antenatal intervention to ease the transition to motherhood, to strengthen the mother-infant relationship, and to keep baby safe despite challenges. Our hypothesis was that the group would support women who did not feel mentally or emotionally prepared for the baby's arrival. The group consisted of four weekly hour-long virtual antenatal sessions. One session was delivered each by occupational therapist, nursery nurse, clinical psychologist and parent-infant psychotherapist, with a mix of didactic and psychoeducation. The 4 sessions enable the therapists to prepare the women for common situations they may encounter once their baby arrived, and encouraged the participants to be open to contacting the perinatal team if they recognised they were struggling. They were followed by a postnatal reunion session, approximately a month later. Psychology resources and a booklet on Adjusting to motherhood were circulated.

Methods: Mixed methods design. Referrals were sought from all clinicians in the community perinatal team who also obtained verbal consent. The referred women were grouped according to their gestations and estimated due date. Ethical approval was not sought as this was a service evaluation. Sample: 10 women in the pilot, 24 women in two subsequent groups, mostly first-time mums. Data collection: Quantitative: A questionnaire was circulated antenatally and postnatally, based on the Rigidity of maternal beliefs scale (RMBS) and the Pre- and Post-natal Bonding Scale (PPBS). Qualitative data was collected during feedback session in reunion groups.

Results: More than half of the referred women attended most sessions; there was a low response rate in the postnatal questionnaire however there was improvement in relationship with baby among those who answered.

Conclusion: This is an acceptable low-cost antenatal intervention that can benefit first time mums and improve the relationship with their baby. Similar groups can be created in other regions. It can be improved by co-designing future iterations, by distributing the validated questionnaires to a bigger number of mothers and to include a session addressed at fathers.

Keywords: Service improvement project, maternal confidence and functioning, group antenatal care, perinatal mental health, attachment

Introduction

Becoming a mother is not straightforward. As well as treating maternal mental illnesses, Perinatal Mental Health Services focus on the prevention of maternal mental illness, aiming to improve outcomes for children by supporting at-risk mothers to have good mental health and, importantly, improve their relationships with their babies. Mothers may struggle to make space for their baby in their life due to social issues (poverty, unstable housing or unemployment), lack of support (single parenthood, lack of positive role models or positive experiences (being themselves in the care system), or their own mental health issues. They could be feeling anxious because their experiences of being mothered (or fathered) were lacking, or because their pregnancy was unplanned and/or their delivery was traumatic. Babies born to at-risk mothers are at risk of having poor attachment and Adverse Childhood Experiences (ACEs).[1] The threshold for acceptance of referrals to Community Perinatal Teams is lower than that of local Adult Community Mental Health Teams (secondary mental health services). Self-referrals from pregnant or postnatal women are accepted, as well as professional referrals, because one of the aims of the team is to strengthen the mother

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and baby bond and to intervene early, to prevent maternal mental illness from impacting on infants or children. The multidisciplinary team comprises of doctors, mental health nurses, psychologists, parent-infant therapists, nursery nurses, midwives, social workers, and occupational therapists who support mothers and their families.

MBRRACE-UK' is the collaboration appointed by the Healthcare Quality Improvement Partnership (HQIP) to run the national Maternal, Newborn and Infant Clinical Outcome Review Programme (MNI-CORP) which continues the national programme of work conducting surveillance and investigating the causes of maternal deaths, stillbirths and infant deaths. The 2022 Maternal MMBRACE-UK report found that difficult social circumstances bring additional challenges to parenting: "At least half of the women who died by suicide, and the majority from substance misuse had multiple adversities with a history of childhood and/or adult trauma frequently reported. Cardiovascular disorders and psychiatric disorders are now equally responsible for maternal deaths in the UK, accounting for 30% of the women who died up to six weeks after the end of pregnancy; in previous reports, cardiovascular disorders had been reported as the leading cause of maternal death." [2]

Group-based antenatal interventions have been found to enhance the preventive care of mothers and infants. [3] CenteringPregnancy® is a structured antenatal programme which consists of 10 antenatal sessions and one postnatal session, covering various topics ranging from pregnancy development to nutrition and birth control, and encourages mothers to support each other.[4]

Bollen carried out a research overview of the sociological and social psychology literature on transition to motherhood. She found that "social support, which includes practical help, information and emotional support (including emotional support provided by other mothers), is a key factor in the transition to motherhood." [5] She found the following themes: 1)mothers not being prepared for the reality of motherhood, 2)mothers' expectations crushed:cultural beliefs lead women to avoid discussing experiences, thereby hindering the normalisation of experiences, 3)mother experiencing a rollercoaster of emotions: overwhelm, shock, exhaustion, difficulty accepting ambivalent feelings, 4)difficult experiences of childbirth and breastfeeding, 5)characteristics of baby: interpreting the baby's cries and settling baby, 6)gaining confidence over time.

Methods

The Adjustment to Motherhood group was designed as an antenatal intervention to support the transition to motherhood and to strengthen the mother-infant relationship, for women who are already at risk of or experiencing perinatal mental illness and are being treated by the community perinatal team. Before this programme, there were no antenatal group psychoeducational programs at our Community Perinatal Team; there were several established group psychotherapy programmes, which were mainly delivered to postnatal mothers. These included psychotherapeutic parent-infant groups ("Circle of security"), postnatal social groups ("wellbeing and lifestyle groups") or dialectical behavioural therapy-informed groups ("Emotional coping skills groups"). There was therefore a gap between the antenatal midwife groups provided by community midwives or by the National childbirth trust, and the group therapy programmes above. Our hypothesis was that the parenting preparation group would support women who did not feel mentally prepared for the baby's arrival to adjust better and feel more confident to meet their baby's needs.

One of the goals of the Adjustment to Motherhood group was to offer taster sessions led by some key professionals working in the community perinatal team, who could answer participants' questions, identify potential difficulties and suggest practical solutions, thus relieving some of the anxiety of the unknown. A second goal was to improve the women's relationship with the unborn baby and prepare them emotionally for when the baby arrived. The overarching goal was to ultimately provide psychoeducation and messages about how to keep baby safe despite challenges.

The idea of the group was developed by the Consultant Perinatal Psychiatrist, the Lead Occupational Therapist and the Psychiatry Specialty trainee, during supervision sessions and during planning meetings. The plan for the group was to have 4 interactive psychoeducation-based sessions delivered by four key professionals in the multidisciplinary team (occupational therapist, psychologist, nursery nurse and parent infant psychotherapist). A protocol was written and circulated to all the members of the Community Perinatal Team for comments. Please see Tables-1 for the group protocol. A month before the group was due to start, a slot was given in the Multidisciplinary team meeting to discuss/ advertise the group and answer any questions. The presenters were asked to choose their preferred slot, and to prepare their presentations for the sessions that they would run. The psychiatry re-

gistrar coordinated the group, managed the referrals and was the link with the patients during and between sessions. The psychiatry registrar also wrote short contemporaneous notes in the patients' electronic patient records.

Table 1: Adjustment to Motherhood Group Protocol / Information for Referring clinicians

What is it? Purpose of Group
A short, structured, psychoeducational group-based intervention for pregnant women accessing the community perinatal team with the aim to improve their relationship with their baby, to offer additional support, enhance engagement and increase emotional regulation.
Indicators for possible referral (who is the group for?):

- Antenatal, 3rd trimester
- Transdiagnostic (could be particularly beneficial for those with probable complex PTSD diagnosis)
- Women feeling unprepared
- Struggling to bond with unborn baby
- Lacking in confidence
- Unplanned pregnancy and feeling daunted
- Pregnant women who don't recognise vulnerabilities or lack insight into their possible difficulties
- Max attendees 10 attendees

Aims of group

- To offer taster sessions with the goal of facilitating take up of further support if needed postnatally
- Improve relationship with unborn baby
- How to recognise difficulties and identify solutions
- How to make space for baby amongst other challenges
- Emotional preparedness for when baby arrives
- To identify further appropriate and suitable intervention
- Offer social/peer support
- Practical support – what to do when my baby…..or I feel….
- To address the "What I wish I would have known…"
- To provide safety messages
- Parenting psychoeducation

How to Refer
Clinicians to refer to JC or KDD with the name and ID of client and specify due date.
Session Content
Session 1 – Occupational Therapy

- Rhythms vs strict routines and developing balance
- Managing self-care alongside baby care
- How to manage/ adjust expectations of motherhood
- Being aware of your sensory diet and how this affects your mood and wellbeing
- Navigating your new identity and making space for your pre baby self.

Session 2 – Psychology

- Protecting our mood as new mums: getting pleasure and sense of achievement in our days
- Having a compassionate and supportive inner voice, not critical
- We can't soothe baby if we are distressed: quick distress tolerance skills to help mum regulate if baby is hard to settle
- Looking after our sleep as new mums: important to do as poor sleep impacts on emotion regulation, and some quick pointers on how to do this

Session 3 – Nursery Nurse

- My crying baby has a need to be met – crying is the main language he/she knows as a newborn
- It is not always easy to work out why my baby is crying – if I'm feeling tense or agitated it is ok to take a break
- My baby's sleep patterns may vary and differ from other babies – try not to compare
- It is normal for my baby to wake at night
- I can follow my baby's natural sleep patterns and not to worry about routines when he/she is a newborn
- Focusing on getting some fresh air every day will help both of us sleep better

Session 4 – Parent Infant

- You can start to form a relationship with your baby in utero
- Babies are born ' prewired' to form close relationships with a few key people
- How you interact with your baby will affect how your baby's brain develops – 1001 critical days from conception to age 2
- Understanding baby cues can help you work out what your baby is communicating
- You cannot spoil a baby by responding to their needs
- You don't have to be a perfect parent. Good enough is good enough

When it will run

- To launch first group in November 2021 as a pilot.
- Online virtual group
- Thereafter to run every other month from the first week.
- 5 sessions – Occupational Therapy, Psychology, Nursery Nurse, parent infant psychotherapy (taster) and a reunion session to be confirmed after babies have been born.

Table 1 Continuation: Adjustment to Motherhood Group Protocol / Information for Referring clinicians

Facilitation
Each session would be led by a professional from one of the disciplines.
- Occupational therapy
- Psychology
- Nursery Nurse
- Parent infant psychotherapist

Chair, coordinator role
Role description
- Manage referrals
- Send out invites.
- Introduce and close group
- Maintain consistency
- Keep track of participants and attendance. Follow up if don't attend
- Facilitate "reunion" session

Method of delivery
- Mix of didactic and discussion participation to aid engagement
- Parenting psycho education

Measuring Outcomes
A pre and post questionnaire emailed to clients, based on Pre- and Post-natal Bonding scale [6] and the Rigidity of Maternal Beliefs Scale [7].

A companion booklet that had been designed and written in 2020 by key professionals of the Hertfordshire Community Perinatal Team: psychologists, occupational therapists, parent-infant psychotherapists, nursery nurses and perinatal psychiatrists was also circulated to attendees. The sections of the booklet were:1)Introduction, 2)Your well-being: self-care and lifestyle, 3)Managing overwhelming emotions, 4)Looking after your mood day-to-day, 5)People skills, 6)Forming a happy, healthy relationship with your baby after birth, 7)Coping with crying and sleeping.

The inclusion criteria were: being pregnant, being under the Community Perinatal Team, and being able to communicate in English. The referrals were sent by email to the occupational therapist and the psychiatry registrar who then tabulated them on an Excel spreadsheet, grouping women according to their gestations and estimated due date, so as to time their invitation to the group when they were in the last two months of pregnancy. The first group was launched in November 2021 as a pilot. Thereafter, it was hoped that the group would be run six times a year, roughly every two months.

The group consisted of four weekly antenatal sessions, run over 1-1.5h at the same time each week, followed by a postnatal reunion session, approximately a month after the fourth antenatal session, and timed so that all women had given birth by then. An additional postnatal contact at 1 year postnatal was planned. The first 4 sessions were structured, and the postnatal reunions were led by the needs of the group. The sessions were delivered via a virtual platform. Participants joined online via a video conferencing platform. A shared drive was created where the presentations and resources were stored. A week before the date of the first session, an invitation was sent by a text messaging service to the women referred to the group, offering them the group with specific dates and times and inviting them to respond and confirm their attendance. To assess the participants' confidence in parenting antenatally, a questionnaire was created, based on the Pre-and Post-natal Bonding scale (PPBS) [6] and the Rigidity of Maternal Beliefs Scale (RMBS).[7] Five additional questions were added enquiring about women's wellbeing and confidence.

When planning the questions to ask the mothers attending the Adjustment to Motherhood group, several existing questionnaires were considered, both antenatal and postnatal. Antenatal questionnaires include the Maternal Fetal Attachment scale, the Maternal Antenatal Attachment Scale and the Prenatal Attachment Inventory. These all have "multifactorial structures and show good reliability, but not for all subscales." [6] Postnatal questionnaires included the Postpartum Bonding questionnaire, the Edinburgh Postnatal Questionnaire, the Maternal-to-Infant Bonding scale, the Parent-to-infant Attachment questionnaire, the Maternal attachment inventory, the Maternal Postpartum Attachment questionnaire, the Adult Attachment questionnaire, the Pre- and Post-natal Bonding Scale, and the Rigidity of Maternal Beliefs Scale. (Table 2).

The Pre- and Post-natal Bonding Scale (PPBS) [6], is a five-item bonding scale with good psychometric properties and good internal consistency. Its aim is to measure both pre- and post-natal bonding/ attachment in a user-friendly way. It asks women to describe their feelings towards their baby in a Likert scale. Two questions were selected, specifically "During the last four weeks, I could best describe my feeling towards my baby as…: loving, AND : the most beautiful thing that ever happened to me."

Table 2: Questionnaire distributed antenatally and postnatally

1.	How would you rate your own wellbeing (1 star to 5 stars)
2.	How well do you feel able to meet your own needs once baby arrives? 0 (not at all confident) to 100 (very confident) sliding scale
3.	During the last four weeks, how would you describe your feelings towards your baby (0 not at all loving) to 100 (happy and loving)
4.	During the last four weeks how would you describe your feelings towards your baby (0 the worst thing that ever happened to you) to 100 (the most beautiful thing that ever happened to you).
5.	Where would you rate your confidence in parenting, currently? 0 (no confidence) to 100 (high confidence) sliding scale
6.	Where would you rate your confidence in managing your emotions? 0 (no confidence) to 100 (high confidence) sliding scale
7.	How confident do you feel to read baby cues (behaviours) currently? 0 (not at all confident) to 100 (very confident) sliding scale
8.	How confident do you feel in your ability to raise a happy and healthy baby, currently? 0 (not at all confident) to 100 (very confident) sliding scale
9.	Please rate the statement: It is important to me that others think that I am a good parent. 7-point Likert scale Strongly disagree- Neither agree nor disagree- Strongly agree
10.	Please rate the statement: Being a mother should be positive. 7-point Likert scale Strongly disagree- Neither agree nor disagree- Strongly agree
11.	Please rate the statement: I would feel guilty if I didn't enjoy being a mother. 7-point Likert scale Strongly disagree- Neither agree nor disagree- Strongly agree
12.	Please rate the statement: I should do everything for my baby myself

Questions 1,2,5,6,7 were added by the researchers
Questions 3,4 were derived from the Pre- and Post-natal Bonding Scale [6]
Questions 8-12 were derived from the Rigidity of Maternal Beliefs Scale [7]

The Rigidity of Maternal Beliefs Scale (RMBS) [7] examines the rigidity of maternal beliefs in four major domains, suggested to be closely related to mood and behaviour. The RMBS can identify maladaptive or rigid thoughts that could be a focus of intervention, for women who are at risk for postpartum depression in clinical contexts and may be used to guide conversations about motherhood expectations. Overall, the RMBS had a high predictive value for risk of postnatal depression. [7] However this scale was not used in its entirety for the Adjustment to Motherhood group, because reducing postnatal depression was not one of the specific goals of the Adjusting to motherhood group. The RMBS consists of 24 questions, divided in four categories which were: perceptions of societal expectations of mothers, role identity, maternal confidence, maternal dichotomy. One question each from the four factors of the RMBS and one additional question about role identity were selected, the selection criterion being the highest loading from principal axis factoring (Table-2) [7]). Maternal dichotomy was the only factor in the RMBS that was a significant predictor of postpartum depression and could be the visible manifestation of societal expectations. Eg. "It is important to me that others think that I am a good parent. AND If I can't calm my baby when he/she cries, does not sleep well or otherwise misbehaves, then I am not a good parent." Additionally, 5 non-standardised quantitative questions were added, one about self-rating of own wellbeing, and one each about self-rating of confidence to meet own needs once baby comes, confidence in parenting, confidence in managing emotions, and confidence to read baby cues.

The type of the study was observational prospective cohort study with community perinatal mental health team.

The Primary aim was to improve relationship with unborn baby and the secondary aims were:1)to offer taster sessions antenatally with the goal of facilitating take-up of further support if needed postnatally, 2)psychoeducation on how to recognise difficulties and identify appropriate and suitable interventions, 3)to offer social/peer support and practical support- what to do when my baby… or when I feel…, 4)provide safety messages.

Sample size was variable, dependent on number of women felt to be suitable for referral, and also on their gestation periods and estimated due dates (as the group takes place in the last 4-6 weeks of their pregnancy with one postnatal session.) There were changes on recruitment that might explain the higher attendance in the last group, namely the first group had been run by the psychiatry registrar, the second by the occupational therapy assistant, but from the third onward, it was handed over to one of the administrators who has continued running the group. Additionally, as the group has gradually become more established, it is possible that there was greater value placed by the referrer on attendance, which in turn encouraged the pregnant mothers to attend.

It is not possible to identify a primary outcome assessed, as participants' circumstances and needs are varied, and attachment often is developed over several years. A secondary outcome is measuring improvement in confidence using the questionnaire. There have not been any additional costs attached to this service offering, as the organisers have made space to run the group during their normal working week. Ethics approval was not required for our study. Women were identified antenatally by any members of the Community Perinatal Team performing initial assessments of women referred to the team. The

clinicians gave information to the women about the group and gained verbal consent for the referral. Verbal consent of participants was obtained by the referring clinician at the time of the clinical review. The discussion about the referral and the consent witnessed by the clinician were recorded by the clinician in their clinical notes contemporaneously.

Results

The first group was launched on Zoom in November 2021 as a pilot and this research includes results from two further groups. In the first cycle: November 2021-early January 2022, out of 10 referrals, 7 women attended most or all sessions and 3 attended the postnatal reunion at one month. In the second cycle: January-April 2022, out of 10 referrals, 5 women attended most or all sessions and 2 attended the postnatal reunion at one month. In the third cycle: April-May 2022, out of 14 referrals, 8 attended all or most sessions and 2 attended the postnatal reunion at one month (Table-3).

Table 3: Size and timing of groups, and records of attendance

	referrals accepted+ confirmed	attended all or most antenatal sessions	attended postnatal session
group 1: Nov 2021-Jan 2022	10	7	3
group 2: Jan 2022-April 2022	10	5	2
group 3: April 2022-May 2022	14	8	2

Participants' confidence in parenting was assessed antenatally and postnatally in the questionnaire. (Table-2 and Table-4) In the first cycle, out of 10 referrals, 2 completed the questionnaire while pregnant, 3 postnatal at one month and 1 postnatal at 1 year. In the second cycle, out of 10 referrals, 7 completed the questionnaire while pregnant and 2 postnatal at one month. In the third cycle, out of 14 referrals, 7 completed the questionnaire while pregnant and 1 postnatal at one month. The questionnaire has not been circulated at one year postnatal for women who took part in cycles 2 and 3 yet, but will be, at one year. There was some improvement in most questions in the first 3 groups, indicating that participants found the intervention useful in the short term especially in the questions related to the way they feel about their baby and their ability to read cues There was also modest improvement in the 1st and 2nd cycles in the confidence mothers felt in their ability to raise a happy baby and to meet their own needs once their baby arrived (Table-5).

Tablo 4: Responses received

answered questionnaire	while pregnant	1 month postnatal	1 y postnatal
group 1: 10	2	3	1
group 2: 10	7	2	questionnaire not circulated yet
group 3: 14	7	1	questionnaire not circulated yet

Tablo 5: Improvement in feelings

During the last four weeks how would you describe your feelings towards your baby (0 the worst thing that ever happened to you) to 100 (the most beautiful thing that ever happened to you).	
	out of 10
group 1	1.57
group 2	1.57
group 3	2
improvement antenatal-1 month postnatal	

During the reunion session, most participants fed back that they found very useful the information on sleep by the nursery nurse, the information on baby cues by the parent-infant psychotherapist, and appreciated being sent the presentations as a resource to go back to check. Feedback by some participants was that they would like the organisers to give information of how to support fathers. Although it was explained that this group fulfilled a psychoeducational role, some participants were disappointed that more of the mums didn't want to stay in touch after the group. Feedback from the presenters was that it was difficult to set a date for the postnatal reunion that all the mothers had given birth, given that some went over their due dates. An opportunity to feedback individually was offered, and one patient said she would have preferred a less didactic approach. She didn't realise that other people felt the way she did when they were pregnant, so the fact that the group existed and there were other people also dealing with the same thing was good. She would have liked to build a relationship with the other mothers in the group.

Discussion

First-time mums who are at risk may not be able to make space for baby in their life due to social issues, lack of support, lack of positive life experiences or mental health

difficulties. The adjustment to motherhood group was designed as an antenatal intervention to ease the transition to motherhood, to strengthen the mother-infant relationship, and to keep baby safe despite challenges. 4 hour-long sessions were delivered through a virtual platform, aiming in psychoeducation and normalisation but also in signposting to members of the community perinatal team. Participants' confidence in parenting was assessed antenatally and postnatally. There was improvement in most questions in 3 groups that have run so far. There was a modest improvement in the 1st and 2nd cycle in the confidence mothers felt in their ability to raise a happy baby. There was a good improvement in both cycles in mothers' confidence in reading baby cues and in confidence to meet own needs once baby arrived.

Limitations were that text messages were time-consuming and that few responses were received in the qualitative and quantitative analysis. Advantages of the text message was confidentiality according to clinical governance, no need to share clinician's email address or telephone number.

Conclusion

This was a pilot of a low-cost intervention whose aim is to ease the transition to motherhood. This pilot intervention fulfilled its aim in providing preparation for parenting to women under the Hertfordshire Community Perinatal Team. The real strength is that the expectant mothers received psychoeducational sessions from different professionals, which provided practical reassurance and helps improve confidence/ wellbeing. Moreover, the social element encouraged discussions about beliefs about role identity and societal expectations, which might have affected the mothers' sense of self efficacy and indirectly led to low mood. Parent-infant dyad work is usually done postnatally, but here the work starts antenatally and is continued postnatally. So far, 5 groups have taken place since the pilot group, and there are many referrals. This group has now continued running for one year and has become established. The next step is to involve a service implementation scientist who could support us to run this service evaluation, this time inviting experts by experience (mothers who had taken part in the group) to co-design future iterations; to interview the professionals participating as to their views, to distribute the questionnaire to a bigger number of the pregnant mothers who are under the Community Perinatal team, to perform quantitative analysis of the questionnaire results, and to include a session designed for fathers.

Conflicts of Interest: No conflicts declared.

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