A collaborative approach to perinatal and infant mental health service delivery in Australia

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Abstract

Objective: The objective of this paper is to report on the development and implementation of a community-based perinatal and infant mental health day program for mothers with psychiatric illness. The program was initiated through interagency collaboration between adult mental health, infant mental health and community child health services in Queensland, Australia in response to calls for an integrated approach that could be delivered state-wide if successful. Preliminary results of the program's evaluation are provided.

Method: A pre-post survey design was used to assess the influence the program had on maternal mental and emotional well-being and the maternal-infant relationship. Twenty-one women receiving treatment for perinatal mental illness gave consent to attend the 6-week day program integrating three currently separate and discrete services: adult mental health, infant mental health and community child health.

Results: Clinically and statistically significant improvements were observed for maternal mental health, and parent-infant relationships following the program.

Conclusions: These findings support interagency collaboration between adult mental health, infant mental health and community child health services to deliver services to women with mental illness with newborns and their families. The utility of using a collaborative approach in a community setting endorses more comprehensive and longer-term evaluation of effectiveness and cost benefit.

Keywords: child health, infant mental health, interagency collaboration, perinatal mental health

Several decades of research has helped our understanding of the way in which early interactions and response to infant cues assist development of secure attachment relationships to key care providers in the early months of life.[1] These relationships are critical to early brain development and infant mental health in the first 3 years of life.[2,3] Unfortunately, mothers' and, as more recently understood, fathers', vulnerability to mental illness increases in the perinatal period.[4,5] Perinatal mental health conditions including depression, anxiety disorder, adjustment disorder and schizophrenic illness can result in significant impairment of sensitive and responsive parenting.[6] Consequently, mental health services are interested in providing programs to ameliorate the effect that maternal mental illness can have on cognitive, emotional and behavioural functioning and parenting ability,[7–9] as well as infant mental health.

Unless maternal health, mental health and child health services are well integrated, women with mental illness necessarily engage with these services in isolation. Improving mental health service delivery in the perinatal period depends in part on improved collaboration.[8–10]

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For this study, a group of senior health professionals from three health services in Queensland, Australia recognised the need for interagency collaboration. Women with newborns had been refused admission to a residential Early Parenting Centre if severity of impairment could impede their ability to process and take on parenting information. Unfortunately, many of these women also did not meet the acuity criteria for admission to an adult mental health service.

In response, a brief community-based mental health day program for women with mental illness and their babies was developed. The initial aim was to establish whether interagency collaboration increased the capacity of diverse health services to provide early intervention and treatment to these women and their babies by sharing knowledge, expertise and resources.

Method

Program description

The aim of the program was to provide treatment and early intervention to improve maternal mental health and emotional well-being, and optimise parent-infant relationships. Clinicians from adult mental health, infant mental health and community child health services delivered the interventions. The first author (JvH) was appointed program coordinator.

Participants attended between 10am and 3pm for one day a week for 6 weeks. Group-based and individualised psycho-education and therapeutic interventions were provided. An open group format allowed for prompt entry into the program following referral and intake. Group sessions provided the opportunity to reflect on feelings and share experiences in a supportive environment followed by a structured group discussion and provision of an education program. Session topics included: a) adjusting to parenthood, b) managing depression, stress and anxiety, c) communication skills, problem solving, d) bonding, attachment, factors that impact the parent-infant relationship and e) sleep/settling, massage, play, safety and nutrition. Individual sessions were offered to give focus to maternal mental health, child health and infant mental health. A family systems approach was employed,[11] and fathers were invited to an evening parenting/fathering session where information and support was provided.

Participants

Mothers and their babies were recruited through existing referral pathways to adult mental health, infant mental health and community child health services from general practitioners and community-based non-government agencies. Between June and October 2009, 29 women were referred. Following a full mental health assessment, 21 eligible women were accepted to the program and gave consent to participate in the study. The inclusion criterion was: mothers with a mental illness giving primary care to an infant aged 6 months or younger. Mothers with a primary diagnosis of personality disorder, substance use disorder, intellectual disability or who could not speak or understand English were excluded from participation. Participants were women with a diagnosis of depression (12 women) or anxiety (two women) and anxiety and depression (four women) arising in the perinatal period, bipolar affective disorder (two women) and schizo-affective disorder (one woman). Women's ages ranged from 18 to 41 years of age, with 40% between 30 and 34 years of age. Baby's ages ranged from 6 weeks to 6 months at intake.

Procedure

Ethics approval was gained from each of the Human Research Ethics Committees, the former Royal Children's Hospital and Health Service District, Prince Charles Hospital and Health Service District and the Royal Brisbane Women's Hospital and Health Service District as well as the Queensland University Technology HREC. Participation in the program was voluntary and participants were made aware that they could withdraw from the program or its evaluation without penalty. Participants were assured that they could continue to attend the program even if they withdrew from the study.

Measures and data analysis

Table 1 shows the measures used in the study. Baseline data were collected for all program participants and these were matched to follow-up data using unique identifiers for the total sample of 21 participants. All data were screened for inaccuracies, missing data, outliers and normality using SPSS 15.0. T-tests were used to compare baseline and follow-up results for the 21 participants who all completed at least five of the six program sessions.

Results

Table 2 shows differences between baseline and follow-up scores using t-tests and statistical significance at 0.05. The findings show significant improvement in self-reported symptoms of depression, anxiety and stress, and clinical assessment of interactions between mother and baby.

Participant feedback

Mothers were asked to provide feedback at an exit interview and complete a short questionnaire. Twenty mothers completed the survey and reported that the program:

Table 1. Measures used in this study

Self-reported	**Depression Anxiety and Stress Scale (DASS-21)**[15] DASS is a set of three seven-item scales designed to measure the negative emotional states of depression, anxiety and stress. Each seven-item set rates the severity of symptoms over the previous 7 days. The scales can be summed to produce a composite measure of general psychological distress or negative affectivity. **The Edinburgh Postnatal Depression Scale (EPDS)**[16] The EPDS is a universally recognised screening tool with good validity and specificity in identifying women at risk of depression in the perinatal period. Ten items rate the intensity of symptoms over the previous 7 days. **Mental Health Inventory (MHI)**[17] The MHI has 38 items rating emotional well-being over the previoust month on a scale from one to six. Results are categorized in sub-scales covering: anxiety, depression, loss of behavioral or emotional control, psychological distress, positive affect, emotional ties, life satisfaction, psychological well-being and the mental health index.
Clinician administered: maternal mental health	**Health of the Nation Outcome Scale (HoNOS)**[18] HoNOS is a set of 12 scales, each measuring a type of problem commonly presented by patients/clients in mental health care settings. A completed HoNOS score sheet provides a profile of 12 severity ratings and a total score. Severity of symptoms is measured on a 5-point scale (0 to 4). Four sub-scales are behavioral problems, impairment, symptomatic problems and social problems. **Brief Psychiatric Rating Scale (BPRS)**[19] The BPRS is a rating scale for assessing change in the positive, negative and affective symptoms of individuals who have psychotic disorders, especially schizophrenia. Items cover the broad range of symptoms that are commonly seen in psychotic relapse, including hallucinations, delusions, and disorganisation, as well as the mood disturbances that may also accompany relapse (e.g. hostility, anxiety and depression). The BPRS consists of 18 symptom constructs and each symptom is rated on a scale of 1 to 7.
Clinician administered: parent–infant relationship	**Parent–Infant Relationship Global Assessment Scale (PIR-GAS)**[20] The PIR-GAS is a 90-point scale used to assess the quality of an infant–parent (or caretaker) relationship based on a continuum from well adapted to grossly impaired. It should be completed only after a thorough clinical evaluation of the infant's (0–5) problems. The relationship problems may stem from within the infant, within the caregiver(s), between the infant and the caregiver or from the larger social environment.

a) was very helpful (90%) and b) met their expectations (85%). Three quarters were satisfied with the program's duration and all participants reported that group leadership was very effective.

The mothers reported improvement in their parenting ability. One mother said, "*the combination of child health, infant mental health and adult mental health worked really well, my confidence has improved in all areas*" and "*I make more of an effort to play with and delight in my baby*". Mothers also highlighted how the program had impacted on their mood, "*it helped to know that others also feel unsure and that parenting skills are learned. I am more able to relax and not be as anxious about my choices for my child*" and "*I now better understand my feelings, what triggers my low moods and how I can manage my feelings*".

Clinician feedback

Clinicians and referring agencies were interviewed at the conclusion of the program to evaluate the program more thoroughly. Twelve clinicians provided feedback.

Professional networks appeared to be strengthened. In particular, clinicians indicated that they developed a deeper appreciation of each other's roles working with mothers and infants. For example the parlance of infant mental health practitioners was observed to be able to change the focus for mothers, enabling them to see from the infant's perspective. Another unexpected result was that participating clinicians returned to their workplaces and shared such knowledge and experience with colleagues. Clinicians claimed it "*was a positive experience*". They recommended the program could be improved with better sequencing and scaffolding of interventions.

Table 2. Means, standard deviations, t scores and p values for the self-report and clinician rated measures (N=21)

Mental health scales	*Pre intervention*		*Post intervention*			
	M	*SD*	*M*	*SD*	*t*	*p*
DASS-21 (self-administered)						
Depression	18.63	9.46	9.63	6.21	3.61	0.00
Anxiety	15.00	9.80	6.50	6.71	3.9	0.00
Stress	28.50	9.60	13.25	9.00	4.91	0.00
DASS total	62.13	26.21	29.37	17.97	5.15	0.00
EPDS (self-administered)						
EPDS total	16.88	5.02	10.44	5.68	5.01	0.00
MHI (self-administered)						
Anxiety	33.88	8.61	24.38	5.64	3.88	0.00
Depression	13.94	3.46	9.81	2.95	–3.72	0.00
Loss of behavioural/emotional control	27.50	5.42	21.00	5.59	3.57	0.00
General positive affect	25.06	5.90	33.56	9.15	–3.41	0.00
Emotional ties	6.94	2.29	8.69	2.39	–3.05	0.00
Life satisfaction	2.75	0.68	3.69	0.87	–4.39	0.00
Psychological distress	83.13	16.58	61.19	15.13	4.11	0.00
Psychological well-being	37.00	0.86	49.06	12.44	–3.84	0.00
Global MHI score	119.25	23.71	152.56	25.35	–4.09	0.00
HoNOS (clinician-administered)						
Overactive/aggressive behavior	1.31	0.87	0.31	0.60	4.47	0.00
Non-accidental self-injury	0.19	0.40	0.00	0.00	1.86	0.08
Problem drinking or drug taking	0.13	0.50	0.13	0.50	–	–
Cognitive problems	0.19	0.40	0.06	0.25	1.46	0.16
Physical illness or disability problems	0.19	0.55	0.06	0.25	1.46	0.16
Problems with depressed mood	2.13	0.72	1.19	0.75	4.39	0.00
Severity of other mental and behavioural problems	2.63	0.89	1.50	1.10	3.31	0.00
Problems with relationships	0.69	0.945	0.38	0.62	1.23	0.24
Problems with occupation and activities	0.00	0.00	0.06	0.25	–1.00	0.33
HoNOS total score	7.75	2.67	4.00	2.16	5.61	0.00
BPRS-E (clinician-administered)						
Thought disturbance/positive symptoms	6.56	1.37	5.44	1.03	–2.76	0.01
Anxiety-depression	10.56	2.61	7.13	2.28	5.28	0.00
Withdrawal/negative symptoms	5.13	1.03	4.19	0.40	3.53	0.00
Hostile suspicious/paranoid	3.19	0.40	3.00	0.00	1.86	0.08
Activity/mania	5.00	1.16	4.06	0.25	3.34	0.00
Total	36.75	5.12	28.81	4.45	5.64	0.00
PIR-GAS (clinician-administered)	56.50	11.58	65.25	11.60	–4.43	0.01

DASS-21: Depression, Anxiety and Stress Scale (high scores indicate a greater severity of symptoms); EPDS: Edinburgh Postnatal Depression Scale (high scores indicate a greater risk of postnatal depression); MHI: Mental Health Inventory (higher scores indicate better psychological well-being); HoNOS: Health of the Nation Outcome Scale (high scores indicate greater problems); BPRS-E: Brief Psychiatric Rating Scale (higher scores indicate greater severity of symptoms).

Discussion

The collaborative effort of the services involved in the development and implementation of the pilot program addressed a significant gap in service delivery for mothers with psychiatric illness and their infants.[12] This evaluation has shown promise in relation to significant improvements in maternal mental health and parent-infant relationships.

Taken together, the interventions contributed to positive outcomes for participating mothers and their families through significant improvement in mental health and emotional well-being, enabling mothers to respond appropriately to infant cues for love and attention. Integration of the participating health services allowed greater networking for clinicians.[13]

These preliminary results are promising and support findings reported in previous issues of this journal.[10,14] The ability to attract such a vulnerable group of new mothers into a regular day-program and deliver a collaborative program from three discrete services is now established. But it is acknowledged that the small sample size (*N*=21) did preclude more extensive analysis that might confirm the overall success of this approach. The study design would be strengthened by using a comparison group. Clinically significant change at the individual level was not measured and there is the possibility that the sample was comprised of particularly resilient women given their willingness to participate in the trial. Group level improvements may have been influenced by the result of extraneous variables such as facilitator attributes or medical interventions such as medication. Outcomes in relation to longer term benefits and cost-effectiveness need to be evaluated in future research. Additionally, the impact on service utilisation must be considered.

Conclusion

Improvements in maternal emotional and mental health and maternal responsivity to infants can be achieved through interagency collaboration. Cohesive case management, shared resources, increased networking and increased knowledge and capacity regarding perinatal and infant mental health had a positive impact. Data analyses and feedback from clients and clinicians alike support this assertion. Importantly, further research and evaluation is required to determine the cost effectiveness of an integrated approach to perinatal mental health, infant mental health and child health service delivery.

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Disclosure

The authors report no conflict of interest. The authors alone are responsible for the content and writing of the paper.

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