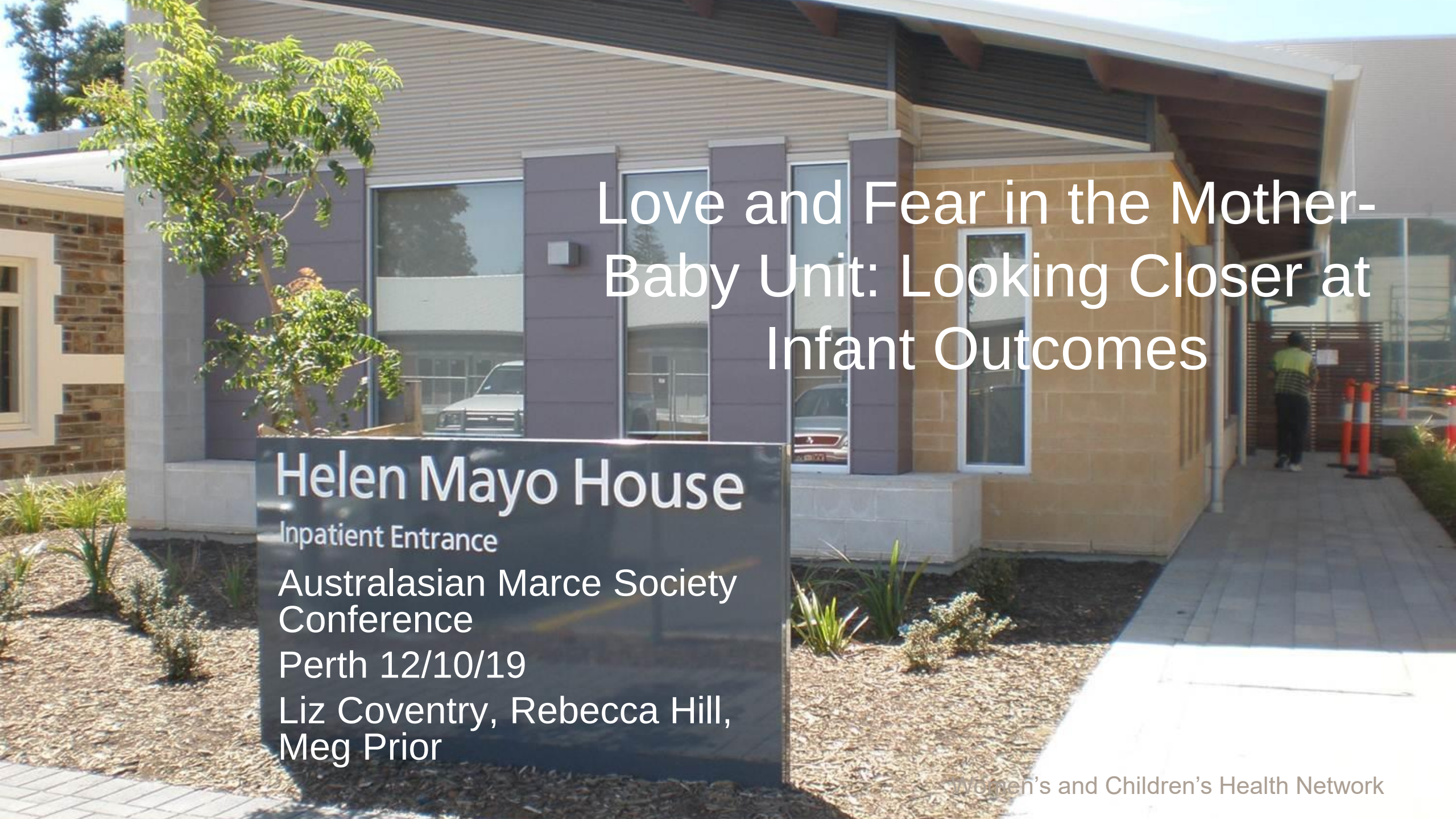

Love and Fear in the Mother-Baby Unit: Looking Closer at Infant Outcomes

Australasian Marce Society Conference

Perth 12/10/19

Liz Coventry, Rebecca Hill, Meg Prior

Acknowledgement of Country

Traditional owners of the Perth region and the Swan Coastal Plain are the Noongar people

And the traditional owners of the land on which Helen Mayo house stands are the Kuarna people of the Adelaide plains

We honour their ownership and connection to the country and waters of their regions

Some important questions

- What is the status of infants in our mother-baby unit?
  - Socio-emotional
  - Relational
  - Developmental
  - Physical
- If there are problems in the above factors, do they improve with MBU admission?
- If there are improvements, are these sustained or are they a group with poorer long-term outcomes?
- How can we capitalize on their presentation to services at this vulnerable point and optimize their treatment and post-discharge care?

Assumptions and Hypothesis

- Modern infant mental health perspectives;
  - Knowledge of intergenerational transmission of trauma
  - Importance of mother-infant relationship and reflective function as important vehicles and moderators of this (and impact of maternal mental illness on these)
  - Vulnerability and plasticity of infants in their first year of life
- and - direct observation on the ward,
- provide us with the intuition that these infants are at significant risk of adverse developmental, emotional and attachment trajectories, often right from conception
- We saw an imperative to look more closely at the infants' status to accurately define their needs and to guide appropriate follow-up care

What we'll cover

- Our local context – Helen Mayo House, South Australia
- Prior research in MBUs
- Objectives of the project
- Methodology
- Preliminary results
- Discussion

Helen Mayo House

- The statewide parent-infant mental health inpatient facility for South Australia
- Has capacity to admit 6 parents (usually mothers) and 6+ infants up to 2 years of age
- Priority given to infants < 1 year of age, breastfeeding, mother already admitted to an adult psychiatric facility
- Multidisciplinary team – 1.3 FTE consultant psychiatrists, registrar, nursing staff, SW, psychologist and infant-parent therapist
- Average length of stay around 22-23 days

Perinatal Psychiatry

AUSTRALASIAN PSYCHIATRY

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Clinical characteristics and mental health outcomes for women admitted to an Australian Mother–Baby Unit: a focus on borderline personality disorder and emotional dysregulation?

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Abstract

Objective: To describe the clinical population of women admitted to a Mother–Baby Unit in Adelaide, South Australia and to evaluate changes during admission in both Axes I and II diagnoses of maternal mental health, and in mother–infant relationships.

Method: Both clinical and self-report assessments of maternal mental health were made at admission and discharge, and self-report comparisons of the mother–infant relationship.

Results: Depressive illnesses (46.2%) were found to be the most prevalent conditions leading to admission, with rates of psychosis (10.3%) and bipolar disorder (3.4%) being lower. A high incidence of borderline personality disorder (23.1%) was found clinically, with almost half the admitted women showing features of borderline personality disorder on a self-report measure at admission. Significant improvements in maternal mental health and the mother–infant relationship were found at the time of discharge.

Conclusions: Admission to this Mother–Baby Unit on mothers' self-report scales showed improvement in mothers'

Table 1. Principal diagnoses of women admitted to the Mother–Baby Unit (*N*=117)

Major depressive disorder – postnatal period	41 (35%)
Major depressive disorder	10 (8.5%)
Adjustment disorder	17 (14.5%)
Borderline personality disorder	15 (12.8%)
Anxiety disorder	10 (8.5%)
Psychosis NOS	5 (4.3%)
Bipolar disorder	4 (3.4%)
Schizophrenia	4 (3.4%)
Puerperal psychosis	3 (2.6%)
Dysthymia	3 (2.6%)
PTSD	2 (1.7%)
Substance abuse	1 (0.9%)
Acute organic brain syndrome	1 (0.9%)
Intellectual disability	1 (0.9%)

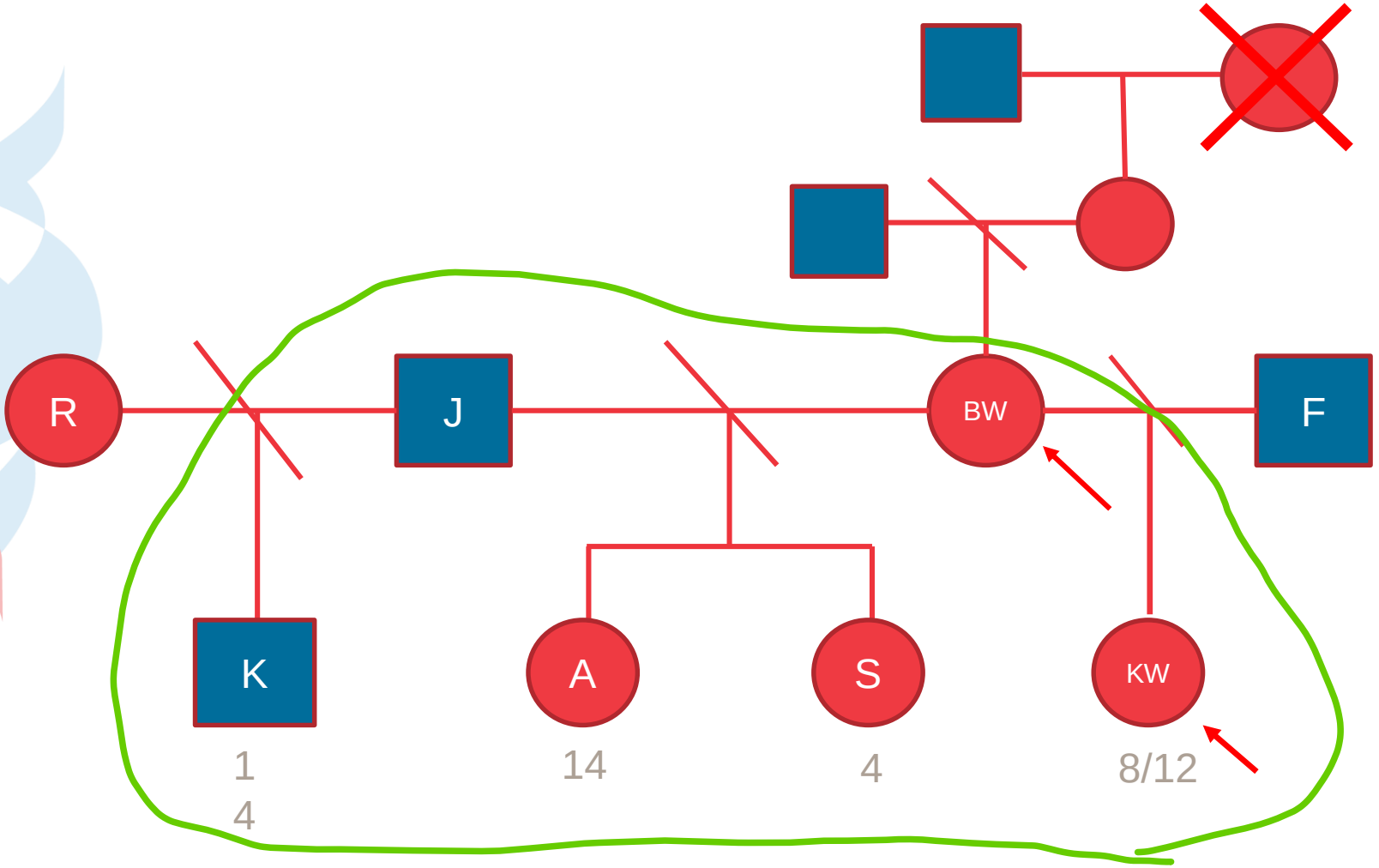
NOS: not otherwise specified; PTSD: post traumatic stress disorder.

- Mother's average age 29.65 yr, infant's 7.52 months
- 23.1% with BPD, further 11.1% with substantial traits

Infants in the Context of HMH

- Infants are admitted in their own right (not listed as boarders)
- They are presented separately in ward round
- Reviewed weekly by a senior paediatric registrar
- Included in parent-infant therapy sessions
- The focus of some elements of the unit's group program
- Discharge planning for the dyad invariably results in referrals to infant based services – however these are patchily available and often at risk of loss of funding
- In addition, despite our best efforts the infant can still fall out of mind due to chaotic nature of the adult cohort

An Example of the Chaos: BW and KW



MBU literature

- The literature on MBUs focuses almost exclusively on the mothers, recording high illness severity, positive outcomes in terms of symptom remission and good client satisfaction ratings (Connellan et al, 2017)
- Two follow-up (post-discharge) studies of the infants:
  - One study of 82 dyads noted continued negative impacts on the mother-infant interaction in the first year of life (Hipwell et al, 2000)
  - children at 4-6 years of age (Wan et al 2007) noted that development did not differ significantly from age-matched peers, but that attachment problems occurred more often in the post-MBU cohort
- Comprehensive infant-focused data is lacking in this area

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Mother and Baby Units matter: improved outcomes for both

Lucy A. Stephenson, Alastair J. D. Macdonald, Gertrude Seneviratne, Freddie Waites and Susan Pawlby

Background

Mother and Baby Units (MBUs) are usually preferred by patients and clinicians. Current provision is limited, although expansion is in progress. To ensure successful investment in services, outcome measurement is vital.

Aims

To describe maternal outcomes, mother–infant outcomes and their relationship in one MBU.

Method

Paired maternal Brief Psychiatric Rating Scale (BPRS) scores, Health of the Nation Outcome Scales (HoNOS) scores and Crittenden CARE-Index (CCI) mother–infant interaction data were collected at admission and discharge.

Results

There were significant improvements in BPRS ($n = 152$), HoNOS ($n = 141$) and CCI ($n = 62$) scores across diagnostic groups.

Conclusions

Positive outcomes were achieved for mothers and babies across all diagnostic groups. Reduction in maternal symptoms, as measured by BPRS, does not necessarily confer improvement in mother–infant interaction. MBU treatment should focus on both maternal symptoms and mother–infant interaction.

Declaration of interest

None.

Keywords

Mother and Baby Unit; outcome studies; perinatal psychiatry; mother-infant interaction.

MBU Literature - Infants

- Stephenson et al (2018) published a study looking at outcomes for mothers and babies in a large UK MBU
- Infant outcomes were measured using the Crittenden CARE-index – focusing on cooperativeness and passiveness scores
- They found a significant improvement ($p < 0.0001$) in infant cooperativeness but no significant improvement in passiveness
- They concluded that while there were appreciable improvements in maternal symptoms this did not necessarily translate into improvements for the mother-infant interaction – and thus recommended that MBUs focus not only on maternal symptomatology but also M-I interaction

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Mother–infant interaction in mother and baby unit patients: Before and after treatment

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ABSTRACT

Maternal severe mental illness (SMI) disrupts mother–infant interaction in the immediate postpartum and is associated with less than optimal offspring development. In-patient mother and baby units (MBUs) provide the opportunity of supporting mothers with SMI in developing their relationships with their infants in order to minimise this disruption. One way is through an individualised video feedback intervention, delivered as part of a multidisciplinary inpatient treatment package. The present study prospectively measured changes in mother–infant interaction following video feedback intervention, during admission to an MBU ($N = 49$). Comparisons were made with mother–infant interactions of (1) a community-based ill group of mothers ($N = 67$) with a mental health diagnosis of similar severity, living at home and without the intervention and (2) a group of healthy mothers ($N = 22$). Maternal sensitivity and unresponsiveness, and infant cooperativeness and passiveness, were measured from a 3-min videotaped play session, using the CARE-Index. Following admission and the video feedback intervention, the MBU mothers (irrespective of diagnosis) and their infants showed improvements in their interactions. Moreover, on discharge the MBU dyads were significantly more sensitive, cooperative and responsive than the community ill group, and as attuned as the healthy group. While the design of the study does not allow us to conclude unequivocally that the video feedback intervention has effects on the outcome for the mothers and babies independent from the whole inpatient therapeutic package, the results do show that the dyadic interaction of mothers with SMI and their infants improves following the focussed treatment package in a specialised MBU.

UK - showed significant improvements on the CARE Index – mean length of stay **13 weeks**

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ORIGINAL ARTICLE

Use of video feedback intervention in an inpatient perinatal psychiatric setting to improve maternal parenting

Justin L. C. Bilszta · Anne E. Buist · Fandy Wang · Nur Rusydina Zulkefli

Received: 26 July 2011 / Accepted: 18 April 2012 / Published online: 16 May 2012

Abstract This study utilizes video feedback to improve maternal parenting behavior in clinically depressed mothers admitted to a perinatal inpatient psychiatric unit. Depressed mothers (n=74) were randomized to "video" (n=25), "verbal" (n=26), or "standard care" (n=23). "Video" mothers were taped playing with their infant; interaction was reviewed with a mental health specialist. "Verbal" mothers only discussed interaction with their infant. "Standard care" mothers received only routine inpatient care. Mothers were assessed for mental health status, perceptions of baby behavior, and parenting competence. There was significant improvement in mental health status of all participants, regardless of intervention. Neither intervention had an advantage, compared to standard care, in improving parenting confidence or perceptions of infant behavior. Video mothers were more likely to report no change in their parenting confidence the more feedback sessions completed. The number of intervention sessions for each participant was limited by the duration of their inpatient admission. Most participants were on simultaneous pharmacotherapy and psychotherapy, as well as receiving intensive mothercraft assistance; this may have influenced intervention effectiveness. Results suggest that this type of intervention may be beneficial, but in the current format does not add sufficiently to standard care to be detected by the measures used.

Keywords Postnatal depression · Inpatient · Mother–infant · Video · Intervention

Introduction

Postnatal depression (PND) affects between 15 and 20 % of women following childbirth (Buist et al. 2008; Leahy-Warren and McCarthy 2007; O'Hara and Swain 1996). PND has been demonstrated to have significant negative effects on the mother–infant relationship and infant cognitive and behavioral development (Luoma et al. 2001; Murray and Cooper 1997; O'Connor et al. 2002; Pilowsky et al. 2008; Rahman et al. 2004; Weissman et al. 2006). While the literature is not entirely consistent, in part because of the complex interplay of factors influencing maternal depression and child adjustment (Elgar et al. 2007), there is evidence that the timing, duration, and intensity of a maternal depressive illness is one of the major factors influencing poor child neurodevelopmental outcomes (Luoma et al. 2001; Pilowsky et al. 2008; Weissman et al. 2006).

Aust - also a video feedback intervention but could not demonstrate superiority over usual care - mean length of stay **3 weeks**

ARTICLE

MOTHERS AND THEIR INFANTS CO-ADMITTED TO A NEWLY DEVELOPED MOTHER–BABY UNIT: CHARACTERISTICS AND OUTCOMES

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ABSTRACT: Research on Mother–Baby Units (MBUs) has mainly focused on maternal psychiatric outcomes, not the well-being of infants. This study investigated infant development and mental health along with maternal characteristics and the mother–infant relationship in 45 dyads (60% New Zealand European, 20% Māori, 11% Pacific) admitted to a new MBU. Maternal psychopathology was measured with the Health of the Nations Outcome Scale (HoNOS, J.K Wing et al., 1998) and Global Assessment of Functioning (GAF; I.M. Aas, 2010). The Parent–Infant Relationship Global Assessment Scale (PIR-GAS, Zero to Three, 2005) measured the mother–infant relationship. Infant measures included Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood (Zero to Three Press, 2005) and the Ages & Stages-3 (J. Squires, E. Twombly, D. Bricker, & L. Potter, 2009). Maternal mental illness and functioning improved during the admission and were positively associated with longer inpatient duration and no illicit substance use. Well-being of the infants was concerning. In addition to lower birth weights and poorer health status, at discharge 51% were lagging behind developmentally, and 51% were exhibiting signs of infant mental health concerns. Relationally, 67% of mother–infant dyads had features of, and 29% met criteria for, a disordered relationship. Poorer mother–infant relationships were associated with a maternal diagnosis of schizophrenia or bipolar disorder, use of the Mental Health Act, leaving the MBU early, limited social support, and infant mental health diagnosis.

Keywords: infant, inpatient, mother–baby unit, maternal mental health

* * *

Wright et al – Infants in an MBU (2018)

- This study described the characteristics of 45 mother-infant dyads admitted to an Auckland based MBU
- This was the first study to comprehensively describe the health and well-being of infants admitted to an MBU
- They found high rates of infant mental health diagnoses, developmental concerns and relational dysfunction
- Using ASQ-3: **51.4% of infants had developmental concerns**
- **46.7% of infants > 6 months** had “scores suggesting delays in socioemotional development”
- **51.1% of infants** had ‘any diagnosis’ on the DC 0-3R

Wright et al – Infants in an MBU 2018

- Unsurprisingly infants in this study were exposed to adverse environments ante- and post-natally
- There were high rates of pre- and post-natal exposure to psychoactive substances from both parents
- And a high proportion (28%) had 2 parents with a SMI
- Wright et al concluded that

  “The high rate of relational difficulty and infant mental health concerns suggests that at a minimum identification needs to be undertaken in MBUs by staff with appropriate expertise. Systematic follow up and further research are needed to determine which infant-focused interventions are best delivered in this specific population.”

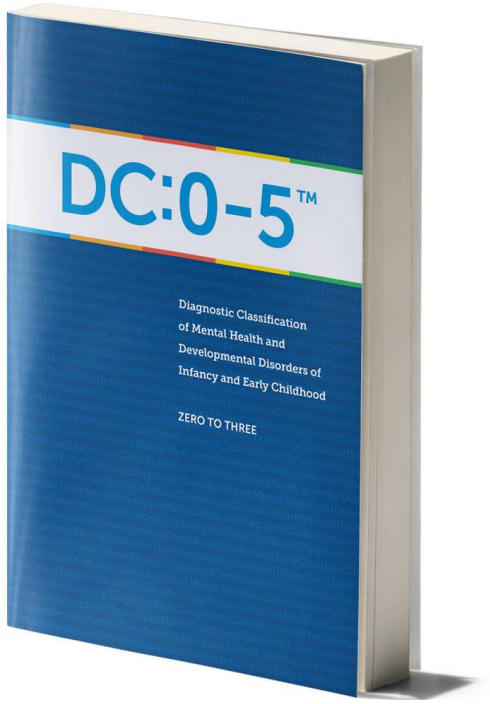
The HMH Infant Characteristics Study

- A descriptive study of infant and maternal characteristics
- Prospective data collection over 12 months
- Initially, data collected for 30 dyads for a pilot phase – then extend to another 100 dyads
- Data collection began in early July 2019

Measuring Infant Characteristics

- Development - Ages and Stages Questionnaire (ASQ-3) – via interview with the parent
- Social withdrawal - Alarm Distress Baby Scale (ADBB) – clinician-rated
- Psychiatric diagnosis and relational quality through the multiaxial system of the DC 0-5
- Parent-Infant Relationship Global Assessment Scale (PIR-GAS) – clinician-rated

DC:0-5



Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood (Zero to Three, 2016)

Axis I: Mental, Developmental Disorders

Axis II: Relational Dimension

Axis III: Physical Illness

Axis IV: Psychosocial Stressors

Axis V: Developmental Dimension

Measuring Maternal Characteristics

- Self-reported Edinburgh Postnatal Depression Scale (Cox et al, 1987)
- Self-reported Maternal Postnatal Attachment Scale (Condon et al, 1998)
- Clinician rated Clinical Global Improvement and Severity rating scales
- Psychiatric diagnosis in accordance with the DSM V

Preliminary Results

- 20 completed admissions so far
  - 2 declined/excluded
  - Small amount of missing data

- 18 mothers, 19 infants

- Infant age:
  - mean = 35.41 weeks (~8.26 months) SD 32.9
  - range: 1 week - 22 months
- Maternal age:
  - mean = 34.11 years SD= 5.83
  - range: 25-42 years
- Length of stay:
  - mean = 25.89 days SD= 9.83
  - range:11-45 days

Primary Maternal Diagnosis

DSM V Diagnosis	Number
Major Depressive Disorder, mod - severe	14 (77.7%)
MDD, severe, with psychotic features	1 (5.5%)
First Episode Psychosis (Possibly BPAD)	1 (5.5%)
Borderline Personality Disorder	2 (10.5%)

Secondary Maternal Diagnoses

DSM V Diagnosis	Number
Anxiety	5
Borderline Personality Disorder	3
PTSD	4
OCD	1
Somatoform disorder	1
Schizoaffective disorder	1

Maternal Rating Scales

Measure	Admission mean (St dev)	Discharge mean (st dev)	t	Significance p	Cohen's d (effect size)
EPDS	20.33 (5.05)	11.07 (5.85)	6.49	.00001	1.69 Very large
PIRGAS	36.63 (14.2)	54.5 (17.98)	-4.6	.00035	1.1 Very large
MPAS Quality of attachment	26 (6.93)	18.01 (5.72)	5.48	.0001	1.26 Very large
MPAS Absence of Hostility	15.37 (5.27)	12.08 (4.07)	2.99	.011	0.7 Medium
MPAS Pleasure in interaction	17.29 (6.51)	13.21 (6.18)	4.73	.00039	0.64 Medium

Infant Characteristics: DC:0-5 Axis I

- 19 infants
- **Any Axis I diagnosis – 7/19 (36.8%)**
- 1 infant with 2 diagnoses
- Diagnoses made:
  - Separation Anxiety
  - Relationship Specific Disorder of Infancy/Early childhood (mother)
  - Excessive Crying Disorder
  - Other sleep, eating and excessive crying disorder of infancy/early childhood (Sleep Onset Disorder – age).
  - Global Developmental Delay
  - Disinhibited Social Engagement Disorder
  - Other Neurodevelopmental Disorder of Infancy/early childhood (DiGeorge syndrome)

Infant Characteristics: DC 0-5 Axis II

- This axis is used to characterise the infant's relationship context
- The first part of this axis rates basic caregiving functions in the **primary caregiving relationship** and the infant's contributions to this relationship
- 4 levels from "well adapted to good enough" to "disordered and dangerous"
- The modal rating is a **3** which is **compromised to disturbed** (SD 0.9; range 1-4)

Infant Characteristics: Axis II continued

- The second part of Axis II denotes the various dimensions of the **caregiving environment** beyond the primary caregiving relationship
- 4 levels for rating from “well adapted to good enough” through to “disordered and dangerous” caregiving environments
- Modal rating so far is **3** (SD 0.9; range 1-4) which is **compromised to disturbed**

Infant Characteristics: Axis III

- Axis III is used to note physical health and other conditions not included in Axis I
- **5/19 (26.3%) infants** had a **physical health diagnosis**
- Diagnoses included:
  - gastro-oesophageal reflux disorder
  - esotropia
  - anaemia secondary to lead exposure
  - complex febrile convulsions
  - failure to thrive
  - DiGeorge syndrome

Infant Characteristics: Axis IV

- Psychosocial stressors
- We used the DC:0-5 checklist to compile the number of stressors
- Constructed a simple scale of severity:
  - 0 = nil significant
  - 1 = few/mild (1-2 stressors)
  - 2 = moderate (3)
  - 3 = significant (4)
  - 4 = extreme (5)
- Mode = **3 (significant)**
- There were **5/19 (26.3%) infants** rated as **extreme**

Infant Characteristics: Axis V

- This domain is related to developmental competence. We did not use the DC:0-5 competencies ratings – instead we have relied on ASQ-3
- It is important to note there was ***only one child*** with no developmental concerns.

	Typical Development	Need for Monitoring	Need for Further Assessment
Communication	14	2	1
Fine motor	9	5	3
Gross motor	15	1	1
Problem solving	11	5	1
Personal - social	9	8	0

Discussion Points

- These are only interim data – but:
- So far confirming the hypothesis that this is a highly vulnerable group – high levels of DC:0-5 pathology, developmental concerns, stress and even physical illness
- As expected maternal rating scales show signs of significant change from admission to discharge as does the PIR-GAS
- Already suggests that more may need to be done to monitor development beyond the MBU
- And undersores the question – will the mother's improvement eventually lead to improvement for the infant?

Challenges arising

- Developmental screen and DC:0-5 diagnosis only occurring once rather than admission and discharge
- Self-report vs objective – is the balance right?
- Dyads with short stays – hard to catch! So data lost
- It’s a lot of extra work

Conclusions

- Interim results are encouraging in showing that our service provides a useful intervention for parents hospitalised with a serious mental illness
- It is clear that the infants admitted to HMH are highly vulnerable in multiple domains
- But further data needs to be collected to confirm and delineate
- And this will need to include post-discharge follow-up evaluation to determine how infants fare beyond the MBU
- [hypothesis – there will prove to be a subset with poorer outcomes and more needs – are these infants of mothers with complex trauma and low RF? Or another subset?]


YEAH
SCIENCE!
PEEK
A
BOO!

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