CONTINUITY OF MIDWIFERY CARE MODERATES THE EFFECTS OF PRENATAL MATERNAL STRESS ON POSTNATAL MATERNAL WELLBEING: THE QF2011 QUEENSLAND FLOOD STUDY

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ABSTRACT

INTRODUCTION: Poor postpartum mental health is a major public health issue, and risk factors include experiencing adverse life events during pregnancy. We assessed whether Midwifery Group Practice (MGP), compared to standard hospital care, would protect pregnant women from the effects of a sudden-onset flood on postpartum depression and anxiety.

OBJECTIVE: To determine the extent to which being followed in a Group Midwifery Practice buffers pregnant women from postpartum depression following exposure to the stress from a major natural disaster.

METHOD: Women received either MGP care in pregnancy, in which they were allocated a primary midwife who provided continuity of care; or they received standard hospital care provided by various on-call and rostered medical staff during labor and birth, and postnatally. All women in the study were pregnant when a sudden-onset flood severely affected Queensland, Australia, in January 2011. At recruitment into the QF2011 Queensland Flood Study within a few months of the disaster, women (n = 112) completed questionnaires on their flood-related hardship (objective stress), their emotional reactions (subjective stress), and cognitive appraisal of the impact of the flood (positive, neutral, or negative). Self-report assessments of the women's depression and anxiety were obtained during pregnancy and at 6 weeks and 6 months postpartum.

RESULTS: Controlling for all main effects, regression analyses showed there was a significant interaction between maternity care type and objective flood-related hardship and subjective stress, such that depression and anxiety scores at 6 weeks postpartum increased with increasing objective and subjective stress in the standard care group, but not in the MGP group, suggesting a buffering effect of continuity of midwifery care. There was no buffering effect, however, against distress at 6 months postpartum.

CONCLUSION: The benefits of midwifery continuity of care in pregnancy clearly extend beyond a more positive birth experience and better birthing and infant outcomes, to mitigating the effects of high levels of objective hardship and subjective stress experienced by women in the context of a natural disaster on their mood up to 6 weeks postpartum.

INTRODUCTION

- 12% - 15% of Australian women experience depression in first 6 months postpartum;
- 13% of Australian women experience postpartum anxiety, often comorbid with depression
- Having a major stressor in pregnancy is a risk factor for postpartum depression and anxiety;
- Social support buffers against postpartum mental health problems;
- Social support buffers against postpartum mental health problems;
- Midwifery Group Practice (MGP) provides continuity of care through pregnancy and postpartum, and increases women's sense of social support;
- It is unknown whether MGP can buffer pregnancy women against a major, sudden-onset, independent stressor such as a natural disaster.
- In January 2011 Brisbane, Australia experienced a devastating flood (24 dead, $AU 2 Billion)

OBJECTIVES

Our goal was to determine the extent to which Midwifery Group Care (MGP) would buffer pregnant women against the effects of 3 aspects of prenatal maternal stress (PNMS) on their depression and anxiety symptoms at 6 weeks and 6 months postpartum.

METHODS

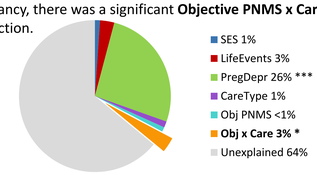
Subjects were 196 women who were pregnant during the 2011 Queensland Flood and provided data at recruitment into our study (QF2011), and at 6 weeks and/or 6 months postpartum;

- **M@NGO Randomized Control Trial (RCT)**: Most women were already enrolled in an RCT comparing birth outcomes in women randomized to two types of prenatal care:
  - **Maternity Group Practice (MGP; n = 48):** Women were followed by a primary midwife in a practice with 3 other midwives who shared in their care. A familiar midwife from the MGP would attend the birth if the primary midwife was unavailable. MGP midwives provide care until 6 weeks postpartum.
  - **Standard Care (SC; n = 53)**: Women received prenatal care from a community-based general practitioner. Their births were attended by doctors or midwives in hospital with whom they were often not familiar
- **Recruitment into QF2011 and PNMS assessment** occurred between 4 and 12 months after the flood.
- **Instruments**:
  - **Objective Prenatal Maternal Stress (PNMS)**: We created a questionnaire to assess the objective severity of women's Threat, Loss, Scope and Change due to the floods. The Queensland Flood Objective Stress Questionnaire (QFOSS).
  - **Cognitive Appraisal of the flood** was assessed with a single item: "*If you think about all of the consequences of the 2011 Queensland flood on you and your household, would you say the flood has been…?*" Women rated their appraisal on a 5-point Likert scale, from Very Negative (-2) to Very Positive (+2). We dichotomized the scale into Negative/Very Negative vs. Neutral/Positive/Very Positive.
  - **Subjective PNMS** was assessed using a composite score from three validated scales: the Peritraumatic Distress Inventory (PDI), the Peritraumatic Dissociative Experiences Questionnaire (PDEQ), and the Impact of Event Scale – Revised. The scores were centered around a mean of 0 and SD = 1.
  - **Depression in Pregnancy:** Edinburgh Postnatal Depression Scale (EPDS) at about 14 weeks pregnancy.
  - **Postpartum Depression:** EPDS at 6 weeks and 6 months.
  - **Postpartum Anxiety:** State-Trait Anxiety Inventory (STAI) at 6 weeks and 6 months.
  - **Other pregnancy life events** : The number of events occurring in pregnancy from a list of 26 possible events from the Life Experiences Survey (LES).
- **Analyses**: We conducted hierarchical multiple regressions, entering pregnancy depression, other pregnancy life events, and socioeconomic status first; followed by Care Type (Standard Care = 0; MGP = 1), then PNMS, then interactions between PNMS and Care Type.

RESULTS: POSTPARTUM DEPRESSION (% variance explained is at model entry)

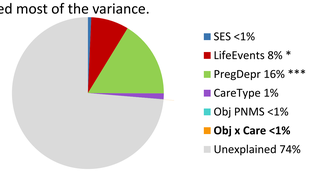
& OBJECTIVE PNMS: 6 WEEKS

This model explained 36% of the variance in **6 week** depression. Controlling for depression and other life events in pregnancy, there was a significant **Objective PNMS x Care** interaction.



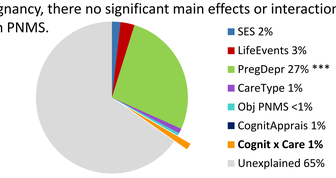
6 MONTHS

This model explained 26% of the variance in 6 month depression. Depression and other life events in pregnancy explained most of the variance.



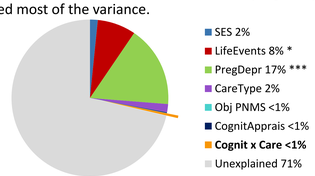
& COGNITIVE APPRAISAL: 6 WEEKS

This model explained 35% of the variance in **6 week** depression. Controlling for depression and other life events in pregnancy, there no significant main effects or interactions with PNMS.



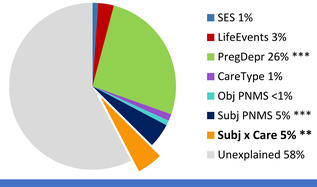
6 MONTHS

This model explained 29% of the variance in 6 month depression. Depression and other life events in pregnancy explained most of the variance.



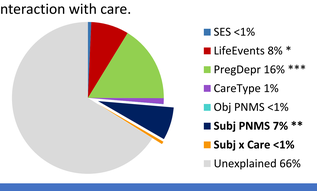
& SUBJECTIVE PNMS: 6 WEEKS

This model explained 42% of the variance in **6 week** depression. Controlling for depression in pregnancy, there was a significant **Subjective PNMS x Care** interaction.

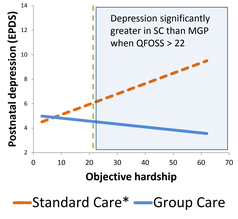


6 MONTHS

This model explained 34% of the variance in 6 month depression. Depression and other life events in pregnancy, and **Subjective PNMS** explained most of the variance. There was no interaction with care.

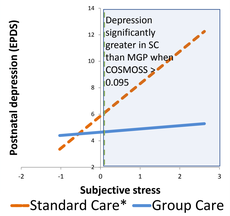


6-WEEK DEPRESSION IN STANDARD CARE GROUP IS A FUNCTION OF PRENATAL OBJECTIVE HARDSHIP AND SUBJECTIVE STRESS; MIDWIFERY GROUP CARE BUFFERS AGAINST PNMS



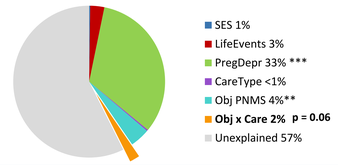
*Interaction effect (p = .031) between care type and **objective PNMS** on postnatal maternal depression score at six weeks (* p < 0.05 for SC group)*

*Interaction effect (p = .006) between care type and **subjective distress** on postnatal maternal depression score at 6 weeks (* p < 0.05 for SC group)*

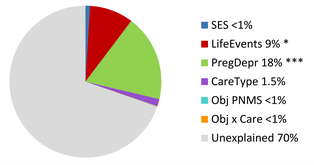


RESULTS : POSTPARTUM ANXIETY

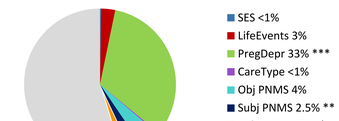
& OBJECTIVE PNMS: 6 WEEKS



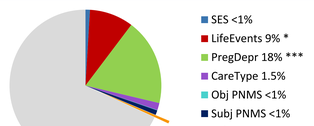
6 MONTHS



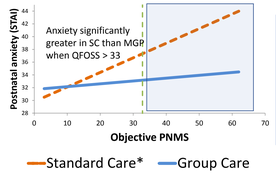
& SUBJECTIVE PNMS: 6 WEEKS



6 MONTHS

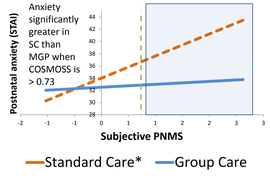


6-WEEK ANXIETY IN STANDARD CARE IS A FUNCTION OF OBJECTIVE AND SUBJECTIVE PNMS AND CARE TYPE



*Interaction effect (p = .062) between care type and **objective PNMS** on postnatal maternal anxiety score at six weeks (* p < 0.05 for SC group)*

*Interaction effect (p = .048) between care type and **subjective PNMS** on postnatal maternal anxiety score at six weeks (* p < 0.05 for SC group)*



CONCLUSIONS AND DISCUSSION

CONCLUSIONS

- Depression in early pregnancy explains 18% - 33% of variance in depression and anxiety at 6 weeks and at 6 months postpartum;
- Other life events in pregnancy, besides the flood, explain the second greatest amount of variance.
- **Standard Care:** The greater the objective or subjective PNMS, the greater the 6-week postpartum depression and anxiety in this group;
- **Midwifery Group Care (MGP) buffered women** against the effects of prenatal maternal objective and subjective stress on both depression and anxiety **at 6 weeks** postpartum;
- **MGP did not buffer the effects of flood-related PNMS at 6 months post-partum;**
- At lower levels of objective and subjective PNMS there were no differences in Depression and Anxiety – **group differences emerged at moderate levels of PNMS**.

DISCUSSION

- **Social Support?** The protective effects of MGP at 6 weeks postpartum may be the result of added social support provided by midwives who continued follow-up until 6 weeks.
- **Recommend continuing MGP beyond 6 weeks?** Our results suggest that continued visits by a familiar midwife beyond 6 weeks postpartum may provide longer-lasting protection again postpartum distress.

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