Research report

Long-term trajectories of maternal depressive symptoms and their antenatal predictors

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ABSTRACT

Background: Depressive symptoms, often long-term or recurrent, are common among mothers of young children and a well-known risk for child well-being. We aimed to explore the antecedents of the long-term trajectories of maternal depressive symptoms and to define the antenatal factors predicting the high-symptom trajectories.
Methods: The sample comprised 329 mothers from maternity centers. Maternal depressive symptoms were assessed with the Edinburgh Postnatal Depression Scale (EPDS) antenatally and at two months, six months, 4–5 years, 8–9 years and 16–17 years after delivery. Maternal expectations concerning the baby were assessed with the Neonatal Perception Inventory (NPI). Background information was gathered with questionnaires.
Results: A model including four symptom trajectories (very low, low-stable, high-stable and intermittent) was selected to describe the symptom patterns over time. The high-stable and the intermittent trajectory were both predicted pairwise by a high antenatal EPDS sum score as well as high EPDS anxiety and depression subscores but the other predictors were specific for each trajectory. In multivariate analyses, the high-stable trajectory was predicted by a high antenatal EPDS sum score, a high EPDS anxiety subscore, diminished life satisfaction, loneliness and more negative expectations of babies on average. The intermittent trajectory was predicted by a high antenatal EPDS sum score, a poor relationship with own mother and urgent desire to conceive.
Limitations: Only self-report questionnaires were used. The sample size was rather small.
Conclusions: The results suggest a heterogeneous course and background of maternal depressive symptoms. This should be considered in intervention planning.

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1. Introduction

The research on maternal depression, postpartum depression in particular, has burgeoned in recent years and the potentially harmful consequences of maternal depression on child's cognitive and emotional development at any time are well-known (Cummings and Davies, 1994; Goodman, 2007; Goodman, et al., 2011; Korhonen, et al., 2014; Luoma, et al., 2001; Murray and Cooper, 1997). However, there is still lack of longitudinal research on the antecedents and natural course of maternal depressive symptoms during the childbearing years and child development.

Various psychological, psychosocial, and pharmacological interventions have been found to benefit depressive mothers (Dennis and Hodnett, 2007). Therefore it would be important to recognize the antecedents of long-lasting or recurrent depressive symptoms as early as possible.

1.1. Trajectories of depressive symptoms

Depressive symptoms are not uniform but may vary in their spectrum, severity, duration, and recurrence over time. Nandi, et al. (2009) have suggested that there are potential patterns of heterogeneity in both "symptom syndromes", i.e. the nature or spectrum of symptoms experienced by an individual, and in the "symptom trajectories", which refers to the patterns of symptoms over time. Considering symptom syndromes, anxiety symptoms are among the most common symptoms co-occurring with

Table 1
Recent studies on trajectories of maternal depressive symptoms.

Author, year	Site	Time points	n	Measure of depressive symptoms	Trajectories	%	Correlates or predictors of trajectories
Campbell et al. 2007	US	1 month 6 months 15 months 24 months 36 months 54 months 7 years	1261	Center for Epidemiologic Studies scale (CES-D)	1) Low-stable	46	Older, better educated, higher incomes than in other trajectory groups, more likely to be stably married and Caucasian than in trajectory groups 3, 4 and 6
					2) Moderate-stable	36	Somewhat higher incomes and educational levels than in trajectory groups 4 and 6 but lower than in group 1
					3) Moderate-increasing	6	Younger, less educated, lower incomes, less likely stably married and Caucasian than in trajectory group 1
					4) High-decreasing	6	Younger, less educated, lower incomes, less likely to be stably married and Caucasian than in trajectory group 1
					5) Intermittent	4	Younger, less educated, lower incomes than in trajectory group 1
					6) High-chronic	3	Younger, less educated, lower incomes, less likely to be stably married and Caucasian than in trajectory group 1
Gross et al. 2009	US	1.5 years 2 years 3.5 years 5 years 5.5 years 6 years 8 years 10 years 11 years 12 years	285	Beck Depression Inventory (BDI)	1) Low	25	Reference
					2) Moderate low	47	Child noncompliance scores higher than in trajectory group 1
					3) Moderate high	22	Child noncompliance scores indicatively higher than in trajectory group 1
					4) High chronic	7	Family income lower and child noncompliance scores higher than in trajectory group 1
Mora et al. 2009	US	antepartum (15 weeks) 3 months 11 months 25 months	1735	Center for Epidemiologic Studies scale (CES-D)	1) Never	71	Reference
					2) Antepartum	6	Nativity (US born: protective), race (latina/hispanic: protective), self-rated emotional health (fair/poor: risk), recent alcohol use (risk), ambivalence about pregancy (anxious: risk), objective stress (high: risk)
					3) Postpartum	9	Nativity (US born: protective), education (less than or still in high school: risk), race (latina/hispanic: protective), parity (1-2 older children: risk), self-rated emotional health (fair/poor: risk), comorbid condition (risk), objective stress (moderate or high: risk)
					4) Late	7	Education (less than high school: risk), self-rated physical health (very good: protective), objective stress (moderate or high: risk)
					5) Chronic	7	Race (black non-hispanic: protective), parity (more children: risk), self-rated emotional health (fair/poor: risk), ambivalence about pregancy (anxious: risk), objective stress (moderate or high: risk)
Skipstein et al. 2010	Norway	18 months 2.5 years 4.5 years 8.5 years 12.5 years 14.5 years	913	Hopkins Symptom Check List (HSCL-25)	1) No symptoms	5	
					2) Low	19	Age (older than in trajectory group 5)
					3) Moderate-low	30	Gender of the child (proportion of boys higher than expected)
					4) Moderate	32	
					5) High-chronic	10	Age (younger than in trajectory group 2), workforce participation (less often than in other trajectory groups), education (lower than in other trajectory groups), partner status (least often living with a partner)
					6) Low-rising	4	education (highest)
Cents et al. 2012	The Netherlands	antepartum(20 weeks of pregnancy) 2 months 6 months 36 months	4167	Brief Symptom Inventory (BSI)	1) No depressive symptoms	34	Reference
					2) Low depressive symptoms	54	Ethnicity (non-Western), parity > 1, history of depressed mood
					3) Moderate depressive symptoms	11	Family income $\leq$ 2000 €, ethnicity (non-Dutch), parity > 1, history of depressed mood, family stress
					4) High depressive symptoms	1.5	Age (younger), low educational level, family income $\leq$ 1200 €, ethnicity (non-Dutch), history of depressed mood, family stress
Sutter-Dallay et al. 2012	France	antepartum (after 8 months of pregnancy) 3 days 6 weeks 3 months 6 months 12 months 18 months 24 months	579	Center for Epidemiologic Studies scale (CES-D)	1) Never	72	Reference
					2) Antepartum	21	Older age, higher trait anxiety scores, income < 1500 €, parity > 1
					3) Postpartum	4	
					4) Chronic	3	Higher trait anxiety scores