Optimal care?
9-months fully paid maternal leave, high quality care and associations with Child behaviour at 3 years
A sub-project of the MoBa-study

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Overview

Part I
Childcare and levels of risks in Norway

Part II
Methods and procedures of The MoBa-Study

Part III
A longitudinal population based sub-study of the MoBa-study: Optimal care? maternal leave and childcare effects on behaviour difficulties at 3-years
Part I:

Childcare and levels of risks in Norway
Social welfare in Norway

Maternal leave benefit:

• In Norway the leave of absence is laid down in the Working Environment Act.
• Fully paid maternal leave for 43 weeks or 52 weeks at 80% salary.
• Parental benefits for employees cover 100 per cent of their income.
• Parental benefits are not paid for income in excess of 6G (71 000 AU$)
The use of child care

• Only 1% of the children under 1 year in non-parental care.

• After the first year about 77% of children attend some form of non-parental care, preferably group day-care.

(National statistics of Norway, SSB 2010)
Childcare coverage

• Day care centre coverage of 87-100% around the country.

• 3-5 years 100%

• Nearly all (80%) of the families ask for, and get full time provision for their children. (37.5 hours per week).
25-year history of childcare use in Norway

![Graph showing the number of infants aged 0-2 in day care centres from 1977 to 2001.](image)

- **0 age**
- **1 age olds**
- **2 year olds**
Cost is regulated by maximum price level

• Sweden was the first country in Scandinavia to pass a regulation defining how much day care centre provision should cost, by fixing an upper roof.
• There are no big differences among centres with respect to cost in Scandinavia.
• There is heavy subsidizing from the government
Childcare quality

• The kindergarten ACT of 1975 ensures high structural quality through laws and regulations..

• In Norway (child-care giver ratio) it is 1:4 plus teacher once a week, at 12-24 months; 1:6 at 36 months; and 1: 6 for 54 months.

• Teacher education of 3 years with focus on pedagogical learning and sensitivity to the child's needs (Borge et al., 1994; havnes, 2009).
Levels of Risk in Norway I:

• Considered to be the only country with child poverty below 5% that are continuing to decrease.

• USA, child poverty above 15%

• Norway among the top 4 countries in child well-being, while UK and USA in the bottom two

(ref: Unicef)
Levels of Risk in Norway II: TEENAGE BIRTHS.

Teenage fertility rate: births per 1000 women age 15-19:

• Norway: 10
• Canada: 20
• United Kingdom: 27
• United States: 30

(ref: Unicef)
Levels of Risk in Norway III:
LOW BIRTH WEIGHT RATE

Percentage (%) births less than 2500 g.

• Sweden       4.5%
• Norway        4.9%
• Canada        5.3%
• UK            7.5%
• USA           7.9%
Levels of Risk in Norway IV: EDUCATION

Percentage (%) of 15-19 year-olds not in education, training or employment

- Sweden 5.7%
- Norway 4%
- Canada 5.3%
- UK 9.8%
- USA 7.5%
Part II:

The Norwegian Mother and Child Cohort Study (MoBa)
Study Aims:

• The study aims to calculate the degree of association between potential causal factors (exposures) and ill health in mother and child.

• There is also more than 100 different sub-projects; The ABC-study- Autism; ADHD; Language; Tooth study; Breast-milk study; many more
Historical Background

• Recruitment are finalized, and include a total of 107,000 children and their parents
• Pilot study in 1997
• Recruitment started in Hordaland, Bergen, 1999
• Became a National cohort study 2002
Recruitment and participants

• 50 out of 52 hospitals around Norway have agreed to participate in the recruitment to the study.

• Pregnant women are registered at the hospital, and 98% of pregnant women in Norway attend routine Ultrasound examinations around the 17th week in pregnancy.

• They are then invited via postal questionnaires which is sent to their home address.

• The invitation describes the purpose of the study, protection of privacy and practical details.
Data Collection

Week 17 Ultralyd

Week 22 Birth

Week 30

6 Mth

18 mth

36 mth

5 year

Umbilical cord

Mother QI QII QIII QIV QV QVI QVII

Father

Child

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# MoBa-cohort

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Invited</td>
<td>277,700</td>
</tr>
<tr>
<td>Consent</td>
<td>106,980</td>
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<tr>
<td>% returned Q</td>
<td>38.5%</td>
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## Response rate

per October 2009

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>% respons</th>
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<tbody>
<tr>
<td>1 – 17 weeks</td>
<td>95.2 %</td>
</tr>
<tr>
<td>2 – Nutrition</td>
<td>92.3 %</td>
</tr>
<tr>
<td>3 – 30 weeks</td>
<td>90.9 %</td>
</tr>
<tr>
<td>4 – Child 6 m</td>
<td>84.8 %</td>
</tr>
<tr>
<td>5 – Child 18 m</td>
<td>73.0 %</td>
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<tr>
<td>6 – Child 3 Years</td>
<td>60.2 %</td>
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# Biological samples

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<tr>
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<th>Total</th>
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<tbody>
<tr>
<td>Mother-week17</td>
<td>92 630</td>
</tr>
<tr>
<td>Mother- birth</td>
<td>83 220</td>
</tr>
<tr>
<td>Child- Umbilical cord</td>
<td>88 850</td>
</tr>
<tr>
<td>Father- week17</td>
<td>68 000</td>
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Ethical considerations I

The purpose of the project is to investigate the causes of disease. Knowledge about the causes of disease can lead to good interventions and further laboratory research which can reveal the mechanisms that underlie disease processes.
Ethical considerations II

• The MoBa-study is approved by Regional Ethics Committees for medical research, Health Region II (REK II), and the data inspectorate.

• From spring 1997 to spring 2000, the project had its own committee advising and making recommendations to the project's executive and working groups.
Part III:

Optimal care?

The role of maternal leave and high provision of good quality care and associations with behaviour difficulties at 3-years.
Background I: Non-maternal care

Half a century ago Bowlby argued that mothers form relationships with their infants that are qualitatively different from any other, thus major concerns were raised about the possible risks associated with non-maternal care (Bowlby, 1951).
Background II: Non-maternal care

- Childcare have mostly been focused on the first 12 months of life, and the potential harmful effects is particularly associated with research in the USA (see i.e. NICHD, Jay Belsky).
- The effects of childcare may vary with the quality of both homecare and care outside the home (Rutter, 1981).
- There are major differences in the effects of childcare in different social contexts.
- Childcare may vary with the levels of risk, and can for example be protective in the case of high family risk (Borge et al., 2004).
Example: Non-maternal care moderates aggression in children from high risk families (Côté et al., 2008)
Example: Non-maternal care moderates emotional difficulties in children from high risk families (Côté et al., 2008)
The present Study

• To date, no other studies have examined population-based data where the majority of infants are cared for at home the first year of life.

• In the present study we examined how the extensive welfare policy of 42 weeks maternal leave and high coverage of group day-care, is related to social selection and behaviour problems in 36 month-olds.
Method

Child outcome:

• Physical aggression measured at age 18 and 36 months
• Crying behaviour at 18 and 36 months
• Demographics (i.e. maternal age, education Income, number of siblings).
• Psychosocial variables; family disharmony and maternal anxiety
• Child characteristics ; Gender and Child temperament at 6 months
Measures:

Childcare:

• Group day-care
• Family care
• Nanny
The percentage of children cared for regularly by different caregivers at 6, 9, 12, 15 and 18 months.
Number of hours spent in Childcare at age 18 months

Figure 2. Number of hours spendt in non-maternal care at 18m
Child outcome at 36 months:

Crying behaviour:
• The three items were rated by mothers on a five-point scale (“cries a lot”, “gets easily upset”, “scream and cries intensely”) from the EAS temperament scale

Physical aggression:
• Five items from the CBCL for ages 1.5 to 5 years (Achenbach, Edelbrock, & Howell, 1987). Included items were “is aggressive when he/she is frustrated”, “gets often into fights”,

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In conclusion

We expect to find:

• There was a strong selection effect, and that as a result,

• there is no direct or moderating effect of group day-care starting in the second year of life on child behaviour difficulties.

Findings from this presentation have not been published, but I am happy send results to those interested when published.
Resources

- [http://www.ssb.no/english/subjects/04/02/10/barnehager_en/](http://www.ssb.no/english/subjects/04/02/10/barnehager_en/)

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Discussion

• How does the Norwegian model differ from that of Australia?
• What are the effects of group day-care in Australia? Why?

• The role of social selection in different cultures- Why does this matter for child psychopathology?
• After almost half-a-century of group day-care research, where do we stand today?
  (Maternal care vs. Non-maternal care)