

## Length of maternity leave and health of mother and child – a review

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### Summary

**Objectives:** Assessment of the literature on the length of maternity leaves and health of mothers and children; evaluation of the Swiss situation in view of the maternity leave policy implemented in 2005.

**Methods:** Review of thirteen original studies identified by PubMed using topic-related terms.

**Results:** A positive association was shown between the length of maternity leave and mother's mental health and duration of breastfeeding. Extended maternity leaves were also associated with lower perinatal, neonatal and post-neonatal mortality rates as well as lower child mortality; however, results are obtained in ecological studies. There is less evidence regarding other health outcomes. The new policy in Switzerland extends maternity leave for a considerable number of women to 14 weeks. With this prolongation, fewer depressive symptoms and longer breastfeeding duration can be expected, while benefits regarding other health outcomes would warrant longer leaves.

**Conclusions:** Longer maternity leaves are likely to produce health benefits. The new policy in Switzerland will probably improve the situation of those women, who previously were granted only minimal leave and/or mothers with additional social risk factors.

**Keywords:** Maternity leave – Maternal health – Child health – Breastfeeding – Review – Switzerland.

In the last decades, there has been a marked increase of women in the labour force of industrialised nations, mainly as a consequence of an increase of women with children remaining in paid work. Overall, the average employment rate of

women in the European Union in 2002 was 47.6% (Bundesamt für Statistik 2004). In Switzerland it was even higher, at 59.4%. The Swiss employment rate of 25- to 45-year-old mothers with children below the age of 6 years has considerably increased from 40% in 1990 to 62% in 2000, while the employment rate of women of comparable age without children has risen only slightly. Against this background, public policies regulating maternity and employment, such as paid maternity leave, gain importance.

In most industrialised countries, national policies for (paid and job-protected) maternity leave were established decades ago (Kamerma 2000). Since the 1990s, a minimum of 3 months parental leave has been mandatory within the European Union, and there is a binding guideline for at least 14 weeks of maternity leave (Kommission der Europäischen Gemeinschaften 1999; Kommission der Europäischen Gemeinschaften 2003). In most countries, however, the actual length exceeds this minimal standard by far (Bundesamt für Sozialversicherung 2004; MISSOC 2004). The new national legislation in Switzerland, which has been in effect since 1 July 2005, foresees paid maternity leave of 14 weeks, guaranteeing 80% of the previous wage for all employed women. Thus, this legal regulation, although a new achievement in Switzerland, remains limited when compared internationally (Bundesamt für Sozialversicherung 2004; MISSOC 2004).

Maternity leave is considered an element of maternity protection and benefits of policies are presumed to include women's and child health. Until the 1990s no direct empirical evidence existed to support this assumption. However, positive health effects were postulated based on the high prevalence of symptoms of mothers in the first postpartum year and the higher symptom incidence of children in day care compared to children cared for at home (McGovern et al. 1992). A comparison of maternal and infant mortality across the European Union and Switzerland shows no relationship with maternity leave

regulations though: while Scandinavian countries belong to the nations with the most extended maternity provisions and also have among the lowest rates of maternal and infant mortality, maternal mortality rates in Switzerland are very low too, despite far less advanced maternity policies. On the other hand, there are countries with less favourable health indicators than Switzerland despite more extended regulations, such as the United Kingdom or Greece (Bundesamt für Sozialversicherung 2004; WHO 2004). However, in a case study on the impact on breastfeeding of labour market policy and practice in Ireland, Sweden and the USA, the policy package in Sweden with its extensive well-paid parental leave was interpreted as an important factor behind Sweden's enviable child health statistics (Galtry 2003).

This article reviews the literature on the association between the length of maternity leave and maternal and child health indicators and evaluates the results with regards to the current regulation pertaining to maternity leave in Switzerland.

## Methods

### *Search strategy*

The literature search targeted studies on the association between the length of maternity leave and health endpoints for mother and child. The term *maternity leave* was defined to include maternity leave, granting employed mothers a limited job-protected period around childbirth, as well as *parental leave*, which is a gender-neutral job-protected leave from employment and usually follows after the exhaustion of maternity leave (Kamerman 2000).

The searches were conducted in PubMed using topic-related search terms, either alone or in combination, both for the exposure (maternity leave, parental leave) and for the health outcomes (health, mother's/women's/maternal/infant/child health, maternal mortality, infant mortality, breastfeeding).

Studies were included for review that were conducted and published since 1990, carried out in Europe or the United States, and published in English, French or German. In a first step of the selection process, meta-analyses and reviews were searched for, in a second step, original articles. A few original articles were chosen from the reference lists of included papers. One study was excluded since it was a pilot study (Gjerdingen et al. 1991). Overall, 13 original studies were selected for review.

For the evaluation of the situation regarding maternity regulations in Switzerland, the paper relies on the fact sheet on the revision of the Income Replacement Scheme ("Erwerbssatzordnung"), published by the Federal Office of Social Security, that describes the new regulation of paid maternity leave in Switzerland (Bundesamt für Sozialversicherung 2004).

### *Included studies*

Of the studies included in the review, five are longitudinal, six cross-sectional, and two ecological. Nine studies were conducted in the USA, one each in Italy and Turkey. The two ecological studies included European Countries, USA, Canada, Japan and New Zealand. Data collection goes back to the late 1980s and early 1990s, except for the ecological studies that go back to 1959 and 1969. The size of the study populations ranges from 141 to 1762 women. Recruitment of women was done by newspaper advertisement (Killien et al. 2001), using birth certificates (McGovern et al. 1997), using hospital records (Hyde et al. 1995; Gjerdingen & Chaloner 1994; Romito et al. 1994; Clark et al. 1997), or using a continental mail panel (Roe et al. 1999). For some papers, study populations were recruited from ongoing studies (Chatterji & Markowitz 2004; Visness & Kennedy 1997): (National Maternal and Infant Health Survey NMIHS (Chatterji & Markowitz 2004; Visness & Kennedy 1997); Wisconsin Maternity Leave and Health WMLH (Hyde et al. 1995; Clark et al. 1997); Infant Feeding Practices Study IFPS (Roe et al. 1999); Arthur et al. (2003), Killien et al. (2001)). Study populations mostly were not representative of the general female population. In cross-sectional studies, selected women had to be in paid work at the time of the interview. In longitudinal studies, they had to have been in paid work during pregnancy and intending to take up paid work again after childbirth. Paid work was defined – in longitudinal studies – as remunerated work at any time during pregnancy (Killien et al. 2001), or as remunerated work at least 20h per week (McGovern et al. 1997). Data collection was performed retrospectively in some studies, ranging from an average of 7 months up to 3 years after delivery in cross-sectional studies. In longitudinal studies, women were followed up to 12 months after childbirth. Two studies did not give the respective information (Arthur et al. 2003; Visness & Kennedy 1997). With the exception of the ecological studies, the information was based on self-report of included women (by personal interview, or e-mail). A video film was used to evaluate mother-infant interactions in one study (Clark et al. 1997). Health endpoints were assessed by validated questions or scales (CES-D, SOS, PFAS, Spielberger State Anxiety and Anger Inventory, Mental Health Inventory as in the RAND Health Insurance Experiment, PCERA, FPBPA). The information in the ecological studies came from several sources: health indicators mainly from the Organization for Economic Cooperation and Development (OECD); length of maternity leaves from the International Labour Office (ILO).

Length of maternity leave was mostly defined by the number of weeks after childbirth when mothers were off work, with-

**Table 1** Length of maternity leave and maternal health

Author(s)	Study design	Study population, year(s) of data collection, region/country	Outcome measure	Exposure: Length of maternity leave	Results
<b>Maternal health</b>					
Chatterji & Markowitz 2004	cross-sectional	1762 women. Mothers of children with increased postpartum risk oversampled. 1988, USA	Symptoms of depression (CES-D <sup>a</sup> ) in past week, on average 13 months after childbirth (6–24 months) >3 outpatient physician or clinic visits in first six months after childbirth	<6 versus 6–8 weeks <6 versus 8–12 weeks <6 versus >12 weeks	Increasing maternity leave from 6 or fewer weeks to 8–12 weeks or >12 weeks is associated with a decline in depressive symptoms of 11 % and 15 %, respectively. No decline of depressive symptoms in women with maternity leave of 6–8 weeks in comparison to <6 weeks, and in women who are clinically depressed (CES-D Score >16) No association with the number of outpatient physician or clinic visits.
Killien et al. 2001	longitudinal	149 partnered first-time mothers. 91 % Caucasian, predominantly well educated with adequate income. 1990–1995, USA (Northwest)	Health status (clinical health/symptom experience SOS <sup>b</sup> , role performance PFAS <sup>c</sup> , global perception of health) during pregnancy and 4, 8, 12 months after birth	Week of return to employment after childbirth (continuous)	No association with health status in the first year after childbirth
McGovern et al. 1997	cross-sectional	654 women. 91 % White, 67 % married. Mothers of children with increased postpartum risk oversampled. 1991–1992, USA (Minnesota)	Mental health (depression, anxiety, general positive affect; Stewart) Vitality (Stewart) Role function (Sherbourne, Stewart, Ware) in past 4 weeks, 7 months after childbirth	Time off work after childbirth in days (continuous)	The association between the time off work and maternal health is U-shaped: higher vitality beyond a length of 12 weeks, better mental health beyond 15 weeks, better role function beyond 20 weeks of leave.
Hyde et al. 1995	longitudinal	266 women. 93 % White. 53 % with college degree or beyond. 1990–1991, USA (Wisconsin)	Depression (CES-D <sup>a</sup> ) Anxiety (Spielberger State Anxiety Inventory) Anger (Spielberger State Anger Inventory) in past week, during pregnancy and 1, 4 months after childbirth	6 versus 12 weeks	Maternity leave of 6 weeks in comparison to 12 weeks is associated with elevated depression scores in women with marital concerns and elevated depression scores and greater anger in women with low work rewards (4 months after childbirth). No association with anxiety.
Gjerdingen & Chaloner 1994	longitudinal	436 married, first-time mothers. 1989, USA (Minnesota)	Mental health (depression, general positive affect, anxiety, life satisfaction; Mental Health Inventory used in the RAND Health Insurance Experiment) 1, 3, 6, 9, 12 months after childbirth	<9 versus 9–24 weeks <9 versus >24 weeks	Better mental health 9 and 12 months after childbirth in women with a maternity leave of >24 weeks in comparison to women with <9 weeks of leave. No significant association with mental health at 1, 3 and 6 months after childbirth.
Romito et al. 1994	cross-sectional	141 first-time mothers. 38 % with only compulsory education. 88 % married. 1988–1989, Italy (Trieste)	Backache Extreme tiredness Lack of sleep 15 months after childbirth	<12 versus 13–34 weeks <12 versus 35–60 weeks	No association with backache, extreme tiredness and lack of sleep.

<sup>a</sup> CES-D: Center of Epidemiologic Studies Depression Scale, <sup>b</sup> SOS: Symptom of Stress Inventory, <sup>c</sup> PFAS: Perceived Functional Ability Scale

out distinguishing whether it was a paid or unpaid leave, whether it was the legally prescribed length, or whether there was a prolongation of maternity leave. Only Ruhm (2000) separated paid and unpaid leave in the analysis. Maternity leaves in the analytical studies lasted on average 8 to 12 weeks. The age of included women ranged from 28 to 31, except for one study, where it was 40 years (Arthur et al. 2003).

## Results

### *Length of maternity leave and maternal health*

Table 1 compiles methods and results of 6 studies that investigated the association of maternity leave with maternal health. Several studies show a positive association between the length of maternity leave and mental health: fewer depressive symptoms were observed in mothers entitled to 8 and 12 weeks leave after childbirth, than in women entitled to less than 6 weeks ((Chatterji & Markowitz 2004; Hyde et al. 1995) association seen only in women with low work rewards or with marital concerns). Among women with low work rewards, lower levels of anger were observed if maternity leave lasted 12 weeks in comparison to a length of less than 6 weeks (Hyde et al. 1995). General mental health (depression, anxiety, general positive affect, life satisfaction) at 7 and 9–12 months after childbirth was improved in women with maternity leaves beyond 15 weeks and 24 weeks respectively, when compared to leaves of below 9 weeks (McGovern et al. 1997; Gjerdingen & Chaloner 1994). A positive association with vitality and role function was seen for maternity leaves beyond 12 and 20 weeks, respectively (McGovern et al. 1997).

No association was found between the length of maternity leave and the level of depressive symptoms and mental health respectively, when comparing women with maternity leaves of 6 versus 6–8 weeks (Chatterji & Markowitz 2004), and when comparing women with leaves below 9 versus 9–24 weeks (Gjerdingen & Chaloner 1994). Furthermore there was no association in women, who were clinically depressed ((CES-D >16) (Chatterji & Markowitz 2004)) and no association with anxiety (Hyde et al. 1995). Associations were not observed for further health indicators, such as the number of outpatient physician or clinic visits in the first six months after childbirth (Chatterji & Markowitz 2004). Nor were associations observed for a summary indicator of health status in the first postpartum year (including clinical health/symptom experience, role performance, global perception of health (Killien et al. 2001), or extreme tiredness, backache and lack of sleep (Romito et al. 1994).

### *Length of maternity leave and child health*

Two ecological studies investigating the association of the length of maternity leave and child health show consistent results (Ruhm 2000; Winegarden & Bracy 1995) (Tab. 2).

A slight reduction of perinatal and neonatal mortality was seen with maternity leaves of up to 25 weeks (Ruhm 2000). Longer maternity leaves were associated with a marked decrease of post-neonatal mortality and of child mortality (deaths between 1 and 5 years of age). These two indicators, as well as infant mortality, were reduced by 3 to 4% per increase of maternity leaves of 10 weeks. In the study of Winegarden et al. (1995), a prolongation of maternity leave of 10% was associated with a decrease in infant mortality of 3 to 5%. No association was found with low birth weight. Unpaid leave showed no significant association with infant mortality, and there were no further benefits seen with maternity leaves longer than 40 weeks (Ruhm 2000).

### *Length of maternity leave and quality of mother-infant interactions*

One study has investigated the association of the length of maternity leave and the quality of mother-infant interactions (Clark et al. 1997) (Tab. 2). Four months after childbirth, mothers entitled to short maternity leaves (6 weeks) showed significantly more negative interactions with their infant than women with longer maternity leaves (12 weeks). In addition, women with more physical health symptoms, elevated levels of depressive symptoms, or having a child with difficult temperament, interacted significantly less positively with their child if they were entitled to only 6 weeks of maternity leave than comparable women entitled to 12 weeks of leave. The associations between the length of maternity leave and two scales of child behaviour (negative and positive) were not significant.

### *Length of maternity leave and breastfeeding*

Table 3 compiles the four studies investigating the association of the length of maternity leave with breastfeeding (duration of breastfeeding and weaning).

Consistently, the duration of breastfeeding was significantly higher in women with longer maternity leaves. According to the studies of Arthur et al. (2003), for the first- and second-born child, of Yilmaz et al. (2002) for maternity leaves longer than 16 weeks in comparison to shorter leaves, and of Roe et al. (1999), each week of maternity leave increased breastfeeding by almost half a week. Weaning within four months after childbirth is significantly more frequent in women with maternity leaves of less than 8 weeks than in women with longer leaves (Yilmaz et al. 2002).

**Table 2** Length of maternity leave and child health

Author(s)	Study design	Study population, region/country	Outcome measure	Exposure: Length of maternity leave	Results
<b>Child health</b>					
Ruhm 2000	ecological	1969–1994, 16 European countries	Infant, perinatal, neonatal and post-neonatal mortality <sup>a</sup> Child mortality <sup>b</sup> Low birth weight <sup>c</sup>	Weeks of job-protected paid parental leave (continuous)	A 10-week extension in paid leave is associated with a reduction of infant mortality rates by 2.5 to 3.4 %, with a decrease of post-neonatal mortality by 3.7 to 4.5 % and child mortality by 3.3 to 3.5 %. Compared to no leave mandate, 50-week entitlement is predicted to reduce infant mortality by around 12 %, post-neonatal mortality by around 20 % and child mortality by around 20 %. Modest but statistically significant reduction in perinatal and neonatal mortality up to 25 weeks of leave. Sharp decrease of post-neonatal and child mortality with extended entitlements beyond 25 weeks of leave. No further health benefit between 40 and 50 weeks of leave. Leave has no significant effect on birth weight. Unpaid leave is unrelated to infant mortality. A substantial leave entitlement might increase breastfeeding sufficiently to prevent 0.5 to 1.0 post-neonatal deaths per 1000 live births.
Winegarden & Bracy 1995	ecological	1959, 1969, 1979, 1989. 17 OECD countries (Europe, USA, Canada, Japan, New Zealand)	Infant mortality <sup>a</sup>	Weeks of paid maternity leave (continuous)	An added week of paid maternity leave is associated with a decrease in infant mortality of 0.5 per 1000 live births; a leave extension of 10 % with a reduction of infant mortality of 3 to 5 %.
<b>mother-infant interactions</b>					
Clark et al. 1997	longitudinal	198 women. 92 % Caucasian. 53 % with college degree or beyond. USA (Wisconsin)	Quality of mother-infant interactions, using four scales from the PCERA (Parent-Child Early Relational Assessment), 4 months after childbirth	6 versus 12 weeks	Mothers with shorter maternity leaves (6 weeks) had significantly more Maternal Negative Affect and Behaviour in interactions with their infants than mothers with longer leaves (12 weeks). Women with higher levels of physical health symptoms, elevated levels of depressive symptoms or infants having a difficult temperament, who returned to work earlier (6 weeks), exhibited less Maternal Positive Affective Involvement, Sensitivity and Responsiveness in interactions with their infants than those who remained on leave longer (12 weeks). The two infant PCERA Scales showed no significant association with the length of maternity leave.

<sup>a</sup> Infant mortality: infant deaths under 1 year; perinatal mortality: stillbirths and deaths within 1 week of birth per 1000 live and still births; neonatal mortality: infant deaths under 28 days; post-neonatal mortality: deaths between 28 days and 1 year

<sup>b</sup> Child mortality: deaths between 1 and 5 years of age

<sup>c</sup> Low birth weight: new-borns weighing less than 2500 g as % of live and still births over 1000 g

### Assessment for Switzerland

In Switzerland, the new regulation which came into effect on 1 July 2005 foresees paid maternity leave of 14 weeks, guaranteeing 80 % of the previous wage for all employed women (Bundesamt für Sozialversicherung 2004). The situation as it was before the introduction of the new regulation can only be drawn relying on rough estimations, since there are no national statistics on maternity leaves. According to the Federal Office of Social Security, the Swiss Code of Obligations

(“Obligationenrecht”) previously constituted the legal basis for the entitlement to continued payment of wages in case of maternity for around 45 % of women in paid work. The Code foresees a minimal entitlement, grading the continued payments according to the years of service in paid work at the same employer, not distinguishing them from payments made because of health problems or accidents (Bundesamt für Sozialversicherung 2004). Also, in the past even around 13 % of women who enjoyed better entitlements, such as those ensu-

**Table 3** Length of maternity leave and breastfeeding

Author(s)	Study design	Study population, region/country	Outcome measure	Exposure: length of maternity leave	Results
<b>Breastfeeding</b>					
Arthur et al. 2003	cross-sectional	146 physician mothers. 2000, USA (Mississippi)	Duration of breastfeeding (FPBPA <sup>a</sup> )	Length of leave in weeks (continuous)	Positive association between the length of maternity leave and breastfeeding for first- and second-born children.
Yilmaz et al. 2002	cross-sectional	301 women, 53 % with university degree. 1998–1999, Turkey (Ankara)	Duration of breastfeeding Weaning	<8 versus 9–16 weeks <8 versus >16 weeks	Mothers with a maternity leave of more than 16 weeks breastfed significantly longer than women with <8 and 9–16 weeks of leave. No significant difference in duration of breastfeeding for leaves of <8 versus 9–16 weeks. Women with a maternity leave of less than 8 weeks weaned significantly more often within 4 months after childbirth than women with longer leaves (9–16, >16 weeks).
Roe et al. 1999	cross-sectional	712 women. White mothers, women with higher education and larger household income oversampled. 1993, USA	Duration of breastfeeding	Length of leave in weeks (continuous)	Length of work leave contributes significantly to the duration of breastfeeding in the first 12 months after childbirth. Largest effect of work leave on breastfeeding occurs in the first 12 weeks after childbirth. Each week of work leave increases duration of breastfeeding by almost one half of a week.
Visness & Kennedy 1997	cross-sectional	1506 women. 1988, USA	Duration of breastfeeding	Length of leave in weeks (continuous)	Positive association between the length of maternity leave and the breastfeeding duration.

<sup>a</sup> FPBPA: Female Physicians' Breastfeeding Practice Assessment

red by a collective bargaining agreement (“Gesamtarbeitsvertrag”), obtained less than 14 weeks paid leave. This was often the case in the health sector, in the sales trade and in industrial branches (Fankhauser 2002). In addition to ensuring a period of 14 weeks, the new law also extends the group of women entitled to continued maternity payment to self-employed women and to women working in family firms. This leads to a substantial improvement for a considerable number of women in case of maternity, compared to the time before 2005.

Can we expect health benefits for women and children in Switzerland? When applying results of the reviewed studies to Switzerland, without making any restrictions, an extension of maternity leaves from a few to 14 weeks would lead to: a decrease of depressive symptoms; an improvement of maternal vitality; an improvement of the quality of mother-infant interactions; and to a prolongation of breastfeeding. Only an extension beyond 14 weeks would have a positive impact on general mental health (i. e. depression, anxiety, positive affect, life satisfaction), on role performance, and on child health endpoints.

## Discussion

### General issues

Evidence from this review shows that longer maternity leaves are associated with: fewer depressive symptoms; improved mental health; higher vitality; and better role performance in mothers. They are also associated with: a higher quality of mother-infant interactions; and a longer duration of breastfeeding. As to child health, extended maternity leaves are associated with lower mortality up to the fifth year of life.

With these 13 studies, there is rather little empirical research on the association of length of maternity leave and maternal and child health. The only outcome investigated in several studies was maternal mental health (depression, general mental health). We cannot exclude however to have missed some studies with our search strategy.

Health benefits varied for different health endpoints and depending on the length of maternity leave. Even for short leaves (8–12 weeks), a decrease in maternal depressive symptoms, an improvement in the quality of mother-infant

interactions, better vitality, as well as longer breastfeeding durations were documented in comparison to a reference group with 6–9 weeks of maternity leave. For intermediate lengths of leave (12–25 weeks), improvements were seen for the duration of breastfeeding, for general mental health (depression, anxiety, positive affect, life satisfaction), for maternal role performance, as well as a decrease in perinatal and neonatal mortality, while longer maternity leaves (exceeding 25 weeks) were associated with a decrease of post-neonatal and child mortality. No associations were observed for other indicators, such as the number of outpatient physician or clinic visits within the first six months postpartum, a summary health indicator in the first postpartum year, backache, lack of sleep, and anxiety.

Studies are heterogeneous and there are limitations due to methodological issues. Six of the included studies are cross-sectional. Two studies are ecological, although an attempt was made to increase their validity by adjusting for country- and time-specific effects. Possible biases are related to the collection of information (self-report, partially retrospective) and the recruitment of participants. Study populations were mostly not representative of the female population, or only women who returned to work after maternity leave were included. Further methodological problems relate to insufficient control for confounding by maternal education or by health status. Some of the information is not very current, being collected in the late 1980s or early 1990s.

For some health endpoints which were studied twice or several times – as for infant mortality or depressive symptoms, general mental health (depression, anxiety, positive affect, life satisfaction) and duration of breastfeeding – results are however consistent. Longer maternity leaves are consistently associated with fewer mental problems or symptoms and with longer duration of breastfeeding. There are, nevertheless, differences with regard to the time period when a health benefit becomes evident, and with regard to conditions relevant for seeing an impact. When compared with results of cross-sectional studies, longitudinal studies on maternal mental health showed benefits for comparatively longer maternity leaves, or only where additional risk factors (such as low work rewards or marital concerns) were at play.

Less evidence is available for other health endpoints such as vitality, role performance, number of maternal outpatient physician/clinic visits, quality of mother-infant interactions, infant/child mortality rates, studied only once. Caution is also advised regarding conclusions pertaining to causal relationships in the ecological studies on infant mortality. However, health benefits of longer maternity leaves for children are plausible against the background of the established association of breastfeeding with better child health (Yngve & Sjöström 2001).

#### *Assessment of the situation in Switzerland*

Most reviewed studies were conducted in the USA, a country with major differences to Switzerland in the social security system and health care. Not all women in the USA are entitled to (paid or unpaid) maternity leave (Kamerman 2000). Mean length of maternity leaves in the studies was 8–12 weeks, and in some studies, the educational level of included women is higher compared to women of the overall population. Comparatively, women in Switzerland with maternity leaves of 8–12 weeks tend to have rather lower levels of education and to belong to lower socio-economic groups (Stahelin et al. 2004; Fankhauser 2002). Therefore, study results cannot be transferred without caution to Swiss women entitled to these lengths of maternity leave. Furthermore, most studies did not assess the length of maternity leave to which women would have been entitled by law; instead they assessed the number of postpartum weeks when women were not in paid work. The length of maternity leaves in Switzerland may actually be higher than the legally prescribed 14 weeks, since some employers provide more than these 14 weeks and since after this period, additional unpaid leaves can be obtained. Therefore, the results of studies with intermediate length of leave (12–25 weeks) may be appropriate to Switzerland. Regrettably, with one exception (Romito et al. 1994), no European studies were found, providing better comparability with Switzerland. Even for northern Europe with its more developed parental leave policies, there is only one case study focussing on labour market policy and breastfeeding in Ireland, Sweden and the USA (Galtry 2003). This study does not, however, present associations of length of maternity leave and breastfeeding duration.

Against this background, the new policy installed on 1 July 2005, entitling all women in remunerated employment in Switzerland to 14 weeks of paid maternity leave, may lead to an improvement of maternal mental health and to an extension of breastfeeding duration, in particular in women who previously were entitled to a minimal leave and/or who present with additional social risk factors.

#### **Conclusions**

Overall, results show that longer maternity leaves are associated with improvements in maternal mental health and with longer breastfeeding durations. For child health outcomes extended maternity leaves were associated with lower perinatal, neonatal and post-neonatal mortality rates as well as child mortality; however, these results are obtained in ecological studies. With regard to all other endpoints of maternal

and child health, the results are less conclusive due to scarce data or methodological problems and more research is needed to clarify the associations with the length of maternity leave. However, legal regulations increasing maternity leaves from a few weeks to 8–12 weeks or more are likely to lead to health benefits. This is expected to be the case also in Switzerland,

where the new policy leads to longer maternity leaves for a large proportion of women in the labour force.

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