

Child Health and Parental Paid Work

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Abstract

We ask how the paid work of married mothers and fathers is affected when a child has a serious health problem, chronic condition or disability. Using the 1998-2000 Statistics Canada National Longitudinal Survey of Children and Youth, we find that married mothers of children with health problems are less likely to engage in paid work and/or work fewer paid hours per week. This finding is evident when we study the association between child's health status and mothers' labour market outcomes measured in the same year, when we estimate models of the onset of child health problems that control for prior labour market attachment of the mother and when we estimate models using 'propensity score matching' techniques. No statistically significant changes in paid work participation or hours are apparent for fathers of the same children. These differences in response to child health problems by mothers compared to fathers are consistent with traditional gender roles within families, and may make sense as a 'household' coping strategy. However, such a division of labour may generate economic vulnerability for mothers compared to fathers.

JEL codes:

Keywords: child health, child disability, maternal labour force participation, within-household, intra-household, family, gender

I. Introduction

In this paper, we ask how the paid work of married¹ mothers and fathers is affected when a child has a serious health problem, chronic condition or disability. This is an important question given both the growth in the number of children living at home with disabilities or medical problems² and the growth in the number of married-couple families in which both mother and father are engaged in paid work. Although demands placed upon families vary with the nature and severity of the child's health problem, it is often the case that there are both time and financial pressures to be faced (Gould, 2004).

Children with serious health problems or disabilities often have frequent hospitalizations, may need to attend many medical appointments or therapy sessions, require extra help with schoolwork or parental advocacy for their special needs and/or require additional physical care (Beagan, et al., 2005). At the same time, supports commonly available to other parents engaged in paid work may not be available when a child has a disability or serious health problem (Thyen, Kuhlthau and Perrin, 2004). For example, daycare for children with disabilities is often very limited; even friends and family may be reluctant to take on the care of a child who requires specialized treatment. Some parents may thus be unable to continue in paid work (or in paid work of the same kind and quantity) if a child has serious health problems, with negative implications for family financial well-being.

¹ Throughout the paper, 'married' refers to both legal or common-law marriages.

² Powers (2003) presents U.S. data. Trends across time in child disability rates are harder to identify with Canadian data, given changes in definitions used by nationally representative surveys (Statistics Canada, 2002), but are likely to follow a similar trend. This may, paradoxically, be partially due to advances in medical science which mean that children survive but live with health problems; it is also the case that fewer children with serious disabilities are institutionalized than was previously the case (Salkdever, 1982a).

At the same time, even in Canada where doctor or hospital bills are not an issue, many other expenses are not covered by public health insurance. For example, extra money may be needed to build wheelchair ramps, buy hearing aids, travel from a rural area to visit specialists in the city, or pay ‘deductibles’ on drugs. U.S. studies document extra financial costs incurred by families of children with disabilities or chronic conditions (e.g., Lukemeyer, et al., 2000; Meyers, et al., 1998). While these may be lower in Canada, data from the Statistics Canada Participations and Activity Limitations Survey nonetheless indicate that 67 percent of children with severe to very severe disabilities have ‘unmet needs’ for specialized aids; in the majority of cases, needs were unmet due to cost (Statistics Canada, 2001).

Thus, families in which a child is not well may be caught in a ‘double bind’ of needing both more time at home and more money. Faced with such pressures, one possible solution for married parents is specialization: one parent could reduce paid work to do the care-giving while the other maintains or even, if possible, increases paid work both to help compensate for reduced family earnings and to help cover new expenses.³ Since most wives earn less than their husbands, relative opportunity costs are likely to mean that, from a family perspective, it makes most sense for the mother to reduce paid work. Women who are mothers may also have chosen more ‘family-friendly’ jobs in order to accommodate ‘regular’ care-giving needs (e.g., chicken pox or the ‘flu’) which could also make it relatively easier for them to reduce hours when faced with more serious child health problems.

³ Lone parents obviously do not have this option and so are faced with extraordinarily difficult circumstances. However, we do not study lone mothers in this paper given our focus on ‘household’ responses with potentially different roles for mothers and fathers connected to gendered norms.

Even if the mother is not the parent with lower earnings or more flexible job, the ‘identity’ model proposed by Akerlof and Kranton (2000) suggests that she may be the one who reduces paid work to do the care-giving. In this context, behaviour consistent with a ‘good mother’ identity might be to prioritize the care-giving role. The mother of a child who is seriously ill may feel she ‘should’ be his or her principal care-giver (and this may be reinforced if extended family and health-care workers also think this should be the mother’s role). Qualitative evidence is consistent with such reasoning. In a study of parents of children with high-functioning autism, Gray (2003) quotes a mother as saying: “Yes, I do work but . . . of course, again [my son] dominated that (p. 636).

On the other hand, behaviour consistent with a ‘good father’ identity when a child is very ill or disabled might be to prioritize bread-winning (e.g., by *not* reducing current paid hours or even possibly increasing them, though options for increasing hours are likely to be limited if most fathers are already working full time). Again, such behaviour may be reinforced through the re-actions of outsiders, including extended family and health-care professionals. Evidence from qualitative studies is also consistent with this idea: “So, I’d basically come home and have my tea, shower, bit of rest, change, go back to the office and do another three hours of work, which was quite stressful (father quoted by Gray, 2003, p. 635).

Notice, too, that policies and institutions may, perhaps inadvertently, serve to reinforce adherence to traditional norms of behaviour. For example, if standard paid work weeks involve very high hours or if there is no daycare available for children with special needs, it will be difficult for parents to share bread-winning and care-giving; to behave as a “dual-earner/dual-carer’ couple (Gornick and Meyers, 2003).

While specialization may make sense as a family coping strategy, it can have negative implications for the personal economic well-being of the mothers. First, the literature on bargaining models of household behaviour emphasizes the relative earnings of husband and wife as key predictors of bargaining power (e.g., Chen and Woolley, 2001; Lundberg, Pollak and Wales, 1997). Thus, role specialization as a means of coping with a child health crisis has the potential of reducing the mother's bargaining power within marriage if it leads to the erosion of job-related human capital and hence earnings potential over time. Second, reducing paid hours or withdrawing completely from paid work may have negative long-term implications for the mother's financial well-being if the couple should divorce, or even if they remain married but she does not have the opportunity to gain labour market experience, pension entitlements, etc. This might be viewed as a more extreme version of the 'child penalty' documented for women with children compared to women without, regardless of the child's health (see, for example, Waldfogel, 1998).

In summary, we hypothesize that married mothers and fathers will not respond in the same way to a reduction in child health status. Instead, it seems likely that: 1) mothers will reduce paid hours or even withdraw from the labour market; 2) fathers will not reduce paid hours (and indeed may, if anything, do more hours of paid work); 3) there will, as a result, be increased specialization according to traditional gender roles within the family. To investigate these hypotheses, we use a sample of children with married-couple parents drawn from Statistics Canada's National Longitudinal Survey on Children and Youth (NLSCY). In section II, we briefly review other relevant literature. Section III describes estimates of the association between child health and parental paid work in

the same year. We study both participation and weekly hours of paid work, for mothers and fathers separately. Section IV studies implications of the onset of child health problems for mothers' and fathers' paid work; Section V re-estimates the 'onset' models using propensity score matching techniques. Section VI provides discussion and conclusions.

Our contributions are, first, that we exploit a very large and rich data set relative to what has been available to past researchers which is particularly advantageous in our context, since serious ill health and/or disability are relatively rare among children. Second, we are able to exploit the longitudinal nature of our data to study the impact of the *onset* of child health problems on parental paid work as well as estimates of the association between child health and parental labour market behaviour in the same year. Third, we also utilize 'propensity score matching' to help understand observed relationships between child health and parental labour market behaviour. Fourth, we study impacts on the paid work of fathers of the same children, an aspect of the situation which has thus far received relatively little attention in the literature and we thus highlight the 'household' nature of decision making when faced with child health problems as well as possible within-household differences in implications. Finally, we provide a rare Canadian study of this issue. Since Canadian policies and institutions differ somewhat from those in the U.S., it is interesting to know whether behavioural responses of parents to child health problems are similar.

II. Previous Empirical Literature

A small number of past studies using U.S. data have asked how the paid work of married mothers is affected when there is a child with a disability in the family. Most provide cross-sectional estimates⁴ of associations between current paid work behaviour of the mother and current disability of the child, thus mingling health conditions that have just appeared with those that have existed for many years. Findings from these earlier studies are fairly consistent, indicating reduced probabilities of participating in paid work by married mothers of children with disabilities (e.g., Breslau, Salkever and Staruch, 1982; Gould, 2004; Kimmel, 1998; Powers, 2003; Salkever, 1982a and b) as well as lower paid hours, given participation (Gould, 2004; Powers, 2003; Salkever, 1982b).⁵ Larger negative impacts are apparent for lower-income mothers (Breslau, Salkever and Staruch, 1982; Salkever, 1982b); smaller associations are apparent when young children are present in the family (Salkever, 1982b).

In addition to providing cross-sectional estimates, Powers (2003) begins to examine the dynamics of maternal responses to a child's disability. Using pooled SIPP panels, she estimates *changes* in work activity ('dropping out' of paid work; changes in paid hours) for mothers whose children have disabilities in the starting year of the analysis. All explanatory variables take starting-year values. Powers is able to estimate changes in maternal labour market activity one year later and two years later. Results for her dynamic models are somewhat weaker than for her static, cross-sectional models in

⁴ Some authors have used single years of longitudinal surveys (e.g., the SIPP or PSID), but were not able to use the data longitudinally.

⁵ In contrast, a slightly larger literature focussed on lone mothers generates more 'mixed' results, sometimes finding no impact on paid work (e.g., Salkever, 1982a, Kimmel, 1997 and 1998), sometimes finding a negative impact (e.g., Breslau, Salkever and Staruch, 1982; Lukemeyer, Meyers, and Smeeding, 2000; Salkever, 1990; Wolfe and Hill, 1995).

the sense that fewer variables are statistically significant. For married mothers, she finds little evidence that having a child with a disability affects hours or participation in paid work (in fact, the only cases of statistical significance for child disability variables indicate, somewhat non-intuitively, *increases* in hours).

Several studies point out that size of the estimated association between child disability and mother's paid work will vary with the nature and severity of the child's health problem, with larger reductions when the condition is more severe or when multiple disabilities are present (e.g., Powers, 2003; Salkever, 1982b). Gould (2004) very usefully emphasizes that some disabilities are demanding of parental time, others are very expensive and some require both time and money. She develops an individual model of mother's behaviour reflecting the different implications of these aspects of child disability, conducts focus groups with medical experts to ascertain which sorts of disabilities will require more time compared to money and supports her model with an empirical analysis using the PSID.

As is evident from the discussion above, much of the research on the paid work implications of parenting a child with a disability has focussed on implications for the mother. Only Salkever (1982b) symmetrically studies father's responses, and finds no statistically significant association with child disability status. There has thus far been relatively little explicit discussion in the economics literature of the possible 'household' nature of responses to the onset of child health problems. Although most empirical studies of the paid work of married mothers of children with disabilities control for husband's characteristics (e.g., his earnings, health status), the idea that both parents may respond, while perhaps specializing according to traditional roles is not explicitly taken

up. The relative lack of attention to what happens to the paid work of fathers of children with disabilities may, in part, be data-related, but may also in itself be indicative of implicit assumptions that married parents will behave in accordance with traditional roles – that fathers will specialize as bread-winners and so not reduce paid hours or withdraw from paid work when a child has health problems.

Following on from Gould's (2004) argument that child health problems can be demanding in terms of both time and/or money, it seems plausible to suppose that for married-couple parents, deciding how to cope with the onset of a child's serious health problem will require household decision-making. Although not the focus of her paper, Gould recognizes the possibility of 'household' responses to a child's health problem by married-couple parents by summing mother's and father's hours and estimating the impact on total family hours (Table 6, p. 536). She finds no statistically significant relationships between total family hours and her child disability measures. Her interpretation, not pursued, is that there is 'potential substitution between mother's and father's work hours' (p. 538).

III. Estimates of Associations Between Child Health and Parental Labour

Market Behaviour in the Same Year

Data

We begin with estimates of the association between child health and parental paid work when both are measured in the same year. (These estimates are most similar to other studies in the literature.) The data set employed is the Statistics Canada National Longitudinal Survey of Children and Youth (NLSCY), a nationally representative survey

of Canadian children. For our first estimates, we focus on Cycle 4 data collected in 2000,⁶ but also require children to have been present in 1998 in order to construct a variable indicating an ‘increase in the number of children aged 0 to 17 present in the family,’ a key covariate in past studies of this topic. Our sample children are thus aged 2 through 15 in the year 2000.⁷ We restrict attention to children whose mother was deemed the ‘person most knowledgeable’ (or pmk) about the child and who thus answered all survey questions used here,⁸ and for whom there was no missing information about any analysis variable. Given our interest in comparing labour market responses of mothers and fathers, we also select only children in married-couple households.⁹ After all exclusions, our sample consists of 13,117 observations.

All estimates are carried out using longitudinal survey weights. Since the NLSCY is based on the Statistics Canada Labour Force Survey sampling frame which uses a complex survey design, reported standard errors have been calculated using bootstrap weights provided by Statistics Canada (we use 1000 replications). These weights take account of the multi-staged, non-random survey design, thus yielding appropriate estimates of the standard errors. Estimation is carried out using the software package SAS.

⁶ Although data for 2002 and 2004 were available at time of writing, these data are, unfortunately, not useful for our purposes because the definition of child activity limitation changed.

⁷ Restricting attention to children aged 2 through 15 is necessary if they must be present in both 1998 and 2000; an advantage is that many health conditions are difficult to detect in infants.

⁸ We lose only 4 percent of the sample by excluding children for whom the mother is *not* the pmk. However, we have also conducted analyses including cases for which the father is the pmk, given a potential concern that we are biasing our results by eliminating the most ‘non-traditional’ families. Results are not at all sensitive to the inclusion/exclusion of male pmk’s.

⁹ It is, however, important to recognize the possibility that parenting a child with a disability or chronic condition may increase the probability of parental divorce, and that, if this is so, then we are probably under-stating some of the potential negative consequences of parenting a child with a disability. In fact, recent literature does not find a higher probability of divorce or lower levels of family functioning for families with disabled children (e.g., Havens, 2005; Mailick Seltzer, et al., 2001), although some earlier papers did (e.g., Hoddap and Krasner, 1994).

We define a child to have a disability or serious health problem if: over-all health status in 1998 is “fair or poor” as compared to “good, very good or excellent,” or if he or she has an activity limitation, asthma limiting activities, chronic bronchitis, a heart condition, epilepsy, cerebral palsy, a kidney condition, a mental condition, is blind or deaf or unable to walk without mechanical assistance. (Note that these are not mutually exclusive categories – a child could be in poor health and have a heart condition, for example.) All information about the child’s health is reported by the ‘person most knowledgeable’ about the child (the mother, in our sample).¹⁰ In 2000, 13.4 percent of children (or siblings) meet one or more of the above criteria.

We are interested both in whether parents of children with significant health problems do any paid work (focusing on their paid work activity at the time of the survey, when they would also be reporting on child health status) and on their weekly hours of paid work (also at the time of the survey). Both pieces of information are again reported by the mother, for both parents. It is thus possible that mother’s paid work time is more accurately reported than father’s, though we would argue that participation in paid work is easily observable and even paid hours per week can be quite accurately reported by one’s spouse. We prefer to study paid work activity near the time of the survey rather than ‘usual’ activity during the past year because the onset of a serious child health problem may disrupt ‘usual’ work patterns. That is, if the health problem has just appeared at the time of the survey, the parent may report on behaviour that *had* been

¹⁰ How valid are mother reports of child health status? While there is some evidence of inconsistencies between medical records and mother reports (e.g., Miller et al., 2001), in general, consistency between medical records and self reports appears to increase with the severity of the condition (e.g., Baker et al., 2004). Powers (2001) argues that over-all reports of child disability status may be endogenous to maternal labour market behaviour (e.g., because mothers who withdraw attempt to justify their behaviour by emphasizing the severity of the child’s condition). However, Powers also argues that maternal reports of specific impairments are more likely objective – our measure includes both over-all assessments and indicators of specific conditions.

typical (say, in the past year) when asked about ‘usual’ work, in which case we would not pick up any change in labour market behaviour using ‘usual’ hours even if an adjustment had, in fact, been made.¹¹

Descriptive Statistics

Table 1 provides a first indication of the association between parental labour market activity and child health status when both are measured in 2000. Unconditionally, mothers of children with disabilities, chronic conditions or low health status are less likely to engage in paid work than mothers of children with no reported health problems (68 percent compared to 76 percent); mean current weekly hours are also lower (20.6 compared to 23.8), though the standard deviation of hours has increased very slightly (from 17.02 to 17.14). Participation in paid work by fathers of the same children with health problems is, if anything, marginally higher than their counterparts with healthy children. The participation rate for fathers of children with health problems in 2000 is 96 percent compared to 95 percent for fathers of healthy children. Mean current weekly paid hours for fathers of children with health problems are 42.6 compared to 41.8 for fathers of healthy children. Standard deviations are also very marginally lower when the child has a health problem (12.50 compared to 12.54). However, for the fathers, these differences are all very small – almost all fathers are engaged in paid work full-time, regardless of child health status. The key point is simply that fathers do not appear to *reduce* participation in paid work when there is a child with a disability in the family.

¹¹ Using cross-sectional data, Salkever (1982a) finds smaller associations between his measure of labour force participation in the 2 weeks prior to the survey than for his measure of ‘usual’ participation in the past year – a 10 percent reduction in the probability of participation for white married mothers using time of survey participation as compared with a 20 percent reduction using usual participation.

Multivariate Analysis

We first estimate a probit model of the probability that the mother is engaged in paid work at the time of the survey and a tobit model of her current weekly paid hours in which our key explanatory variable is the dummy indicating that the child (or his/her sibling) has a disability/chronic condition/serious health problem in the same year.

Consistent with other empirical studies in this area (e.g., Powers, 2003; Gould, 2004), we control for personal characteristics of the mother likely to be associated with her labour market participation/hours (see Table 2). These include: age (mean of 37.8) and age squared; education level (9.5 percent of mothers have less than high school; 20.2 percent have a university degree); immigrant status (14.5 percent born outside of Canada); visible minority status (8.0 percent non-white); own self-assessed health status (5.9 percent report fair/poor health on a 5-point scale). We also control for family characteristics likely to affect her reservation wage: spouse's health status (5.1 percent in fair/poor health on a 5-point scale); spouse's income (mean of \$51,915); having had an increase in the number of children present in the family between 1998 and 2000 (9.7 percent of families);¹² having a child aged 1 to 4 years in the family (23.7 percent); and number of children (mean of 2.3). Finally, we control for whether the family resides in a rural area (15.0 percent) and for the provincial unemployment rate (mean of 6.9 percent), both likely indicative of local employment opportunities. Exactly the same models of participation and hours are estimated for fathers. Means and frequencies of control variables are reported in Table 2.

¹² This seems most likely to be as a result of the addition of an infant to the household, however we cannot in fact distinguish between a newborn and, say, the adoption of an older child.

Estimation results for both mothers and fathers are reported in Table 3 where the most notable finding is that both participation in paid work and weekly hours of paid work are, other things equal, lower for mothers of children with disabilities/chronic conditions/low health status. For fathers of the same children, no statistically significant association between child health and labour market behaviour is evident.¹³

Since the probit and tobit coefficients do not provide a direct indication of magnitude of association, we have illustrated, in Figures 1 and 2, the probability of labour force participation and expected weekly hours of paid work for: 1) a 'base case' mother; 2) an otherwise identical woman whose child is ill/disabled; and, for comparative purposes, 3) an otherwise identical mother in a family with an increase in the number of children between 1998 and 2000. The 'base' case is constructed by setting all dummy variables equal to zero and all continuous variables at sample means. The 'base' mother is thus 37.8 years old, has 2.3 children and a husband who earns \$51,915. She has a high-school level of education, is white, urban and Canadian-born with no new children or pre-school aged children (i.e., 1 to 4 years). The local unemployment is 6.9 percent. Most importantly, she has no children with health problems. The probability of participating in paid work for this 'base' mother is 75 percent; her expected weekly paid hours are 27.9. The probability that an otherwise identical mother of a child with health problems is engaged in paid work is 68.2 percent, with expected weekly hours of 24.6. Finally, a mother with an additional child in the family (but no children with health problems) has only a 65.2 percent probability of being engaged in paid work and is expected to work only 23.6 hours per week.

¹³ However, the bootstrapped p-value on the child disability dummy in the tobit regression is 0.107.

Thus, the estimated size of the association between child ill health and maternal labour market behaviour is slightly smaller, but in the same ‘ball-park’ as the association with having another child.¹⁴ Powers (2003) also finds, in her static models and using U.S. data, that :

“Generally, child disability effects on the static employment and hours variables are at least as important as the effects of having a young child” (p. 537).¹⁵

IV. Estimation of ‘Onset’ Models

There are several potential criticisms of estimates of the association between child health and parental labour market behaviour in the same year. First, current child health status in any given year mingles together children who have always had a disability, chronic condition or low over-all health status with children who have just developed a problem. Thus, a first criticism of such estimates is that labour market implications may be different during the initial adjustment period than over the longer-term (and it isn’t obvious which would be larger – daycare for a special needs child might be found with enough time, for example, but the parent might ‘burn out’ and feel less able to continue with both paid work and care-giving). Since our data set does not provide health histories from birth for most children, we cannot know when a currently existing problem began. It is thus not an option to study labour market implications of complete child health

¹⁴ In 2000, the year upon which we focus here, eligible new mothers (or adoptive parents) were entitled to 15 weeks of paid maternity benefits and 10 weeks of parental benefits. Parental benefits could be shared by mother and father in two-parent families. In 2001, the parental benefit period was extended from 10 to 35 weeks for a total of 50 paid weeks.

¹⁵ A limitation of the NLSCY is that data restrictions (both sample size and reporting) make it difficult to provide separate estimates for children with specific conditions, though as emphasized by Salkever (1982a and b), Power (2003) and Gould (2004), results may be sensitive to the definition of child disability employed, since both time and financial demands will vary with the nature and severity of the disability. Observed patterns of specialization could differ depending upon whether the child’s health problem is more demanding of time or money (Gould, 2004).

histories. We can, however, start with a sample of children who all have a ‘clean bill of health’ and trace the implications for parental labour market activity of a health problem that first emerges during our study period. We refer to this as our ‘onset’ model.

A second limitation of estimates of ‘contemporaneous’ associations between child health and parental labour market behaviour is that we know there are likely to be unobservable differences between parents in degree of career motivation, attachment to paid work, etc. In addition to sorting out the history/dynamics of the child’s health condition, a key advantage of the ‘onset’ estimation approach is that we are able to control for parental labour market activity *before* the child’s health status falls, thus dealing with the issue of unobserved heterogeneity.

Finally, estimates that take all information from the same year might be criticized in so far as current values for some control variables may, in part, reflect responses to the child’s health condition. For example, families may have moved from the country to the city in order to be nearer to needed specialists/therapists. The onset estimation approach allows us to set all control variables at their ‘pre-child health problem’ values.¹⁶

To estimate the impact of the *onset* of child health problems on the labour market behaviour of their parents, we again use two years of NLSCY data -- cycles 3 and 4, from 1998 and 2000, respectively. Sample selection criteria are as previously described with the addition that we now select only children who had no reported health problems in 1998. Specifically, we select children whose over-all health status in 1998 was reported to be “good, very good or excellent” (as compared to “fair” or “poor”) who did *not* have

¹⁶ We also estimated models that included both 1998 controls and changes in control variables between 1998 and 2000, though some of the changes could have been caused by the decline in the child’s health (e.g., education level may *not* have increased because the parent dropped out of school to care for the child). Key results were not affected by the inclusion of these change variables (see Appendix Table 1), hence we choose to focus on the more parsimonious specification that includes only the 1998 controls.

an activity limitation, asthma limiting activities, chronic bronchitis, a heart condition, epilepsy, cerebral palsy, a kidney condition, a mental condition, were not blind or deaf or unable to walk without mechanical assistance. Although, as outlined above, they solve some technical problems, one important limitation of the onset models is thus that we are excluding some of the most seriously disabled children from our sample (e.g., those who have had health problems/chronic conditions/disabilities from birth or early life).

After the additional exclusion, we have a sample of 11,541 children who were healthy in 1998.

Descriptive Statistics

From our sample of children in married-couple families who were healthy in 1998, 8.1 percent experienced the onset of health problems between 1998 and 2000 (i.e., health status fell from ‘excellent,’ ‘very good’ or ‘good’ to ‘fair’ or ‘poor,’ or an activity limitation or chronic condition not reported in 1998 appeared in 2000). For children who remained healthy between 1998 and 2000, 76 percent of mothers engaged in some paid work compared to 68 percent of mothers whose children developed health problems (see Table 4). Mother’s current weekly hours are also lower following a fall in child health status – 20.7 hours per week compared to 23.8 hours with a small increase in standard deviation (from 17.21 versus 17.04). For fathers, no change in the probability of engaging in paid work is evident (96 percent were engaged in paid work, regardless of health status of the child); mean hours are slightly higher for the sample where child health status declined (42.6 hours per week compared to 41.8 hours per week); the standard deviation for father’s paid hours is slightly lower for the sample of fathers

whose children experienced a reduction in health status between 1998 and 2000 (11.89 versus 12.49).

Multivariate Analysis

Using our sample of children in married-couple families who, in 1998, did not have any reported serious health difficulties, we again estimate probit models of the probability that the mother (father) engaged in any paid work in 2000 as well as tobit models of weekly hours of paid work in 2000. The key explanatory variable is now a dummy equal to one if the child *developed* serious health problems between 1998 and 2000 and we control both for whether or not the parent engaged in paid work in 1998 and how many hours she/he worked per week (before any child health problems were apparent). Other explanatory variables are as described above, except that we use 1998 rather than 2000 characteristics of the parent, family and region (means are reported in Table 5).

Results for estimated probit models of labour force participation in 2000 are reported in columns 2 and 3 of Table 6 and are consistent with earlier conclusions. We find that married mothers of children whose health status falls between 1998 and 2000 are less likely to be engaged in paid work in 2000, controlling for both labour market participation and weekly hours in 1998, prior to onset of the child's condition. Moreover, the size of the association is again relatively 'large' – similar in size to having an infant or pre-schooler in 1998. For married fathers, there is no association between current labour force participation and the onset of health problems for the child. Given our hypothesis that, if anything, fathers are more likely to increase market participation in order to preserve family income and given that 96 percent of fathers in our sample are

already engaged in paid work, this finding is probably not surprising (i.e., it would be difficult for them to increase participation).

Results for estimated tobit models of current (2000) weekly paid hours are reported in columns 4 and 5 of Table 6, for married mothers and fathers, respectively. Again, for mothers, we find that weekly paid hours are lower, all else equal, if a child's health status fell between 1998 and 2000. And, the size of the estimated association is comparable (indeed, slightly larger) than the size of the association apparent for having an infant or toddler in 1998. For fathers, although the estimated coefficient on current paid hours is positive, it does not approach conventional levels of statistical significance.

V. Estimation Using Propensity Score Matching

It is possible that serious reductions in child health are not 'random events' that are equally likely to happen to any child in the population. For example, if reductions in health status are more likely in rural areas and labour force participation is also lower in rural areas, then we might observe an association between reductions in child health and low rates of participation without necessarily any causal connection. To help address this concern, we use 'propensity score matching' (Rosenbaum and Rubin, 1983; Rosenbaum and Rubin, 1984; Smith and Todd, 2005), a technique that involves comparing the labour market behaviour of parents of children who experience reductions in health status to a 'matched' sample of parents whose children remain healthy but are otherwise as similar as possible in terms of other observable characteristics (rather than to a random sample of all other parents in the population).

In order to implement this approach, we first estimate probit models of the probability of the child experiencing a decline in health status (or the onset of a disability or chronic condition) using all of the control variables discussed above (as well as interactions and quadratics for the continuous variables). We then use the first-stage estimated probit model to choose, for each child whose health status declined, a ‘matching’ child who remained healthy, but who had the closest estimated *probability* of experiencing a decline in health, based on observable characteristics (i.e., we use ‘nearest-neighbour’ matching, with replacement). All ‘non-matched’ observations are discarded.

Using the sample of ‘nearest-neighbour’ matched observations plus the children who did actually experience a decline in health status (1674 observations, in total), we re-estimated the onset probit models of labour force participation and tobit models for current weekly paid hours.¹⁷ Except that we are using the sample of children most similar to the children who developed health problems (rather than a random sample of the population), specifications are exactly as described in the previous section. Results are reported in Table 7, and again essentially confirm conclusions discussed earlier.

VII. Discussion and Conclusions

Using longitudinal microdata from the 1998-2000 Statistics Canada National Longitudinal Survey of Children and Youth, we find that married mothers of children with disabilities, chronic conditions or low health status are less likely to engage in paid work and/or work fewer paid hours per week than otherwise similar women whose

¹⁷ ‘Matched’ children without health problems were assigned the bootstrap weights for the child who developed a health problem when estimating standard errors.

children do not have health problems. This finding is apparent in models of the association between child health and mother's labour market behaviour in the same year, in models of the onset of child health problems that control for prior labour market attachment of the mother and in models that use 'propensity score matching' to compare mothers of children with disabilities to mothers of healthy children who are most alike in terms of observable characteristics. No statistically significant changes in paid work participation or hours are apparent for fathers of the same children (though paid work hours for married fathers are, on average, already very high).

These differences in response to child health problems by mothers compared to fathers are consistent with traditional gender roles within families, and probably make sense as a 'household' coping strategy. However, it is important to keep in mind that such a division of labour may generate economic vulnerability for mothers compared to fathers. For example, some household models emphasize relative earnings as important predictors of bargaining power; the literature of 'family gap' demonstrates long-run earnings penalties associated with labour-market withdrawal for mothers; such role specialization can leave mothers particularly vulnerable in the event of divorce.

How could policy help? Reductions in maternal paid work are in the same order of magnitude as those estimated for women with new children in the family. In Canada, we provide paid maternity and parental leave to support the care-giving of new mothers and fathers (including adoptive parents).¹⁸ We could also, for example, provide similar benefits for families caring for children with disabilities/health problems such as are now offered in many European countries (see Gornick and Meyers, 2003). Ideally, these

¹⁸ Six weeks of 'Compassionate care' benefits are also now available as part of the Canadian Employment Insurance programme; parents in our sample would not, however, be eligible since these benefits are only available if the child is 'at significant risk of death.' Take-up rates are very low.

benefits would be available to mothers and fathers and would allow for periodic absences from paid work to accommodate medical appointments, therapy sessions, etc. However, regardless of the type of policy adopted, it would be important that it not entrench the mothers as the care-givers (e.g., a low benefit ceiling would make effective replacement rates significantly lower for fathers) rather offering parents the option of sharing bread-winning and care-giving responsibilities.

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Table 1. Employment and Average Hours. 2000.^a

	No Child Health Problem	Child Health Problem
Mothers		
Labour Force Participation	0.76	0.68
Hours (including zeros)	23.8 (17.02)	20.6 (17.14)
Fathers		
Labour Force Participation	0.95	0.96
Hours (including zeros)	41.8 (12.54)	42.6 (12.50)
No. of Observations	11,600	1,517
^a Standard deviations are in parentheses.		

Table 2 Means for Independent Variables. 2000.			
	All	No Child Health Problem	Child Health Problem
Education of Mother			
Less than High School	9.5%	9.5%	9.4%
High School	47.0%	46.5%	50.6%
Certificate or Diploma	23.3%	23.6%	21.4%
University Degree	20.2%	20.4%	18.6%
Education of Father			
Less than High School	13.4%	13.3%	13.6%
High School	41.5%	41.1%	44.1%
Certificate or Diploma	23.2%	23.3%	23.0%
University Degree	21.9%	22.3%	19.3%
Mother's Age	37.8	37.8	38.1
Father's Age	40.1	40.1	40.2
Mother is an Immigrant	14.5%	14.2%	16.6%
Father is an Immigrant	15.3%	15.1%	16.5%
Mother is Non-White	8.0%	7.8%	9.5%
Father is Non-White	8.3%	8.4%	7.8%
Father's Total Earnings	\$51,915	\$51,965	\$51,591
Mother's Total Earnings	\$21,559	\$22,030	\$18,526
Additional Child Between 1998 and 2000	9.7%	9.7%	9.9%
Child 1-4 Years in the House	23.7%	24.9%	15.8%
Number of Children Aged 0-17	2.3	2.3	2.4
Provincial Unemployment Rate	6.9%	6.9%	6.9%
Rural Residence	15.0%	14.6%	17.3%
Mother has Fair/Poor Health	5.9%	5.1%	11.2%
Father has Fair/Poor Health	5.5%	5.1%	8.3%
Number of Observations	13,117	11,600	1,517

Table 3
Parental Labour Market Behaviour and Child Health Problems. 2000.

	Probit LFP		Tobit	
	Mother	Father	Mother	Father
Dummy=1 if Child Has a Health Problem 2000	-0.202** (0.085)	0.119 (0.098)	-3.702* (1.341)	0.979 (0.608)
Parent's Age in 2000	0.151* (0.035)	0.191* (0.036)	3.129* (0.622)	1.397* (0.348)
Parent's Age in 2000 Squared	-0.002* (0.0005)	-0.002* (0.0004)	-0.040* (0.008)	-0.018* (0.004)
Dummy=1 if Parent has less than High School Education 2000	-0.363* (0.077)	-0.372* (0.094)	-5.747* (1.550)	-2.155* (0.728)
Dummy=1 if Parent has Certificate/Diploma 2000	0.180* (0.067)	0.118 (0.103)	2.209** (0.962)	-0.144 (0.468)
Dummy=1 if Parent has a University Degree 2000	0.430* (0.075)	0.315* (0.122)	5.939* (1.057)	0.514 (0.546)
Dummy=1 if Parent is an Immigrant	0.076 (0.109)	0.334** (0.152)	1.514 (1.545)	1.755** (0.691)
Dummy=1 if Parent is Non-White	-0.276*** (0.143)	-0.375** (0.151)	-1.729 (2.403)	-2.102** (0.946)
Spouse's Total Earnings in 2000	-1.99e-6* (6.53e-7)	3.86e-6 (2.52e-6)	-4.78e-5* (1.41e-5)	5.07e-6 (8.36e-6)
Dummy=1 if Additional Child Aged 0 to 17 Between 1998 and 2000	-0.283* (0.074)	-0.040 (0.104)	-4.866* (1.435)	0.496 (0.627)
Dummy=1 if Child 1-4 Years in House in 2000	-0.211* (0.050)	0.140*** (0.081)	-3.371* (0.822)	0.191 (0.423)
Number of Children Aged 0-17 in 2000	-0.206* (0.028)	-0.012 (0.040)	-4.137* (0.495)	-0.021 (0.250)
Dummy=1 if Rural Residence	-0.155* (0.057)	0.004 (0.089)	-2.742* (0.970)	3.300* (0.613)
Provincial Unemployment Rate in 2000	-0.050* (0.009)	-0.093* (0.011)	0.309** (0.144)	-0.871* (0.092)
Dummy=1 if Parent Has Fair or Poor Health in 2000	-0.434* (0.099)	-1.014* (0.108)	-6.680* (1.834)	-9.032* (1.480)
Dummy=1 if Spouse Has Fair or Poor Health in 2000	-0.151 (0.122)	-0.062 (0.133)	-2.685 (1.973)	-1.321 (0.971)
Intercept	-1.254** (0.635)	-1.368*** (0.729)	-24.400** (11.505)	20.900* (6.883)
Scale			21.040* 0.011	12.683* 0.006
Number of observations	13,117	13,117	13,117	13,117

* Statistically significant with 99% confidence.

** Statistically significant with 95% confidence.

*** Statistically significant with 90% confidence.

Table 4 Employment and Average Hours in 2000. No Child Health Problems in 1998. ^a		
	No Child Health Problem Develops in 2000	Child Health Problem Develops in 2000
Mothers		
Labour Force Participation 2000	0.76	0.68
Hours 2000 (including zeros)	23.8 (17.04)	20.7 (17.21)
Fathers		
Labour Force Participation 2000	0.96	0.96
Hours 2000 (including zeros)	41.8 (12.49)	42.6 (11.89)
Number of Observations	10,704	837
^a Standard deviations in parentheses.		

Table 5 Means for Independent Variables in 1998. Sample With No Child Health Problems Reported in 1998.			
	All	No Child Health Problems Develop in 2000	Child Health Problems Develop in 2000
Education of Mother			
Less than High School	8.7%	8.9%	6.6%
High School	44.2%	44.0%	46.9%
Certificate or Diploma	26.2%	26.6%	21.6%
University Degree	20.8%	20.5%	24.8%
Education of Father			
Less than High School	12.7%	12.7%	11.9%
High School	38.2%	38.3%	36.6%
Certificate or Diploma	27.0%	26.9%	27.8%
University Degree	22.2%	22.1%	23.8%
Mother's Age	35.7	35.7	36.3
Father's Age	38.0	38.0	38.4
Mother is an Immigrant	14.7%	14.6%	16.4%
Father is an Immigrant	15.6%	15.5%	17.6%
Mother is Non-White	8.2%	8.0%	10.6%
Father is Non-White	8.6%	8.5%	9.1%
Father's Total Earnings	\$45,415	\$45,414	\$45,419
Mother's Total Earnings	\$19,001	\$19,082	\$18,079
Child 0-1 Years in the House	15.8%	16.1%	11.8%
Child 2-3 Years in the House	19.3%	19.4%	17.1%
Provincial Unemployment Rate	8.3%	8.3%	8.4%
Number of Children Aged 0-17	2.3	2.3	2.4
Rural Residence	14.5%	14.3%	16.9%
Mother has Fair/Poor Health	4.2%	3.8%	9.2%
Father has Fair/Poor Health	3.7%	3.7%	3.0%
Mother's Labour Force Hours	21.8	21.9	20.9
Father's Labour Force Hours	41.9	41.8	42.7
Mother in the Labour Force	71.8%	72.0%	69.5%
Father in the Labour Force	95.7%	95.6%	96.6%
Number of Observations	11,541	10,704	837

Table 6 Parental Labour Market Behaviour and the Onset of Child Health Problems Between 1998 and 2000 ¹				
	Probit LFP		Tobit	
	Mother	Father	Mother	Father
Dummy=1 if Child Health Problem Develops	-0.248** (0.121)	0.0179 (0.148)	-3.528** (1.278)	0.388 (0.747)
Parent's Age 1998	0.120* (0.038)	0.130* (0.038)	1.552* (0.487)	0.734* (0.278)
Parent's Age 1998 Squared	-0.002* (0.001)	-0.002* (0.0005)	-0.021* (0.007)	-0.010* (0.004)
Dummy=1 if Parent has less than High School Education 1998	-0.165*** (0.099)	-0.254** (0.122)	-0.769 (1.611)	-1.346*** (0.718)
Dummy=1 if Parent has Certificate/Diploma 1998	0.077 (0.084)	0.165 (0.107)	0.775 (0.807)	0.318 (0.478)
Dummy=1 if Parent has a University Degree 1998	0.096 (0.082)	0.306** (0.140)	1.331 (0.903)	0.403 (0.583)
Dummy=1 if Parent is an Immigrant	0.189 (0.144)	0.097 (0.170)	1.286 (1.594)	0.302 (0.754)
Dummy=1 if Parent is Non-White	-0.387** (0.169)	-0.157 (0.168)	-1.685 (1.863)	-1.050 (1.015)
Spouse's Total Earnings in 1998	-2.35e-9 (1.07)	4.14e-7 (1.910e-6)	-8.5e-6 (2.0e-5)	6.6e-6 (9.99e-6)
Dummy=1 if Infant in the House in 1998	-0.219* (0.077)	0.079 (0.111)	-2.905* (0.861)	1.043** (0.486)
Dummy=1 if Child 2-3 Years in House in 1998	-0.253 (0.082)	0.079 (0.111)	-3.079* (1.005)	-0.070 (0.481)
Provincial Unemployment Rate in 1998	-0.024** (0.010)	-0.071* (0.014)	0.023 (1.123)	-0.478* (0.083)
Number of Children Aged 0-17 in 1998	-0.075** (0.032)	-0.048 (0.050)	-1.529* (0.376)	-0.092 (0.242)
Dummy=1 if Rural Residence	-0.161** (0.068)	0.047 (0.109)	-1.724** (0.874)	2.155* (0.572)
Parent's Weekly Hours of Paid Work in 1998	0.019* (0.004)	0.005 (0.006)	0.667* (0.032)	0.452* (0.029)
Dummy=1 if Parent is in the Labour Force in 1998	0.967* (0.121)	1.389* (0.273)	4.600* (1.404)	1.303 (2.222)
Dummy=1 if Parent Has Fair or Poor Health in 1998	-0.130 (0.133)	-0.761* (0.150)	0.745 (1.831)	-6.737* (1.655)
Dummy=1 if Spouse Has Fair or Poor Health in 1998	-0.161 (0.140)	0.011 (0.169)	-1.871 (1.762)	-0.203 (0.895)
Intercept	-0.1944* (0.658)	-1.377*** (0.765)	-20.11** (8.767)	12.41** (5.527)
Scale			16.482* (0.009)	11.247* (0.005)
Number of observations	11,541	11,541	11,541	11,541

* Statistically significant with 99% confidence.
** Statistically significant with 95% confidence.
*** Statistically significant with 90% confidence.
¹ Sample selected is those households children with no health problems in 1998.
² Characteristics of the mother used.

Table 7 Onset of Child Health Problems Between 1998 and 2000 and Parental Labour Market Behaviour Sample Selected Using Propensity Score Matching				
	Probit LFP		Tobit	
	Mother	Father	Mother	Father
Dummy=1 if Child Health Problem Develops	-0.354** (0.156)	0.139 (0.220)	-4.295* (1.656)	1.250 (1.057)
Parent's Age in 1998	0.146 (0.113)	0.076 (0.154)	1.127 (1.749)	0.254 (0.811)
Parent's Age in 1998 Squared	-0.002 (0.002)	-0.001 (0.002)	-0.020 (0.024)	-0.004 (0.011)
Dummy=1 if Parent has less than High School Education 1998	0.192 (0.269)	-0.707** (0.290)	1.659 (5.185)	-4.714** (2.374)
Dummy=1 if Parent has Certificate/Diploma 1998	0.320 (0.196)	0.241 (0.284)	2.918 (1.813)	0.180 (1.319)
Dummy=1 if Parent has a University Degree 1998	-0.042 (0.199)	0.970 (0.775)	0.682 (2.059)	0.279 (1.449)
Dummy=1 if Parent is an Immigrant	-0.160 (0.277)	0.287 (0.631)	-0.374 (3.258)	0.065 (2.414)
Dummy=1 if Parent is Non-White	-0.327 (0.400)	-0.113 (0.523)	-4.736 (4.956)	-1.032 (2.460)
Spouse's Total Earnings in 1998	-9.04e-7 (2.59e-6)	5.04e-6 (8.79e-6)	-1.45e-5 (3.95e-5)	1.54e-5 (2.67e-5)
Dummy=1 if Infant in the House in 1998	-0.103 (0.193)	0.126 (0.332)	-3.624*** (2.123)	0.680 (1.440)
Dummy=1 if Child 2-3 Years in House in 1998	-0.344 (0.223)	0.160 (0.284)	-3.416 (2.293)	0.901 (1.220)
Provincial Unemployment Rate in 1998	-0.042 (0.026)	-0.027 (0.037)	-0.254 (0.282)	-0.229 (0.221)
Number of Children Aged 0-17 in 1998	-0.158*** (0.091)	0.007 (0.101)	-3.142* (1.110)	-0.826 (0.818)
Dummy=1 if Rural Residence	-0.005 (0.175)	-0.051 (0.271)	-3.353 (2.138)	1.980 (1.460)
Parent's Weekly Hours of Paid Work in 1998	0.029* (0.010)	0.012 (0.010)	0.759* (0.087)	0.417* (0.068)
Dummy=1 if Parent is in the Labour Force in 1998	0.820** (0.332)	1.103*** (0.566)	2.480 (3.806)	7.161 (5.388)
Dummy=1 if Parent Has Fair or Poor Health in 1998	0.536 (0.404)	-0.580*** (0.350)	9.448** (4.583)	-6.651 (5.051)
Dummy=1 if Spouse Has Fair or Poor Health in 1998	-0.113 (0.465)	0.450 (0.376)	-2.461 (6.812)	0.649 (1.762)
Intercept	-1.720 (2.046)	-0.809 (2.759)	-0.478 (32.846)	16.485 (15.194)
Scale			16.284* (0.023)	11.624* (0.013)
Number of observations	1674	1674	1674	1674

* Statistically significant with 99% confidence.
** Statistically significant with 95% confidence.
*** Statistically significant with 90% confidence.

Appendix Table 1 Parental Labour Market Behaviour and the Onset of Child Health Problems Between 1998 and 2000. Including Change Variables ¹				
	Probit LFP		Tobit	
	Mother	Father	Mother	Father
Dummy=1 if Child Health Problem Develops	-0.215*** (0.125)	0.052 (0.153)	-3.252** (1.300)	0.599 (0.762)
Mother's/Father's Age 1998	0.109* (0.039)	0.131* (0.038)	1.361* (0.486)	0.741* (0.277)
Mother's/Father's Age 1998 Squared	-0.002* (0.001)	-0.002* (0.0005)	-0.020* (0.007)	-0.010* (0.004)
Dummy=1 if Mother/Father has less than High School Education 1998	-0.159 (0.103)	-0.234*** (0.130)	-0.767 (1.610)	-1.340*** (0.733)
Dummy=1 if Mother/Father has Certificate/Diploma 1998	0.067 (0.089)	0.178 (0.109)	0.622 (0.840)	0.331 (0.475)
Dummy=1 if Mother/Father has a University Degree 1998	0.154*** (0.087)	0.292** (0.147)	1.966** (0.942)	0.287 (0.601)
Dummy=1 if Mother/Father is an Immigrant	0.204 (0.148)	0.112 (0.161)	1.558 (1.616)	0.469 (0.746)
Dummy=1 if Mother/Father is Non-White	-0.401** (0.170)	-0.142 (0.164)	-2.068 (1.873)	-1.050 (1.010)
Spouse's Total Earnings in 1998	-4.79e-7 (1.21e-6)	1.27e-7 (2.45e-6)	-1.23e-5 (1.91e-5)	3.42e-6 (9.96e-6)
Dummy=1 if Infant in the House in 1998	-0.172** (0.078)	0.087 (0.111)	-2.176** (0.847)	1.076** (0.479)
Dummy=1 if Child 2-3 Years in House in 1998	-0.210** (0.082)	0.076 (0.109)	-2.527** (0.988)	-0.062 (0.474)
Provincial Unemployment Rate in 1998	-0.035* (0.012)	-0.087* (0.013)	-0.122 (0.145)	-0.610* (0.101)
Number of Children Aged 0-17 in 1998	-0.109* (0.034)	-0.043 (0.046)	-1.928* (0.400)	-0.133 (0.232)
Dummy=1 if Rural Residence	-0.166** (0.071)	0.093 (0.115)	-1.744*** (0.903)	2.451* (0.591)
Mother's/Father's Weekly Hours of Paid Work in 1998	0.019* (0.004)	0.005 (0.006)	0.658* (0.031)	0.450* (0.030)
Dummy=1 if Mother/Father is in the Labour Force in 1998	0.994* (0.121)	1.394* (0.278)	4.600* (1.388)	0.973 (2.278)
Mother's/Father's Education Went Up From 1998 to 2000	0.117 (0.084)	-0.034 (0.102)	1.128 (0.814)	-0.358 (0.464)
Difference in Spouse's Earnings From 1998 to 2000	-1.49e-6** (7.46e-7)	6.91e-8 (2.21e-6)	-2.78e-5** (1.14e-5)	-9.81e-6 (9.53e-6)
Moved to a Rural Area from 1998 to 2000	-0.417*** (0.251)	0.365 (0.343)	-5.563*** (3.035)	3.673** (1.595)
Moved to a Urban Area from 1998 to 2000	-0.143 (0.180)	-0.436*** (0.248)	-2.964 (2.796)	-3.572** (1.754)
Difference in the Provincial Unemployment Rate from 1998 to 2000	-0.036 (0.051)	-0.160** (0.080)	-0.581 (0.615)	-0.817*** (0.439)
Number of Children 0-17 Went Up from 1998 to 2000	-0.442* (0.086)	-0.083 (0.126)	-6.191* (1.084)	-0.215 (0.541)

Number of Children 0-17 Went Down from 1998 to 2000	0.269** (0.110)	-0.097 (0.184)	2.484** (1.120)	0.042 (0.838)
Dummy=1 if Mother/Father Has Fair or Poor Health in 1998 and 2000	-0.293 (0.237)	-1.113* (0.236)	-1.886 (3.548)	-10.93* (3.341)
Dummy=1 if Mother/Father Has Fair or Poor Health in 1998 but not 2000	-0.004 (0.174)	-0.432** (0.197)	2.846 (2.476)	-3.890* (1.366)
Dummy=1 if Mother/Father Has Fair or Poor Health in 2000 but not 1998	-0.144 (0.190)	-0.614* (0.172)	-1.139 (1.919)	-3.549* (1.371)
Dummy=1 if Spouse Has Fair or Poor Health in 1998 and 2000	-0.238 (0.192)	0.367*** (0.207)	-1.669 (2.834)	1.020 (1.314)
Dummy=1 if Spouse Has Fair or Poor Health in 1998 but not 2000	-0.149 (0.198)	-0.081 (0.234)	-2.685 (1.986)	-0.474 (1.237)
Dummy=1 if Spouse Has Fair or Poor Health in 2000 but not 1998	-0.064 (0.273)	0.088 (0.266)	-1.234 (2.144)	-1.167 (1.133)
Intercept	-1.458** (0.667)	-1.490*** (0.794)	-13.03 (8.618)	12.86** (5.569)
Number of observations	11,541	11,541	11,541	11,541
* Statistically significant with 99% confidence. ** Statistically significant with 95% confidence. *** Statistically significant with 90% confidence. ¹ Sample selected is those households children with no health problems in 1998. ² Characteristics of the mother used.				

Fig. 1. Probability of Participation in the Labour Market in 2000

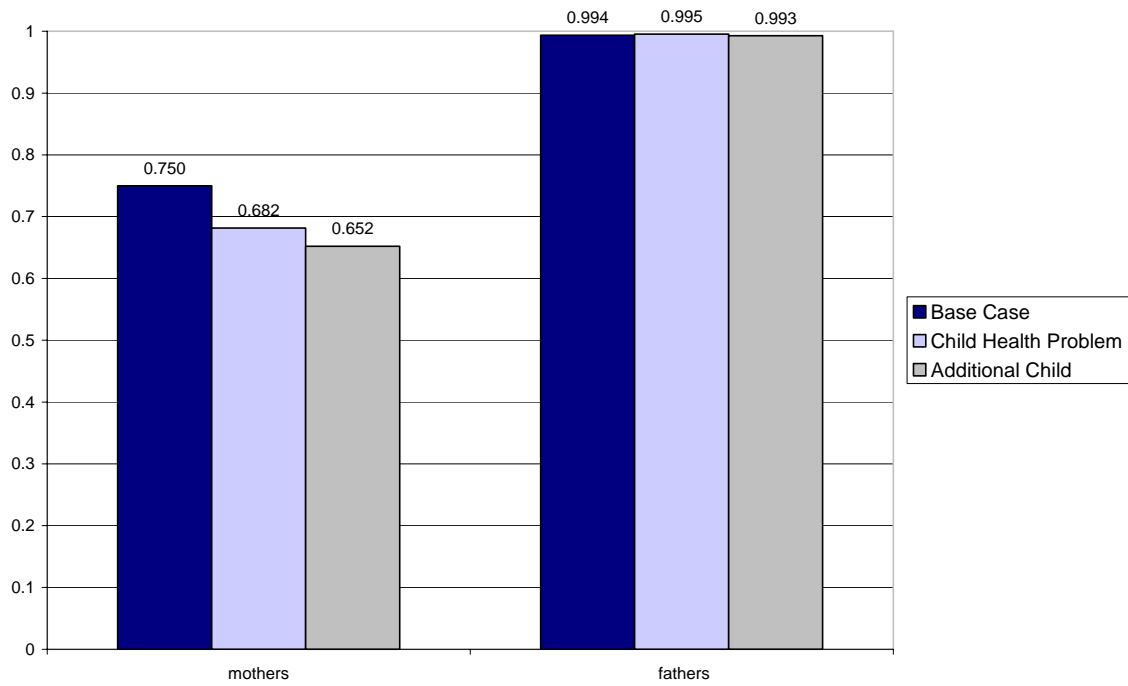


Fig. 2. Expected Labour Market Hours in 2000

