The Impact of Labor Policies on the Health of Young Children in the Context of Economic Globalization

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Abstract

Globalization has transformed the workplace at the same time that increasing numbers of children live in families in which all adults work for pay outside the home. Extensive research evidence demonstrates the importance of parental involvement in the early years of a child's life. Yet, parents caring for young children may face challenges in fulfilling both work and family responsibilities under current labor force conditions. In this article, we review the evidence on the importance of parental care for meeting young children's routine care needs, preventive health care needs, and curative medical treatment requirements. We examine the evidence regarding the impact of four policies in particular on young children's health and development: parental leave, breastfeeding breaks, early childhood care and education, and leave for children's health needs. Last, we examine the availability of these policies worldwide and discuss the potential economic implications.

INTRODUCTION

Over the past several decades, the world of work has changed dramatically. The economic environment has been transformed by globalization. One of the consequences of the interdependence of the global economic system is the increasing competition among countries based on their labor force-which has often meant a "race to the bottom" in terms of remuneration and working conditions as employers move from higher-income countries to lower-cost settings, or threaten to do so to resist improving standards. At the same time, globalization has brought new employment opportunities for working families around the world, particularly in low- and middle-income countries. Young adults and families continue to move to bigger cities from smaller cities and towns as well as from rural areas in search of these economic opportunities. The proportion of the world's population living in urban areas has increased dramatically from under 30% in 1950 to over 50% in 2010 and is expected to reach 70% by 2050 (94).

At the same time, the composition of the labor force has changed. Ideally, historical global data on the labor force participation of parents or of women of childbearing age would be available; unfortunately, these do not exist. However, data on the female proportion of the labor force show that the female share of the labor force has increased or remained stable in nearly every region of the world. Given the very high proportion of women globally that are mothers, this increase could not have occurred without an increase in the proportion of working mothers. Between 1960 and 2009, all parts of the Americas saw a significant change: from 32% to 46% in the United States, 25% to 47% in Canada, and 21% to 41% in Latin America and the Caribbean. The female proportion of the labor force was already at least 40% in 1960 in Europe and Central Asia, East Asia and the Pacific, and sub-Saharan Africa, and this level was maintained or slightly increased. The Middle East and North Africa also saw a modest increase, from 21% to 25%; only South

Asia experienced a small decline in the female proportion of the labor force, from 34% to 29% (122, 123). An estimated 340 million children under age six now live in a household in which all adults work for pay outside the home (59).

These changes make it important to have a good understanding of how policies shaping parents' work lives in a globalized economy affect the healthy development of young children. In this review, we address selected policies that can affect working parents' ability to ensure their children receive three different kinds of care: (a) developmentally appropriate and health-promoting daily care; (b) preventive health care on an intermittent but regular basis; and (c) curative medical care and treatment when a child is ill or injured. In this review, we examine four policy areas that may impact children's care in working families: (a) leave for parents after the birth or adoption of a child, (b) the availability of breastfeeding breaks at work, (c) early childhood care and education, and (d) leave for preventive and curative child health visits. In each case, we first assess the evidence regarding the impact of each policy on children's healthy development and then examine the global availability of each policy. We conclude with a discussion of policy implications and remaining gaps in the research.

PARENTAL INVOLVEMENT DURING INFANCY

Studies have examined the effect of paid parental leave on children in high- and lowincome countries. Ruhm's study of 25 years of data from 16 European countries found that after controlling for a variety of potentially confounding factors, including national per capita income and the availability of health services and technology, the provision of 10 extra weeks of paid maternity and parental leave was associated with a 1–2% reduction in infant mortality rates, a 3.5–4.5% reduction in postneonatal mortality, and a 3–3.5% reduction in child mortality (98). The associated benefits were even greater for longer periods of leave. The results of Tanaka's study of data from 18 OECD countries between 1969 and 2000 are very consistent with these findings (110). Importantly, leave that was not income-protected or job-protected had little impact on mortality in either of these studies.

Expanding beyond high-income countries to include low- and middle-income countries. where the early health risks for infants and toddlers are much greater, Heymann, Raub, and Earle's study of paid leave for mothers in 176 countries worldwide confirms the significant health benefits of paid leave (62). To compare paid leave for mothers consistently across countries, we combined paid time off available through maternity as well as parental leave and multiplied this duration with the percentage of wages replaced during the leave period, creating a measure of full-time equivalent weeks of leave. Controlling for a nation's wealth and health care expenditures, as well as the female literacy rate, we found that the provision of 10 additional full-time equivalent weeks of leave was associated with an 8% reduction in neonatal mortality and a 10% reduction in infant mortality (62). The importance of parental leave to health outcomes may not be surprising given the intensity of care that infants need. When parents take leave from work after a child's birth or adoption, they are able to address directly all three elements of care described above: they can provide daily care, meet preventive needs from immunizations to breastfeeding, and seek curative care when necessary.

Studies have also shown associations between the availability of leave for new parents and indicators of preventive care received by children. A global study by Daku, Raub, and Heymann shows that increases in the duration of paid leave for mothers are associated with statistically significant increases in immunization coverage, using a measure of full-time equivalent weeks of maternal leave, as in the study described above, and controlling for health expenditures, presence of a skilled birth attendant, percentage of women in the labor force, and the female literacy rate (29). Specif-

ically, a 10% increase in full-time equivalent weeks of leave is linked to increases of between 15% and 25% in coverage of BCG (Bacillus Calmette-Guérin for tuberculosis), DPT1, DPT3, measles, and polio vaccinations. Using data from the U.S. National Longitudinal Survey of Youth, Berger, Hill, and Waldfogel found that when mothers return to work less than 12 weeks after giving birth, particularly if they are working full time, their children are less likely to be breastfed, to receive all their DPT (diphtheria, pertussis, and tetanus) and oral polio immunizations, and to have regular preventive medical checkups, even after a wide range of control variables are taken into account (11). A portion of the health benefits of leave derives from the fact that paid leave for women facilitates the initiation and continuation of breastfeeding, which has a wide range of welldocumented health benefits, discussed in detail in the following section. When mothers have access to paid leave, it is much easier for them to breastfeed for at least the six months currently recommended by the World Health Organization (125). The link between leave duration and breastfeeding has been demonstrated in a wide range of contexts. For example, a study of the expansion of parental leave rights in Canada from 25 weeks to 52 weeks found that this expansion was associated with a significant increase in breastfeeding duration, in exclusive breastfeeding duration, and in the percentage of mothers who continued breastfeeding for at least six months (6). Although a similar natural experiment did not occur in Thailand, women who took longer leave there also had higher breastfeeding rates (127).

Substantially more research has been done on maternity leave than on paternity or parental leave. However, the body of evidence does not give reason to doubt that paternity and parental leave would effectively ensure the availability of a parent to provide routine care, preventive health care (outside of breastfeeding), or sick child care. Additional research shows that when fathers can take leave with a new baby their involvement in childrearing tends to increase, **Full-time equivalent weeks:** duration of paid leave multiplied by the percentage of wages replaced during the leave period

Duration of paid leave for mothers: the number of weeks of paid time off available through maternity and

parental leave

Duration of paid leave for fathers: the number of weeks of paid time off available through paternity and parental leave

and these effects continue after the leave period ends. A US study using nationally representative data showed that fathers were more likely to be regularly involved in child care when they had taken at least two weeks of leave from work after their child's birth even once preexisting commitment to child care (measured by birth class attendance and presence in the delivery room) as well as many other individual and family characteristics were taken into account (89). Similarly, a large-scale study in the United Kingdom, again controlling for a wide range of relevant factors, found that fathers who took leave were 19% more likely to regularly feed their babies and get up with them at night 8-12 months later. The same study showed that when workplaces offered parental or paternity leave, men were five times more likely to take leave after the birth of a child (111). A study in Sweden showed that when fathers had taken longer periods of leave, they were significantly more likely to report responsibility for and involvement in child care and more time spent with children on weekdays after their return to work, controlling for "attitudes toward active fatherhood" as well as for parental education and work variables (53). Other studies have documented similar effects and clear benefits of paternal involvement for children and families (43, 105).

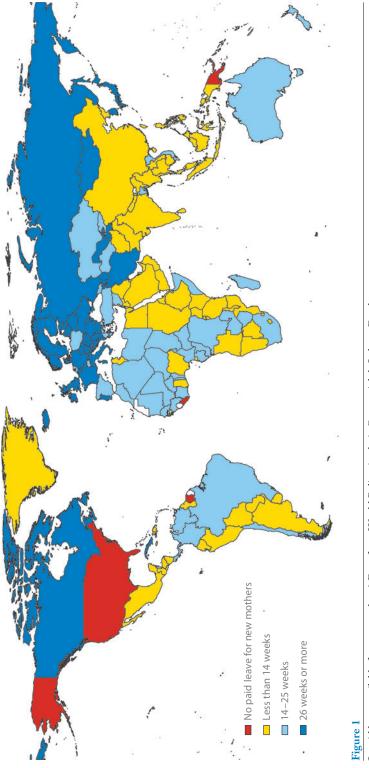
The evidence on the benefits of paid leave for new parents is strong; the next question to ask is whether policy makers have acted on it. Our study of labor laws and social security in 190 countries showed that of the 188 countries with accessible labor legislation, 180 have legislated paid leave for mothers. (See Figure 1.) Eight countries do not have paid leave for mothers: the United States, Suriname, Liberia, Samoa, Nauru, Palau, Tonga, and Papua New Guinea. When combining paid mother-specific maternity leave with paid parental leave that can be taken by either parent, 45 countries provide at least 6 months of leave, and 52 countries provide between 14 and 25 weeks (61).

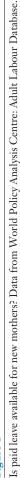
By comparison, many fewer countries have taken steps to ensure that fathers can spend time with their new children. (See **Figure 2**.) Eighty-one countries provide paid leave that can be taken by fathers either through paternity or shared parental leave, and in 40 of these countries, the duration of paid leave for fathers is less than three weeks of leave (61). Evidence shows that men are more likely to take leave specifically designated for fathers only (paternity leave) than to take gender-neutral parental leave (15, 37, 91); nonetheless only 67 nations guarantee paid paternity leave (61).

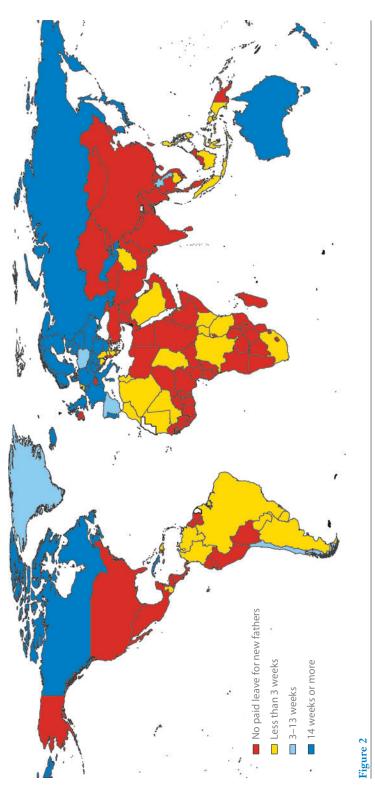
BREASTFEEDING AND WORKING MOTHERS

A large body of epidemiological evidence dating back decades supports the substantial benefits of breastfeeding to the health of both infants and mothers (24, 31, 74). Breast milk contains a variety of components that protect against infection and inflammation, including lactoferrin, immunoglobulin A, oligosaccharides, and cytokines (87). The immediate health effects are reduced prevalence of and deaths due to diarrhea (23, 40, 64), respiratory infections (17, 75, 119, 126), otitis media (4, 33), pneumonia (116), and other infectious diseases (5). Breastfeeding reduces an infant's exposure to potentially harmful agents, and thus the benefits are especially significant where clean water and sanitation facilities are not universal (66). However, children in affluent countries and populations also experience these benefits (32, 65). Over the long term, studies have found a significant dose-response relationship between breastfeeding and a child's cognitive development, even once potentially confounding factors are controlled for (3, 69, 86). Evidence also indicates a connection between breastfeeding and reduced risk of various chronic diseases, including allergies, diabetes (100), atopic dermatitis (47), hypertension, inflammatory bowel disease (68), and certain types of cancer (10, 82, 106, 107). For mothers, health benefits include accelerated postpartum weight loss; lower risks of breast cancer (36), hypertension, and cardiovascular disease (104); and possible reduced risks of ovarian cancer and osteoporosis (65).











Relatively few social barriers to breastfeeding exist when a mother can stay home from work during her baby's infancy, but returning to work can change these conditions. The lack of accommodations made for women to breastfeed in the workplace can create logistical barriers, and negative attitudes among employers and coworkers can be another obstacle (44). Studies in the United States and Singapore have shown that although a return to work did not affect women's intention to breastfeed or initiation of breastfeeding, employment significantly reduced the probability that a woman was breastfeeding even two or three months after childbirth (49, 90). Research shows that work can be a barrier to breastfeeding in a wide variety of contexts, from the United Kingdom to Spain to Australia to Taiwan (9, 11, 18, 21, 31, 38, 45, 52, 58, 76).

One way to address some of these barriers is by providing breastfeeding breaks for mothers after their return to work. Guaranteed breastfeeding breaks give working mothers the right to a certain period of time off per day that can be used to breastfeed the infant if they are close enough to the workplace or to express milk that can be stored and fed to the baby later. Our research shows that 136 countries provide breastfeeding breaks; countries mandate these breaks in different ways, including as several short breaks, one longer break, a shortened workday, and other formulations. (See Figure 3.) In 112 of these countries, breaks are guaranteed for at least one year (61). However, this still leaves working mothers in a large number of countries without this important workplace protection.

In many working environments, breastfeeding breaks are low cost and easy to implement. In others, such as factories, the brief absence of an employee may be disruptive to the productivity or activity of other workers, and more consideration must be given to the approach taken. However, this challenge is not a new one. Factories and other similarly structured workplaces accommodate breaks for meals, for using the bathroom, to decrease physical strain, and for other reasons. Using team and crosscoverage approaches are just two of the approaches taken to increase flexibility in these settings.

EARLY CHILDHOOD CARE AND EDUCATION

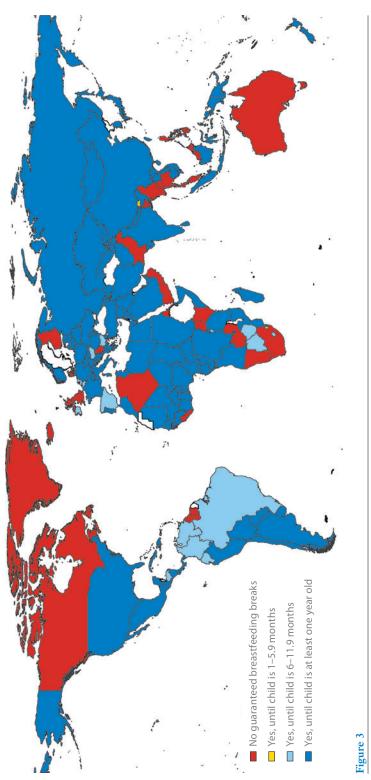
Early childhood care and education (ECCE) programs can have significant benefits for children's healthy development and school readiness, especially for children who are at risk, though the benefits naturally depend on the quality of the program. Studies from the United States and the United Kingdom have shown that participation in quality ECCE can benefit children's school readiness, school achievement, and grade completion and reduce grade repetition. These effects have been consistently documented during the early years, although there is some debate over their magnitude and whether these benefits fade out over time, with some studies finding continuing effects and others diminishing differences after the first few years (7, 14, 16, 25, 26, 30, 51, 77, 78, 79, 83, 99, 101, 118). Some of the differences in long-term outcomes may be affected by the quality of education received after early childhood. A metaanalytic review of 35 rigorous studies of ECCE interventions for economically disadvantaged children, primarily in the United States, found that ECCE is consistently associated with significant effects on cognitive ability and academic achievement (50). Evidence also indicates positive effects on socioemotional development (7, 83). While findings on school outcomes demonstrate a large degree of consensus, there is more debate over other types of effects. Although there is some evidence that participation in the Head Start program in the United States, an ECCE program for low-income families, was associated with better health and nutrition outcomes (25, 27, 28, 42), studies do not consistently find an effect on these types of indicators (77). Differences here may depend on the nature of the ECCE services provided.

Even though most of the research in this area has been carried out in high-income countries, there is evidence of benefits in low- and

Guaranteed breaks:

a policy providing a certain amount of time during the workday for nursing mothers to breastfeed or express milk

ECCE: early childhood care and education





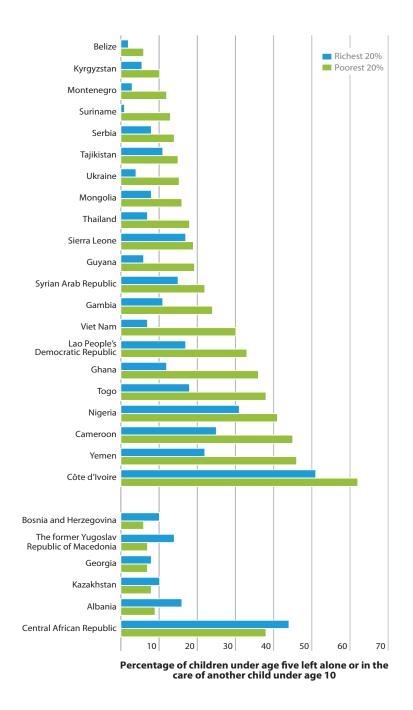
middle-income contexts, as well. Again, the evidence is strong and consistent with regard to educational outcomes, with suggestions of additional impacts on health in some cases. In Brazil, where the public education system provides preschool education to children aged 0 to 6 (with 27% attendance rates at the time of study), each additional year of preschool has been found to increase the total number of years of education completed by half a year, reduce grade repetition rates by 3-5 percentage points, and increase men's future income by 2-6%, after controlling for personal, family, and geographic characteristics (121). Benefits are even greater for disadvantaged children. Evidence also indicates that children's nutritional status in terms of height for age and weight for height benefits. In Argentina, one year of ECCE was found to improve test scores and behavioral indicators such as discipline, class participation, and effort at the third-grade level (13). Similar benefits for children's education, as well as some benefits for children's health and nutrition, have been found in Bangladesh (1), Botswana (109), Turkey (67), and other countries (124).

The care and supervision provided by these programs can also be important for children in families where parents are balancing paid work with family responsibilities. When parents return to work after their child is born (or after parental leave ends), they must arrange for someone to care for the child during work hours, especially because most countries do not provide parental leave long enough for a child to reach school age, when most of a child's daytime supervision needs will be met by the educational system. Many young families live far from extended family members, and the majority cannot afford to pay for private caregivers. In the absence of affordable ECCE facilities, the consequences of this care gap can be devastating for children. Our study of working families around the world showed that more than one in three parents had left a young child home alone, and more than one-quarter of parents had left a child in the care of another child (59). Data from 21 countries covered by UNICEF's Multiple Indicator Cluster Surveys show that children in lower-income families are significantly more likely to be left at home alone than are their higher-income counterparts. (See **Figure 4**.) As well, these data confirm that the number of young children left at home alone or with inadequate care is large: The proportion of children under age five who had been left home alone or in the care of another child was more than 10% in 20 of these countries and more than 30% in 7 countries (115).

There is currently no regularly updated, readily available source of information on the public provision of ECCE, the age at which it begins, for how long it is provided, affordability, quality, or other important information. However, the best available information, from a 2007 UNESCO report, shows that many countries do not provide this service to families, a significant problem given that ECCE is accessible to low-income families only when publicly provided or subsidized. Approximately half of the world's countries lack formal ECCE programs for children under age 3; provision improves once children reach the age of 3, but considering most countries offer less than one year of parental leave, many families are left with few affordable care options during the toddler years (113).

HEALTH NEEDS DURING CHILDHOOD

Studies spanning several decades have documented the importance of parental care for ill or injured children. Parental presence has been shown to benefit children undergoing surgery (46, 55, 73, 85, 102); an intervention study of children undergoing outpatient surgical procedures in hospital targeting increased parental involvement in postoperative care found that when parents were more involved, children experienced less pain and other negative effects than did children whose parents were less involved (70). Another study showed that when parents were able to stay with their children in hospital, children's hospital stays were 31% shorter (112). Parental presence also improves a child's coping with hospitalization by reducing



Note: This analysis included 28 countries, one of which (Uzbekistan) did not show a statistically significant difference between the richest and poorest households and was therefore excluded from the graph. Albania, Belize, and Bosnia and Herzegovina showed a statistically significant difference at the 5% level ($p \le .05$); all other countries showed a statistically significant difference at the 1% level ($p \le .05$); all other countries showed a statistically significant difference at the 1% level ($p \le .05$); all other countries showed a statistically significant difference at the 1% level ($p \le .05$); all other countries showed a statistically significant difference at the 1% level ($p \le .05$); all other countries showed a statistically significant difference at the 1% level ($p \le .05$); all other countries showed a statistically significant difference at the 1% level ($p \le .05$); all other countries showed a statistically significant difference at the 1% level ($p \le .05$). When the direction of the association was not consistent with the expected pattern, the chart groups the countries accordingly.

Figure 4

The poorest children are at greatest risk of being left alone or with inadequate care. This graph depicts the percentage of children under age 5 left alone or in the care of another child under age 10 in the past week, by household wealth quintile. From 114 with permission.

Annu. Rev. Public Health 2013.34:355-372. Downloaded from www.annualreviews.org Access provided by University of California - Los Angeles UCLA on 10/13/23. For personal use only.

stress and anxiety (19, 80, 92, 97, 103). Parental involvement can improve recovery from both physical and mental health conditions (48, 96). Substantial evidence shows that for adolescents with chronic health care needs, such as diabetes and asthma, the involvement of parents is especially critical and improves the management of the condition as well as psychological adjustment to it (2, 54, 56, 57, 71, 120).

Logic suggests and evidence confirms that the ability of parents to take time off from work is a strong determinant of their ability to address their children's health needs. Heymann, Toomey, and Furstenberg's (63) study of parents in a US city found that when paid sick days that could be taken for a child's health needs were available, parents were five times more likely to care for their sick child themselves than they were when this leave was not available. Clemans-Cope et al. (20), using nationally representative data, came to a similar conclusion in their study of low-income families. Schuster et al. (102) found that when parents were able to take leave from work to care for children with special health care needs, a majority reported positive effects on their child's physical and emotional health; these effects were stronger when leave was paid. When parents do not have the right to take leave to care for a child, they are likely to have to compromise either their child's needs or their work responsibilities and risk income or job loss. When a child has frequent or chronic health problems, a parent's need to take leave and the risks of not having access to it can be even greater. Earle & Heymann's (34) longitudinal study of lowincome families in the United States found that having a child with chronic health issues was associated with a 36% greater likelihood of job loss.

Studies have shown that like access to curative care, children's access to preventive care is affected by their parents' working conditions. Respondents in US studies have cited the need to take time off from work and the difficulty of doing so as barriers to immunizing their children (72, 84, 88, 93). In a study of a large US company, the children of employees who reported difficulty in taking time off from work were significantly less likely to be fully immunized (41). Investigators also found time conflicts to be barriers to immunization in Haiti and Indonesia (22, 108). For children to receive preventive care, working parents require occasional time off from work to seek care and bring children to appointments.

Very few countries have guaranteed that parents can take time off from work for child health–related reasons. Fifty-four countries guarantee parents the right to paid leave specifically to meet their children's health needs; an additional 16 countries provide unpaid leave for this purpose. Some countries guarantee leave that can be taken for family needs in general, for emergencies, or at the employee's discretion; even when these types of leave are included, only 76 countries guarantee parents the right to paid leave that can be used to meet children's health needs, and an additional 21 countries guarantee unpaid leave (61).

ECONOMIC CONSIDERATIONS

Although substantial evidence supports the need for and benefits of parental leave, ECCE programs, breastfeeding breaks, and leave for children's health needs, a question raised by opponents is the potential economic implications of these policies for parents in the paid labor force, employers implementing them, and countries guaranteeing them.

Even though the implementation of these work protections entails inevitable financial and administrative costs, evidence has also indicated that they can have offsetting, positive economic outcomes for families and companies. Studies conducted in the United States, Canada, Japan, and the United Kingdom have found that the provision of maternity leave increased the likelihood of a woman returning to her prebirth employer, and in Europe, paid parental leave was associated with higher rates of employment among women (11, 99, 117). As well as benefiting families by providing income during leave and increasing employment stability, this increased long-term employee retention benefits

needs: a policy
 enabling an employee
 to take time off in
 order to care for the
 health needs of a child

Paid leave for

children's health

employers through reduced hiring and training costs and the increased productivity of an employee well acquainted with the work and the workplace. Benefits of paid leave and flexibility policies in general (including parental leave and child health leave, among others) reported by employers in a study conducted by the Families and Work Institute include "increasing employee engagement and retention; reducing turnover; reducing absenteeism and sick days; increasing customer satisfaction; reducing business costs; increasing productivity and profitability; improving staffing coverage to meet business demands; [and] enhancing innovation and creativity" (44, pp. 83–84).

Additionally, our own work has shown that providing good labor conditions for working parents does not impede a country's economic competitiveness nor does it necessarily lead to higher unemployment rates. At a global level, there is no evidence of any relationship between national unemployment rates and the availability of paid leave for parents, breastfeeding breaks, or leave for children's needs. We examined OECD countries that consistently had among the lowest unemployment rates over the past ten years and found that all but one guarantee paid leave for mothers, and the majority guarantees breastfeeding breaks, paid leave for fathers, and leave for children's health needs. Similarly, when examining countries consistently ranked as highly economically competitive by the World Economic Forum, we found that all provide leave for children's health needs, all but one guarantee paid leave for mothers, and all but two provide paid leave for fathers; a number also guarantee breastfeeding breaks (60). Although job competition from emerging economies based largely on lower labor costs has been a commonly cited concern in relation to improving working conditions, a look at examples shows that the story is not so simple. Whereas the United States guarantees no paid leave to mothers at a national level, India guarantees 12 weeks of fully paid maternity leave, and China provides 18 weeks (35).

ECCE programs inevitably require significant expenditures on the part of nations. However, this investment can have significant returns. As well as the benefits of greater labor force participation among the current generation of parents (99), fostering the development of a healthier and better-educated workforce benefits future economic development. Additionally, cost-benefit analyses of preschool programs show significant direct returns on investment (8, 95, 121).

GAPS IN THE RESEARCH

Although much is known about promoting the health of young children in households in which all adults participate in the paid labor force, research gaps remain.

One research gap relates to the best way of balancing support for children's development with support for gender equity. Evidence confirms the importance of leave for parents of infants, but the ideal duration of leave is still unknown. Although parental care is clearly beneficial for children, evidence from some European countries with long periods of leave indicates that this practice may lead to disadvantages for women in the labor force when provided either as maternity or parental leave without an equivalent length of specifically designated paternity leave (12, 39, 81, 99). If only shorter periods of leave are guaranteed, policy must prioritize quality and affordable care for young children. Further research is needed on the best ways to design parental leaves that support equal opportunities both for caregiving and for paid work, as well as equal uptake by fathers and mothers.

As well, reaching the informal economy is a key concern. Many of the poorest families earn their living in the informal economy, where standard labor laws often do not apply. What is the best way for policy to ensure the healthy development of children in these families? As of yet, there is no comprehensive answer. A first step could be the provision of parental leave through a national social insurance that all can contribute to regardless of employment formality, or a social assistance scheme that covers adults who are not included in mainstream employment-based social security systems. This would likely still not result in universal coverage but could be an important step forward. Access to ECCE programs can be ensured for families in the informal economy if provided universally, similar to the provision of primary education. More challenging is guaranteeing short-term leave and breastfeeding breaks, particularly for informal workers who have employers, such as domestic workers. Additional research on options and best practices is needed.

Last, it is important to supplement research on the impact of labor policies on children's health with data and research on the extent of enforcement and implementation of the laws. One criticism of research focused on labor legislation is that the existence of legislation is an imperfect measure: Countries can have good laws on the books but poor implementation. To the extent that this is true, estimates of the effect of legislation on child outcomes might be biased downward (toward zero). It is crucial that initiatives that examine legal rights be followed up with implementation assessments, ideally using internationally comparable quantitative data. Greater detail and global coverage of data on the implementation of labor laws would improve the quality and rigor of analyses of their impact, while enhancing efforts to hold countries accountable for full enforcement of their laws.

SUMMARY POINTS

- A long history of evidence demonstrates that breastfeeding has extensive health benefits for infants and mothers. When women have access to paid maternity leave or breastfeeding breaks, breastfeeding rates increase.
- 2. Studies have shown that when parents are able to take leave from work, children's access to preventive health measures, such as immunizations, improves.
- 3. Parental availability and involvement improve child health outcomes when children are acutely ill, chronically ill, or hospitalized. Parents are significantly more likely to provide care for sick and injured children if they have access to leave from work and, thus, do not risk job or income loss by providing care.
- 4. Although most countries have guaranteed paid leave for new mothers and many provide breastfeeding breaks, a minority mandate paid leave for new fathers and leave that can be taken to meet children's health needs.
- 5. Early childhood care and education (ECCE) programs have been demonstrated to have cognitive and social benefits for children. In addition, when these programs are available and affordable, they can ensure quality adult care for children during the day while parents are at work.
- 6. ECCE programs are not consistently provided around the world, and information about the nature and availability of these programs is also lacking.

DISCLOSURE STATEMENT

The authors are not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

LITERATURE CITED

- Aboud FE. 2006. Evaluation of an early childhood preschool program in rural Bangladesh. *Early Child* Res. Q. 21(1):46–60
- Anderson BJ, Miller JP, Auslander WF, Santiago JV. 1981. Family characteristics of diabetic adolescents: relationship to metabolic control. *Diabetes Care* 4(6):586–94

- Anderson JW, Johnstone BM, Remley DT. 1999. Breast-feeding and cognitive development: a metaanalysis. Am. J. Clin. Nutr. 70(4):525–35
- Aniansson G, Alm B, Andersson B, Håkansson A, Larsson P, et al. 1994. A prospective cohort study on breast-feeding and otitis media in Swedish infants. *Pediatr. Infect. Dis. J.* 13(3):183–88
- Arnold C, Makintube S, Istre G. 1993. Daycare attendance and other risk factors for invasive Haemophilus influenzae type B disease. Am. J. Epidemiol. 138(5):333–40
- Baker M, Milligan K. 2008. Maternal employment, breastfeeding, and health: evidence from maternity leave mandates. J. Health Econ. 27(4):871–87
- Barnett WS. 2007. Revving up Head Start: lessons from recent research. J. Policy Anal. Manag. 26(3):674– 77
- Barnett WS, Masse LN. 2007. Comparative benefit-cost analysis of the Abecedarian program and its policy implications. *Econ. Educ. Rev.* 26(1):113–25
- Baxter J. 2008. Breastfeeding, employment and leave: an analysis of mothers in Growing Up in Australia. Fam. Matters 80:17–26
- Bener A, Denic S, Galadari S. 2001. Longer breastfeeding and protection against childhood leukaemia and lymphomas. *Eur. J. Cancer* 37(2):234–38
- Berger L, Hill J, Waldfogel J. 2005. Maternity leave, early maternal employment and child health and development in the US. *Econ. J.* 115(501):F29–47
- 12. Bergmann BR. 2008. Long leaves, child well-being, and gender equality. Polit. Soc. 36:350-59
- Berlinski S, Galiani S, Gertler P. 2009. The effect of pre-primary education on primary school performance. J. Public Econ. 93(1–2):219–34
- Besharov DJ, Higney CA. 2007. Head Start: Mend it, don't expand it (yet). J. Policy Anal. Manag. 26(3):678-81
- 15. Brandth B, Kvande E. 2001. Flexible work and flexible fathers. Work Employ. Soc. 15(2):251-67
- Campbell FA, Wasik BH, Pungello E, Burchinal M, Barbarin O, et al. 2008. Young adult outcomes of the Abecedarian and CARE early childhood educational interventions. *Early Child Res. Q.* 23(4):452–66
- Cerqueiro MC, Murtagh P, Halac A, Avila M, Weissenbacher M. 1990. Epidemiologic risk factors for children with acute lower respiratory tract infection in Buenos Aires, Argentina: a matched case-control study. *Rev. Infect. Dis.* 12(Suppl. 8):S1021–28
- Chen YC, Wu YC, Chie WC. 2006. Effects of work-related factors on the breastfeeding behavior of working mothers in a Taiwanese semiconductor manufacturer: a cross-sectional survey. BMC Public Health 6:160
- Cleary J, Gray OP, Hall DJ, Rowlandson PH, Sainsbury CP, Davies MM. 1986. Parental involvement in the lives of children in hospitals. Arch. Dis. Child. 61(8):779–87
- Clemans-Cope L, Perry CD, Kenney GM, Pelletier JE, Pantell MS. 2008. Access to and use of paid sick leave among low-income families with children. *Pediatrics* 122(2):e480–86
- Cooklin AR, Donath SM, Amir LH. 2008. Maternal employment and breastfeeding: results from the longitudinal study of Australian children. *Acta Paediatr*. 97(5):620–23
- Coreil J, Augustin A, Halsey NA, Holt E. 1994. Social and psychological costs of preventive child health services in Haiti. Soc. Sci. Med. 38(2):231–38
- Creek TL, Kim A, Lu L, Bowen A, Masunge J, et al. 2010. Hospitalization and mortality among primarily nonbreastfed children during a large outbreak of diarrhea and malnutrition in Botswana, 2006. *J. Acquir. Immune Defic. Syndr.* 53(1):14–19
- Cunningham AS, Jelliffee DB, Jelliffee EFP. 1991. Breast-feeding and health in the 1980s: a global epidemiologic review. *J. Pediatr.* 118(5):659–66
- 25. Currie J. 2001. Early childhood education programs. J. Econ. Perspect. 15(2):213-38
- Currie J. 2007. How should we interpret the evidence about Head Start? *J. Policy Anal. Manag.* 26(3):681– 84
- Currie J, Hotz J. 2004. Accidents will happen? Unintentional injury, maternal employment, and child care policy. *J. Health Econ.* 23(1):25–59
- Currie J, Neidell M. 2007. Getting inside the "black box" of Head Start quality: what matters and what doesn't. *Econ. Educ. Rev.* 26(1):83–99

- Daku M, Raub A, Heymann J. 2012. Maternal leave policies and vaccination coverage: a global analysis. Soc. Sci. Med. 74(2):120–24
- Deming D. 2009. Early childhood intervention and life-cycle skill development: evidence from Head Start. Am. Econ. J. Appl. Econ. 1(3):111–34
- Dennis C. 2002. Breastfeeding initiation and duration: a 1990–2000 literature review. J. Obstet. Gynecol. Neonatal Nurs. 31(1):12–32
- Dewey K, Heinig M, Nommsen-Rivers L. 1995. Differences in morbidity between breastfed and formulafed infants, part 1. *J. Pediatr.* 126(5):696–702
- Duncan B, Ey J, Holberg C, Wright A, Martinez F, Taussig L. 1993. Exclusive breast-feeding for at least 4 months protects against otitis media. *Pediatrics* 91(5):867–72
- Earle A, Heymann SJ. 2002. What causes job loss among former welfare recipients? The role of family health problems. *J. Am. Med. Womens Assoc.* 57:5–10
- Earle A, Mokomane Z, Heymann J. 2011. International perspectives on work-family policies: lessons from the world's most competitive economies. *Future Child* 21(2):191–210
- Enger SM, Ross RK, Paganini-Hill A, Bernstein L. 1998. Breastfeeding experience and breast cancer risk among postmenopausal women. *Cancer Epidemiol Biomarkers Prev.* 7:365–69
- Eriksson R. 2005. Parental leave in Sweden: the effects of the second daddy month. Work. Pap. Ser. 9, Swed. Inst. Soc. Res. http://webb.polopoly.it.su.se/content/1/c6/03/09/74/WP05no9.pdf
- Escribà V, Colomer C, Mas R, Grifol R. 1994. Working conditions and the decision to breastfeed in Spain. *Health Promot Int.* 9:251–57
- Estévez-Abe M. 2005. Gender bias in skills and social policies: the varieties of capitalism perspective on sex segregation. Soc. Polit. 12(2):180–215
- Feachem RG, Koblinsky MA. 1984. Interventions for the control of diarrhoeal diseases among young children: promotion of breast-feeding. *Bull. World Health Organ.* 62(2):271–91
- Fielding JE, Cumberland WG, Pettitt L. 1994. Immunization status of children of employees in a large corporation. *JAMA* 271(7):525–30
- Frisvold DE, Lumeng JC. 2011. Expanding exposure: Can increasing the daily duration of Head Start reduce childhood obesity? *J. Hum. Resour.* 46(2):373–402
- Fursman L, Callister P. 2009. Men's Participation in Unpaid Care: A Review of the Literature. Wellington, NZ: N. Z. Dep. Labour. http://www.dol.govt.nz/publications/research/mensparticipation-in-unpaid-care/participation-in-unpaid-care.pdf
- 44. Galinsky E, Eby S, Peer S. 2008. 2008 Guide to Bold New Ideas for Making Work Work. New Ideas from the 2007 Winners of the Alfred P. Sloan Awards for Business Excellence in Workplace Flexibility. New York: Fam. Work Inst.
- 45. Gatrell CJ. 2007. Secrets and lies: breastfeeding and professional paid work. Soc. Sci. Med. 65(2):393-404
- Gauderer MW, Lorig JL, Eastwood DW. 1989. Is there a place for parents in the operating room? *J. Pediatr. Surg.* 24(7):705-6
- Gdalevich M, Mimouni D, David M, Mimouni M. 2001. Breast-feeding and the onset of atopic dermatitis in childhood: a systematic review and meta-analysis of prospective studies. *J. Am. Acad. Dermatol.* 45(4):520–27
- George A, Hancock J. 1993. Reducing pediatric burn pain with parent participation. *J. Burn Care Rebabil.* 14:104–7
- Gielen AC, Faden RR, O'Campo P, Brown CH, Paige DM. 1991. Maternal employment during the early postpartum period: effects on initiation and continuation of breast-feeding. *Pediatrics* 87(3):298–305
- Gorey KM. 2001. Early childhood education: a meta-analytic affirmation of the short- and long-term benefits of educational opportunity. Sch. Psychol. Q. 16(1):9–30
- Gormley WT Jr. 2007. Early childhood care and education: lessons and puzzles. *J. Policy Anal. Manag.* 26(3):633–71
- 52. Guendelman S, Kosa JL, Pearl M, Graham S, Goodman J, Kharrazi M. 2009. Juggling work and breastfeeding: effects of maternity leave and occupational characteristics. *Pediatrics* 123:e38–46
- Haas L, Hwang P. 2008. The impact of taking parental leave on fathers' participation in childcare and relationships with children: lessons from Sweden. *Community Work Fam.* 11(1):85–104

- Hamlett KW, Pellegrini DS, Katz KS. 1992. Childhood chronic illness as a family stressor. *J. Pediatr. Psychol.* 17(1):33–47
- Hannallah RS, Rosales JK. 1983. Experience with parents' presence during anesthesia induction in children. *Can. Anaesth. Soc. J.* 30(Pt. 1):286–89
- Hanson CL, De Guire MJ, Schinkel AM, Henggeler SW, Burghen GA. 1992. Comparing social learning and family systems correlates of adaptation in youths with IDDM. *7. Pediatr. Psychol.* 17(5):555–72
- 57. Hauser ST, Jacobson AM, Lavori P, Wolfsdorf JI, Herskowitz RD, et al. 1990. Adherence among children and adolescents with insulin-dependent diabetes mellitus over a four-year longitudinal follow-up: II. Immediate and long-term linkages with the family milieu. *J. Pediatr. Psychol.* 15(4):527–42
- Hawkins SS, Griffiths LJ, Dezateux C, Law C. 2006. The impact of maternal employment on breastfeeding duration in the UK Millennium Cohort Study. *Public Health Nutr.* 10(9):891–96
- Heymann J. 2006. Forgotten Families: Ending the Growing Crisis Confronting Children and Working Parents in the Global Economy. New York: Oxford Univ. Press
- 60. Heymann J, Earle A. 2010. Raising the Global Floor: Dismantling the Myth that We Can't Afford Good Working Conditions for Everyone. Stanford, CA: Stanford Univ. Press
- Heymann J, McNeill K. 2013. Children's Chances: How Countries Can Move from Surviving to Thriving. Cambridge, MA: Harvard Univ. Press
- 62. Heymann J, Raub A, Earle A. 2011. Creating and using new data sources to analyze the relationship between social policy and global health: the case of maternal leave. *Public Health Rep.* 126(Suppl. 3):127–34
- Heymann J, Toomey S, Furstenberg F. 1999. Working parents: What factors are involved in their ability to take time off from work when their children are sick? Arch. Pediatr. Adolesc. Med. 153:870–74
- Howie P, Forsyth J, Ogston S, Clark A, Florey C. 1990. Protective effect of breast feeding against infection. BMJ 300(6716):11–16
- 65. Ip S, Chung M, Raman G, Chew P, Magula N, et al. 2007. Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries. AHRQ Publ. 07-E007. Rockville, MD: Agency Healthc. Res. Qual. (AHRQ). http://archive.ahrq.gov/downloads/pub/evidence/pdf/brfout/brfout.pdf
- Jason JM, Nieburg P, Marks JS. 1984. Mortality and infectious disease associated with infant-feeding practices in developing countries. *Pediatrics* 74:702–27
- Kagitcibasi C, Sunar D, Bekman S. 2001. Long-term effects of early intervention: Turkish low-income mothers and children. J. Appl. Dev. Psychol. 22:333–61
- Klement E, Cohern RV, Boxman J, Joseph A, Reif S. 2004. Breastfeeding and risk of inflammatory bowel disease: a systematic review with meta-analysis. *Am. J. Clin. Nutr.* 80(5):1342–52
- Kramer MS, Aboud F, Mironova E, Vanilovich I, Platt RW, et al. 2008. Breastfeeding and child cognitive development: new evidence from a large randomized trial. Arch. Gen. Psychiatry 65(5):578–84
- Kristensson-Hallstron I, Elander G, Malmfors G. 1997. Increased parental participation on a pediatric surgical daycare unit. J. Clin. Nurs. 6:297–302
- LaGreca AM, Auslander WF, Greco P, Spetter D, Fisher EB, Santiago JV. 1995. I get by with a little help from my family and friends: adolescents' support for diabetes care. *J. Pediatr. Psychol.* 20(4):449–76
- Lannon C, Brack V, Stuart J, Caplow M, McNeill A, et al. 1995. What mothers say about why poor children fall behind on immunizations: a summary of focus groups in North Carolina. *Arch. Pediatr. Adolesc. Med.* 149(10):1070–75
- LaRosa-Nash PA, Murphy JM. 1997. An approach to pediatric perioperative care: parent-present induction. Nurs. Clin. N. Am. 32:183–99
- Léon-Cava N, Lutter C, Ross J, Luann M. 2002. Quantifying the Benefits of Breastfeeding: A Summary of the Evidence. Washington, DC: Pan Am. Health Organ. http://www.linkagesproject.org/media/ publications/Technical%20Reports/BOB.pdf
- Lepage P, Munyakazi C, Hennart P. 1981. Breastfeeding and hospital mortality in children in Rwanda. Lancet 318:409–11
- Lindberg LD. 1996. Women's decisions about breastfeeding and maternal employment. J. Marriage Fam. 58:239–51
- Ludwig J, Miller DL. 2007. Does Head Start improve children's life chances? Evidence from a regression discontinuity design. Q. J. Econ. 122:159–208

- 78. Ludwig J, Phillips D. 2007. The benefits and costs of Head Start. Soc. Policy Rep. 21:3-19
- Magnuson KA, Ruhm C, Waldfogel J. 2007. Does prekindergarten improve school preparation and performance? *Econ. Educ. Rev.* 26(1):33–51
- Mahaffy P. 1965. The effects of hospitalization on children admitted for tonsillectomy and adenoidectomy. Nurs. Res. 14:12–19
- Mandel H. 2012. Winners and losers: the consequences of welfare state policies for gender wage inequality. *Eur. Sociol. Rev.* 28(2):241–62
- Martin RM, Gunnell D, Owen CG, Davey Smith G. 2005. Breastfeeding and childhood cancer: a systematic review with meta-analysis. Int. J. Cancer 117(6):1020–31
- Math. Policy Res. 2002. Making a Difference in the Lives of Infants and Toddlers and Their Families: The Impacts of Early Head Start. Princeton, NJ: Math. Policy Res. http://www.mathematica-mpr. com/PDFs/ehsfinalsumm.pdf
- McCormick LK, Bartholomew LK, Lewis MJ, Brown MW, Hanson IC. 1997. Parental perceptions of barriers to childhood immunization: results of focus groups conducted in an urban population. *Health Educ. Res.* 12(3):355–62
- McGraw T. 1994. Preparing children for the operating room: psychological issues. Can. J. Anaesth. 41(11):1094–103
- Mortensen EL, Michaelsen KF, Sanders SA, Reinisch JM. 2002. The association between duration of breastfeeding and adult intelligence. JAMA 287(18):2365–71
- 87. Naylor AJ, Morrow A, eds. 2001. Developmental Readiness of Normal Full Term Infants to Progress from Exclusive Breastfeeding to the Introduction of Complementary Foods: Reviews of the Relevant Literature Concerning Infant Immunologic, Gastrointestinal, Oral Motor and Maternal Reproductive and Lactational Development. Washington, DC: Wellstart Int., LINKAGES Project/Acad. Educ. Dev.
- Niederhauser VP, Markowitz M. 2007. Barriers to immunizations: multiethnic parents of under- and unimmunized children speak. J. Am. Acad. Nurse Pract. 19(1):15–23
- Nepomnyaschy L, Waldfogel J. 2007. Paternity leave and fathers' involvement with their young children. Community Work Fam. 10(4):427–53
- Ong G, Yap M, Li FL, Choo TB. 2005. Impact of working status on breastfeeding in Singapore. Eur. J. Public Health 15(4):424–30
- 91. Organ. Econ. Co-op. Dev. (OECD). 2005. Babies and Bosses: Reconciling Work and Family Life. Vol. 4. Paris: OECD
- 92. Palmer SJ. 1993. Care of sick children by parents: a meaningful role. J. Adv. Nurs. 18:185-91
- Paschal AM, Maryman JV, Oler-Manske J. 2009. How can immunization coverage in urban counties be improved? A pilot study of a Kansas county. Am. J. Infect. Control 37(5):423–25
- Popul. Div. Dep. Econ. Soc. Aff. U. N. Secr. 2011. Population Distribution, Urbanization, Internal Migration and Development: An International Perspective. New York: United Nations. http://www.un.org/ esa/population/publications/PopDistribUrbanization/PopulationDistributionUrbanization.pdf
- Reynolds AJ, Temple JA, Robertson DL, Mann EA. 2002. Age 21 cost-benefit analysis of the Title I Chicago child-parent centers. *Educ. Eval. Policy Anal.* 24(4):267–303
- Richards MM, Bowers MJ, Lazicki T, Krall D, Jacobs AK. 2008. Caregiver involvement in the intensive mental health program: influence on changes in child functioning. *J. Child Fam. Stud.* 17:241–52
- 97. Robertson J. 1970. Young Children in Hospital. London: Tavistock
- 98. Ruhm CJ. 2000. Parental leave and child health. J. Health Econ. 19(6):931-60
- 99. Ruhm CJ. 2011. Policies to assist parents with young children. Future Child 21(2):37-68
- Sadauskaite-Kuehne V, Ludvigsson J, Padaiga Z, Jasinskiene E, Samuelsson U. 2004. Longer breastfeeding is an independent protective factor against development of type 1 diabetes mellitus in childhood. *Diabetes Metab. Res. Rev.* 20(2):150–57
- 101. Sammons P, Elliot K, Sylva K, Melhuish E, Siraj-Blatchford I, Taggart B. 2004. The impact of pre-school on young children's cognitive attainments at entry to reception. Br. Educ. Res. J. 30(5):691–712
- Schuster MA, Chung PJ, Elliott MN, Garfield CF, Vestal KD, Klein DJ. 2009. Perceived effects of leave from work and the role of paid leave among parents of children with special health care needs. *Am. J. Public Health* 99(4):698–705

- 103. Schuster MA, Chung PJ, Vestal KD. 2011. Children with health issues. Future Child 21(2):91–116
- Schwarz EB, Ray RM, Stuebe AM, Allison MA, Ness RB, et al. 2009. Duration of lactation and risk factors for maternal cardiovascular disease. *Obstet. Gynecol.* 113:974–82
- Seward RR, Yeatts DE, Zottarelli LK. 2002. Parental leave and father involvement in child care: Sweden and the United States. J. Comp. Fam. Stud. 33(3):387–99
- Shu XO, Clemens J, Zheng W, Ying DM, Ji BT, Jin F. 1995. Infant breastfeeding and the risk of childhood lymphoma and leukaemia. *Int. J. Epidemiol.* 24(1):27–32
- Shu XO, Linet MS, Steinbuch M, Wen WQ, Neglia JP, et al. 1999. Breastfeeding and risk of childhood acute leukemia. *7. Natl. Cancer Inst.* 91(20):1765–72
- Streatfield K, Singarimbun M. 1988. Social factors affecting the use of immunization in Indonesia. Soc. Sci. Med. 27(11):1237–45
- Taiwo AA, Tyolo JB. 2002. The effect of pre-school education on academic performance in primary school: a case study of grade one pupils in Botswana. Int. 7. Educ. Dev. 22:169–80
- 110. Tanaka S. 2005. Parental leave and child health across OECD countries. Econ. J. 115(501):F7-28
- Tanaka S, Waldfogel J. 2007. Effects of parental leave and work hours on fathers' involvement with their babies. *Community Work Fam.* 10(4):409–26
- 112. Taylor MR, O'Connor P. 1989. Resident parents and shorter hospital stay. Arch. Dis. Child 64:274-76
- 113. UNESCO. 2006. Education for All Global Monitoring Report 2007: Strong Foundations: Early Childhood Care and Education. Paris: UNESCO
- UNICEF. 2012. Inequities in Early Childbood Development: What the Data Say. New York: UNICEF. http://www.unicef.org/publications/files/Inequities_in_Early_Childbood_Development_LoRes_ PDF_EN_02082012.pdf
- UNICEF. 2012. Multiple Indicator Cluster Surveys 3. New York: Childinfo/UNICEF. http://www. childinfo.org/mics3_surveys.html
- UNICEF, World Health Organ. (WHO). 2006. Pneumonia: The Forgotten Killer of Children. New York and Geneva: UNICEF/WHO. http://whqlibdoc.who.int/publications/2006/9280640489_eng.pdf
- 117. Waldfogel J, Higuchi Y, Abe M. 1999. Family leave policies and women's retention after childbirth: evidence from the United States, Britain, and Japan. *J. Popul. Econ.* 12:523–45
- Waldfogel J, Zhai F. 2008. Effects of public preschool expenditures on the test scores of fourth graders: evidence from TIMSS. *Educ. Res. Eval.* 14(1):9–28
- Watkins CJ, Leeder SR, Corkhill RT. 1979. The relationship between breast and bottle feeding and respiratory illness in the first year of life. *J. Epidemiol. Community Health* 33(3):180–82
- Wolman C, Resnick MD, Harris LJ, Blum RW. 1994. Emotional well-being among adolescents with and without chronic conditions. *Adolesc. Med.* 15(3):199–204
- World Bank. 2001. Brazil Early Childhood Development: A Focus on the Impact of Preschools. Report no. 22841-BR. Washington, DC: World Bank
- 122. World Bank. 2002. World Development Indicators 2002. Washington, DC: Int. Bank Reconstr. Dev./World Bank. http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2002/10/ 12/000094946_0210120412542/Rendered/PDF/multi0page.pdf
- 123. World Bank. 2012. World Development Indicators Online. Washington, DC: World Bank. http://data. worldbank.org/data-catalog/world-development-indicators
- 124. World Health Organ. (WHO). A Critical Link: Interventions for Physical Growth and Psychological development: A Review. Geneva: WHO. http://apps.who.int/iris/bitstream/10665/66677/1/WHO_ CHS_CAH_99.3.pdf
- 125. World Health Organ. (WHO). 2011. Exclusive Breastfeeding for Six Months Best for Babies Everywhere: Statement. Geneva: WHO. http://www.who.int/mediacentre/news/statements/2011/breastfeeding _20110115/en/index.html
- Wright A, Holberg C, Martinez F, Morgan W, Taussig L. 1989. Breast feeding and lower respiratory tract illness in the first year of life. *BMJ* 299(6705):946–49
- 127. Yimyam S, Morrow M. 2003. Maternal labor, breast-feeding, and infant health. In *Global Inequalities at Work*, ed. J Heymann, pp. 105–35. New York: Oxford Univ. Press

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