

Gupta, Nabanita Datta; Jessen, Jonas

Article

Maternity leave versus early childcare – What are the long-term consequences for children?

IZA World of Labor

Provided in Cooperation with:

IZA – Institute of Labor Economics

Suggested Citation: Gupta, Nabanita Datta; Jessen, Jonas (2023) : Maternity leave versus early childcare – What are the long-term consequences for children?, IZA World of Labor, ISSN 2054-9571, Institute of Labor Economics (IZA), Bonn, <https://doi.org/10.15185/izawol.438.v2>

This Version is available at:

<https://hdl.handle.net/10419/274646>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Maternity leave versus early childcare—What are the long-term consequences for children?

Despite increasingly generous parental leave schemes their advantages over subsidized childcare remain unclear

Keywords: publicly subsidized child care, maternity leave schemes, long-term outcomes

ELEVATOR PITCH

There is growing agreement among parents in high-income countries that having a working mother does not harm a preschool child. Yet, research is ongoing on what the long-term effects on children are of being looked after at home (primarily by their mothers) or in childcare. Most studies find positive effects of childcare on child outcomes for children from disadvantaged backgrounds and moderate effects for children from more advantaged backgrounds. Policymakers need to improve compensation and the working environment for the sector if a high quality level is to be achieved and if the beneficial effects are to be maintained.

KEY FINDINGS

Pros

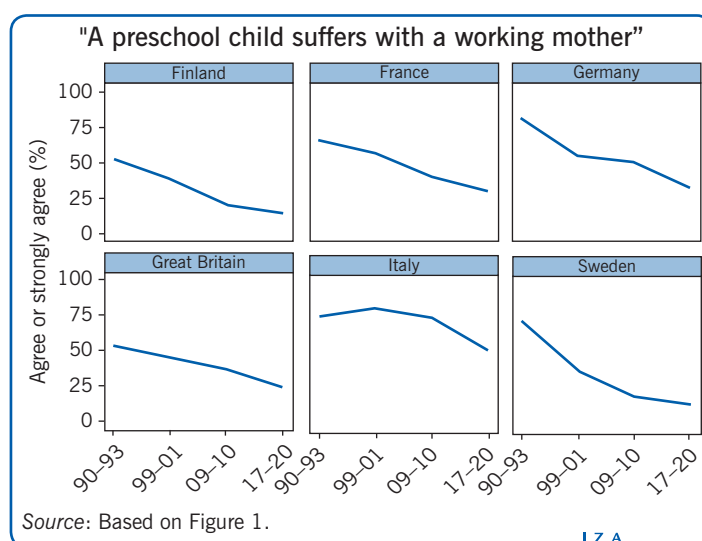
- + Maternity leave expansions have positive effects on child outcomes compared to informal care.
- + Formal childcare expansions have positive effects on cognitive and non-cognitive outcomes for children from disadvantaged backgrounds.
- + Mothers' time spent on engaging in parenting activities is not reduced strongly when their children attend formal childcare.
- + Most European countries now agree that having a working mother does not harm a preschool child.
- + Information provision, transparent and impartial selection criteria, and progressive fees can lower enrolment gaps.

Cons

- Maternity leave expansions have little effect on child outcomes compared to formal care.
- Formal childcare expansions have moderate effects on outcomes of children from advantaged backgrounds.
- The quality of childcare programs matters, inadequate quality can produce negative effects.
- More research is needed on ideal hours of attendance, ideal starting age, and quality level.
- Large enrolment gaps exist in childcare by education level, also in settings with universal childcare.

AUTHOR'S MAIN MESSAGE

Governments should subsidize universal formal childcare, both to meet labor demands in aging societies and to help develop important skills during the critical early years of a child's life. Such investments generate substantial long-term returns in educational and employment outcomes, but are most apparent for children from low and middle socio-economic backgrounds. However, care must be taken to counter any deterioration in non-cognitive skills associated with increased time in childcare, and broad-based societal acceptance and support are necessary to ensure that childcare provision is of sufficiently high quality.



MOTIVATION

The African proverb “It takes a village to raise a child” implies a shared responsibility of the parents, the community, and society for developing a child’s full potential. To optimally stimulate a child, the expertise of several actors/caregivers needs to be pooled, not just the child’s parents. This should balance out the impacts of having less-able parents. Yet, many countries choose to invest mainly in supporting parental leave schemes rather than public childcare during early childhood. These leave schemes are taken up mainly by mothers, implying a single caregiver model. Such a model entails greater risk and a more limited learning environment, especially if the mother is low-educated, and could potentially lead to insufficient investment during a child’s early years. On the other hand, a period of infant–parent attachment is essential for developing a secure socio-emotional foundation.

Excellent reviews of the ever-growing literatures both on the effects of formal childcare and of maternity leave on child development are available. By examining a wide number of studies on the long-term effects of maternity leave schemes and childcare expansions this article sheds light on the long-term education and labor market effects on children of alternative care arrangements in early childhood in high-income countries.

DISCUSSION OF PROS AND CONS

In theory, investments in formal, high-quality early childhood care and education (ECCE) should produce substantial long-term benefits. First, because the receptivity of the brain is at its highest during infancy, and second, because skill acquisition has been shown to be a dynamic, self-productive and cumulative process; skills beget skills. Early evidence on the long-term benefits of ECCE originated from programs targeted specifically toward children from disadvantaged backgrounds and the long-term returns include decreased crime and increased earnings as adults. There was skepticism, however, as to whether universal formal childcare programs, that is programs available to all children, would yield similarly high returns, as children from middle- and high-income families are likely to have better counterfactual care environments. On the positive side, public support for these programs may be higher and universal childcare could also reduce early segregation of children which would close off the channel of positive peer effects for disadvantaged children. A wider array of evidence on effects of universal childcare programs on child development has emerged in recent years. With an adequate quality of care, most studies find positive effects on various measures of child development, with positive effects typically being more pronounced for children from disadvantaged backgrounds.

An alternative to providing subsidized childcare is to pay parents to stay home as caregivers. Over time, countries have expanded both maternity and, increasingly, paternity leave schemes and some have even adopted cash-for-care policies (e.g. in Finland (since 1985) and Norway (since 1998), both still exist today). Generally, the payment is flat-rate and rather low, and therefore the take-up is mainly by low-educated mothers. Sweden and Germany also adopted such policies for children under the age of three when not in public childcare, in 2008 and 2013 respectively, but they were discontinued after a few years. In response to a growing shortage of childcare workers, cash-for-care policies are reemerging in some settings. The municipality of Viborg in Denmark began a cash-for-care scheme from January 1, 2022 where either parent can be compensated 2,500 kr (€336) per month per child for up to three children in the age group 24 weeks to 2 years

and 11 months. In most countries, maternity leave schemes are now unconditional and are, in theory, designed to allow for a smooth transition from paid maternity leave to public childcare. Recent years have also seen an expansion of earmarked parental leave for fathers, with an EU directive (2019/1158) establishing a right to at least ten working days of paternity leave having come into effect in August 2022.

Early reliable evidence of both maternity leave and early childcare and their effects on children mostly originates from Scandinavia because of their early adoption of these programs and due to the availability of population register data that follows entire cohorts of children and their families over decades. In fact, the Scandinavian countries have for years been expanding and financing universal childcare *and* supporting long and generous maternity leave schemes, whereas in many other countries the correlation between spending on parental leave and childcare is negative, suggesting a policy trade-off. Fortunately, in recent years many well-identified studies using rich data sources from a large set of countries have been published allowing researchers to paint a comprehensive picture of these policies effects in various settings.

Effects of maternity leave expansions

In 1990, paid and job-protected leave for mothers was extended by 12 months in Austria. The extension was unusually large and take-up almost universal. As is common for parental leave policies, eligibility for the extended benefits depends on a sharp cut-off date, allowing for a comparison of children born just before to those born just after the cut-off with a regression discontinuity design. Using rich administrative data, a 2020 study analyzes educational, labor market, and health outcomes of children in the long term (ages 17–23) [1]. While health of children is positively affected, the study finds no effects on educational (PISA scores and high track attendance) or labor market outcomes (employment and wages). There are no variations by socio-economic status (SES) or gender; but, interestingly, all outcomes are positively affected when the counterfactual mode of care is informal (mostly grandparents) rather than formal childcare.

Comparable evidence comes from a maternity leave expansion in 1977 that introduced paid maternity leave for the first time in Norway (paid leave increased from zero to four months and unpaid leave rose from three to 12 months) [2]. The study finds a reduction in the dropout rate from high school and a 5% increase in wages at age 30 among the affected children. These effects are stronger for children whose mothers had less than ten years of education. Importantly, maternal income remained the same while maternal time spent with the child increased. As in the study from Austria, the positive effects are identified in a setting when the counterfactual arrangements are largely informal such as friends, relatives, or unlicensed caregivers.

In 1984, the Danish government increased birth-related leave by almost 50%, from 14 to 20 weeks. A study compares outcomes of children born two months before and two months after this reform [3]. Results show no significant differences in reading scores, the probability of high school enrolment, or high school grade point average between these groups. The author discusses some reasons for the non-findings: (i) the counterfactual type of care to parental care in Denmark is high-quality childcare; (ii) less pressure on the childcare system may have meant better conditions for those attending it; (iii) parents

make compensating investments—for instance, giving more of their time (by cutting down on leisure time, say) or effort (“quality time”) or even more purchased goods to a child who attends daycare, so that child outcomes are the same regardless of care type.

At the end of 2000, maternity leave in Canada was extended by about half a year in the first year of a child’s life. While the extension had no measurable development effects on children in the first two years of their lives, a follow-up study examines effects on children at ages four and five using the Peabody Picture Vocabulary Test - Revised (PPVT-R) and Number Knowledge Test as well as non-cognitive indicators to assess the effects on both cognitive and behavioral outcomes [4]. The study finds statistically insignificant or even small negative effects on cognitive skills and no effects on behavioral measures. These findings stand in contrast to most findings from the literature and the authors argue that, as suggested by developmental psychology, the second six months of a child’s life may be critical for some developmental milestones and separation from a mother at this age may be harmful.

This proposed explanation points toward the importance of analyzing maternity leave extensions at different child ages, ideally within the same country. In Germany, three major maternity leave policy changes were enacted in 1979, 1986, and 1992, which increased the length of leave from two to six months, from six to ten months and, later, from 18 to 36 months (increases from ten to 18 months took place in-between). Extensions within the first year but also at older ages can therefore be examined using the same data and identification strategy. A study evaluating these three reforms estimates difference-in-differences models [5]; it does not find significant positive effects on children’s long-term outcomes for any of the reforms with respect to choice of school track, the probability of completing high school, wages, or years of employment. In fact, the third reform actually showed detrimental effects on children in terms of educational attainment. The study further brings evidence from the German Time Use Survey, indicating that when mothers work during a child’s infancy they do not reduce the time spent caring for children; instead, they reduce their leisure and household activities.

Taken together, the evidence of maternity leave expansions points toward mixed effects when considering children’s educational or labor market outcomes in the medium to long term, as hardly any beneficial effects in terms of child development are found after the first six months. The introduction of a short paid or unpaid leave, however, can improve child outcomes in both the short and long term. But longer expansions may even be harmful for child development, especially for children from disadvantaged backgrounds. When the counterfactual mode of care is informal and of lower quality, effects are more likely to be positive. Zero effects may arise because parents tend to take time away from other activities to spend more time with their children.

Effects of childcare expansions

A study from Denmark links daycare registers to educational registers to investigate the effects of enrolment in different types of non-parental childcare on academic achievement in the final school-leaving year [6]. It uses entire birth cohorts of ethnic Danish children, enrolled in either formal center-based daycare or the more informal family daycare at age two and exploits the right to access to preschool in some municipalities. In Denmark, both types of care are regulated with respect to safety, nutritional guidelines, playing facilities,

health, and hygiene. However, while staff at centers hold a pedagogical degree (15–16 years of education), family daycare givers typically have either a vocational degree or high school or less education. Centre-based daycare improved grades in Danish language in the final year of compulsory school by 0.2 standard deviations, but had no effect on Mathematics scores. In terms of parent SES, the results show that effects were strongest among children of low SES backgrounds, but even children of high SES backgrounds benefited from attending formal center-based care rather than informal family daycare. Additionally, boys gained consistently more than girls.

A study from Norway uses childcare assignment lotteries to estimate the effects of enrolment at ages one to two on cognitive development [7]. Measured at age seven, the authors find that children who received an assignment offer achieved higher test scores in language and mathematics of 0.14 standard deviations and were less likely to score below a certain threshold. Children from lower SES backgrounds, measured by parental education or family income, benefit much more, but results are positive for all subgroups considered in the analysis. As in the study from Denmark, boys experience larger positive effects. An appealing feature of the study is that it can use the assignment lottery in an instrumental variable estimation as the authors have information on the exact age of childcare enrolment. Through this they calculate the effect of starting childcare one month earlier, which increases test scores by 0.04 of a standard deviation on average.

Due to early expansions and rich administrative data much of the evidence on universal childcare regimes originated from Scandinavian countries. Fortunately, the evidence base has expanded substantially in recent years. A German study analyses the effects of an expansion of early childcare (zero to two years) on children's motor and socio-emotional skills [8]. Exploiting differential timing in expansion by school districts, the authors use a marginal treatment effects (MTE) framework to assess how outcomes at mandatory medical assessments before entering primary school were affected. The study finds that boys benefit more than girls, leading them to catch up in their language, motor, and socio-emotional development. Immigrant children also catch up in terms of language skills and children from lower-educated families benefit in their socio-emotional development. The findings highlight that a large set of skills ought to be considered when evaluating the efficacy of a given program or policy, as different groups may be affected differently. The study does not find any subgroups for which negative effects are identified, and early childcare in this setting has an equalizing effect.

Many studies document more positive effects for disadvantaged children; an often-proposed mechanism is the worse counterfactual environment at home, though the precise mechanisms commonly remain a black box and are largely suggestive. A study from Japan analyzing an expansion of childcare slots for two- and three-year-olds sheds light on this concept, as the authors not only observe child outcomes, but also information on parenting activities and indicators of parental well-being [9]. Childcare enrolment reduces inattention and hyperactivity among children of lower-educated mothers. As children from higher-educated mothers are not affected, this leads to a complete elimination of gaps by maternal education, which are prevalent when children are not enrolled. In a second step, the study documents effects on parents' outcomes. Parenting of higher-educated mothers is not affected by childcare, but for lower-educated ones an index of parenting quality increased by 0.501 standard deviations, which strongly reduces the gap in parenting quality by education. A driver of better parenting quality could be

lower stress and higher subjective well-being, where effects are again stronger for lower-educated mothers. These findings are in line with research from Germany analyzing the effects of childcare usage on parenting activities using time-use data [10]. It finds that while mothers' time with their child is strongly reduced, the effect on time spent engaging in parenting activities is quite small, as mothers compensate for the reduced overall time they spend with their children when they are attending formal childcare with more direct engagement at other hours of the day.

It appears that childcare often has positive effects for children from disadvantaged backgrounds for a range of cognitive and non-cognitive outcomes. At the same time, effects are more moderate for high-SES children, who are likely to be in more formal, higher-quality arrangements when not attending childcare.

Universal childcare does not always produce positive outcomes

While many studies report positive or null findings for effects of childcare on children's development, there is also evidence that, at least for some subgroups, both cognitive and non-cognitive outcomes can be harmed by childcare. A study from Denmark finds that child behavior at age seven (measured along the Strength and Difficulties Questionnaire, resulting from experiencing high-quality center-based daycare at age three is neutral compared to maternal care, while children experiencing informal daycare display worse behavior than those in maternal care, which indicates that informal, lower-quality arrangements might be more likely to negatively affect child development [11]. This result is driven by boys and children of low-educated mothers.

Several studies have examined the large-scale formal childcare expansion in Québec which led many mothers of preschool children to enter the labor market. A study from 2019 considers not only short-term outcomes (before entering school) but also analyzes longer-term effects to check whether effects identified at young ages in earlier studies persist up to age 20 [12]. The authors find that negative short-term effects on non-cognitive skills are highly persistent and that children from cohorts in Québec with larger formal childcare available score substantially worse in terms of anxiety and aggression, and also experience reductions in prosocial behavior during teenage years. This effect was driven mainly by boys, for whom they saw increased criminal behavior and worsened self-reported health, which increased with the “dosage” received—that is, the number of years of exposure to the childcare program. The study, however, does not report heterogeneous long-term effects by parental SES. An important dimension for interpretation is that the childcare expansion in Québec had strong effects on maternal labor supply. This contrasts with the Scandinavian expansions where most mothers were already in the labor market or with Germany where labor market effects were more muted. The hours spent in childcare also increased substantially for children in Québec compared to the rest of Canada. Both aspects may make negative effects more likely.

A study from Bologna, Italy, uses admission thresholds to analyze the effects of daycare attendance at ages zero to two for a relatively affluent population [13]. The authors find that one additional month in daycare reduces children's IQ at ages eight to 14 by 0.047 standard deviations and also negatively impacts the Big Five, a set of basic personality traits which are relatively stable throughout adulthood. In contrast to the findings from Québec, the negative

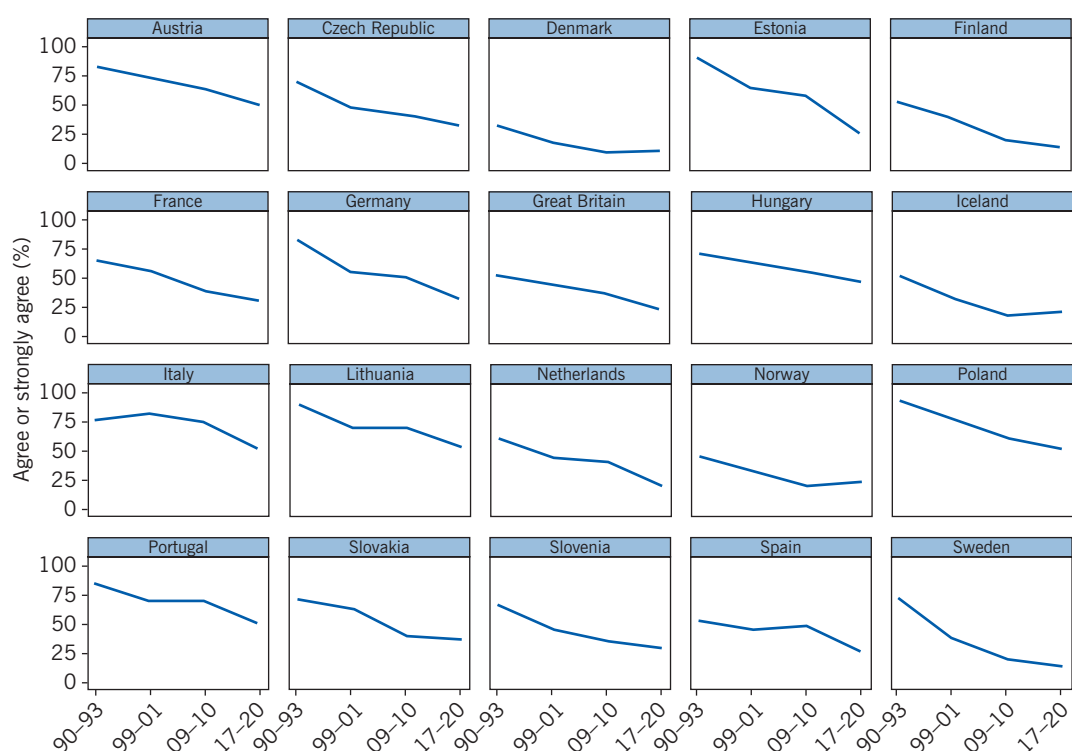
effects are stronger for girls. The study argues that the reduction in one-to-one interactions in childcare can be especially problematic for children from advantaged backgrounds where those interactions in counterfactual care modes are arguably of higher quality.

The two latter studies examine childcare in settings where it is of low quality compared to evidence from many other European countries. In Québec, childcare was assessed to be of only “minimal quality” in 60% of childcare centers; for children from low-income families especially, educational activities were largely insufficient. In Bologna the adult-to-child ratio was very low in comparison to studies identifying more beneficial effects and the authors emphasize that attention should be paid to this quality dimension as more direct interactions are especially important for younger children. The evidence thus seems to suggest that the quality of the childcare program being offered matters substantially and that inadequate quality is more likely to produce negative effects on child development.

Not a question of “if” but of “how and when”

For a long time, the main question for parents regarding childcare was whether their child should enter childcare or not. In light of historically lower female—especially maternal—labor force participation rates and more conservative gender norms, childcare was often viewed as an option for parents—potentially for the benefit of children—but not essential,

Figure 1. Perception that a preschool child suffers with a working mother



Note: Share of respondents agreeing or strongly agreeing to the statement that a preschool child suffers with a working mother. Years shown correspond to the “survey waves” of the European Values Survey.

Source: Authors’ own compilation using data from European Values Study. Online at: <https://europeanvaluesstudy.eu/>

and childcare provision was low in many countries. This has shifted dramatically in recent decades. Figure 1 shows the share of respondents agreeing to the statement that a preschool child suffers with a working mother. Albeit on different levels, the share agreeing has declined dramatically since the early 1990s across all countries. To enable maternal employment and to reconcile work and family life for both parents, childcare provision is now often a fundamental requirement. Thus, many parents now face different key questions in this regard: (i) For how many hours should childcare be used? (ii) What is the ideal starting age? And (iii) What constitutes adequate childcare quality?

Evidence on the right intensity, that is, the number of hours per day, of childcare and its effect on child development is still relatively scarce. Naturally, some hours are necessary in order to reap the beneficial effects on learning outcomes and to get a chance to bond with the caregiver, be it the mother or a non-family caregiver. On the other hand, spending many hours in out-of-home care has been shown to have certain negative consequences for children, such as higher stress levels. Indeed, evidence from the German expansion of full-day childcare suggests negative effects of long hours on socio-emotional development. Similarly, few studies have investigated the optimal starting age of childcare. The Norwegian study discussed above finds significant gains associated with starting childcare at a younger age [7]. Yet, longer-term evidence on this question and for settings outside of Scandinavia are still.

What quality is necessary to provide a beneficial environment for children (of all backgrounds)? While quality is a multi-dimensional concept and many potential indicators (e.g. child-to-staff ratios, skill requirements, pedagogical concepts, process quality, etc.) are difficult to compare across countries, studies that produce negative outcomes for children often score low on at least some of those dimensions. Some studies from Denmark and Norway analyze the effects of structural quality of care (e.g. child-to-staff ratios, caregiver qualifications) on child development and identify a positive relationship. Evidence on process quality is even scarcer, but a large-scale randomized controlled trial from Denmark finds that a low-cost intervention targeted at caregiver-child interactions resulted in pronounced positive effects on language and mathematics skills. So, the scant evidence existing to date points toward the importance of both structural and process quality.

Quality indicators vary strongly across countries, for example, child-to-staff ratios range from 3.0 in Iceland to 13.9 in Hungary. To date it has not been well-established what thresholds are required to produce positive child outcomes, and clearly these are also likely to differ across settings and child background. Yet it seems evident that rapid childcare expansions at the expense of quality (as in Québec) are likely to be a bad deal, as this is more likely to hinder child development.

Enrolment gaps by family background

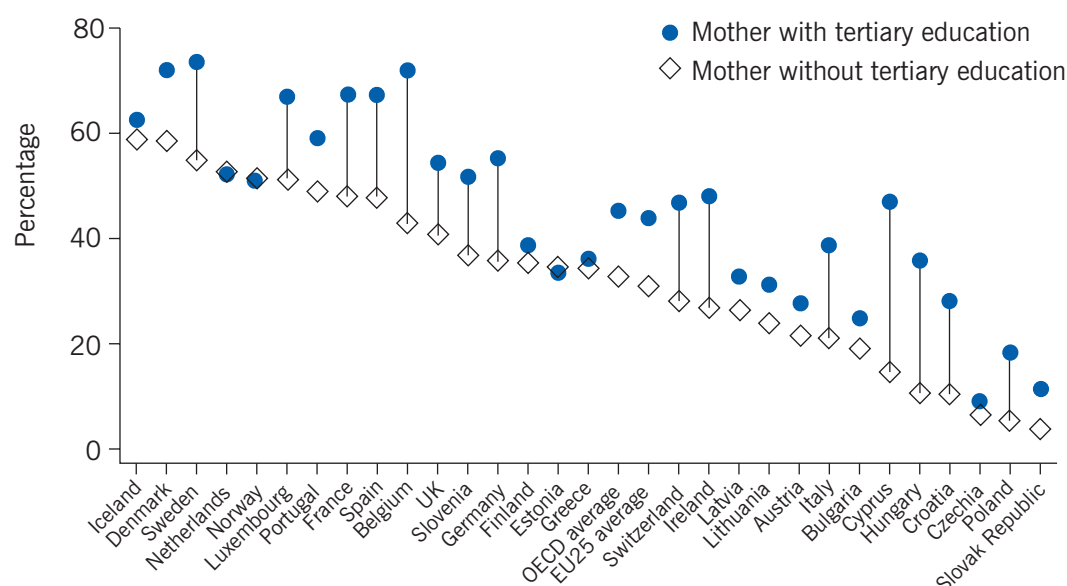
Many studies find stronger positive effects of childcare usage for children from disadvantaged family backgrounds, which is mostly measured by maternal/parental education, but sometimes also by immigrant background or family income. Figure 2 shows enrolment rates for children aged zero to two years by maternal tertiary education for OECD countries (the relationship by household income looks comparable). With a few exceptions, large enrolment gaps by education exist in many countries and, as indicated by the range plots,

most of these differences are significant. Interestingly there is no clear link between the average level of enrolment and the gap by maternal education, which implies that an expansion of childcare provision would not necessarily be accompanied by a reduction in enrolment differences by education.

Because children who benefit more from childcare are commonly less likely to be enrolled, in several countries many early childcare systems are universal only in name leading to substantial interest in understanding why such enrolment gaps by family background exist. A 2020 study from Germany considers demand- and supply-side factors to analyze why children from lower-educated parents or parents with a migrant background are less likely to be enrolled in early childcare [14]. Accordingly, differences by demand are small and explain, if anything, only a small share of the gap. An expansion of provision and a fee reduction strongly reduce the enrolment gap by parental education. However, these measures do not close the gap by migration background. Both quality concerns and discrimination could potentially play a role to explain this gap. Other work shows experimentally that behavioral barriers play a stronger role for disadvantaged families as they may be insufficiently informed about childcare and the application system; providing better information can thus help to reduce the gap.

Drivers of enrolment gaps and solutions to close them are strongly context-specific, but policymakers can help to ensure that childcare systems get closer to being truly universal. Information provision, an impartial application system, and transparent selection criteria in the case of over-demand, and a progressive fee structure (or an abolishment of fees) can all be measures that are likely to result in lower enrolment gaps by family background, ensuring that those children who benefit the most have at least an equal chance to participate in the formal early education system.

Figure 2. Enrolment rates of children aged 0–2 years by maternal education



Note: Range plot indicates that the difference in enrolment by maternal education is statistically significant at the 5% level. Correlation coefficient between education gap and average enrolment (p-value): 0.181 (0.331).

Source: Authors' compilation based on data from the OECD Family Database. Online at: <https://www.oecd.org/els/family/database.htm>

LIMITATIONS AND GAPS

While evidence on the long-term effects of early childcare (formal or more informal) versus maternal care is emerging from various settings, hardly any study is able to examine policy changes that affect each type of care within the same context using multiple treatment analysis methods. Examining each type of policy intervention and interactions between them in the same setting remains a fruitful avenue for future research.

In terms of other outcomes, scant evidence exists on the effects of alternative care arrangements on children's socio-emotional development and the development of soft skills as well as on children's health and physical development in the long term. Furthermore, while most studies concentrate on whether or not children attend a certain type of care in early childhood, few closely examine the quality of that care, although quality has been found to be the most critical factor according to a metastudy. Causal studies on both structural quality characteristics (e.g. staff-to-child ratios, group sizes, physical space, caregiver training, educational activities, etc.) and process quality (the quality of the day-to-day experiences of the child and its interaction with caregivers) are needed. Especially, data on process quality is scarce and ideally researchers would be able to analyze variation in quality of care in otherwise similar institutional and socio-economic contexts to isolate the effects of quality on child development in the short and long term.

Moreover, it may not be the quality of preschool itself but rather the quality of the child's peers that determines long-term outcomes. Similarly, when children are looked after at home by their parents, they may tend only to be exposed to other children from the same neighborhood and SES level. Universal programs change the composition of a child's peers and encourage interactions between low-SES kids and children from higher SES backgrounds, leading to more positive spillovers than with targeted programs. More evidence is needed from experiments that can change the peer group composition while keeping the program content fixed to be able to tease apart which feature is more important for long-term outcomes.

Finally, rather than looking at the overall effect of these interventions as a one-size-fits-all approach, much more needs to be known about the potential heterogeneous impacts of universal childcare. For instance, many previous studies report substantial heterogeneity by family income and gender, and while there is agreement on the former (i.e. low-income families show the strongest effects), the results relating to gender are mixed, depending on the quality of out-of-home care and the outcome being studied. Similarly, many knowledge gaps exist with regard to the effects of parental leave. While this article has focused on maternity leave, an interesting avenue for future research is the effects of paternity leave on child development.

SUMMARY AND POLICY ADVICE

OECD countries were spending on average US\$15,388 per child on parental leave schemes in 2017. The average duration of total paid leave available to mothers in the OECD (EU) in 2020 was 51.5 (63.5) weeks, while for fathers 8.7 (7.1) weeks of paid leave were reserved. OECD countries were also spending an average of US\$5,200 in purchasing power parity (PPP) terms per child below the age of five on ECCE (formal center-based daycare services plus formal family daycare and pre-primary education services). In contrast, the Scandinavian countries (and Luxembourg) all spend more than US\$ PPP 10,000 on ECCE in addition to having comparatively generous parental leave schemes.

The Scandinavian countries have for decades invested in publicly subsidized universal high-quality childcare programs offering formal center-based care. Evaluations of the types of programs discussed here show that they achieve significant long-term gains for the exposed/enrolled children's academic performance, college attendance, labor market participation, and wages. Furthermore, several other studies have shown that universal childcare provision reduces SES differences, enhances intergenerational mobility, and can better equip children for starting public school.

Can these results be extrapolated to settings where the predominant form of care is maternal? Several reasons point to this being possible: when the care is high quality, a universal program may have significant long-term benefits for children from disadvantaged backgrounds, and may be at least equal to maternal care for children from advantaged backgrounds. However, an essential ingredient seems to be widespread societal acceptance of such a model, so that public financing for a high-quality offering can be assured.

As female labor force participation continues to rise (and is critically needed in aging societies), the predominant type of care for small children during the day is increasingly non-parental care. Furthermore, as many countries see larger inflows of migrant families, children from ethnic or low SES backgrounds could benefit substantially from high-quality early childcare, which has been shown to promote good language skills at an early age, thereby leading to a narrowing of achievement gaps. This may help contribute to improved intergenerational mobility among the most vulnerable population segments in many societies.

Additionally, although children of highly-educated parents may benefit just as much in terms of their cognitive development by staying at home with their parent as from attending high-quality childcare, a universal care system can better equip them for handling diversity later in life. All factors considered, the recommendation for policymakers is thus to invest more in universal, high-quality, subsidized childcare for all children, rather than extending maternity leave schemes.

In a post-pandemic world, a shortage of daycare workers in many settings has led to a renewal of the discussion of maternity leave expansions and cash-for-care schemes. Policymakers need to improve compensation and the working environment for the sector to ensure a high quality level can be maintained.

Acknowledgments

The authors thank an anonymous referee and the IZA World of Labor editors for many helpful suggestions on earlier drafts. Version 2 of the article significantly updates the text, figures, and references.

Competing interests

The IZA World of Labor project is committed to the IZA Code of Conduct. The authors declare to have observed the principles outlined in the code.

© Nabanita Datta Gupta and Jonas Jessen

REFERENCES

Further readings

Canaan, S., A. Lassen, P. Rosenbaum, and H. Steingrimsdottir. “Maternity leave and paternity leave: Evidence on the economic impact of legislative changes in high income countries.” In: *The Oxford Research Encyclopedia of Economics and Finance*. Oxford: Oxford University Press, Forthcoming.

Duncan, G., A. Kalil, M. Mogstad, and M. Rege. “Investing in early childhood development in preschool and at home.” In: Hanushek, E. A., S. Machin, and L. Woessmann (eds). *Handbook of the Economics of Education*. Amsterdam: Elsevier, 2023.

Key references

- [1] Danzer, N., M. Halla, N. Schneeweis, and M. Zweimüller. “Parental leave, (in)formal childcare and long-term child outcomes.” *Journal of Human Resources* 57:6 (2022): 1826–1884.
- [2] Carneiro, P., K. V. Løken, and K. G. Salvanes. “A flying start? Maternity leave benefits and long-run outcomes of children.” *Journal of Political Economy* 123:2 (2015): 365–412.
- [3] Rasmussen, A. W. “Increasing the length of parents’ birth-related leave: The effect on children’s long-term educational outcomes.” *Labour Economics* 17:1 (2010): 91–100.
- [4] Baker, M., and K. Milligan. “Maternity leave and children’s cognitive and behavioral development.” *Journal of Population Economics* 28:2 (2015): 373–391.
- [5] Dustmann, C., and U. Schönberg. “Expansions in maternity leave coverage and children’s long-term outcomes.” *American Economic Journal: Applied Economics* 4:3 (2012): 190–224.
- [6] Datta Gupta, N., and M. Simonsen. “Academic performance and type of early childhood care.” *Economics of Education Review* 53 (2016): 217–229.
- [7] Drange, N., and T. Havnes. “Early childcare and cognitive development: Evidence from an assignment lottery.” *Journal of Labor Economics* 37:2 (2019): 581–620.
- [8] Felfe, C., and R. Lalive. “Does early child care affect children’s development?” *Journal of Public Economics* 159 (2018): 33–53.
- [9] Yamaguchi, S., Y. Asai, and R. Kambayashi. “How does early childcare enrollment affect children, parents, and their interactions?” *Labour Economics* 55 (2018): 56–71.
- [10] Jessen, J., C. K. Spieß, and S. Waights. “Centre-based care and parenting activities.” *Oxford Bulletin of Economics and Statistics* 84:6 (2022): 1356–1379.
- [11] Datta Gupta, N., and M. Simonsen. “Non-cognitive child outcomes and universal high quality child care.” *Journal of Public Economics* 94:1–2 (2010): 30–43.
- [12] Baker, M., J. Gruber, and K. Milligan. “The long-run impacts of a universal child care program.” *American Economic Journal: Economic Policy* 11:3 (2019): 1–26.
- [13] Fort, M., A. Ichino, and G. Zanella. “Cognitive and noncognitive costs of day care at age 0–2 for children in advantaged families.” *Journal of Political Economy* 128:1 (2020): 158–205.
- [14] Jessen, J., S. Schmitz, and S. Waights. “Understanding day care enrolment gaps.” *Journal of Public Economics* 190 (2020).

Online extras

The **full reference list** for this article is available from:

<https://wol.iza.org/articles/maternity-leave-versus-early-childcare-what-are-the-long-term-consequences-for-children>

View the **evidence map** for this article:

<https://wol.iza.org/articles/maternity-leave-versus-early-childcare-what-are-the-long-term-consequences-for-children/map>