



EARLY CHILDHOOD IN ISRAEL

Selected Research Findings

Taub Center Initiative on Early Childhood Development and Inequality

Jerusalem, September 2021

This publication was prepared through the generous support of the Beracha Foundation, the Bernard van Leer Foundation, and Yad Hanadiv



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Taub Center for Social Policy Studies in Israel

The Taub Center was established in 1982 under the leadership and vision of Herbert M. Singer, Henry Taub, and the American Jewish Joint Distribution Committee (JDC). The Center is funded by a permanent endowment created by the Henry and Marilyn Taub Foundation, the Herbert M. and Nell Singer Foundation, Jane and John Colman, the Kolker-Saxon-Hallock Family Foundation, the Milton A. and Roslyn Z. Wolf Family Foundation, and the JDC.

The Taub Center is an independent, nonpartisan, socioeconomic research institute based in Jerusalem. The Center conducts quality, impartial research on socioeconomic conditions in Israel, and develops innovative, equitable and practical options for macro public policies that advance the well-being of Israelis. The Center strives to influence public policy through direct communications with policy makers and by enriching the public debate that accompanies the decision making process.

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Taub Center Initiative on Early Childhood Development and Inequality

The Taub Center **Initiative on Early Childhood Development and Inequality** is tasked with examining the effects of the young child's environment on future achievements and disseminating the latest research on this subject to relevant individuals and agencies. The Initiative's goal is to assist in the advancement of effective policy to improve the environmental conditions of children in Israel during their early years of life, in order to improve their outcomes and reduce disparities due to socioeconomic background. The Initiative encourages empirical research into development and inequality among preschoolers in Israel by, among other things, creating a database that facilitates the investigation of the connection between environmental factors during early childhood and future outcomes. The researchers involved in this initiative draft up-to-date research reports, literature surveys, position papers, and policy papers. As part of its effort to disseminate the latest available knowledge, the Initiative holds an academic seminar to provide a multidisciplinary basis — both theoretical and empirical — for the investigation of early childhood. The seminar is intended primarily for civil service employees who are involved in policy making in this field. The activity of the Initiative is guided by an International Advisory Council consisting of leading academics, policy makers and members of civil society organizations who are committed to the advancement and implementation of effective policy in the area of early childhood in Israel.

The activities of the Initiative are supported by the Beracha Foundation, the Bernard van Leer Foundation, and Yad Hanadiv.

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Foreword

To a great extent, early childhood is the most formative period of life and, thus, the socioeconomic environment in which children grow up has a tremendous impact on their cognitive, social, and emotional development. This publication contains a selection of research findings from studies conducted by the **Taub Center Initiative on Early Childhood Development and Inequality**. The studies are intended to give a picture of the situation in Israel in terms of participation rates in early education frameworks, quality indicators of those settings, the influence of participation in preschool on future educational achievements, and more.

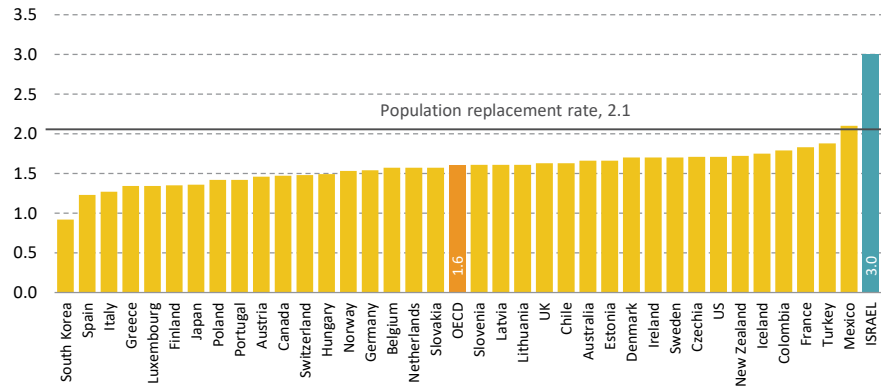
At the end of the booklet, a number of policy options are presented which are intended to improve the educational opportunities for young children in Israel and to impact their future.

“A country of children”: The total fertility rate in Israel is higher than in the other OECD countries

Israel has a lot of children. As seen in the graph, the fertility rate in Israel is higher than in the 36 OECD countries. In 2019, the total fertility rate in Israel (average lifetime number of children per woman) stood at 3.0, which is far higher than the rate required to maintain the population and double the average of 1.6 for the OECD countries.

Total fertility rate, 2019

Average number of children per woman



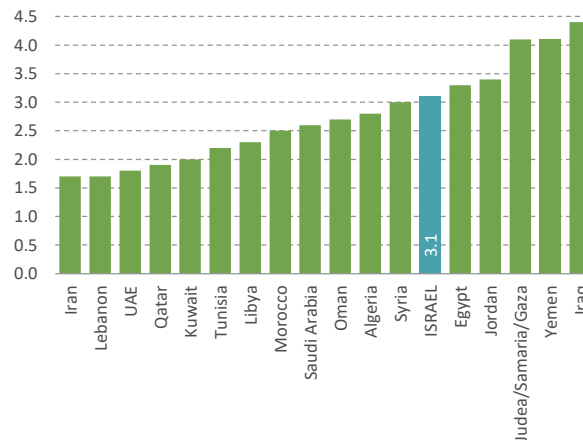
Source: [Dana Vaknin](#), Taub Center, 2020 (updated) | Data: OECD

The fertility rate in Israel is higher also relative to other Middle Eastern countries

Fertility is high in Israel not only relative to the OECD countries but also relative to its neighbors in the Middle East, such as Iran, Lebanon, the United Arab Emirates, and others. The figure shows that Israel is located between Egypt and Syria not only geographically but also with respect to fertility levels.

Total fertility rates, 2015

Middle East countries, average number of children per woman

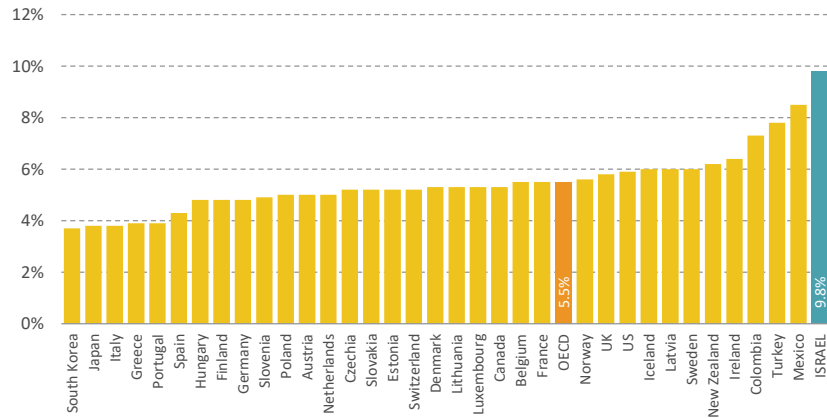


Source: [Weinreb, Chernichovsky, and Brill](#), Taub Center, 2018 | Data: US Census International Programs

10% of Israel's population is under age 4, which is double the OECD country average

Due to Israel's particularly high fertility rate, the share of young children in the population is also high. In 2020, children under the age of 4 accounted for 9.8% of the total population in Israel, as opposed to 5.5% on average in the OECD. Demand for childcare has grown in recent years, in order to enable mothers to work and due to the passing of the law for Free Compulsory Education from age 3 and the required an expansion of preschool frameworks. Many countries, including Israel, have expanded education services for young children at an unprecedented rate with children in daycare at ever-younger ages. An international comparison shows significant differences in participation rates in daycare and formal education frameworks for young children.

Share of children under 4 in the overall population in the OECD countries, 2015



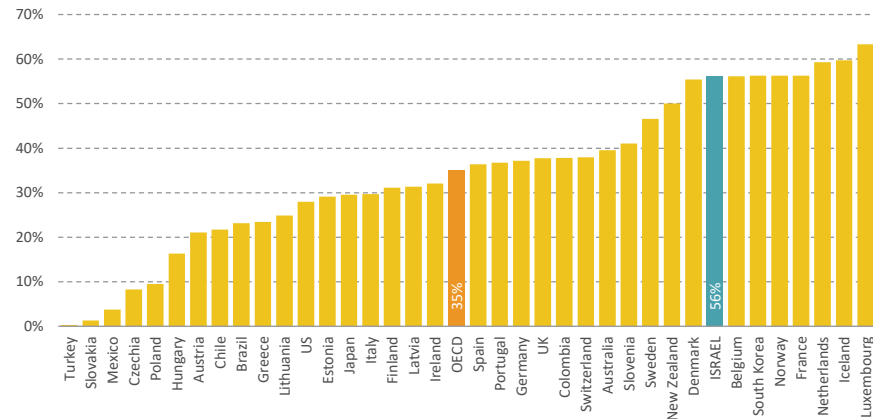
Source: [Dana Vaknin](#), Taub Center, 2020 (updated) | Data: World Populations Prospects, 2020

The participation rate of children in daycare for 0–2-year-olds is higher in Israel than the OECD average

As the figure shows, the participation rate of children ages 0–2 in an educational framework is 56% in Israel, as opposed to 35% on average for the OECD countries. The OECD countries are differentiated one from the other in the rate of participation in this age group, ranging from 10% in Turkey, Slovakia, Mexico, Czechia, and Poland to more than 45% in the Scandinavian countries (except for Finland), the Benelux countries (Belgium, Netherlands, and Luxembourg), France, South Korea, and Israel.

Enrollment rates for children under 2 in educational frameworks, 2017

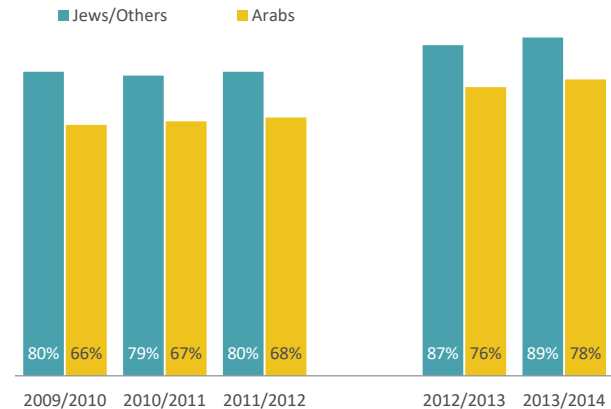
The percent enrolled out of the age cohort



Implementation of the Trajtenberg Committee recommendations for young children and the expansion of the Compulsory Education Law to age 3+ contributed to a rise in preschool enrollment rates

In 2012, following the social protests of the preceding year, the Trajtenberg Committee recommended that the government expand universal compulsory education to 3–4-year-olds. The implementation of the recommendations contributed to raising the participation rate of children in this age group in public educational frameworks, in both the Jewish and Arab sectors. The figure presents the share of 3–4-year-olds in public preschools between 2009 and 2014. It shows an increase of about 8 percentage points between 2011 and 2012 (the year preceding the implementation of the recommendations) and the years immediately following it. Among Arabs, the rate of participation grew from 68% to 78% while among Jews it grew from 80% to 89%.

Enrollment rates in ECEC frameworks, ages 3–4
Pre-kindergarten and public daycare facilities



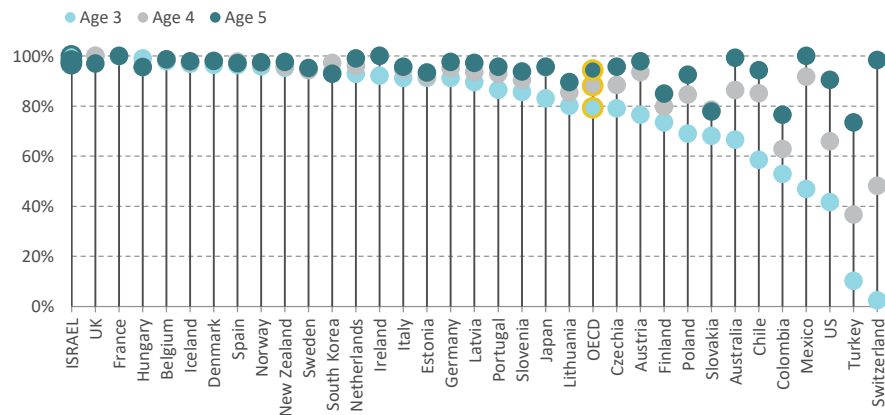
Source: [Zontag, Navon, Vaknin, Bowers, Blank, and Shavit](#), Taub Center, 2020, based on Shraberman and Blass, Taub Center, 2016, Figure 7

The participation of Israeli children ages 3–5 in educational frameworks is almost universal

The participation rate among 3–5-year-olds in educational frameworks is also particularly high in Israel. In 2017, the rate stood at 99%, as opposed to 87% on average in the OECD countries. In Israel, therefore, participation is almost universal in this age group. The figure shows the variation in participation rates for 3-, 4- and 5-year-olds in the OECD countries. In Israel, there is almost no difference in participation rates across these ages, in contrast to countries such as Switzerland, Turkey, the US, and Mexico, where the rate of participation among 4- and 5-year-olds is significantly higher than among 3-year-olds.

Preschool enrollment rates for children ages 3 to 5, 2017

By age

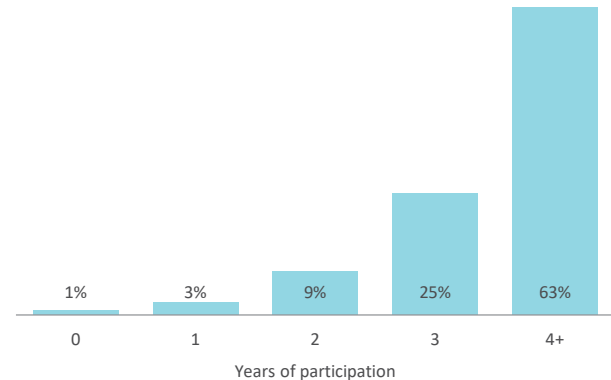


Source: [Dana Vaknin](#), Taub Center, 2020 | Data: OECD, 2019

Most Israeli children spend 4 years or more in an early childhood educational framework

The age at which a child enters preschool naturally has an influence on the total number of years spent in those frameworks and also appears to have a significant effect on later achievements. The figure shows the distribution of number of years spent in preschool, based on the data gathered as part of the PIRLS project for reading literacy conducted in Israel in 2016. Among other things, parents reported the number of years that their child had spent in educational frameworks prior to entering first grade. The children who were tested in the PIRLS exam in 2016 were born around 2006, such that they were preschoolers between 2006 and 2012. The lowest category is very small and includes any child who did not attend any educational framework or attended for less than a year. A large majority of the children (63%) spent 4 years or more in these frameworks; one-quarter spent 3 years, and about 13% spent 2 years or less.

The number of years of participation in ECEC frameworks

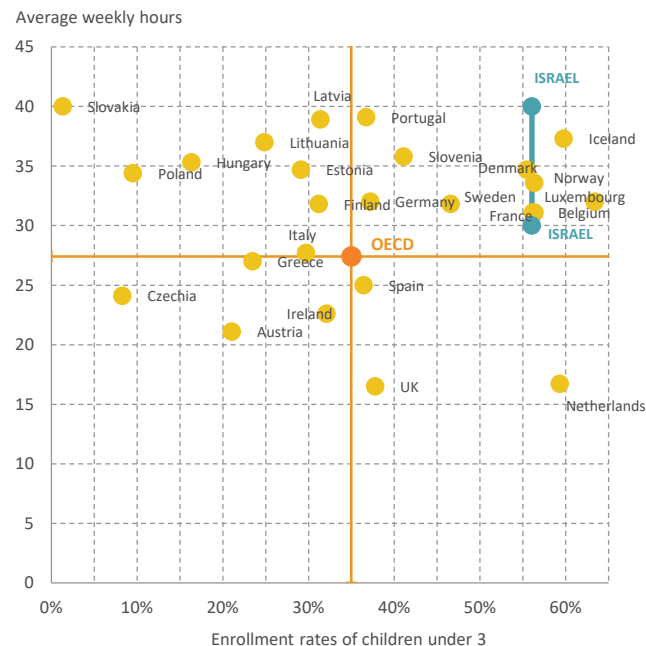


Source: [Zontag, Navon, Vaknin, Bowers, Blank, and Shavit](#), Taub Center, 2020 |
Data: PIRLS 2016 International Database

The average number of hours spent in daycare is also relatively high in Israel

The weekly number of hours spent by children in an educational framework for young children is also an important parameter. As shown, countries vary in the participation rates in early educational frameworks and in the degree of uniformity of that participation across all sections of the population. Research has shown that children up to the age of 3 in Israel spend between 30 and 40 weekly hours on average in daycare, depending on the number of days per week and the number of hours per day. According to other sources, young children up to age 3 in Israel spend an average of 50 hours per week in educational frameworks. Whatever the case, Israel is positioned in the upper right-hand quadrant of the graph, along with the Nordic countries, France, and Belgium, all with particularly high participation rates and high weekly hours of attendance. The picture is clear: children in Israel spend a relatively long time in daycare and early childhood educational frameworks.

Enrollment rates for children under 3 in formal education and the average number of weekly hours spent in daycare, 2017

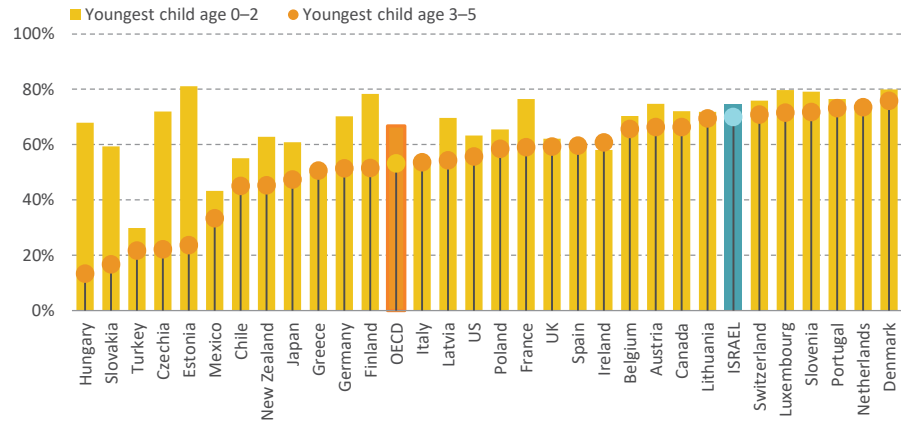


Source: [Dana Vaknin](#), Taub Center, 2020 | Data: OECD, 2018; European Commission, 2019

The employment rate among mothers of young children in Israel is relatively high

This figure shows that the employment rate among mothers of young children in Israel is higher than the average rate in the developed countries, and close to the rate in Switzerland, Luxembourg, and the Netherlands. This is true for mothers whose youngest child is ages 0–2 and for those whose youngest child is ages of 3–5. It is important to mention that the rate of employment among Arab women in Israel is lower (although it has also risen gradually in recent years), primarily due to cultural norms that constrain married women from working outside the home or outside their town as well as to structural barriers in the labor market, such as a limited supply of jobs in towns with an Arab majority and limited access to the labor market.

Employment rates for mothers by age of youngest child, 2014

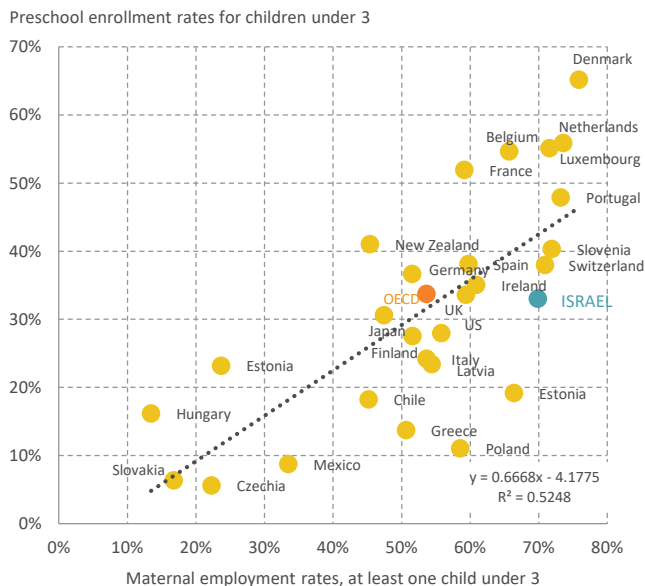


Source: [Dana Vaknin](#), Taub Center, 2020 | Data: OECD, 2018

Children's enrollment in daycare is related to women's employment

This figure shows a relationship between the employment rate of mothers of children up to the age of 3 and the enrollment rate of those children in daycare. In countries where the employment rate of mothers is high, the participation rate of children in early childhood educational frameworks is also high. Israel is located relatively high up in the graph: it has quite a high rate of working mothers and the participation rate of children under age 3 in educational frameworks is higher than the average (although below the regression line). It is important to note that the data in the figure — both the employment data for mothers and the daycare enrollment data for children under the age of 3 — is for the year 2014. As shown previously, in 2017, the participation rate of these children in Israeli educational frameworks was even higher (56%). In other words, Israel is positioned above the regression line and close to countries like Luxembourg and the Netherlands.

The relationship between employment rates of mothers with children under 3 and the daycare enrollment rate of children under 3, 2014



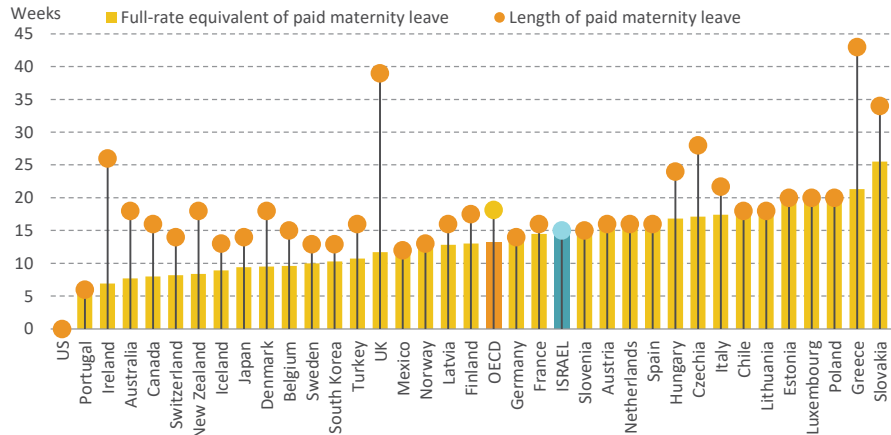
Source: [Dana Vaknin](#), Taub Center, 2020 | Data: OECD, 2017

Maternity leave benefit is relatively generous in Israel and is provided for a large number of children relative to other countries

As can be seen, the 15 weeks paid maternity leave in Israel is shorter than in other developed countries, and the OECD average of 18 weeks. However, the maternity leave benefit in Israel is relatively generous in that a woman receives 100% of her wage during the 15 weeks of maternity leave, while in other countries the payment during maternity leave is less than the full value of the average wage. To complete the picture, it is important to remember that fertility rates in Israel are higher than other OECD countries. The relatively generous maternity leave benefit in Israel is distributed for a greater number of children compared to other countries.

Length of paid maternity leave and full-rate equivalent of paid maternity leave, 2018

In weeks

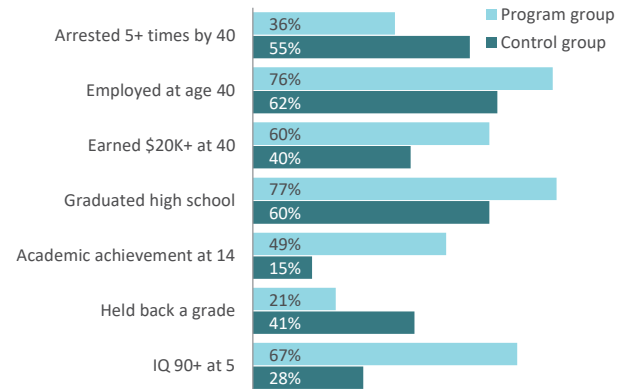


Source: [Dana Vakhnin](#), Taub Center, 2020 | Data: OECD, 2018

Participation in high-quality preschool improves cognitive, social and emotional development as well as future academic achievement, particularly for children from weaker socioeconomic backgrounds

Investment in and access to early childhood educational frameworks can bring substantial improvements in cognitive and non-cognitive skills of children, especially those from weaker socioeconomic backgrounds, and can improve their long-term educational and employment opportunities. One of the best-known panel studies in the field of education found that children ages 3–4-years-old from disadvantaged backgrounds who participated in high-quality educational programs until their entrance to kindergarten had higher matriculation scores compared to children with no particular educational program for early childhood. The high-quality program had a high and positive return to investment for participants as well as for society at large. Forty-year-olds who had attended high quality preschools had higher incomes, committed fewer crimes, and had higher chances of finishing high school and being employed.

Results of the HighScope Perry Preschool Study For participants at age 40



Source: [Vaknin, Shavit, and Sasson](#), Taub Center, 2019 |

Data: Schweinhart et al., 2005



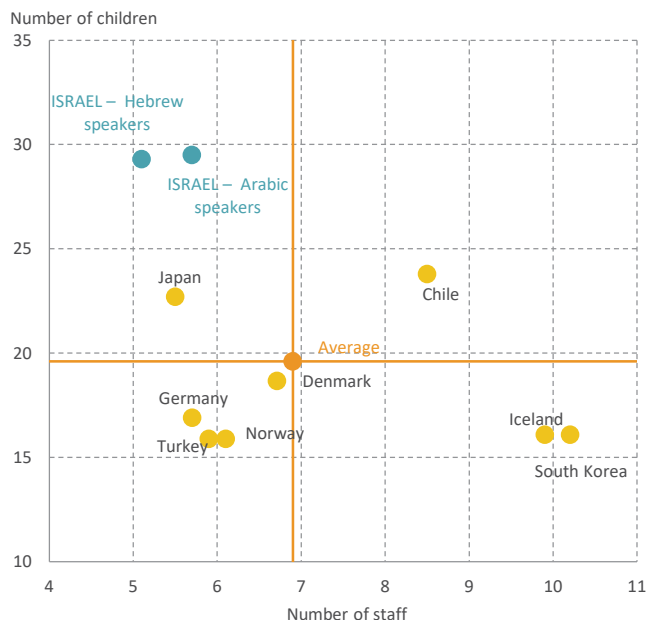
Quality indices show: The quality of early childhood educational frameworks in Israel is relatively low

Research shows that the participation of young children in high-quality early educational frameworks can contribute to the development of their skills and abilities and impacts their future achievements. This is especially the case for children from lower socioeconomic backgrounds. The quality of the framework is, to a large extent, a function of the ratio of staff to children, the level of formal education and training of staff, as well as the quality of educational processes within the preschool setting. As will be seen in the coming pages, structural and process measures of quality of early childhood frameworks show that the quality of these settings is relatively low in Israel.

Too few staff for too many children

The findings of the TALIS survey — an international study of teaching and learning conducted once every few years — show a high ratio of children to staff in preschools in Israel relative to other countries, among both Hebrew speakers and Arabic speakers. The graph shows that in preschools in Israel there are on average 29 children and about 5 staff members on any given day. The average number of children in a preschool in Israel is about 50% higher than the average in other countries covered by the survey, while the number of staff is 23% lower. The situation is much better in, for example, Iceland and South Korea, where on average there are 10 workers in a preschool and the average number of children is 16. Research has shown that a low ratio of children to staff has a positive influence on working conditions for the staff and also eases their work load. In turn, this impacts the quality of service and educational processes. A high ratio of children to staff, as in Israel, can make it difficult for staff to focus on the individual needs of the children in their care.

Number of children and number of staff in preschool settings, 2018



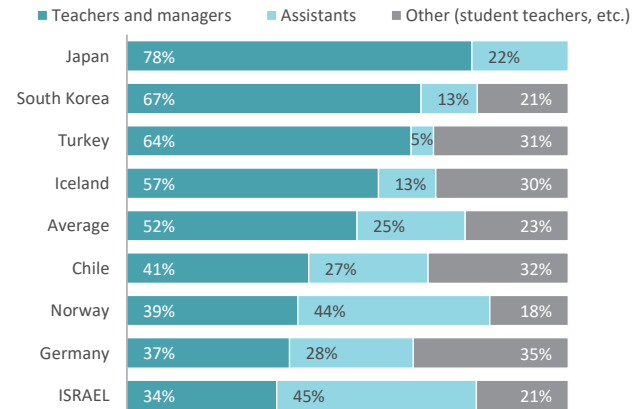
Source: [Dana Vaknin](#), Taub Center, 2020 | Data: TALIS, 2018

Preschool staff in Israel are primarily teaching assistants with generally low levels of formal education

The composition of preschool staff is also important. In Israel, not only is the number of early education staff low relative to other countries, but most of them are assistants (45%) and most have a relatively low level of education. About 70% of the assistants have a high school education or less, a significantly higher percentage than in the other countries examined (for purposes of comparison, the rate in South Korea is only 5%). The figure also shows that the average share of teachers among the early education staff in Israel is lower than in any of the other countries in the survey, only 34% of the staff (that is, one preschool or daycare teacher to two assistants), as opposed to, for example, 78% in Japan, 67% in South Korea, and 52% on average.

Composition of preschool staff, 2018

TALIS preschool study

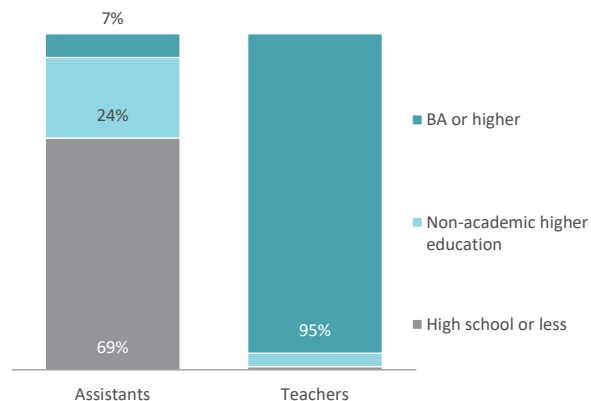


Source: [Dana Vaknin](#), Taub Center, 2020 | Data: TALIS, 2018

The level of formal education of assistants in Israel is particularly low

The findings of the TALIS study show that the level of formal education among preschool staff in Israel is low relative to the other survey countries. About 46% of staff have an academic education versus 52% on average in other countries. About 39% of preschool staff have a high school education or less, which is double the average for the other countries. These gaps are primarily due to disparities in education between teachers and assistants. The graph shows that 95% of preschool teachers in Israel have a first degree or higher, which puts Israel close to Norway (95%) and above other countries participating in the survey, such as Chile (81%), Germany (74%), and South Korea (49%). The formal education of assistants in Israel is particularly low: 69% have a high school education or less, 24% have a post-secondary non-academic education, and only 7% have an academic degree. Assistants make up about 65% of Israeli preschool staff. Thus, a high participation rate of children in educational frameworks is not sufficient, consideration should be given to the quality of services which is also dependent on the staff's level of formal education.

Level of formal education of teachers and assistants in Israeli preschools, 2018

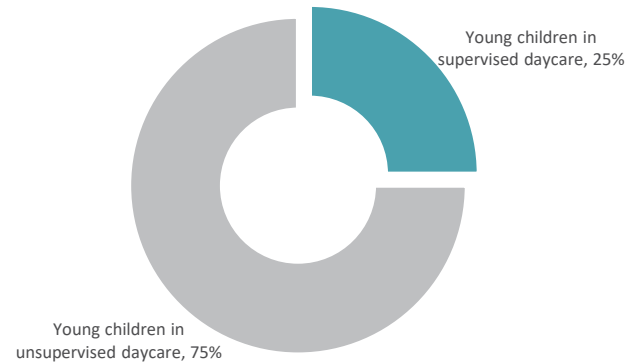


Source: [Dana Vaknin](#), Taub Center, 2020 | Data: RAMA, 2019

A lack of regulation and coordination: Only one-quarter of children under the age of 3 in Israel attend a setting under government supervision

Despite the high rates of participation of young and very young children in educational frameworks, in 2018 only 25% of all children up to the age of 3 in Israel were in frameworks supervised and subsidized by the Ministry of Labor, Social Affairs and Social Services (such as WIZO, NAAMAT, and Emunah). The parents of the remaining 75%, about half a million children, enrolled their young children in private unsupervised frameworks, or had family members or private caretakers to care for their children. Although the Daycare Supervision Law went into effect after public lobbying of more than a decade, the supervision system that is responsible for thousands of frameworks has not been allocated enough inspectors. The lack of supervision over daycare centers by the Ministry of Labor, Social Affairs and Social Services is reflected in the unbelievable ease with which any individual — even someone without any specific educational training for work with young children — can open a private daycare center.

Share of children under 3 in a setting supervised by the Ministry of Labor, Social Affairs and Social Services, 2018



Source: [Dana Vaknin](#), Taub Center, 2020 | Data: Ministry of Labor, Social Affairs and Social Services, 2019



Policy snapshot: Israel's Daycare Supervision Law

In 2018, the government enacted the Daycare Supervision Law requiring all daycare facilities that care for at least seven children to obtain initial government approval to operate and to participate in mandatory first aid and safety training. In January 2021 the regulations were added to this law, which covers all daycare facilities with seven or more children, whether private or those operating under the supervision of the Ministry of Labor, Social Affairs and Social Services. Requirements take effect in various stages starting in the September 2021 school year. The regulations include:

1. A limit on the maximum number of children in a group, the minimum required physical space per child, and the maximum ratio of children to staff, as well as the requirement of a minimum of two staff members for each group. Private frameworks are subject to the same regulations as facilities under the supervision of the Ministry of Labor, Social Affairs and Social Services. These regulations are well below the standards of other OECD countries.
2. Background checks on staff to ensure that no staff member has a criminal past.
3. A written assessment is to be provided within three years that examines options for improving regulatory standards relating to group size, physical space, and staff educational training, with consideration of practices in OECD countries.
4. Staff members are to have basic training in first aid.

- 5. Every new employee in early education must undergo a minimum 220 hours of pedagogical training in a recognized training center; these studies must be completed within the worker’s first year of employment in ECEC. In addition, all regulated daycare centers must have an educational consultant for a minimum of four hours a month.
- 6. Facilities must have a safety check according to the regulations by a certified safety consultant to ensure that the facility is appropriate for young children.

As such, the Daycare Supervision Law, its accompanying regulations and the work being done on its successful implementation are a critical first step in improving the quality of ECEC frameworks for children under age three in Israel. There is a concern, however, that the budget provided by the government is insufficient to support the implementation of these requirements among private childcare providers, and that some providers will exit the childcare field altogether while others will evade the regulations.

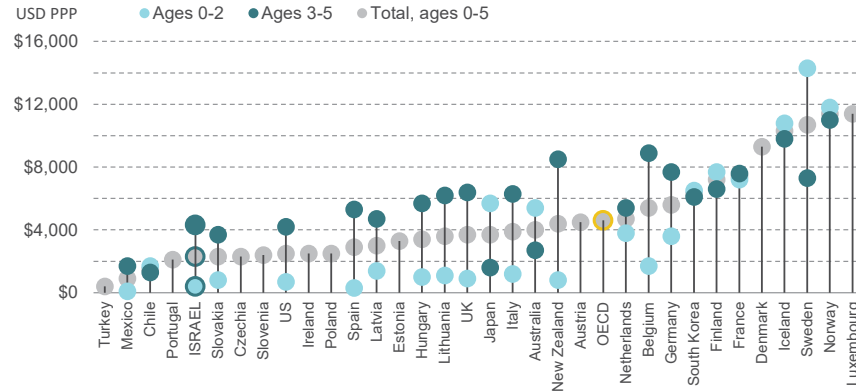
Requirements for size of group, staff to child ratio and physical space according to the [Daycare Division regulations](#), 2021

Age group	Maximum class size	Staff to child ratio	Square meters per child
Birth to 15 months	20	1:6	2.8 square meters
15–24 months	24	1:9	2.6 square meters
Over 24 months	30	1:11	2.2 square meters

Public expenditure per child in Israel on early childhood educational services is particularly low relative to other OECD countries

Public expenditure in Israel on welfare and education services has been on an upward trend since the middle of the last decade. For services for very young children, though, public expenditure per child is lower than in other countries and is similar to that in Portugal, Slovakia, and the US, and is significantly lower than in the Scandinavian countries, Luxembourg, and France. Although public expenditure in Israel on services for children ages 3–5 is higher, it is still among the lowest relative to other countries. It can be assumed that in countries with a low level of government intervention, such as Israel, social inequality in access to high-quality early educational frameworks is greatest, since high-quality frameworks are often more expensive and without public subsidy.

Public expenditure per child on early childhood education and care, 2015



Source: [Dana Vaknin](#), Taub Center, 2020 | Data: OECD, 2018



Policy snapshot on high-quality early education: New Jersey's preschool reform

New Jersey is considered to be a successful example of implementing high-quality preschool. Around twenty years ago, New Jersey's Supreme Court ruling issued the first court order in the US requiring high-quality universal preschool for 3- and 4-year-olds in the state's poor urban school districts. In considering policy options to improve ECEC quality in Israel, it is helpful to examine the [New Jersey Supreme Court's rulings](#) on the definition of high quality, as well as subsequent state regulation on the matter:

1. Budget allocations for preschool cannot be based on an arbitrary pre-determined amount, but should be based on a thorough assessment of funds needed to provide high-quality care.
2. The ratio of staff to preschool children must be one certified teacher and one qualified teaching assistant for every 15 children.
3. Programs must be staffed by BA and Early Childhood Education-certified teachers, who are paid salaries on par with public school teachers. In order to address the supply challenge, the district was allowed to "grandfather" in certified primary school teachers with two years' preschool experience.
4. Substantive curriculum plans must be developed, guided by nationally-recognized preschool curriculum models.
5. Districts must aim to serve at least 90% of eligible children in the program, and if not, may need to develop a corrective plan for community outreach.

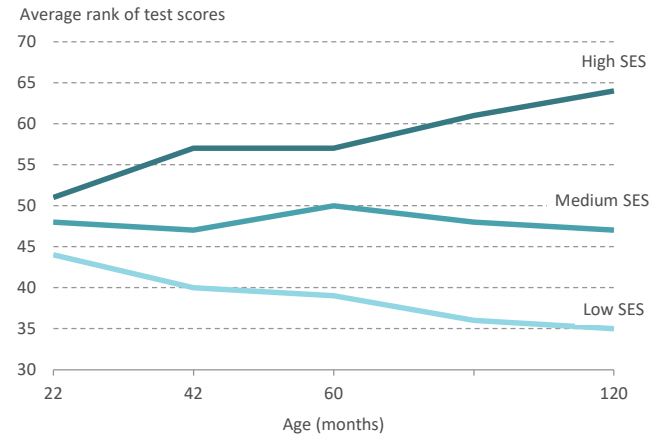
6. Private and community providers can be incorporated into the preschool system, but they have to be given the support, funds and guidelines from the state to upgrade from daycare level care to the higher educational standards of the state's preschools.
7. Investment in renovation and construction of new facilities (and use of temporary facilities in the meantime) to accommodate a high-quality learning environment.

A study by Barnett and Jung (2021) found the results of the New Jersey preschool program to be commensurate with other high-quality programs such as the Perry Preschool Project and the Chicago Child-Parent Center Program. The average effect on language and literacy, math and science was 0.15 standard deviations for those who participated for one year and 0.30 standard deviations for those who participated for two years compared to those who did not participate in the program. Grade repetition was reduced by 15 percentage points and participation in special education by 7 percentage points for those who participated in at least one year of the preschool program versus those who did not.

Inequality begins in infancy: Socioeconomic gaps leave their mark on cognitive development by a child's early years of life and may widen over time

Children are differentiated one from the other in their cognitive and non-cognitive abilities well before they start school and meet the education system. Research has shown that inequality in abilities and learning skills begins at a very early stage in life — at birth and even prior to that. The social, economic, and cultural environment at these critical ages determines to a large extent children's learning opportunities as well as the cognitive, linguistic, and social stimulation they are exposed to, and in this way also affects their future. The figure shows the large differences in cognitive abilities according to socioeconomic status that are already seen by the age of 22 months. Moreover, from the moment that developmental gaps appear, they widen over time. The graph shows that over time the average achievements of children from stronger socioeconomic backgrounds continue to improve, while achievements of children from weaker backgrounds diminish with age. Thus, it appears that a substantial share of the gap between children from different socioeconomic groups emerges in early childhood.

Average ranking of cognitive skills among children ages 22, 42, 60, and 120 months by socioeconomic background
United Kingdom, children born in 1970



Source: Feinstein, 2003

Universal access to educational frameworks does not guarantee equal access to high-quality educational settings

As we have seen, the participation rate in early childhood educational frameworks in Israel and other OECD countries has been on a continual upward trend in recent years, both in the 0–2 age group and the 3–5 age group. Nonetheless, universal access to early educational frameworks does not ensure equal access to high-quality educational frameworks. The family environment that children grow up in affects their learning opportunities, and the socioeconomic status of the family also determines to a great extent the parents' choice of educational frameworks for their children. The educational setting that parents choose for their young children — in terms of type, quality, time spent there, and starting age — is a function of the parents' needs, their social and cultural

characteristics, the options available to them, and economic constraints they may face. This decision in the end affects the physical and social environment to which their young children are exposed and therefore their learning opportunities as well. As the following graphs show, children from strong socioeconomic backgrounds and Jewish children are enrolled in educational frameworks at much higher rates than members of other groups. In fact, those children most in need of these frameworks in terms of cognitive development are enrolled at the lowest rates. Therefore, it is highly desirable that efforts be invested in increasing as much as possible the participation rate of these groups in educational frameworks.

Enrollment rates in ECEC frameworks for children ages 4 and under

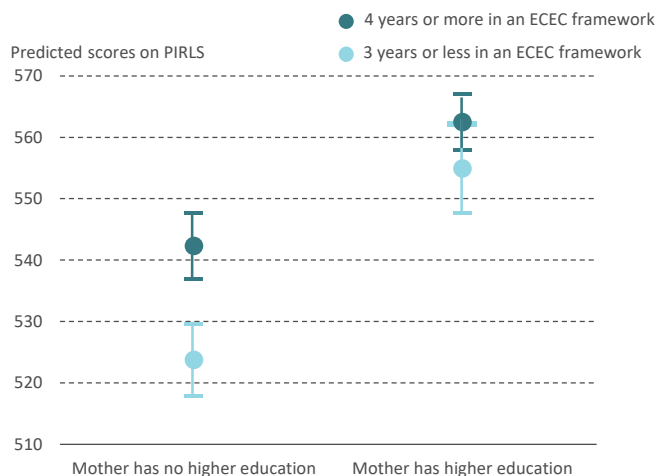


Source: [Zontag, Navon, Vaknin, Bowers, Blank, and Shavit](#), Taub Center, 2020 | Data: CBS, Social Survey 2004

The more years children spend in early childhood educational frameworks the higher their academic achievements, particularly for children from weaker socioeconomic backgrounds

Participation in early childhood educational frameworks for more than 2 years contributes substantially to educational achievements in school, especially for children from weaker socioeconomic backgrounds. Study results indicate that the positive effect of being in an educational framework for 4 or more years for children of mothers with an academic education is smaller than for children of mothers without higher education. The figure shows the predicted achievements on the PIRLS test according to the mother's education level and the number of years their children were in preschool. Around each point, which is the average predicted value, is the 95% confidence interval. For children of mothers with an academic degree, the two points are close together and the confidence intervals overlap. It appears that being in preschool for 4 or more years does not have a significant effect on achievement. For children of mothers without an academic degree, the difference between the two points is large and statistically significant, implying that spending longer in preschool increases future achievement. Unfortunately, these children often spend less than the average length of time in preschool.

Predicted scores by mother's education and the number of years in ECEC frameworks



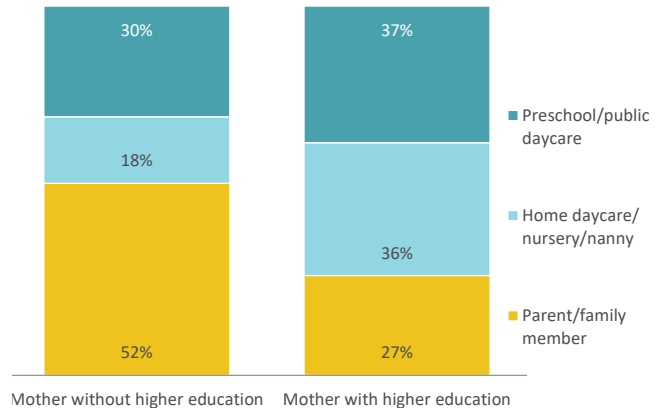
Source: [Zontag, Navon, Vaknin, Bowers, Blank, and Shavit](#), Taub Center, 2020 |
Data: PIRLS, 2016

Children from weaker socioeconomic backgrounds tend to have lower participation levels in early childhood educational frameworks

Young children from weaker socioeconomic backgrounds tend to participate less in educational frameworks. This includes Arabs, children of mothers without an academic education, and children from low-income families. They also tend to start preschool at a later age and thus are enrolled for fewer years. The following graph presents the difference in participation rates for children ages 0–4 in various frameworks according to the mother's education level. Since the vast majority of 5–6-year-olds were attending kindergarten, the graph focuses on age 4 and younger, where there was variation in the types of frameworks (in 2004 when the Central Bureau of Statistics Social Survey was carried out). It can be seen that children of mothers with an academic education attend preschool at significantly higher rates than children of mothers without an academic education.

Enrollment rates in ECEC frameworks for children ages 4 and under

By mother's education level



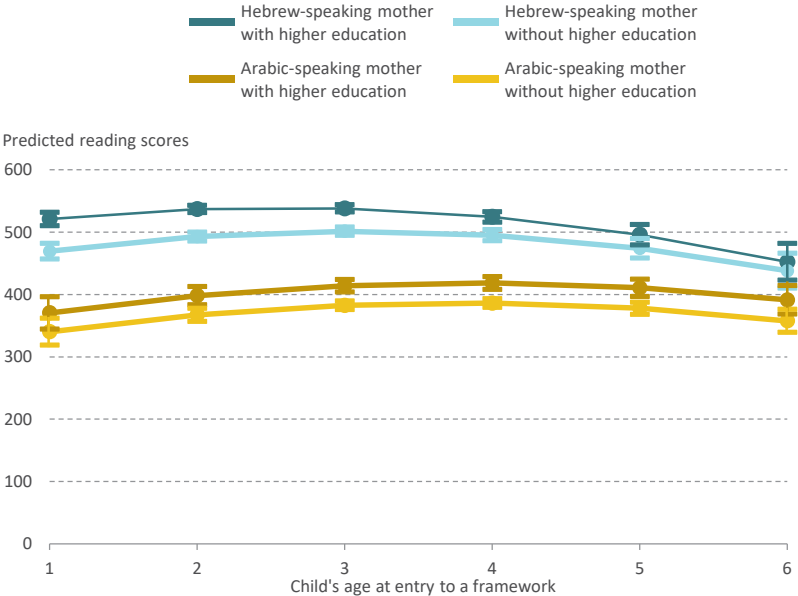
Source: [Zontag, Navon, Vaknin, Bowers, Blank, and Shavit](#), Taub Center, 2020 | CBS, Social Survey 2004

Starting daycare too early leads to relatively low achievements, especially among Arabs and children of mothers with low education levels

The following figure illustrates the triangular relationship between the age of starting in an early education framework, the mother's level of education and scores in reading comprehension. The graph relates to Jews and Arabs. In both groups, the relationship between age of starting daycare and the reading comprehension score is non-linear: those who start daycare early have a low score which later rises until a peak (at age 2–3 among Jews and 3–4 among Arabs) and then declines for those who started in a framework relatively late. An examination of the confidence intervals of the data points in the graph reveal a number of important insights. (1) Among Jewish children of mothers with higher education, the disadvantage of entering daycare very early, in terms of the reading comprehension score, is not statistically significant, relative to children who started preschool at age 2–3. (2) In contrast, among Jewish children of mothers with less education, starting daycare at the age of 1 is a disadvantage relative to starting at the age of 3 and one that is statistically significant. (3) Among

Jews from both education level groups, starting at age 5–6 results in lower reading comprehension scores than starting at age 2–4 and the difference is statistically significant. (4) Among Arabs in both education level groups, starting early (at the age of 1) is a disadvantage relative to starting at age 3–4 and the difference is statistically significant. (5) The disadvantage of starting preschool late is not statistically significant. Research in other countries has also found that overly intensive daycare at a very early age is liable to harm cognitive and social skills development. This is related to some extent to the finding in our research that starting daycare too early results in relatively low achievement. It is worth mentioning that the harm to achievement due to starting at too early an age is observed particularly among Arabs and children of mothers with less education. This implies that the harm to achievement for these children is the result of the low-quality of the frameworks that they attended.

Predicted scores in reading by mother’s education and age at entrance to ECEC frameworks, PISA 2018



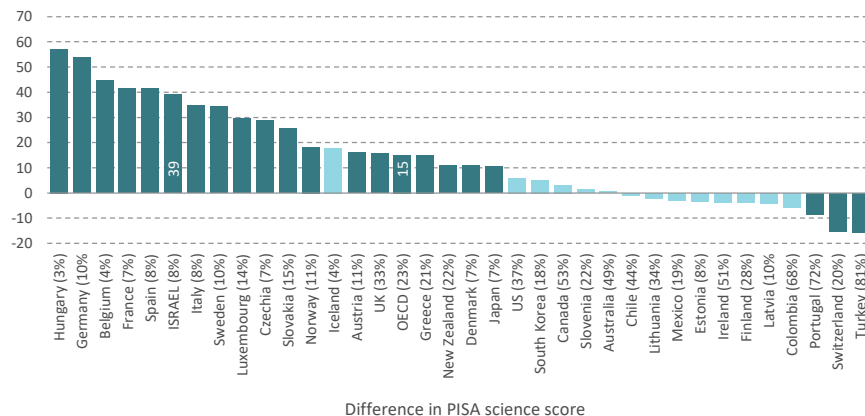
Source: [Zontag, Navon, Vaknin, Bowers, Blank, and Shavit](#), Taub Center, 2020 | Data: PISA Database

An international comparison: 15-year-old students who were in preschool for 2 years or more have higher achievements than those who attended for less time and the gap in Israel is large

The figure shows that in more than 80% of the surveyed countries, students who had been in an early educational framework for 2 years or more achieved higher scores on the PISA science test than those who attended for less than 2 years. In parentheses next to each country name is the percentage of 15-year-olds who were in a setting for less than 2 years. After controlling for the student's and school's socioeconomic level, this finding remains statistically significant for about one-half of the countries, including Israel (in dark blue). In Israel, the gap in scores between students who were in preschool for 2 years or more and those who were in preschool less than 2 years was 39 points, in contrast to the average OECD gap of 15 points.

The difference in PISA science scores between students who were in preschool for at least 2 years and those who were in preschool for less than 2 years, 2015

Controlling for student and school socioeconomic status



Note: In parentheses, the percent of students age 15 who were in an early education framework for less than 2 years. Lightest color signifies not statistically significant; darker color signifies a level of statistical significance.

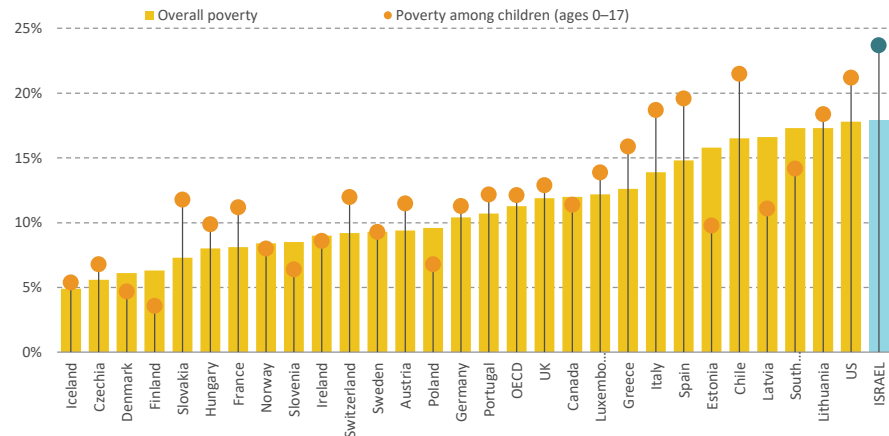
Source: [Dana Vaknin](#), Taub Center, 2020 | Data: OECD, 2017

The poverty rate among children in Israel is higher than in other OECD countries

Income inequality in Israel in terms of disposable income is among the highest in the OECD. In Israel, the share of households living under the poverty line is higher than in all other developed countries. The Poverty and Social Gaps Report of Israel's National Insurance Institute shows that, in 2018, more than 469,400 families were living in poverty, and in them, more than 841,700 children. In 2017, the overall poverty rate was about 18% in Israel, the highest among the more than 30 OECD countries looked at. However, not only was Israel's incidence of poverty the highest in the developed world, the gap was even more pronounced among children. As can be seen in the figure, the poverty rate among the 0–17 age group in that year was 23.7%.

Overall poverty rate and poverty among children ages 0–17, 2017

After taxes and transfer allowances, OECD countries



Source: [Vaknin, Shavit, and Sasson](#), Taub Center, 2019 (updated) | Data: OECD Poverty Rate Indicator

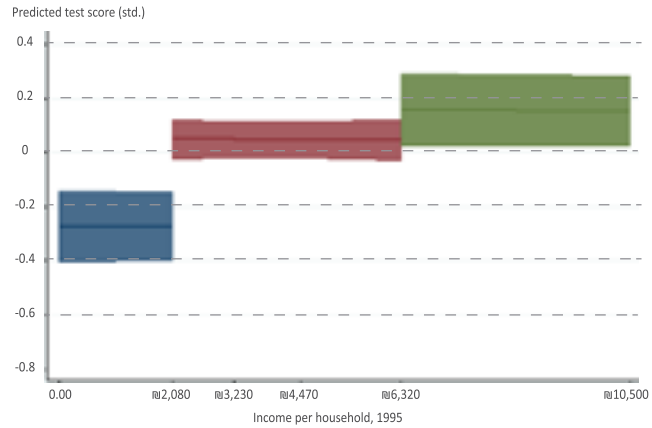
Economic distress experienced in early childhood has a substantial effect on future achievement

A study conducted by the Taub Center based on data from the 1995 and 2008 census and the results of the Meitzav exams, found that belonging to the lowest income quintile in early childhood has a negative and statistically significant effect on future academic achievement (after controlling for family income at later ages and background variables such as parents' education and family size). Moreover, the effect of relative poverty in early childhood on future academic achievement was found to be particularly strong when measured for ages 0–2 and was larger than at ages 3–5. The following figures show that poverty in early childhood has a major effect on predicted

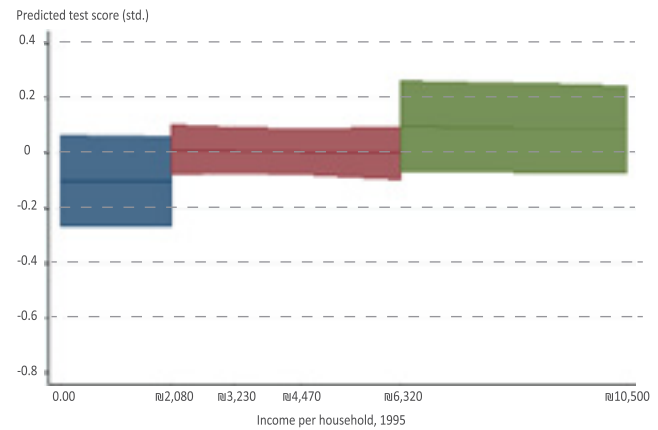
scores on the Meitzav exam in math in Grade 5. Thus, children ages 0–2 in families who were in the lowest income quintile in 1995 had lower achievements on their matriculation exams. This effect was not found to be statistically significant for later age groups (ages 3–5). The graphs also show that belonging to the highest income quintile in early childhood leads to higher future achievement, although its effect is not statistically significant. These findings reinforce the “first 1,000 days of life theory,” according to which the sensitivity of children to their surroundings is greater during the first two years of life.

Predicted score on the Meitzav exam in math in Grade 5

Children from birth to age 2



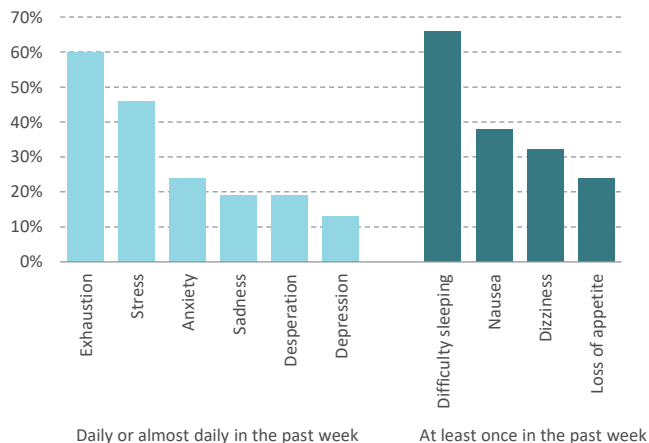
Children ages 3–5



Economic concerns during the Covid-19 pandemic had a significant effect on the lives of young children and their mothers

The Covid-19 pandemic had an adverse effect on the mental health of Israelis and the three lockdowns they experienced were particularly challenging. During these periods, parents had to look after their children around the clock and provide for their educational needs while also working or worrying about their economic situation due to a loss of income. With regard to employment, mothers were especially affected. During each of the three lockdowns, the share of women who were on unpaid leave was higher than the share of men. The Taub Center monitored the well-being of families with children ages 7 or under in each of the lockdowns. In the survey conducted during the second lockdown 823 mothers of young children participated, 70% of whom were employed at the time. About 60% of the working mothers reported fatigue, 46% experienced stress every day or almost every day during the week prior to the survey, 1 in every 4 experienced anxiety, and 1 in 5 felt sad. These emotional challenges also had somatic manifestations: 2/3 had trouble falling asleep during the week prior to the survey, 38% experienced nausea, and 25% lost their appetite.

Distribution of mothers' responses to the survey question:
How frequently did you experience the following feelings during the past week?

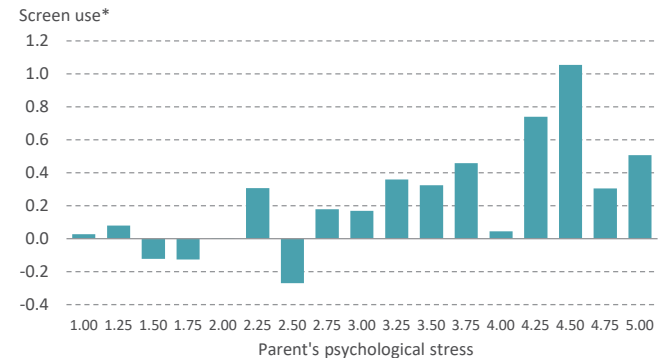


Source: Taub Center Initiative on Early Childhood Development and Inequality |
Data: Initiative Surveys, 2020

Excessive screen time, which can lead to developmental challenges, tends to be higher among young children of parents without an academic education or who are experiencing high tension and stress

In a Taub Center study conducted during the first Covid-19 lockdown in the spring of 2020, it was found that screen time for young children increased with their parents' psychological stress level. The findings also showed that children's screen time was higher when their parents did not have an academic education and that the stress levels of parents during the lockdown were higher among Arabs and low-income families. The figure shows the average screen time for children ages 1–6 according to an index of parental psychological stress. It shows greater screen time on average among children of parents who reported higher levels of stress. Examining the results on the basis of theoretical models in the literature on parenting, it can be hypothesized that they reflect a reduction in the parents' psychological welfare, which in turn has an effect on their emotional availability and their ability to set boundaries for their children.

Means of child's screen use by parents' psychological stress
Weighted sample



* Parents were asked to report to what extent watching television, and playing on the computer/tablet/smart phone is a part of their youngest child's daily routine during the lockdown, on a 4-point scale (1=not at all; 4=a great deal of the day). The sum of the responses was adjusted to zero with a standard deviation of 1.

Source: [Navon, Bowers, Blank, Vaknin, and Shavit](#), Taub Center, 2021 |

Data: Initiative Survey conducted during the first Covid-19 lockdown, Taub Center



Policy Options

The findings presented in this booklet allow for some important conclusions in the realm of early childhood policy in Israel. In this section, we propose policy alternatives in four areas: increasing the participation of young children in early childhood education, improving the quality of ECEC frameworks, the comprehensive treatment of poverty among children, and the collection of more accurate and comprehensive data on young children in Israel. While a much more thorough cost-benefit analysis as well as deep consideration of the potential implications is warranted prior to undertaking any specific policy option, we believe it is valuable to aggregate some potential policy directions that emerge from the Taub Center's research findings thus far in the early childhood arena.

* Written by Liora Bowers, Prof. John Gal, and Dana Vaknin.

Increasing the participation of young children in early childhood education

The reform proposed by the Trajtenberg Commission, which began implementation in 2012–2013, increased the participation rates of children ages 3–4 in public education. It also simultaneously encouraged parents to register their children in supervised public settings, whose quality tends to be better on average than private frameworks.

As we have seen in this booklet, participation in ECEC — in daycare, preschool, and kindergarten — contributes to children’s cognitive development. It appears that this contribution is more significant among the relatively weak socioeconomic strata (based on the mother’s education level), but it is precisely in these groups that participation rates in ECEC for ages birth to 3 are lower. This is particularly true for Arabs as well as for non-Haredi Jews from less educated families with relatively low incomes. Increasing participation in regulated frameworks is complex, as it requires both increasing the supply of regulated early childhood frameworks for ages birth to 3 — for which demand currently outstrips available spaces — as well as promoting increases in demand among children from lower socioeconomic groups. Some policies to increase participation in frameworks by the estimated 530,000 children ages 3 months to 3 years include:

- Greater investment in the construction of new supervised and high-quality daycare centers (estimated in the [Knesset Research and Information Center 2020 report](#) at a cost of NIS 3.5 million per center). Expanding the supply of these frameworks to meet the demand will also require the recruitment and training of additional quality educational staff, as detailed in the next section.

- Changes in the planning processes may be required in order to enable Arab localities to actually access funds, identify land, and undertake the planning and implementation processes for the construction of daycare centers. The current requirements mean that only about half of budgeted funding for daycare construction is actually utilized in the Arab sector due to scarcity of publicly owned land, which makes it difficult to identify locations for new daycare centers. Furthermore, in many Arab localities, there is a lack of approved city plans and the municipalities lack the trained staff or the resources to manage the required procedures to obtain government funding for construction of daycares.
- Given the findings regarding the value of participation in high-quality ECEC frameworks, consideration should be given to the costs and benefits of increasing government financing to expand universal education to younger ages, or changing the eligibility requirements for receipt of childcare subsidies.

Expanding universal education would entail a significantly larger outlay. The [Knesset Research and Information Center 2020 report](#) noted that the government subsidizes about 50% of the cost of care for the approximately 25% of children from birth through age 3 who are in supervised care settings (at a cost of about NIS 1 billion annually). Under a proposal to provide **universal** ECEC for all children from birth to age 3, it was estimated that the annual cost in 2016 would have increased to NIS 8 billion under the care standards at the time for the number of staff to children, and closer to NIS 11 billion if it came alongside a reduction in that ratio. Moving responsibility from the Ministry of Labor, Social Affairs and Social Services to the Ministry of Education will also entail costs related to greater supervision.

Given the large budgetary outlay involved as well as the results of Taub Center and other studies that are less definitive about the benefits of very early participation in early childhood frameworks

(whether due to the quality of the care or other factors), it may be optimal to focus on expanding access to high quality, age appropriate frameworks from age 2 onwards rather than from birth. Expanding universal care from age 2 will still require that the government considers how best to provide oversight for children's care in the first couple of years of life, given that the paid maternity leave period in Israel is up to 15 weeks and job-related protections extend up until one year after birth.

A second option instead of expansion of universal care is to change the current eligibility conditions to receive a subsidy for supervised daycare settings, as well as to increase the subsidy level to cover a larger share of the cost of care. Currently, receiving a subsidy for daycare for ages birth to 3 generally entails either that the mother be employed or studying for at least 24 hours a week. Subsidies are provided on a sliding scale based mostly on household income, with parents paying somewhere between about 10% and 80% of the monthly cost. If ECEC, however, is considered to be developmentally valuable for young children regardless of the working status of their parent, the government will have to cut the tie between these two objectives. This would mean granting subsidies also to mothers living in poverty who do not work or study or those whose employment is very limited. Such a change would also increase the likelihood that mothers would choose supervised frameworks over unsupervised ones, whose quality in terms of structure and process is most likely to be higher.

There is concern, however, that removing the employment-related requirements from childcare subsidies would reduce work incentives of low-income mothers, lowering women's labor force participation and further increasing individuals' dependence on government. On the other hand, there is the alternate possibility that providing free or subsidized ECEC to mothers will then facilitate their entry into paid work. This potential outcome is grounded in the [findings](#) of both greatly

increased ECEC participation and women's labor force participation following the implementation of universal preschool in select Arab localities in the early 2000s.

Both options presented here — expansion of universal care and expansion of eligibility for subsidies — involve increased government expenditures. However, if the emphasis of childcare at the youngest ages is on high-quality ECEC for the child rather than as a support for working parents, such a move may also entail shifting to a different model of early childhood care that is more common in other OECD countries. Such a change may include shorter hours or fewer days a week in ECEC with higher quality care. This model has economic considerations as well. On the one hand, an increase in expenses related to an improvement in the quality of education and care as well as participation rates, and, on the other hand, a reduction in operating costs in conjunction with the reduction in hours and days of operation. The expected implications on the labor market of such a step must, of course, be examined carefully.

Improving the quality of early childhood care and education frameworks

This booklet has highlighted that the impact of an educational settings on children's outcomes depends on its quality. The high share of young children in Israel's population requires an investment in high quality ECEC frameworks. As such:

- The perspective of ECEC for ages birth to 3 needs to include the educational benefit to the child and, as a result, to society, rather than merely being viewed as a childcare mechanism for working parents. An important part of this vision is to shift responsibility for early care frameworks for ages birth to 3 from the Ministry of Labor, Social Affairs and Social Services to the

Ministry of Education. Such a shift is expected be accompanied by higher quality standards and greater supervision. This move was approved by the government on July 19, 2021 along with an allocation in the recently approved state budget of NIS 200 million towards its implementation.

- It is important to regulate the training of caregivers for ages birth to 3 as well as assistants in ECEC settings for ages 3–6, particularly given Israel’s heavy reliance on assistants in its staffing of ECEC relative to other countries. Training programs should allow for personal and professional development as well as practical specialization. Such training will raise the threshold requirements for work in the field and set clear standards for the profession. The Daycare Supervision Law that comes into effect for this coming school year, for the first time includes training requirements for caregivers of children birth to 3, of a minimum 220 hours. One challenge in the implementation of training requirements is finding appropriate ways to retain already working assistants by providing them with opportunities to combine training with their day-to-day work in the field. Such processes, particularly with veteran assistants, may take time to implement. It is also important to create advancement tracks for workers who stay in the profession over time.
- The [Knesset Research and Information Center 2020 report](#) estimated the wages of a caregiver at a supervised daycare center at NIS 6,400–7,000 per month, lower than the average earnings of NIS 8,000 per month in the education sector. As such, along with increased training and skills of early childhood staff, an appropriate, substantial improvement in the working conditions and wages of the early childhood educators may be required. Improved working conditions in preschools and daycare centers in Israel may in turn also improve the occupational prestige of the profession and attract higher quality workers to the field. However, given that wages make up a very high share of the costs of ECEC operations, these improved working conditions will require substantial budget additions from either the government or from parents’ pockets, which may in turn lower demand.

- It is important to raise the ratio of staff to children in early education frameworks along accepted lines in other developed countries. Raising this ratio will allow childcare staff to focus on the individual needs of the children in their care as well as allow staff to provide more educational and enriching stimulation that is important to the young child's cognitive development.

The Daycare Supervision Law begins this process, however the ratios outlined by the regulations are up to twice the ratio that is common in developed OECD countries of similar in size. For example; the Daycare Supervision Law sets out a ratio of 1 staff member to 6 babies, while a report from the [Daycare Division](#) found that 1:3 to 1:5 is the ratio common in other countries for this age group.

The challenge is that reducing the staff to child ratio is very expensive. The Daycare Division estimated that the cost of improving these ratios to 1:5 for babies, 1:8 for toddlers 15–24 months, and 1:10 for children ages 24–36 months will add about NIS 355 million per year in staffing costs. Ultimately the Daycare Supervision Law's regulations were approved at lower staff to child ratios than presented here, but the standards will be reexamined in coming years as part of the regulations.

- In addition to structural quality issues such as the ratio of staff to children, group size and staff education levels, it is important to measure and improve process quality in ECEC. Process quality relates to the nature of the child's day-to-day learning experiences; in other words, the quality of developmental and educational activities and children's interactions with staff and other children. High process quality has been found to be an even more influential component of ECEC on children's future achievements than structural quality, and is particularly critical for children from disadvantaged groups. Process quality is more challenging to assess, and is generally measured through observational assessments such as the Environment Rating Scale (ERS) that

examines the availability of enriching activities and materials, level of supportive adult-child interactions, and physical space and safety in ECEC settings. Robust data collection on process quality in ECEC, and investments in staff, activities and materials that directly improve process quality is very important in Israel.

The comprehensive treatment of poverty among young children

Our research clearly shows that inequality in educational achievements in Israel is linked to economic inequality and living in poverty. A comparison of educational achievements of children living in poverty in Israel relative to children from higher socioeconomic strata shows that to deal more successfully with the effects of poverty on the development of young children in Israel requires a wide and comprehensive intervention by the state. This means increasing the income of poor families and their ability to fulfill their children's basic needs, like food, healthcare, and reasonable housing options. Policy options that focus on reducing the incidence and effect of poverty among families with young children could include:

- Increasing incomes through encouraging greater labor force participation (a major emphasis of Israeli governments in recent years) particularly among Arab Israeli women and Haredi men is one option. This can be achieved by increasing the size of the work grant (Earned Income Tax Credit), particularly for working parents of young children.
- Increasing the size of income supplements and the uptake of this benefit among poor families. In general, the use of “conditional cash transfers” — payments to families that are linked to their participation in a particular program or service, say job training or parenting courses — is also

growing in popularity in OECD countries to help incentivize desired actions alongside providing for monetary transfers to poor families.

- Shifting some of the child benefit allowances from the teenage years to the early years and thus helping parents to improve the quality of education and care for their young children at this critical period of their development, especially among families that are struggling. Today, child allowances are universal and paid for children from birth to age 18, with little change in the amount of the allowance over this period. Consideration should be given to the adoption of an approach that differentiates the level of the allowance based on the age of the child — for example, to increase the allowance provided to families of young children, and decrease that given to families with older children.
- A supplemental nutrition voucher plan that targets low-income young children by providing a healthy food basket could be very relevant for Israel. An example of this is the WIC (Supplemental Nutrition Program for Women Infant and Children) program in the US which provides additional food supplies to low-income women (about 25%) and to their young children under age 5 (about 75%). Numerous evaluations over the many years of the program have shown direct improvement in future cognitive and academic achievements due to improved nutrition of children in the program. Such a program could also be relevant in Israel.

The collection of accurate and comprehensive data on young children in Israel

One of the challenges in conducting research on early childhood in Israel is the lack of high-quality, comprehensive data. As only about a quarter of children ages birth to 3 are in regulated ECEC frameworks, data and information about ECEC for the remaining 75% of children is almost nonexistent to date. In addition, while Israel's Tipat Halav system (family care centers) has almost universal reach among Israel's children in providing well-baby care services, these data are not made available to the Central Bureau of Statistics (CBS) and thus cannot be integrated into other administrative datasets containing demographic and socioeconomic information to allow for comprehensive research on this age group.

For this reason, the collection and aggregation of data on young children in Israel is an important step that will allow researchers to conduct studies based on quality data and to provide policy makers valid and reliable information. We recommend:

- With the implementation of the Daycare Supervision Law, there is an opportunity to engage in data collection on early childhood frameworks and the children participating in them. In addition, creating a pathway to allow integration of Tipat Halav data into CBS databases, within the confines of CBS' strict security and privacy regulations, would allow a wealth of information that is already being collected on Israel's entire early childhood population to be much better leveraged for policy research purposes.
- To initiate a longitudinal study of young children in Israel: such a study would gather physiological, psychological, and social data on children from birth through their developmental

and educational stages, including information on their families and the educational settings in which they participate. Research of this kind will allow a comparison among children growing up in different household, social, educational, and socioeconomic settings and can try to identify those characteristics that affect on developmental-functional differences between children and the changes in these gaps over time. Research of this type has great importance for its expected contribution to formulating on-going public policy for young children and child development in Israel.

- One option for increasing the quality of comparable data available on young children is for Israel to participate in the [International Early Learning and Child Well-Being study](#) that recently completed its first round in several OECD countries. This study collects robust empirical data on home, parental and early childhood education environments, as well children's competencies in social, cognitive, and emotional domains. The study is now recruiting its second wave of survey participants and the OECD is interested in having Israel participate.

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Health Policy Program

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