

## Support from Birth: ZEPPELIN 0-3

Very Brief Research Progress Report, May 2016

ZEPPELIN<sup>1</sup> is one of the largest longitudinal intervention studies in Europe with a randomized controlled trial study design: Using the Parents as Teachers (PAT) program, parent educators made home visits to support young children in 132 families with social burdens every 2 to 3 weeks for a period of 3 years. The children are being compared to young children in 116 families who are not receiving PAT program support. The aim is to test whether early support from birth is effective in families that are in difficult circumstances.

The main research questions are:

1. Does the early support have positive impacts on the children's development?
2. Do the parents show improved parenting practices?
3. Do the families become more socially integrated?
4. Do children receiving support from the program have greater school success than children not receiving support from the program?

At present, results from the first 3 years of the study are available: The first three questions can be answered in the affirmative: The intervention proved effective (see below). The fourth question, as to whether the early support increases educational opportunities in the longer term, can be answered only later, with the investigations planned at school entry in the years 2017 to 2021 (ZEPPELIN 5-9) and at the transition to lower secondary school in the years 2023 to 2025 (ZEPPELIN 12-13).

**Target group:** ZEPPELIN is interested in families that are in difficult circumstances around the time of the birth of the child and that need support with early care and education of their children. 'Difficult circumstances' means that the families have burdens and risk factors that make the start of parenthood difficult, such as limited social support, financial distress, unemployment, or family difficulties. Here are some data from the sample:

Of the 248 participating families, 73% of mothers do not have Swiss citizenship, 31% spoke no or little German at recruitment into the study, 34% completed no schooling beyond compulsory education, and 12% are single parents. Fourteen percent of the children were born prematurely (the Swiss average is 7.3%), 10.6% were born weighing less than 2,500 grams (the Swiss average is 5.9% for Swiss nationals and 6.3% for foreign nationals), and 5.2% are twins (the Swiss average is 1.9%).

Three children had to be excluded from the study due to illness or severe disability; these children and their families instead received support from early childhood education for children with special needs.

The socioeconomic status of the ZEPPELIN sample is very low, with a mean score of 24 on the International Socio-Economic Index of Occupational Status (ISEI), which is half the mean score in the Program for International Student Assessment (PISA).

Families could be recruited thanks to good cooperation with the regional child and youth services centers (kjz), mainly with the parent advisors but also with the pediatricians.

**Early support:** Early support in the form of the PAT parenting education program was implemented in several communes in the Canton of Zurich (near the project locations Dietikon/Schlieren, Opfikon/Kloten, and Dübendorf/Uster). The families received at-home support from an experienced

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<sup>1</sup> *Zürcher Equity Präventionsprojekt Elternbeteiligung und Integration* [Zurich Equity Prevention Project with Parents' Participation and Integration]

parent advisor (a PAT parent educator), in some cases starting before the birth of the child and in most cases starting 1 month after the birth of the child, continuing up to the child's third birthday. In addition, group meetings were held monthly at the family center. All PAT parent educators completed training in how to implement PAT and had regular coaching and supervision. For information on the necessary prerequisites and conditions for PAT, see <http://www.pat-mitellernlernen.org>.

**Research:** To examine the effectiveness of the early support, the families were randomly assigned to two groups at the outset: an intervention group receiving the intervention (PAT support) and a control group with no intervention. Comparison of the two groups aims to uncover possible impacts of the early support. For that purpose, after the birth of the child and around the time of the child's first three birthdays, measurements were conducted at three levels: parents, child, and parent-child interaction.

### **Main Results at Project End<sup>2</sup>**

Sample: Of 248 families, 38 families were lost to attrition by the fourth measurement time point (child age 3 years) due to moving away, lack of time, illness, or unreported reasons. The loss of participants was thus less than 5% per year and far smaller than in comparable studies with PAT conducted in the United States or Germany. As of May 2016, 210 families were participating in the ZEPPELIN study, with 109 families in the intervention group and 101 families in the control group.

Child's development: The greatest impacts were found in the children's language, cognition, and behavior (Bayley-III, SBE-KT, CBCL). Children receiving PAT support showed significant advances compared to children in the control group; they possessed a larger vocabulary and could express themselves better. They were less anxious and slept better through the night (health questionnaire). Experiments conducted on delayed gratification showed that children receiving PAT support had better impulse control.

Parenting practices: The analyses indicated that the positive impacts were mainly associated with a more stimulating environment at home (HOME). Already after one year, mothers receiving PAT support were significantly more sensitive than mothers not receiving PAT support (CARE-Index). Various other data also spoke for improved parenting practices: For example, in families receiving no PAT support, the television was kept on in the home for twice as many hours.

#### Social connections:

Parents receiving PAT support had better connections with community resources (Soziale Netzwerke). For instance, they utilized toy lending libraries as well as libraries significantly more frequently than families in the control group. Further, mothers receiving PAT support felt more supported by their partners than mothers in the control group did. And above all, mothers in the intervention group speaking a foreign language more frequently took a German course.

**Outputs:** ZEPPELIN has already been presented at several national and international conferences. Ten Master's theses have been completed, and three doctoral dissertations will be completed soon. Several papers have been published in peer-reviewed journals (see [www.zepelin-hfh.ch](http://www.zepelin-hfh.ch)).

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<sup>2</sup> For all analyses, we checked whether the impacts found are not erroneously attributable to the variables child's gender, child's birthweight, mother's ability to speak German, and family burdens.

**Key Data of the ZEPPELIN Intervention Study with the Parents as Teachers (PAT) Program**

- Longitudinal study (2011 to 2016) with follow-ups (2017 to 2021 and 2023 to 2025)
- Target group: Families with social burdens and with a newborn child
- Main aim: Early support for enhanced educational opportunities in the long term
- Intervention: Targeted parent education at home using a support program
- RCT design; N at  $t_0$  (baseline) = 248 families with 261 children (intervention group = 132 families; control group = 116 families)
- Four measurement time points ( $t_0$ : in child's 3rd month of life;  $t_1$ : in 12<sup>th</sup> month;  $t_2$ : in 24<sup>th</sup> month,  $t_3$ : in 36<sup>th</sup> month)

**Support Program: Parents as Teachers (PAT)**

- A parent advisor with special training (PAT parent educator) makes regular at-home visits to 12 families (every 2 to 3 weeks for 3 years)
- Group meetings are held once a month at the family center
- The building of social connections in the local community is intensively pursued
- PAT parent educators conduct development screenings
- At program end, utilization of further resources is set up

**Conclusion for practice:**

The prevention program Parents as Teachers (PAT) is especially well suited for providing effective and long-lasting developmental support to children in families with social burdens.

The challenge is correctly identifying families at risk and obtaining and retaining their willingness to participate in the intensive program.

The quality of the access to "difficult to reach" families consists in the following concrete points:

- We tie in with existing early childhood services (such as parent advice)
- We build interdisciplinary networks relating to birth (with professionals in healthcare and psychosocial care, such as pediatricians, midwives, and more)
- We conduct a short screening for an initial assessment of risk factors and preventive factors
- We do not give up if the first contact is unsuccessful and visit families at their homes, if needed with intercultural interpreters
- We encourage parents through positive messages about participation (culture of recognition instead of rationale of suspicion; relationship and meetings instead of brochures and instruction books)
- We provide incentives for parents to participate and also stay in the program (small welcome and birthday gifts, such as a toy or picture book)

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