Longitudinal study ZEPPELIN – Support from Birth: 2nd Follow-up 2021–2024 (ZEPPELIN 9–13)

Progress report for SNF FI (Nr. 10FI14_198055)

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The longitudinal study ZEPPELIN has the overall aim to investigate the long-term effectiveness of early childhood support with the program "PAT -Learning with Parents" (PAT) in families with psy-chosocial stress. It consists of the feasibility study "ZEPPELIN/M" (2009-2011), the main study "ZEPPELIN 0-3" (SNF 2011-2014-2016), the 1st follow-up "ZEPPELIN 5-8" (SNF 2017-2020), and the 2nd follow-up "ZEPPELIN 9-13" (SNF 2021-2024). The first project phase (ZEPPELIN 0-3) was successfully completed. Positive effects were demonstrated at the age of three. Families from the intervention group provided a more stimulating home environment, from which children benefited especially in language development and behavior (Lanfranchi, Schaub, Neuhauser, Burkhardt, & Ramseier, 2016). In kindergarten (t5, t6), these effects were again demonstrated in language de-velopment and behavior, with additional effects in self-control and mathematics. In the following, the continued work from 2021 and the results of the first follow-up (ZEPPELIN 5-8) are reported with a focus on t7 and t8. In addition, the current state of the second follow-up (ZEPPELIN 9-13) is re-ported, focusing on data collection started in 2021 (t9).

Objectives ZEPPELIN 5-8: The main objective is to examine the medium-term impact of the PAT support program on the transition to kindergarten and from there to the first two grades of primary school. For this purpose, the data analyses at t7 were continued, including imputation procedures for missing data and subgroup analyses. Furthermore, the t8 family home-visits for data collection were continued; currently, these data are being processed and analyzed.

Objectives ZEPPELIN 9-13: In addition to the long-term evaluation of effectiveness with regards to the educational success of the adolescents, causal pathways, effects on the biological stress markers, dental health, and the "return on investment" are to be analyzed. Data collection in the third grades (t9) began in spring 2021, and preparations are currently underway for assessment in spring 2022. Data from the achievement tests in German and mathematics in 2021 have already been processed, and preliminary analyses are presented in this interim report. The sub-studies on biological stress marker (methylation) and dental health are planned for t11. The data required for the cost-benefit analysis will be collected by t11, and the analyses are planned for the next two years.

Methods: In the randomized controlled trial (RCT) design, the intervention group (IG, home visits and group meetings with PAT) was compared to the control group (CG, usual support services for young children in the community of residence, without PAT). After baseline data collection at the age of three month, characteristics of parents, children, and parent-child interactions, as well as social stress and protective factors were initially recorded yearly (age of 12, 24, 36 months), then again in kindergarten (age of 5 and 6 years) and school age (age of 7 and 8, currently 9 years). Starting with the measurements in the first grade (t7), the study was expanded regarding the sample: The children were now examined together with their classmates by class-testing, in addition to interviews with teachers and parents. This extension allows for, first, new group comparisons with classmates via matching (e.g., propensity score matching (Becker, 2011)); second, to include related collective characteristics of the school environment such as the achievement level of the class in the IG-CG comparison; and third, to conceal the identity of the children participating in ZEPPELIN from the teachers to avoid biases in their response behavior. The masking is done by surveying the teachers on a total of five students: The respective children from the IG and CG alongside randomly selected children from the class. The surveys in ZEPPELIN 5-8 and ZEPPELIN 9-13 were a combination of individual-testing and research visits to families at home (t5, t6), class-testing (t7, t9), and research visits (t8). The research visits capture characteristics of the parents, the child, and the parent-child interaction. The class-testing assessed academic competencies in mathematics, language, and self-control. In addition, interviews with the teacher (characteristics of the child, the teacher, the class and the school), the parents (characteristics of the child, the parents and the interaction with the school) were conducted, and from t9 onwards, also surveys of the children (characteristics of the interaction with classmates and the teacher).

The kindergarten and 1st grade surveys were successfully completed. The surveys with families at home (t8) had to be partially interrupted due to the Corona pandemic in spring 2020 and winter 2021 and now were largely completed. Surveys in 3rd grade were started in spring 2021, and children enrolled later and those with grade repeats will be surveyed in spring 2022.

Sample: At t7, a total of 156 families participated, 79 in the IG and 77 in the CG. The sample attrition occurred, on the one hand, due to 63 dropouts over the past survey years, i.e., families who did not want to or could no longer participate in the study at t7 (Lanfranchi et al., 2021). On the other hand, 29 families did not participate at this measurement point due to the following reasons: child could not be located (n=8), no consent (n=8), cancellation of class teacher and family not available for individual testing (n=4), moving away (n=2), and various (n=7). Of these 29 dropouts, one family indicated they would not participate in the study in the future (no interest) and another moved away to Portugal.

At t8, a total of 109 families participated up to the current time, of which 58 were in the IG and 51 in the KG. A final survey is planned for spring 2022. The sample attrition occurred firstly due to 65 dropouts, i.e. families who no longer wished or were able to participate in the study by t8. Second, 73 families did not participate due to the following reasons: unavailable (n=27), cancellations due to Corona (n=25), no research visit desired (n=10), no time (n=5), miscellaneous (n=6).

For the t9 2021 surveys, 136 children (from 127 families) were tested, and 41 additional children will be tested in 2022.

Sample attrition: During ZEPPELIN 0-3, approximately 5% of parents dropped out of the study per year. A predictor analysis for differential sample attrition showed no significant group differences (Schaub et al., 2019). Three years later, just before children started school, dropout increased to around 35%, with a slightly larger increase in IG (see flow chart in Fig. 1). Again, no significant predictors of sample attrition could be detected (Schaub et al., 2021) - i.e., even mothers with low German language skills, who could only be recruited with special efforts did not drop out significantly more often than others. At t8 the dropout was significantly higher, it was 56% (research visits at home). In CG, families with higher stress and lower socioeconomic status dropped out; in IG, families with lower socioeconomic status and mothers with no postsecondary education, lower age, and low German proficiency dropped out. Overall, the differential dropout results in an significant overrepresentation of burdened families in the IG at t8. Table A1 in the appendix provides an overview of the sample attrition up to t8.

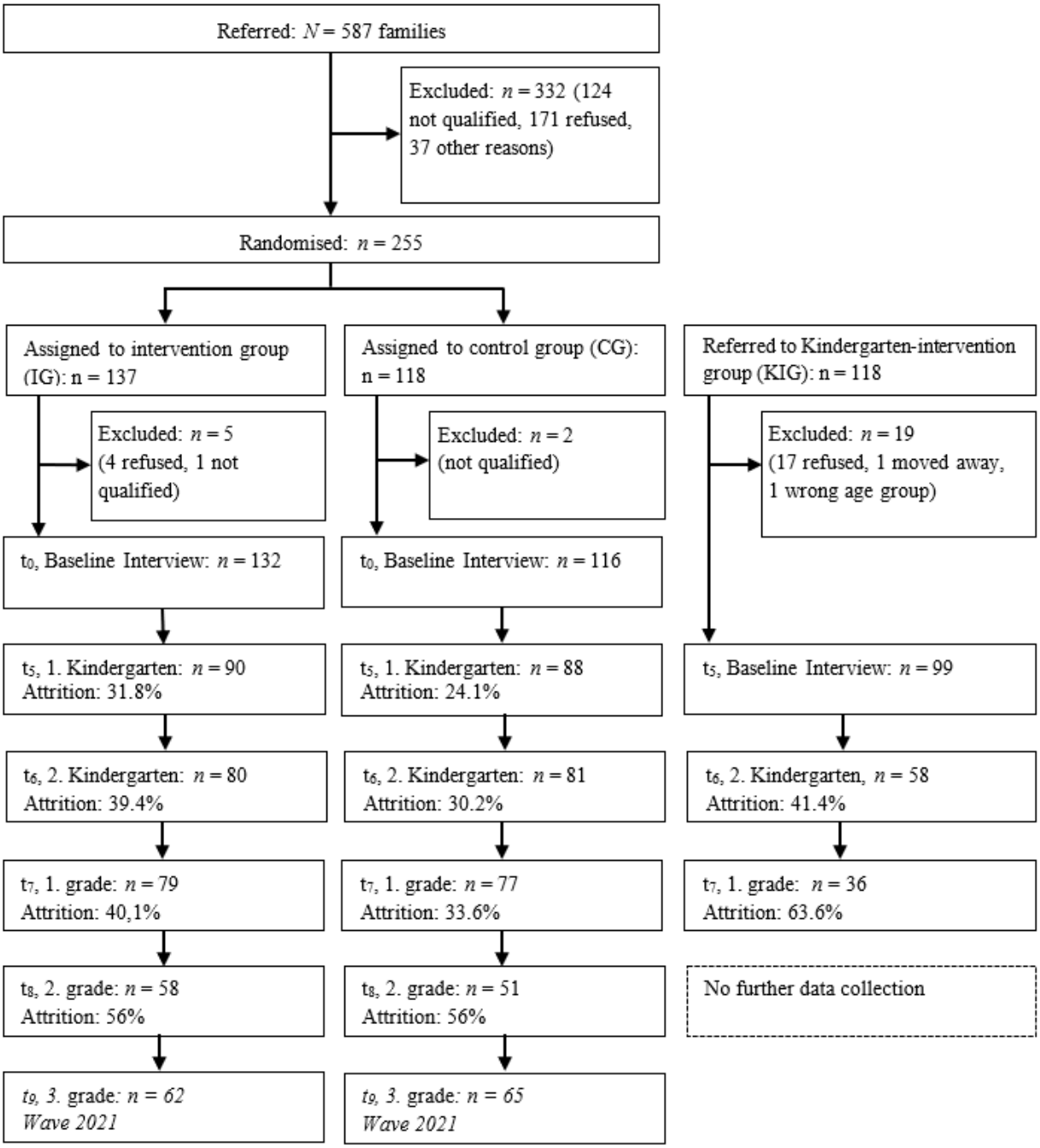

Fig. 1. CONSORT flow diagram through the phases of the study.

Instruments. At t7, the test procedures were administered in the context of class-testing and only in exceptional cases in individual-testing sessions (SLRT-II, Moll & Landerl, 2010; WLLP-R, Schneider, Blanke, Faust & Küspert, 2011; MBK 1+, Ennemoser, Krajewski & Sinner, 2010; CFT 1-R; Weiss & Osterland, 2013). In the teacher questionnaire, data was collected on selected children (including those from the ZEPPELIN sample, see method description above) (e.g., SDQ, Klasen, Woemer, Rothenberger, & Goodman, 2003; Motivation, Renzulli et al., 2010; STRS, Pianta, 2001; PIQ, Venetz et al., 2015; school involvement, self-construal; use of support services, self-construal) and the teachers were asked about the classroom setting (class and teacher characteristics, self-construal; support resources, adapted from Roos & Wandeler, 2012; attitude integration, adapted from Bosse & Spörer, 2014; Roos & Wandeler, 2012). Parent questionnaires were used to collect family characteristics and child characteristics from all participating families (e.g., SDQ, Klasen, Woemer, Rothenberger, & Goodman, 2003; school involvement, self-construal; use of support services, self-construal).

The surveys at t8 consisted of an interview at the families home. The HOME inventory (elementary school age version; Caldwell & Bradley, 2003) was used to assess home stimulation levels. Parents completed questionnaires on parenting style (APQ, Reichle & Franiek, 2009), parental sense of competence (PSOC, Ohan, Leung, & Johnston, 2000), perceived social support (WSU; Tröster, 2010), and child behavior (CBCL 6-18R, Döpfner, Plück & Kinnen, 2014). An experiment on self-control (inhibition) was conducted with the children (ADHD-KJ, Petermann & Petermann, 2019). Further, children were interviewed with a questionnaire on social inclusion in school (PIQ version child, Venetz et al., 2015).

At t9, class tests were again administered. Performance in reading, writing, and mathematics was assessed by tests developed by the Institute for Educational Evaluation (Institute for Educational Evaluation 2021a, 2021b, 2021c). Students' attention and concentration performance was measured using the d2-R (Brickenkamp, Schmidt-Atzert, & Liepmann, 2010). Furthermore, the parent and teacher questionnaires already used at t7 were used again (see instruments t7 above). In addition, students were asked about integration (PIQ, Venetz et al., 2015), class climate, and relationship with the teacher (Rauer & Schuck, 2003).

ZEPPELIN 5-8: Results on effects of PAT in the first and second school year. The results from kindergarten (t5 and t6) have already been discussed in the 2020 interim report (Lanfranchi et al., 2020) and the 2021 final report (Lanfranchi et al., 2021), so we focus here on the results from first and second grade (t7 and t8). For the data from the first grade (t7), multiple regression analysis was used to test whether the effects of PAT found at the end of the intervention at three years persisted. Because the research question was directed (PAT leads to improvement in family, parent, and child characteristics), one-sided testing was conducted. In addition, to avoid bias from missing values, the analyses at t7 were calculated with manifest and multiple imputed data[1]. The results of these analyses (Table 1) indicate significantly lower problem behavior with respect to hyperactivity (teacher ratings) for the first grade. The positive effects on the children's language skills shortly after the end of the program and in kindergarten could not be replicated for the first school year. There were also no significant differences in other problem behaviors, mathematics achievement, nonverbal intelligence, motivation, participation, and in the children's relationship with the teacher. Separate analyses of the highly stressed families revealed the same pattern of effects with regards to hyperactivity as assessed by the teacher, and in addition, a significant effect on mathematics achievement.

Analyses of the number of children with special educational measures and class repetitions revealed only minor differences in the educational progress to date between children from the IG and the CG. Thus, 33.8% of the children from the CG received special education measures, while the proportion in the IG was somewhat lower at 31.9%. On the other hand, the proportion of children with class repetitions (kindergarten or 1st grade) is somewhat higher at 14.4% than in the CG (10.3%). However, this could not be statistically validated.

1 For this purpose, the statistical software R (package: mice) was used. The same set of predictors was imputed separately for IG and CG (randomization and t0 variables, age at t7 and months since enrollment were fixed; relevant developmental characteristics between t1 and t6 were included based on a minimum correlation of r=.4). Predicted Mean Matching was applied to estimate 100 data sets with 40 iterations. The reported results are based on the data generated by the current specification of the imputation model.

Table 1.
Results of linear regression analysis on effects PAT with manifest and imputed data in the first grade (t7).

					Manifest				Imputed			
Source	Construct	Instrument	Group	*Dir*[10]	*Estimated mean*	*beta*	*SE*	*p*[a]	*Estimated mean*	*beta*	*SE*	*p*[a]
Tests	Nonverbal Intelligence[2]	CFT 1-R	IG	+	62.36	1.52	1.66	.18	55.77	1.25	1.58	.25
			CG		60.84				54.52			
	Reading[2]	WLLP-R	IG	+	48.75	2.21	1.84	.12	44.95	2.14	1.72	.11
			CG		46.54				42.82			
	Math[2]	MBK-1+	IG	+	61.61	1.87	1.65	.13	56.62	2.39	2.00	.12
			CG		59.74				54.23			
	Math, Cut-Off at T < 40[1]	MBK-1+	IG	−	0.00	0.62		.20	0.05	0.58		.12
			CG		0.01				0.09			
	Writing, Spelling mistakes[b]	SLRT	IG	−	13.37	-0.12	0.60	.42	16.94	-0.29	0.53	.29
			CG		13.49				17.23			
	Writing, Capitalization[b]	SLRT	IG	−	8.96	0.49	0.37	.91	10.33	0.15	0.33	.68
			CG		8.47				10.17			
Teacher	Hyperactivity[3]	SDQ	IG	−	5.75	-1.04	0.49	**.02**	7.71	-1.12	0.51	**.02**
			CG		6.79				8.83			
	Conduct problems[3]		IG	−	6.21	-0.37	0.38	.17	7.31	0.00	0.38	.50
			CG		6.58				7.31			
	Emotional problems[3]		IG	−	4.15	0.33	0.43	.78	5.61	0.28	0.45	.73
			CG		3.82				5.32			
	Problems with peers[3]		IG	−	5.39	-0.19	0.42	.33	7.92	0.11	0.45	.60
			CG		5.58				7.82			
	Prosocial behavior (recoded)[3]		IG	−	7.37	-0.33	0.45	.23	9.19	-0.13	0.48	.39
			CG		7.71				9.32			
	Problem behavior Total[7]		IG	−	21.63	-1.00	1.32	.23	28.83	-0.64	1.16	.29
			CG		22.63				29.46			
	Motivation[8]		IG	+	5.10	0.16	0.19	.21	4.19	0.15	0.18	.20
			CG		4.95				4.04			
	Partizipation[4]	PIQ	IG	+	1.89	0.00	0.08	.50	1.44	-0.03	0.08	.62
			CG		1.90				1.47			
	Stud.-Teacher Relationship − Closeness[5]	STRS	IG	+	3.27	-0.13	0.11	.86	2.83	-0.15	0.12	.90
			CG		3.39				2.98			
	Stud.-Teacher Relationship − Conflict[5]	STRS	IG	−	0.20	0.08	0.12	.76	0.57	0.13	0.11	.88
			CG		0.12				0.43			
Parents	Hyperactivity[3]	SDQ	IG	−	5.77	-0.05	0.43	.46	6.36	0.06	0.40	.56
			CG		5.82				6.30			
	Conduct problems[3]		IG	−	8.67	0.22	0.34	.74	8.96	0.08	0.32	.60
			CG		8.44				8.88			
	Emotional problems[3]		IG	−	7.01	0.02	0.42	.52	6.90	0.17	0.30	.71
			CG		6.99				6.73			
	Problems with peers[3]		IG	−	6.68	0.26	0.35	.77	7.25	0.40	0.38	.85
			CG		6.41				6.85			
	Prosocial behavior (recoded)[3]		IG	−	8.46	-0.06	0.35	.44	8.25	-0.17	0.31	.29
			CG		8.51				8.43			
	Problem behavior Total[7]		IG	−	28.05	0.40	1.18	.63	29.59	0.64	0.87	.77
			CG		27.65				28.95			

[a]one-sided; controlled for psychosocial stress, single parent, project location, mother's language proficiency, sensitivity, gender, proportion of years lived in Switzerland, no post-compulsory education, ISEI controlled; b additional control for age (Mt.), months since enrollment in school; [1] Odds, [2] *M*=50, *SD*=10, [3] 4–11 (strongly agree), [4] 0–2 (strongly agree), [5] 0–4 (completely agree), [6] 0–3 (very high), [7] 4–44 (strongly agree), [8] 0–5 (always), [9]Number of errors, [10]expected direction of the effect.

In the second class (t8), data were collected from families at home during research visits. The last visits took place in October 2021 and data preparation is currently ongoing. Preliminary results of simple T-tests show no statistically significant group differences for either family or maternal outcomes. For child outcomes, a significant effect was found for self-control, with advantages for children from the IG (see Table 2). These analyses do not consider patterns of attrition in the sample. Thus, it should be noted that at t8 families with a significantly higher stress level (baseline characteristic) are represented in the intervention group than in the control group. Next steps of the analysis include the handling of missing values (imputation) and linear analyses including relevant control variables as well as subgroup analyses.

Table 2.

Results of T-tests on group differences between IG and CG in 2nd grade (t8).

	CG			IG						
	M	*SD*	*n*	*M*	*SD*	*n*	*Dir*[1]	*ΔM*	*t(df)*	*p*[a]
Family (HOME)										
Emotional climate	.77	.14	48	.75	.17	56	+	–.02	–.52(102)	.70
Encouragement of maturity	.78	.20	48	.73	.21	56	+	–.04	–1.1(102)	.86
Family companionship	.68	.19	48	.71	.17	56	+	.03	.83(102)	.21
Family integration	.73	.29	48	.68	.31	56	+	–.06	–.94(102)	.83
Enrichment[*]	.63	.17	48	.53	.22	56	+	–.09	–2.43(102)	.99
Learning materials and opportunities	.53	.23	48	.56	.21	56	+	.03	.63(102)	.26
Responsivity	.88	.15	48	.85	.15	56	+	–.02	–.76(102)	.77
Physical environment	.93	.11	48	.91	.13	55	+	–.01	–.60(101)	.73
Total HOME	.74	.09	48	.72	.10	55	+	–.02	–1.21(101)	.88
Mother (APQ)										
Positive parenting	4.34	.62	42	4.38	.45	45	+	0.05	.39(74)	.35
Inconsistent discipline	2.60	.60	42	2.55	.56	45	–	0.05	.40(85)	.35
Punishment	3.38	.56	42	3.34	.65	45	–	0.04	.31(85)	.38
Poor monitoring/supervision	1.44	.44	42	1.37	.35	45	–	0.07	.79(85)	.43
Mother (PSOC)										
Parenting sense of competence	2.54	.59	39	2.58	.59	37	+	0.04	.29(74)	.38
Mother (WSU)										
Social support	1.74	.54	42	1.75	.69	45	+	–0.01	–.07(83)	.53
Child (CBCL)										
Depressive symptoms	57.27	7.78	41	58.53	8.81	43	–	–1.27	–.70(82)	.76
Anxiety symptoms	59.10	8.65	41	59.37	7.52	43	–	–0.27	–.16(82)	.56
Somatic symptoms	54.41	6.58	41	58.47	9.23	43	–	–4.05	–2.32(76)	.89
ADHS	59.93	9.07	41	57.67	7.54	43	–	2.25	1.24(82)	.11
Oppositional defiant	57.00	7.97	41	56.09	6.37	43	–	0.91	.58(82)	.28
Dissocial symptoms	56.63	7.69	41	57.07	7.36	43	–	–0.44	–.27(82)	.60
Child (PIQ)										
Social integration	3.53	.45	47	3.47	.42	56	+	–0.05	–.64(101)	.74
Child (ADHS-KJ)										
Self-regulation deficit	51.61	6.66	38	48.92	4.08	49	–	–2.69	–.2.19(58)	**.02**

[a]one-sided; [1]expected direction of the effect; [*]significant in the opposite direction of hypothesis at α=.05.

ZEPPELIN 9-13: Preliminary results on effects of PAT in the third school year. The classroom assessments in the third school year started in 2021. So far, data have been collected from 136 children, and further surveys of 41 children are planned until the end of June 2022. The data for the achievement tests in German and mathematics already have been prepared; the teacher, parent and student questionnaires are still in progress. Initial analyses (T-tests; Table 3) indicate that the children from the IG performed better in reading, writing and mathematics than the children from the KG, but these effects cannot yet be secured against chance-level effects.

Table 3. Results of T-tests on group differences between IG and CG in 3rd grade (t11).

	CG			IG						
	M	*SD*	*n*	*M*	*SD*	*n*	*Dir*[1]	Δ*M*	*t(df)*	*p*[a]
Reading	314.24	103.34	70	336.14	114.83	66	+	21.9	1.17(134)	.122
Writing	409.55	148.32	69	437.53	185.31	64	+	27.98	.97(131)	.168
Math	270.25	76.97	68	282.17	75.71	66	+	11.92	.90(132)	.184

[a]one-sided; [1]expected direction of the effect.

Conclusion. The results on academic competencies in the first and third grades showed that the children from the IG consistently perform better in German (reading and writing) and mathematics than the children from the CG. However, the analyses for the total sample do not reveal any significant differences in school performance between IG and CG. Subgroup analyses with the data from the first grade showed a significant difference between children from the IG and CG in mathematics performance among highly stressed families, but not in the performance in German. Regarding behavioral characteristics, a heterogeneous picture emerges: In the first grade, teachers report a significant positive effect on the hyperactivity of the students in the IG. In contrast, from the parents' point of view, no significant effects with advantages in IG can be detected in neither the first nor the second grade. A similar picture emerges from the research visits in second grade: Here, the effects on home stimulation and positive parenting behavior demonstrated in the first year of kindergarten (Lanfranchi et al., 2021) could not be replicated. Only regarding self-control, the children from the IG show significantly higher scores than the children from the CG. However, it is important to note that (1) as a result of the differential dropout (see Table A1 in the Appendix), the families in the IG were significantly more burdened than the families from the KG, (2) during the survey phase, the dynamics in the families and thus also the parenting and family characteristics were influenced in different ways by Corona measures, and (3) the lower statistical power associated with the sample attrition sets a challenge to detect weak effects. Consequently, it remains to be investigated to what extent effects emerge when control variables are considered. Regarding the surveys in the third grade, it should be noted that the surveys have not yet been completed and further data preparation is pending. In a next step, the data from the questionnaire surveys will be processed and analyzed. In the further analyses of t8 and t9, it is planned to investigate subgroup effects and to calculate imputation models to deal with missing data.

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Appendix

Table A1: Baseline characteristics und attrition.

Baseline Variables	Sample in t_0		Dropout upto t_8		Sample in t_8	
	IG (n = 132) *M* (*SD*) / %	CG (n = 116) *M* (*SD*) / %	IG (n = 74) *M* (*SD*) / %	CG (n = 65) *M* (*SD*) / %	IG (n = 58) *M* (*SD*) / %	CG (n = 51) *M* (*SD*) / %
Family						
First born	58%	60%	58%	55%	57%	66%
Stress (HBS)	47.51 (16.56)	44.84 (15.58)	47.39 (16.84)	48.00 (14.64)	**47.66 (16.35)**	**40.82 (15.95)**
ISEI	27.12 (21.23)	31.52 (23.18)	23.04 (16.57)	26.56 (21.48)	32.32 (25.22)	37.84 (23.92)
Hard to reach	**14%**	**24%**	**15%**	**31%**	14%	16%
Child						
Female	57%	48%	59%	54%	53%	41%
Twins	5%	5%	5%	6%	5%	4%
Preterm borns	11%	10%	9%	11%	14%	10%
Low birth weight	8%	10%	4%	11%	12%	8%
Multilingual	**14%**	**7%**	11%	6%	**19%**	**8%**
Age at randomization (days)	51.29 (38.93)	54.98 (49.76)	48.38 (42.21)	50.97 (47.81)	55.00 (34.30)	60.10 (52.16)
Mother						
Age at birth (years)	29.39 (5.88)	29.90 (5.51)	28.47 (5.55)	29.52 (5.43)	30.57 (6.12)	30.40 (5.63)
Single mother	13%	15%	15%	14%	10%	16%
No post-compulsory edu.	39%	42%	46%	47%	29%	35%
Duration of stay in CH at birth	37%	41%	35%	41%	41%	41%
Non-Swiss nationality	73%	74%	74%	77%	71%	71%
Low German proficiency	32%	29%	41%	32%	21%	26%

Notes. c2 / Fisher's exact test or t-test two-sided, differences with p < .10 are highlighted: In bold for IG-CG comparisons, marked in gray for comparison between dropouts and participants in IG and CG.

Publications in 2021

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Presentations in 2021

12.02.2021 Zürich, 26. Jahrestagung GAIMH, online zu «Krisen!? Formen, Herausforderungen, Lösungen»: Risikofamilien in Corona-Zeiten aufsuchend begleitend. Virtuelle Hausbesuche mit PAT – Mit Eltern Lernen am Beispiel zeppelin – familien startklar (Parallelveranstaltung Silvia Hengartner von der Koordination PAT Schweiz von zeppelin – familien startklar und Carmen Drinkmann von der Programmleitung PAT)

20.03.2021 Köln, VIFF Symposium Frühförderung 2021 (online) zum Thema Übergänge: Der Aufbau transitorischer Räume als Präventionsmassnahme - Frühförderung ab Geburt bei Kindern aus Familien in Risikosituationen (Keynote, Andrea Lanfranchi, Alex Neuhauser, Simone Schaub) –Vortrag einsehbar unter https://online.viff-fruehfoerderung.de/pages/vortraege-on-demand/poster/F01

28.05.2021 Kreuzlingen, Zweites Internationales Bodensee-Symposium Frühe Kindheit, online zu ««Mit Emotionen umgehen – Eine Aufgabe für Klein und Gross»»: *Den feinfühligen Umgang mit Emotionen in belasteten Familien fördern: Ergebnisse aus der ZEPPELIN Studie* (Präsentation, Patsawee Rodcharoen, Alex Neuhauser Isabelle Kalkusch, Andrea Lanfranchi)

9.-10.6.2021 Lausanne, 11th International Conference of Panel Data Users in Switzerland (FORS): ZEPPELIN Longitudinal Study - Early Childhood Intervention 1. Follow-up 5-8) (Präsentation, Isabelle Kalkusch, Alex Neuhauser, Patsawee Rodcharoen, Andrea Lanfranchi)

24.08.2021 Göteborg, 19th Biennial EARLI Conference, online zu «Education and Citizenship: Learning and Instruction and the Shaping of Futures»: *How preterm birth and social burdens of the family are affecting on children`s executive functions?* (Präsentation, Minna Törmänen, Simone Schaub, Erich Ramseier, Alex Neuhauser, Patsawee Rodcharoen, Isabelle Kalkusch, Andrea Lanfranchi)

6.-7.9.2021 Geneva, ECER 2021 Conference, online zu «Education and Society : expectations, prescriptions, reconciliations»: *Families with Social Burdens and the Cognitive Development and Executive Functions of a Child with Preterm Birth. A Longitudinal Intervention Study* (Präsentation, Minna Törmänen, Simone Schaub, Erich Ramseier, Alex Neuhauser, Patsawee Rodcharoen, Isabelle Kalkusch, Andrea Lanfranchi)

12.10.2021 Baltimore/MA, USA: Parents as Teachers 2021 International Conference: Parents as Teachers Switzerland: 10 Years of ZEPPELIN Study – New Developmental Evidence in Kindergarten and First Grade (online presentation, Patsawee Rodcharoen, Alex Neuhauser, Isabelle Kalkusch, Andrea Lanfranchi)

24.11.2021 Zürich, Swiss Society for Early Childhood Research (SSECR), "#comebackstronger", University of Teacher Education in Special Needs, HfH: *Effects of early intervention in psycho-socially disadvantaged families at the transition to school: Results from the ZEPPELIN study* (Presentation, Alex Neuhauser, Patsawee Rodchaoren, Isabelle Kalkusch, Minna Törmänen, Erich Ramseier, Andrea Lanfranchi).

Public Media in 2021

20.11.21 NZZ am Sonntag: «Besserer Start für Kinder aus armen Familien. Eine Zürcher Studie zeigt, wie stark schon sehr frühe Förderung die Chancen von Kindern in Schule und Beruf verbessert». https://nzzas.nzz.ch/wissen/besserer-start-fuer-kinder-aus-armen-familien-ld.1656195?reduced=true

15.09.21 Radio DRS, Echo der Zeit: «Chancengleichheit dank sprachlicher Frühförderung». https://www.srf.ch/audio/echo-der-zeit/chancengleichheit-dank-sprachlicher-fruehfoerderung?partId=11889132

03.07.21 Bildung CH: «Früh lesen können: Vor- oder Nachteil?» https://www.lch.ch/aktuell/detail/10-2020