

HeadStart national evaluation final report

Appendix 3: Additional
impact analysis not
published elsewhere

**Evidence Based
Practice Unit**

A partnership of



Introduction

We conducted analysis during the HeadStart evaluation to examine the impact of universal and targeted interventions on young people’s mental health and wellbeing. Some of this quantitative analysis was not published elsewhere and we therefore present it below with detailed tables and explanatory commentary. This accompanies the section ‘Impact on mental health and wellbeing’ in the HeadStart National Evaluation final report and is for those with an interest in the analysis and detailed findings.

Impact of universal support

To investigate the impact of universal interventions, we focused on using data from one Headstart partnership, Kent. The reason for focusing on Kent HeadStart was the unique phased rollout of universal support where schools were not all part of the programme from year 1 but each year more schools were added. Young people in all schools, however, took part in the annual survey which enabled a natural experiment design to compare young people’s outcomes depending on their exposure to HeadStart universal support.

We focused on the first three years of the programme and classified schools as having no exposure (if they were not part of the HeadStart programme in the first three years), a little bit of exposure (if they were part of the HeadStart programme in the third year), moderate level of exposure (if they were part of the HeadStart programme from the second year onwards) and lots of exposure (if they were part of the HeadStart programme from the beginning).

Table 1. Kent schools categorised according to exposure to HeadStart (based on the number of years actively involved in the programme)

HeadStart 2016/17	HeadStart 2017/18	HeadStart 2018/19	Exposure Variable	<i>N of schools</i>
0	0	0	0 - no HS exposure	565
0	0	1	1 - a little bit of HS exposure	1523
0	1	0	2 - moderate level of HS exposure	22
0	1	1	2 - moderate level of HS exposure	1745
1	1	1	3 - Lots of HS exposure	1496

Sample

For each analysis, survey data from young people was only included in the sample where they had both baseline data and outcome data.

Support from home was measured with the family connection subscale of the Student Resilience Survey (SRS; Lereya et al., 2016). Support from school was measured with the school connection subscale of the SRS (Lereya et al., 2016) and peer support was measured with the peer support subscale of the SRS (Lereya et al., 2016). High scores on the support subscales indicate greater support. Mental health difficulties were measured with the total score of Strengths and Difficulties Questionnaire (i.e., comprising the four problem scales (emotional symptoms,

conduct problems, peer-relationship problems, and hyperactivity/inattention problems) (Goodman et al., 1998). High scores on the total difficulties indicate greater mental health difficulties. Subjective wellbeing was measured with the child self-report Short Warwick and Edinburgh Wellbeing Scale (SWEMWBS; Stewart-Brown et al., 2009). High scores on the SWEMWBS indicate greater positive subjective wellbeing.

Baseline was conceptualised as:

- If Time 1 was not missing → baseline coded as Time 1
- If Time 1 was missing and exposure to HS was at 2016/17 (Time 1) → coded as missing
- If Time 1 was missing and exposure to HS was at 2017/18 (Time 2) → coded as missing
- If Time 1 was missing and exposure to HS was at 2018/19 (Time 3) → baseline was coded as Time 2
- If Time 1 was missing and there was no exposure to HS → baseline was coded as Time 2.

Models

A series of two-level models (young people clustered within schools), with exposure to HeadStart (see above) as the main predictor variable, and adjusting for sex, FSM eligibility, SEN status, ethnicity (being White vs being from another ethnic group), and baseline scores were conducted. Each model predicted a different outcome, including support from home, school and peers, and mental health and wellbeing, (see Tables 2 and 3). Overall, the results showed that HeadStart exposure had no significant effect on any of the outcome variables.

Table 2. Social support from home, school and peers according to school exposure to HeadStart (based on the number of years actively involved in the programme)

	Support at home (N=3670 young people, 28 schools)		Support at school (N = 3644 young people, 28 schools)		Peer support (N = 3698 young people, 28 schools)	
	Intercept = 9.63 (0.38)		Intercept = 7.36 (.44)		Intercept = 34.15 (1.03)	
	Coefficient B (SE)	<i>p</i>	Coefficient B (SE)	<i>p</i>	Coefficient B (SE)	<i>p</i>
<i>Pupil level</i>						
Sex (male)	0 (.1)	.999	.58(.15)	<.001	-3.09 (.35)	<.001
FSM eligibility (yes)	-.38 (.11)	<.001	.12 (.16)	.450	-1.47 (.38)	<.001
SEN status (has SEN)	-.2 (.18)	.265	.77 (.25)	.002	-1.36 (.61)	.026
Ethnicity (minority)	.22 (.14)	.124	0 (.21)	.994	2.33 (.51)	<.001
Baseline score	.45 (.02)	<.001	.37 (.02)	<.001	.38(.02)	<.001
<i>School level</i>						
HeadStart exposure (a little)	.18 (.22)	.404	.53 (.40)	.184	.21 (.66)	.752

HeadStart exposure (moderate)	-.05 (.21)	.830	.19 (.39)	.632	.39 (.65)	.553
HeadStart exposure (lots)	.09(.22)	.665	.19 (.40)	.634	.75 (.66)	.259

Table 3. Mental health and Wellbeing and HeadStart Exposure (based on the number of years actively involved in the programme)

	SDQ Total Difficulties (N = 3795 young people, 29 schools)		SWEMWEBS (N = 3305 young people, 29 schools)	
	Intercept = 7.05 (.43)		Intercept = 12.28 (.56)	
	Coefficient B (SE)	P	Coefficient B (SE)	P
Young people level				
Sex (male)	-1.97 (.19)	<.001	1.91 (.19)	<.001
FSM eligibility (yes)	.86 (.20)	<.001	-.97 (.20)	<.001
SEN status (has SEN)	.66 (.31)	<.001	.24 (.33)	.467
Ethnicity (minority)	-1.05 (.27)	.037	.37 (.27)	.178
Baseline score	.55 (.01)	<.001	.43 (.02)	<.001
School level				
HeadStart Exposure (a little)	.08 (.47)	.857	-.12 (.43)	.780
HeadStart Exposure (moderate)	.28 (.46)	.543	-.15 (.42)	.716
HeadStart Exposure (lots)	.04 (.47)	.934	.30 (.43)	.487

Impact of targeted support

We carried out two different analyses on the quantitative survey data to investigate the impact of targeted HeadStart support over the five years (i.e., 2016/17- 2020/21). See the section ‘Impact of targeted support’ in the main report. Further details and tables from the analysis are provided below.

Note that in contrast to the rest of the HeadStart partnerships that depended on opt-out consent forms, Cornwall’s relied on opt-in consent forms to collect data on targeted support. Anecdotal reports also suggest that not all young people had been asked to provide consent where this was relevant. This means that where young people have no record of receiving support, it may be that no support was provided or it could mean that support was provided but consent for sharing was not requested, or was requested but not given. Because of this lack of certainty around records of who received support, data from Cornwall has not been incorporated into the following analysis.

Comparison of young people who did, and did not, receive HeadStart targeted support - Repeated time points

Multi-level regression analysis of the longitudinal survey data was used to evaluate the impact of targeted support between young people who received any targeted support (i.e., at least once over the five years) versus those who did not receive any support (Repeated time points multi-level analysis).

Findings

The results (see Figures 1 - 4 below) showed the following:

- Mental health difficulty scores of young people who received targeted support were significantly higher compared to those who did not receive targeted support (indicating that the support was reaching those with more need).
- Emotional difficulties of all young people significantly increased from 2018/19 onwards.
- Behavioural difficulties of all young people decreased from 2018/19 onwards.
- Wellbeing declined over time for all young people from 2017/18 onwards.
- The results showed no greater improvement (or no reduced deterioration) in mental health and/or wellbeing scores among the young people who received targeted support. In other words, the scores of those who received targeted interventions were parallel to those who didn't receive targeted support.
- Those that received any targeted support had a sharper increase in emotional difficulties from 2019/20.

Due to conducting many analyses, it is important to apply Bonferroni correction. Once applied, only the following findings remained within significance levels:

- *Those who received targeted support were more likely to have higher mental health difficulties and lower wellbeing overall.*
- *There was an increase in emotional difficulties for all young people from 2018/19 onwards.*
- *There was a decline in behavioural difficulties for all young people in 2020/21.*
- *There was a decline in wellbeing for all young people from 2017/18 onwards.*

Considerations of why significant differences might not have been detected between those who did or did not receive targeted support:

- We don't have data for all the young people that received targeted support. It is possible that young people who received targeted support to have erroneously been included in the comparison group.
- The interventions were not perfectly aligned with data collection.

- The aim of the interventions may not be captured well with the WMF data (i.e., the primary outcome may have been something other than mental health problems or wellbeing).
- The summative evaluations showed that the level of engagement and attendance in interventions affects their impact. The data analysed consisted of a mixture of instances where interventions were well attended and where they were poorly attended meaning that effects in cases where attendance was good might have been diluted with cases where this was not the case.

Figure 1. Changes of total difficulties scores from 2016/17 to 2020/21 for the young people who received targeted interventions (pink line) versus those who didn't receive interventions (blue line). Yellow line: SDQ borderline threshold.



n = 792, intervention group n = 103

Table 4. The association between targeted support and SDQ total difficulties over time

	Coefficient (95% CI)	P
Time 1 x targeted interventions (ref)		
Time 2 x targeted interventions	0.63 (-1.07, 2.32)	0.470
Time 3 x targeted interventions	0.85 (-0.85, 2.54)	0.328
Time 4 x targeted interventions	0.84 (0.25, 1.77)	0.333
Time 5 x targeted interventions	1.13 (-0.57, 2.82)	0.194

Figures 2 and 3. Changes in SDQ emotional difficulties and behavioural difficulties scores from 2016/17 to 2020/21 for young people who received targeted interventions (pink line) versus those who didn't receive interventions (blue line). Yellow line: SDQ borderline threshold.

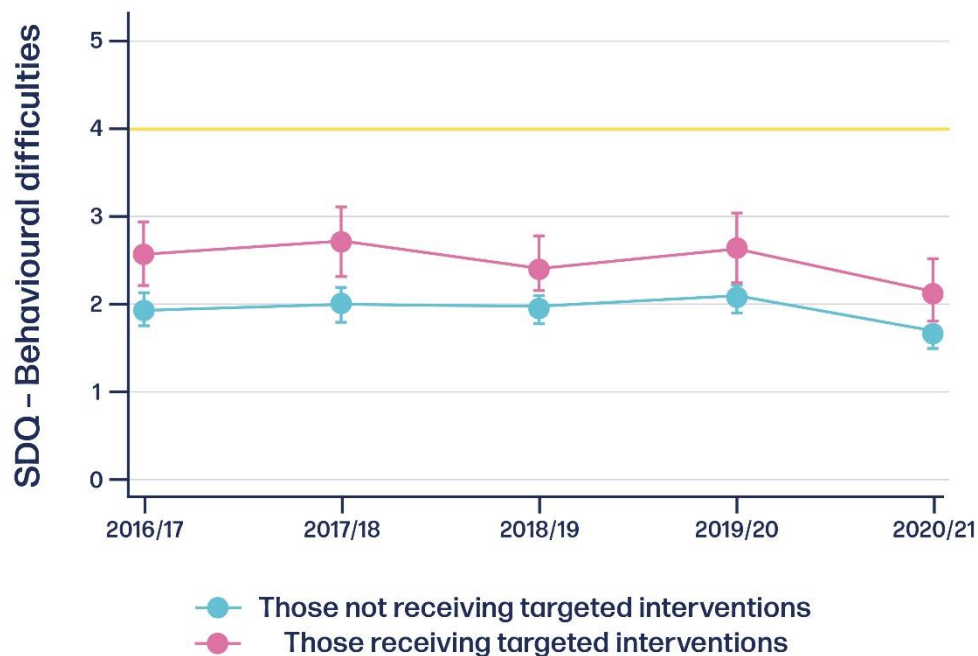
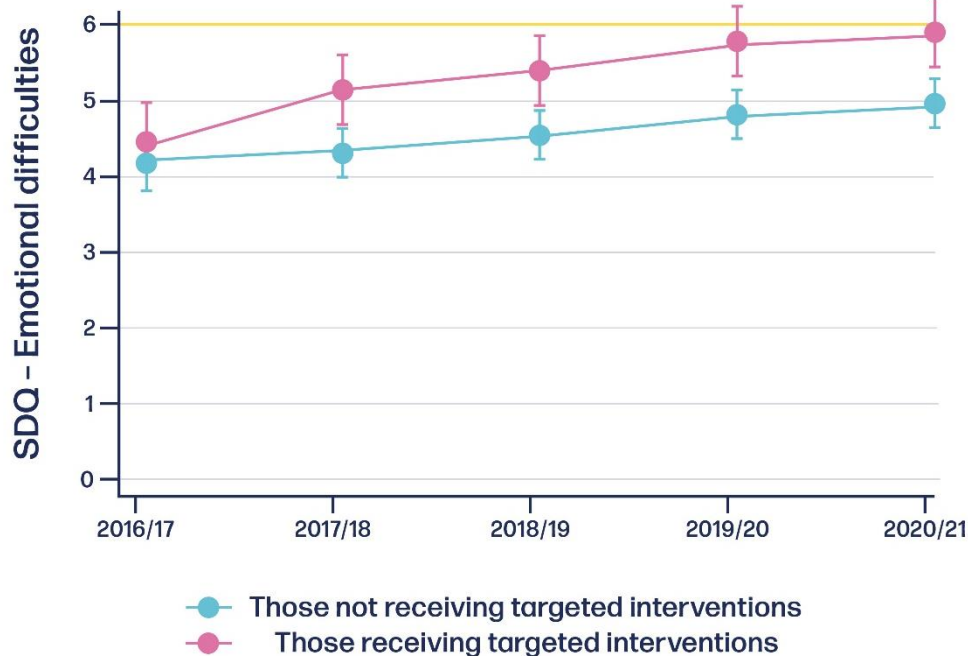


Figure 2: Emotional difficulties (n = 798; intervention group n = 103). Figure 3: Behavioural difficulties (n = 800; intervention group n = 104).

Table 5. The association between targeted support and SDQ emotional difficulties overtime

	Coefficient (95% CI)	P
Time 1 x targeted interventions (ref)		
Time 2 x targeted interventions	0.61 (-0.08, 1.30)	0.084
Time 3 x targeted interventions	0.69 (-0.001, 1.38)	0.051
Time 4 x targeted interventions	0.77 (0.09, 1.46)	0.028
Time 5 x targeted interventions	0.75 (0.06, 1.44)	0.033

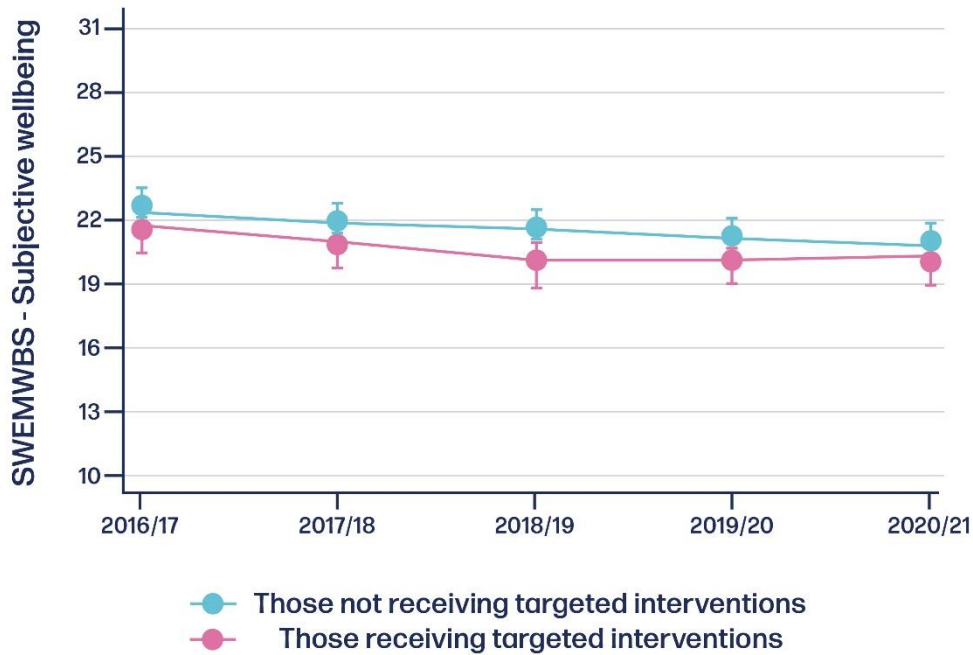
Table 6. The association between targeted support and SDQ behavioural difficulties over time

	Coefficient (95% CI)	P
Time 1 x targeted interventions (ref)		
Time 2 x targeted interventions	0.11 (-0.40, 0.62)	0.668
Time 3 x targeted interventions	-0.16 (-0.68, 0.34)	0.524
Time 4 x targeted interventions	-0.09 (-0.60, 0.42)	0.731
Time 5 x targeted interventions	-0.19 (-0.70, 0.32)	0.472

The findings displayed in the tables and figures above show that:

- those that received targeted interventions had higher emotional difficulties from 2019/20 onwards
- there was no significant association between receiving targeted interventions and behavioural difficulties over time
- emotional difficulties increased for all young people from 2018/19 onwards
- behavioural difficulties decreased for all young people in 2020/21.

Figure 4. Change of SWEMWBS (wellbeing) scores from 2016/17 to 2020/21 for young people who received targeted interventions (**pink line**) versus those who didn't receive interventions (**blue line**).



n = 632; intervention group n = 81

Table 18. The association between targeted support and subjective wellbeing over time

	Coefficient (95% CI)	P
Time 1 x targeted interventions (ref)		
Time 2 x targeted interventions	-0.39 (-1.60, 0.81)	0.524
Time 3 x targeted interventions	-1.07 (-2.20, 0.18)	0.097
Time 4 x targeted interventions	-0.53 (-1.73, 0.66)	0.383
Time 5 x targeted interventions	0.04 (-1.16, 1.23)	0.948

- There was no significant association between receiving targeted interventions and wellbeing over time.
- Wellbeing declined over time for everyone from 2017/18 onwards.

Comparison of targeted support year on year

The second methodology to evaluate the effectiveness of targeted support was to run pre-post regression analysis year on year by exploring changes separately from: time point 1 (2016/17) to time point 2 (2017/18), from time point 2 (2017/18) to time point 3 (2018/19), from time point 3 (2018/19) to time point 4 (2019/20) and from time point 4 (2019/20) to time point 5 (2020/21).

We categorised the targeted support by:

1. Any targeted support.
2. The targeted intervention support categories were: any professionally led resilience training, therapy or counselling (individual); any professionally led resilience training, therapy or counselling (group); developing a relationship with a person in the community or school; creative and physical activity to improve mental health; parent and carer support; reflective spaces; online support; engagement and active collaboration; training for professionals; and assessment. No analyses were conducted when the intervention group had less than 10 individuals. This meant that it was not possible to analyse separately the following targeted intervention groups: any professionally led resilience training, therapy or counselling (individual); creative and physical activity to improve mental health; parent and carer support; reflective spaces; online support; engagement and active collaboration and training for professionals.

The majority of the time, no analyses were conducted between time point 4 and 5 due to sample size.

Main findings:

- The baseline mental health difficulties scores for the young people who received targeted support to reduce onset of mental health problems were particularly higher than those who didn't receive targeted support.
- The results showed no greater improvement (or no reduced deterioration) in mental health and/or wellbeing scores among the young people who received targeted support. The mental health difficulties scores of those who received targeted support was parallel to those who didn't receive targeted support. This result is relatively similar to what we observed from the first multi-level analysis.
- The results showed that those who had any targeted support had an improvement in their wellbeing score from 2017/18 to 2018/19.
- Those who received an 'assessment' type of targeted support showed an improvement in their behavioural difficulties score from 2018/19 to 2019/20.

Due to conducting many analyses, it is important to apply Bonferroni correction. Once applied, only the following findings remained within significance levels:

- *Those who received targeted support were more likely to have higher mental health difficulties and lower wellbeing.*