

## Zone West: Quantitative outcomes for Outer West schools.

Quantitative data is collected using standardised questionnaires, author-designed targeted questionnaire and background demographic information. Questionnaires are completed by parents, teachers and children/young people before children receive Zone West support ('pre') and after 9 months of Link Worker support ('post').

The primary quantitative outcome at Zone West is change in social-emotional mental health (SEMH) as measured by the Strengths and Difficulties Questionnaire (SDQ). Secondary outcomes include quality of life measured by the Pediatric Quality of Life (PedsQL), and language and communication measured by the Childrens Communication Checklist (CCC) and author designed targeted vocabulary list. For secondary school Zone West cohort school attendance outcomes were also collected.

Quantitative data was analysed using descriptive (i.e. mean scores) and inferential statistics (statistical significance). Inferential statistical analysis was completed using non-parametric Wilcoxon related samples test on SPSS, and Welsch's test for attendance outcomes. In inferential statistical analysis a probability 'p' value is computed that represents the probability that results have occurred by chance. A 'p' value of < 0.05 indicates a statistically significant result; a result that is less than 5% likely to be due to chance occurrence and is more than 95% likely to be due to the independent variable, i.e., Zone West.

### Primary school outcomes.

In February 2024, matched pre- post data were available for 8 primary Zone West schools (n= 83).

#### *Background information*

*Table 1. Background information for primary cohort*

	Yes %
Existing diagnosis of disorder	11
On wait list	14

Being assessed by MH services	8
Medical problems	37
On regular medicine	23
Disrupted/poor sleep	10
Parental concern about:	
Development	8
Behaviour	11
Diet	30
Weight	23
Friendships	10

### *Social-emotional mental health (SEMH)*

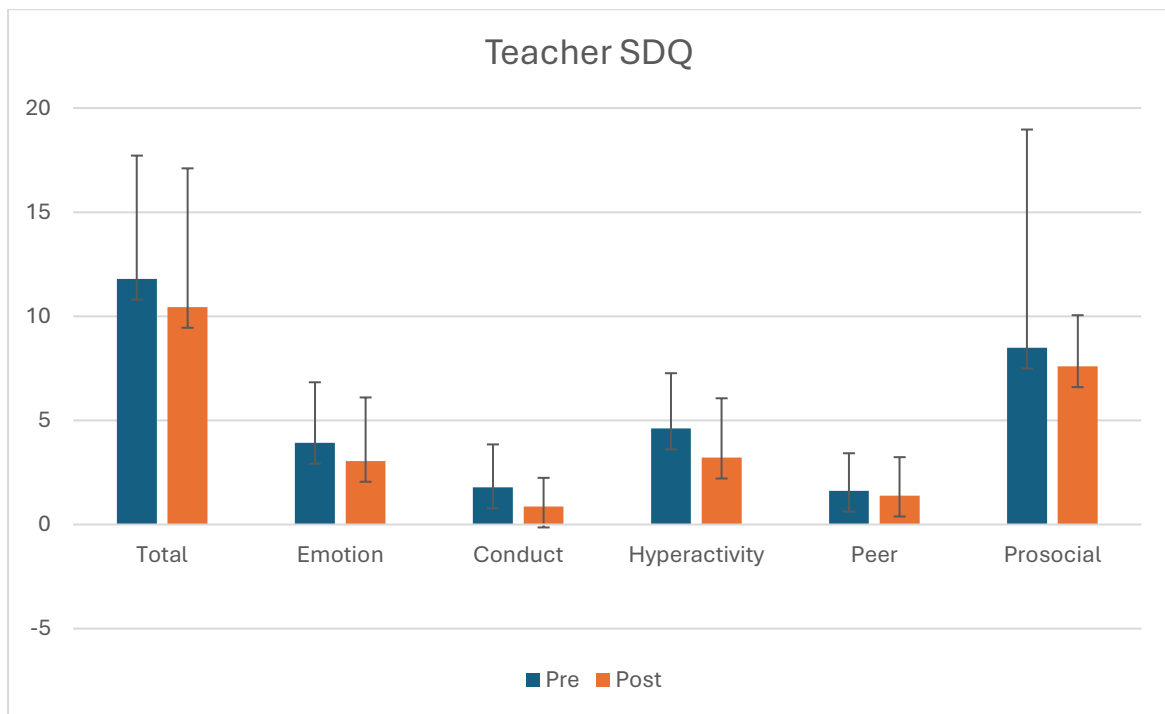
SEMH was measured by the Strengths and Difficulties Questionnaire (SDQ), completed by parents, teachers and Zone West children pre- and post-support. The SDQ is a standardised questionnaire commonly used in clinical diagnostic and research practice which measures:

- Total behaviour difficulties,
- Emotional difficulties,
- Conduct difficulties,
- Hyperactivity,
- Peer difficulties and
- Prosocial behaviour.

Higher scores on all scales apart from the prosocial scale indicates greater difficulty. The prosocial scale is reverse scored (as this scale indicates positive helping behaviour), so higher scores on this subscale indicate greater prosocial behaviour.

Each subscale is scored out of 10, and the total score is scored out of 40 (the sum of the first 4 subscales).

Figure 1. Mean and standard deviation teacher-report SDQ scores, pre- and post-Zone West (Mean, SD)

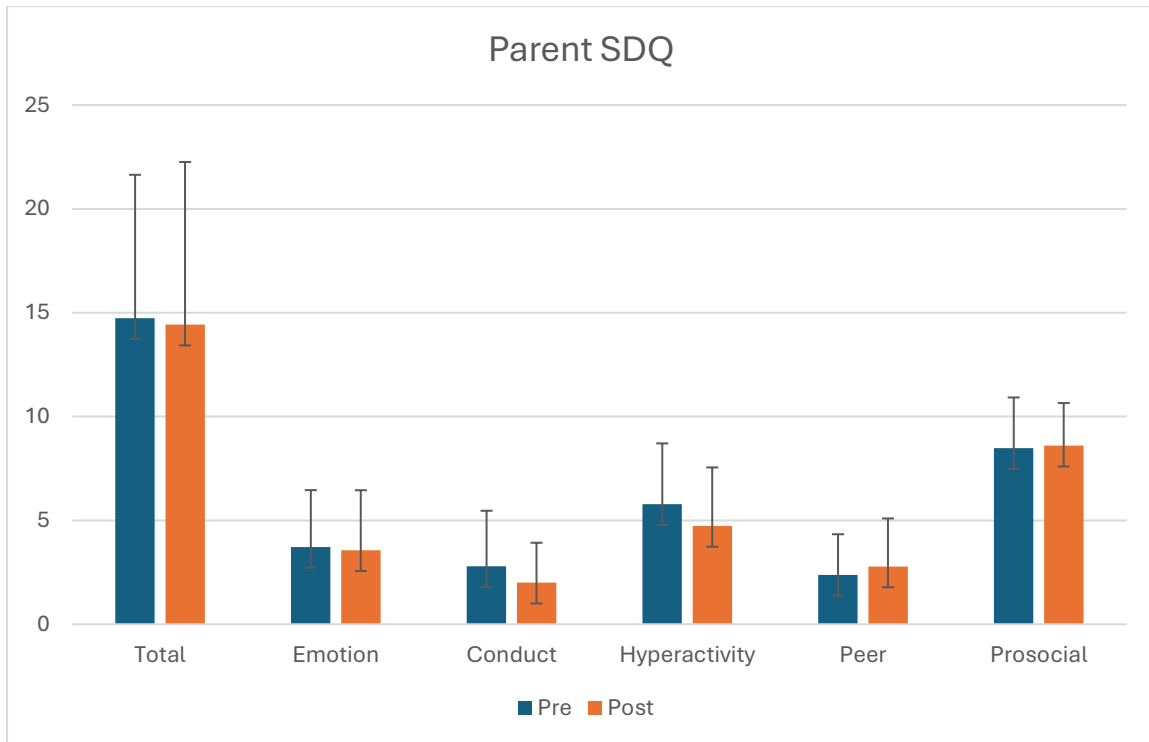


At intake, based on teacher-report SDQ, **47%** of children had 'raised'. 'high' or 'very high' degree of social-emotional mental health difficulties. Post- Zone West, **28%** had 'raised'. 'high' or 'very high' difficulties.

Mean scores indicate teachers reported improvement over time in children's total difficulties, emotional, conduct, hyperactivity and peer difficulties.

Statistical analysis indicated a significant effect of Zone West on children's **emotional difficulties (p<0.05)**, and a highly significant effect on **conduct difficulties (p= <0.01)** and **hyperactivity difficulties (p= <0.01)**, as reported by teachers.

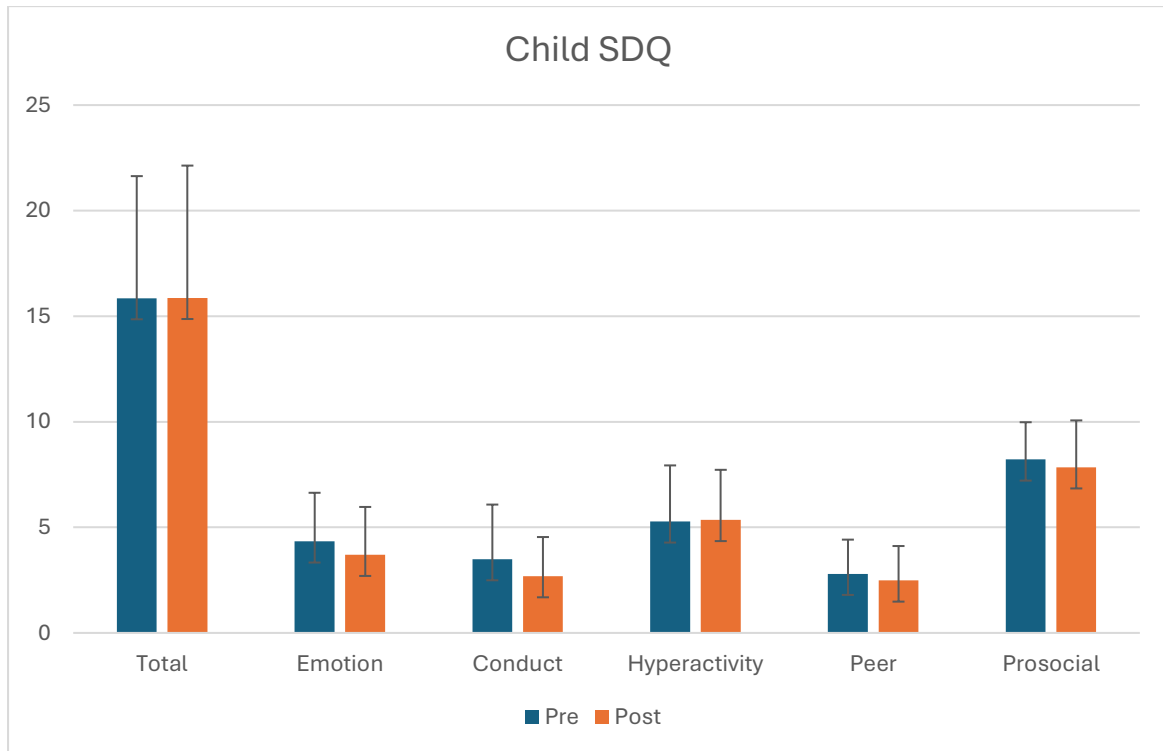
Figure 2. Mean and standard deviation parent-report SDQ scores, pre- and post-Zone West (Mean, SD)



Mean scores indicate parents reported improvement over time in children’s total difficulties, conduct and hyperactivity difficulties and prosocial behaviour. Emotional difficulties were reported to have remained stable.

Statistical analysis indicated a highly significant effect of Zone West on children’s **conduct difficulties (p= <0.01)** and **hyperactivity difficulties (p= <0.01)**, as reported by parents.

Figure 3. Mean and standard deviation child-report SDQ scores, pre- and post-Zone West (Mean, SD)



Mean scores indicate children themselves reported improvement over time in their emotional difficulties, conduct difficulties, and peer difficulties.

Statistical analysis indicated a highly significant effect of Zone West on children's **emotional difficulties (p<0.01)**, **conduct difficulties (p= <0.01)** and a significant effect on **peer difficulties (p= <0.05)** as reported by children.

### Quality of Life (QoL)

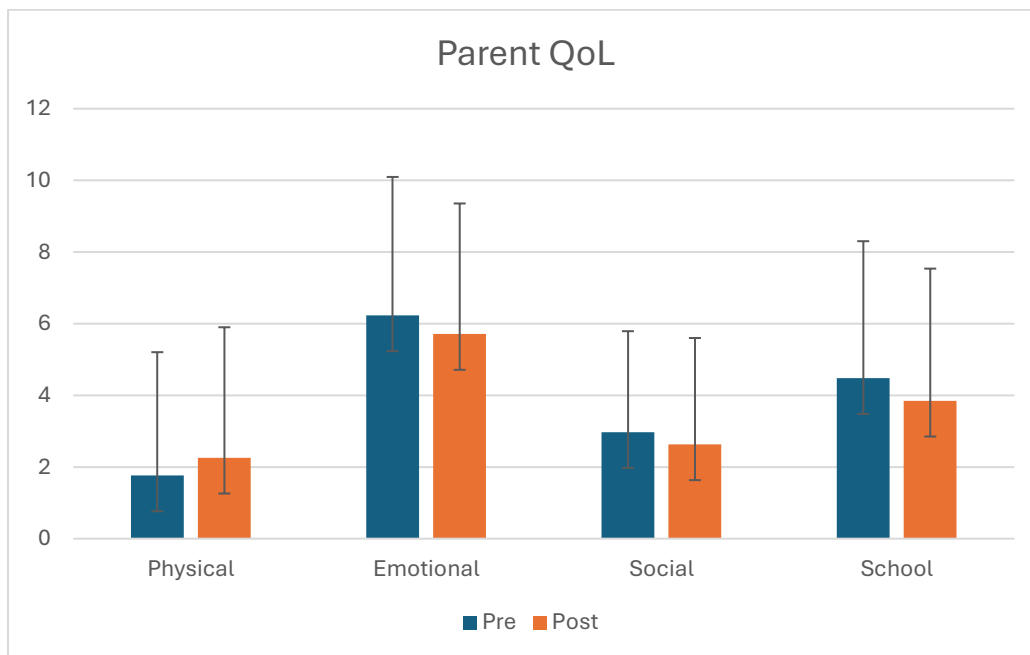
Children's QoL was measured by the Paediatric Quality of Life Inventory (PedsQL), which is a standardized health status assessment that measures quality of life across five domains:

- Physical functioning,
- Emotional functioning,
- Social functioning,
- School functioning.

Each subscale is scored between 0-4, with children/young people and parents answering, 'over the past month how much of a problem has this been for you/your child'. Higher scores indicate poorer functioning/greater problems, therefore a decrease in scores over time indicates improved functioning/decrease in problems. In the Zone West project, the PedsQL was completed by parents and Zone West children/young people.

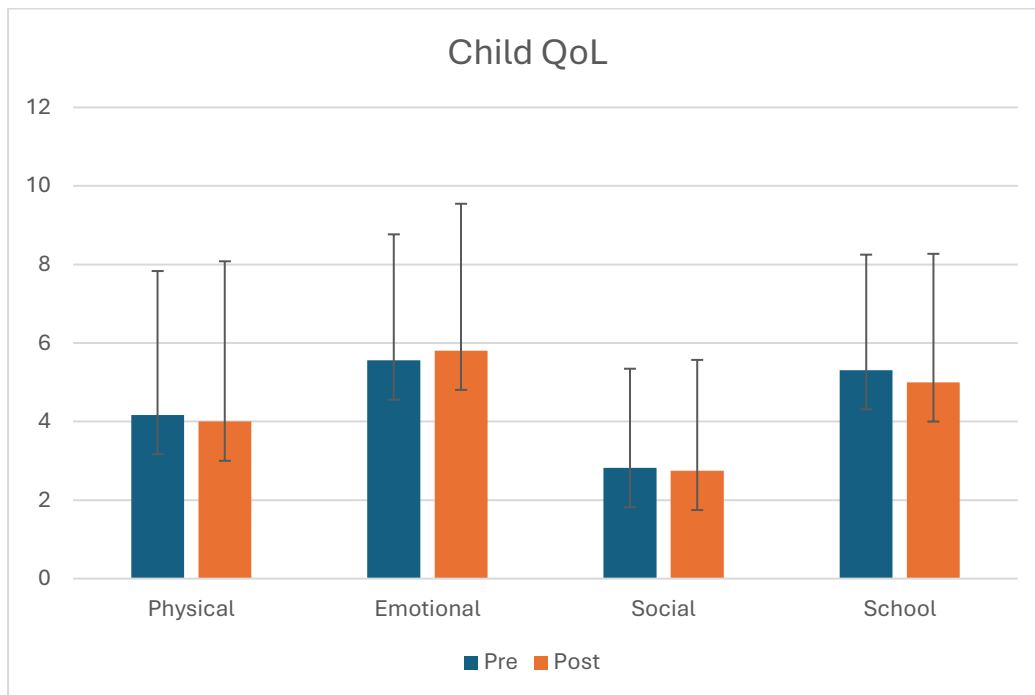
### Quality of Life

Figure 4. Pre- and Post- Zone West parent-report PedsQL scores (Mean, SD)



Mean parent-report QoL scores indicate parents reported improvement over time in their child's emotional, social and school functioning. These reported improvements though did not reach statistical significance and this is likely to be due to the large degree of variability between QoL scores as indicated by large standard deviations.

Figure 5. Pre- and Post- Zone West child-report PedsQL scores (Mean, SD)



Mean child-report QoL scores indicate children themselves reported stability over time in quality of life, therefore there were no changes in child self-reported physical, emotional, social or school functioning from pre-post Zone West.

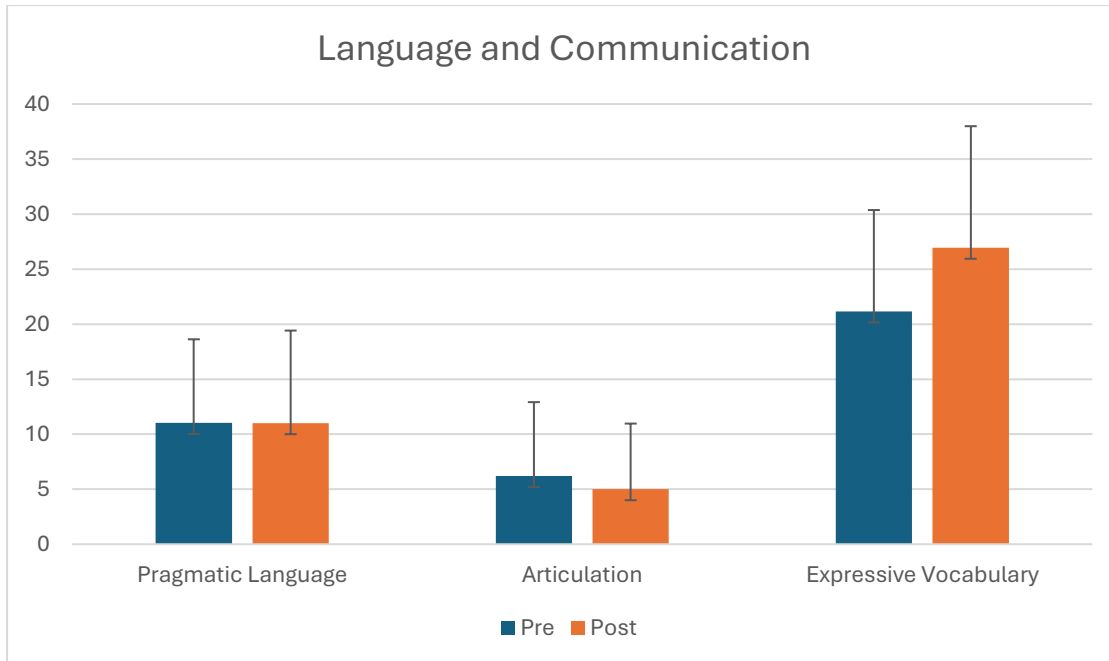
### *Language and Communication*

Children's language and communication was measured with a shortened version of the parent-report Children's Communication Checklist-2 (CCC-2) which measures:

- Pragmatic language skills (ability to use language appropriately across contexts),
- Articulation/grammatical skills.

Higher scores on these scales indicate greater degree of language difficulty, therefore a decrease in scores over time indicates improved language skills. Children's expressive vocabulary skills were measured using an author-designed targeted vocabulary list which was completed by the children themselves with the Link Worker. This measured the number of words the child/young person uses out of a list of 45, therefore higher scores indicate greater vocabulary skills.

Figure 6. Pre- and Post- Zone West parent-reported CCC and child-reported vocabulary scores (Mean, SD)



Mean scores indicate stability in pragmatic language skills but improvement in articulation skills over time as reported by parents. There was an increase in children expressive vocabulary skills over time as reported by the children.

Statistical analysis indicated a significant effect of Zone West on children’s **articulation** ( $p < 0.05$ ).



## Secondary school outcomes

In February 2024, matched pre- post data were available from 1 secondary Zone West school, for young people in years 7 and 8 (n=30).

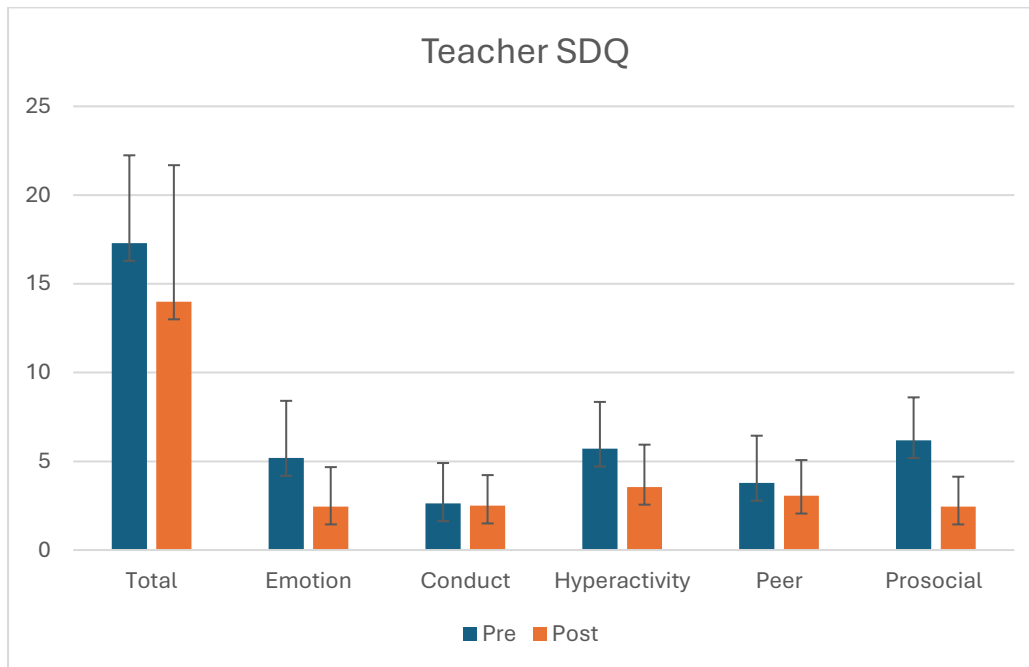
### *Background information*

*Table 2. Background information for secondary cohort*

	Yes %
Existing diagnosis of disorder	15
On wait list	7
Medical problems	71
On regular medicine	13
Disrupted/poor sleep	22
Parental concern about:	
Mental Health	36
Aggressive behaviour	22
Anxiety/depression	27
Weight	23
Friendships	45

Social-emotional mental health (SEMH)

Figure 7. Mean and standard deviation parent-report SDQ scores, pre- and post-secondary school Zone West (Mean, SD)

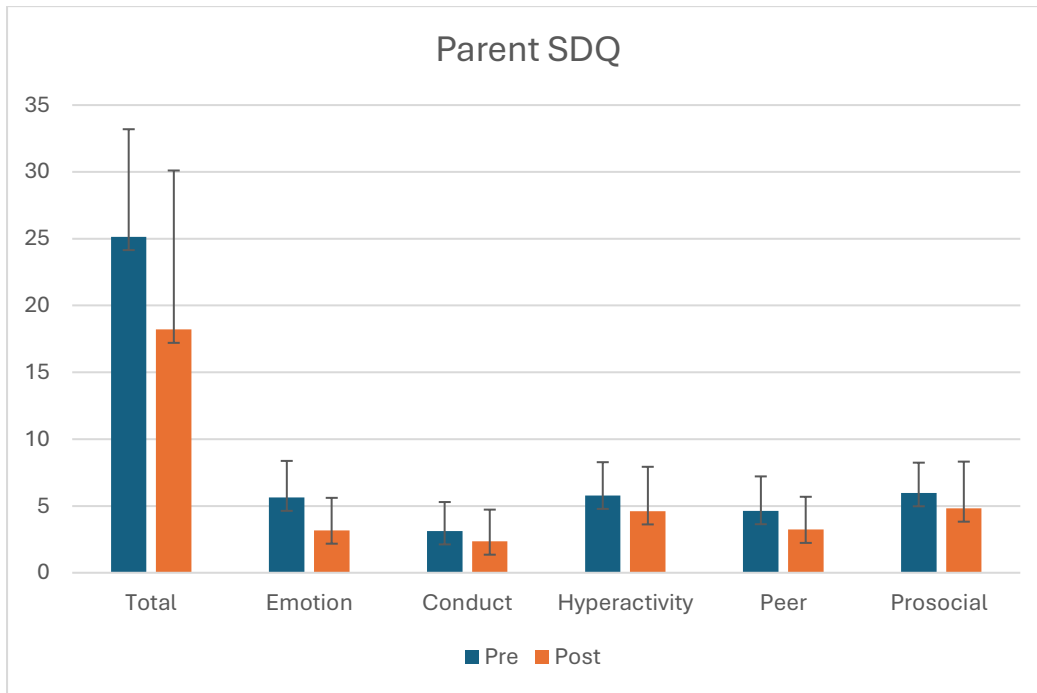


At intake, based on teacher-report SDQ, **59%** of young people had ‘raised’. ‘high’ or ‘very high’ degree of social-emotional mental health difficulties. Post- Zone West, **32%** had ‘raised’. ‘high’ or ‘very high’ difficulties.

Mean scores indicate teachers reported improvement over time on young people’s total difficulties, emotional difficulties, hyperactivity difficulties and peer difficulties. Conduct difficulties were reported to have remained the same and prosocial were rated as slightly greater degree of difficulty but within a typical range for age.

Statistical analysis indicated a significant effect of Zone West on young people’s **emotional difficulties** ( $p < 0.05$ ) and **hyperactivity** ( $p < 0.05$ ), as reported by teachers.

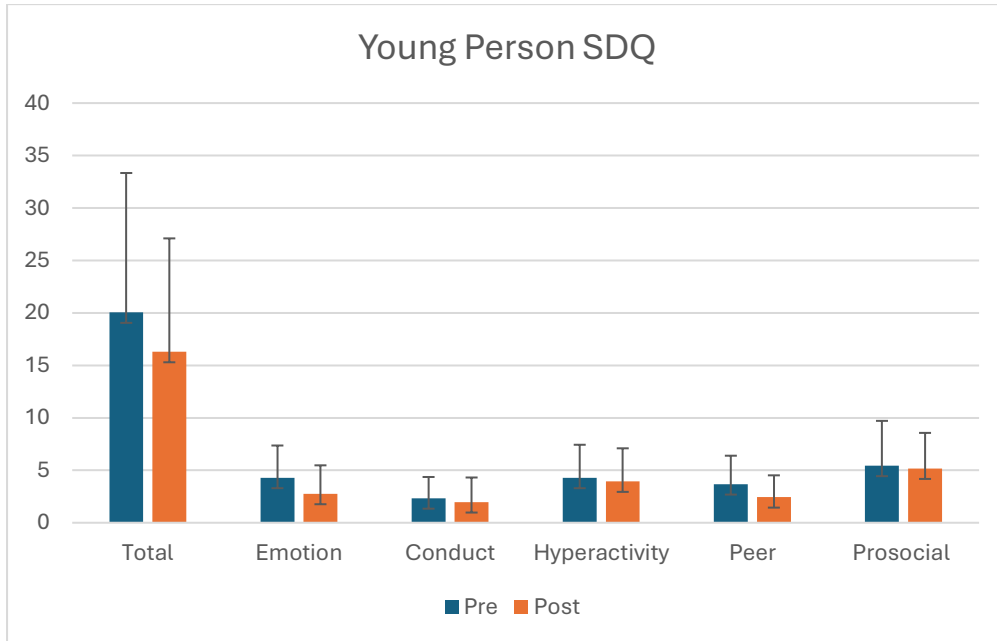
Figure 8. Mean and standard deviation teacher-report SDQ scores, pre- and post-secondary school Zone West (Mean, SD)



Mean scores indicate parents reported improvement over time on their young person's total difficulties, emotional difficulties, conduct and hyperactivity difficulties and peer difficulties. Prosocial difficulties remained relatively stable.

Statistical analysis indicated a significant effect of Zone West on young **people's total difficulties** ( $p = <0.05$ ) and a highly significant effect on **emotional difficulties** ( $p = <0.01$ ), as reported by parents.

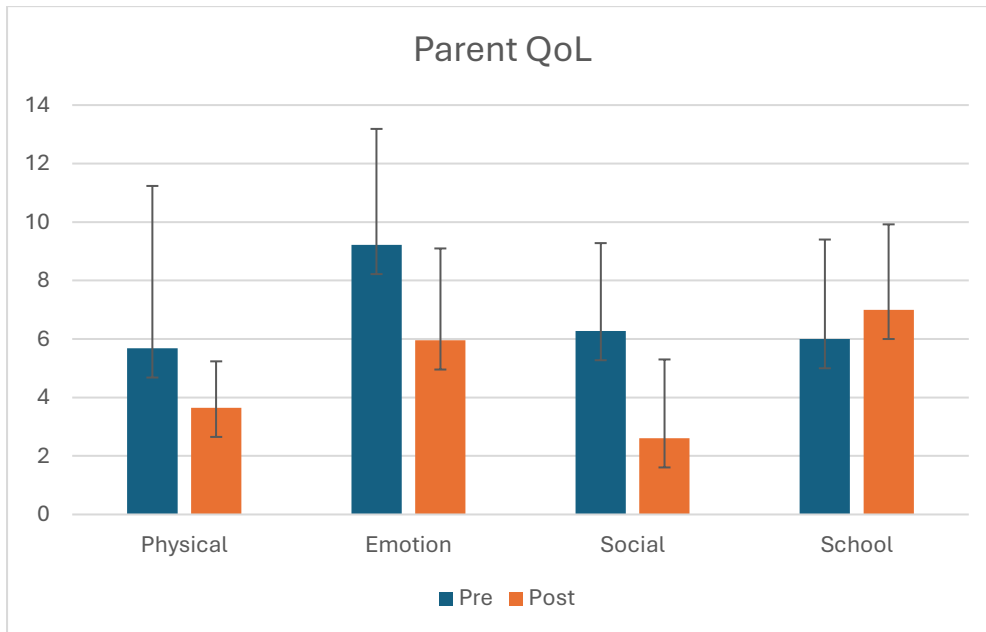
Figure 9. Mean and standard deviation young-person-report SDQ scores, pre- and post-secondary school Zone West (Mean, SD)



Mean scores indicate the young people themselves reported improvement over time in their total difficulties, emotional difficulties, and peer difficulties. Conduct, hyperactivity and prosocial difficulties were reported to have remained stable.

Statistical analysis indicated a significant effect of Zone West on young **people's emotional difficulties (p= <0.05)** and **peer difficulties (p<0.05)**, as reported by the young people themselves.

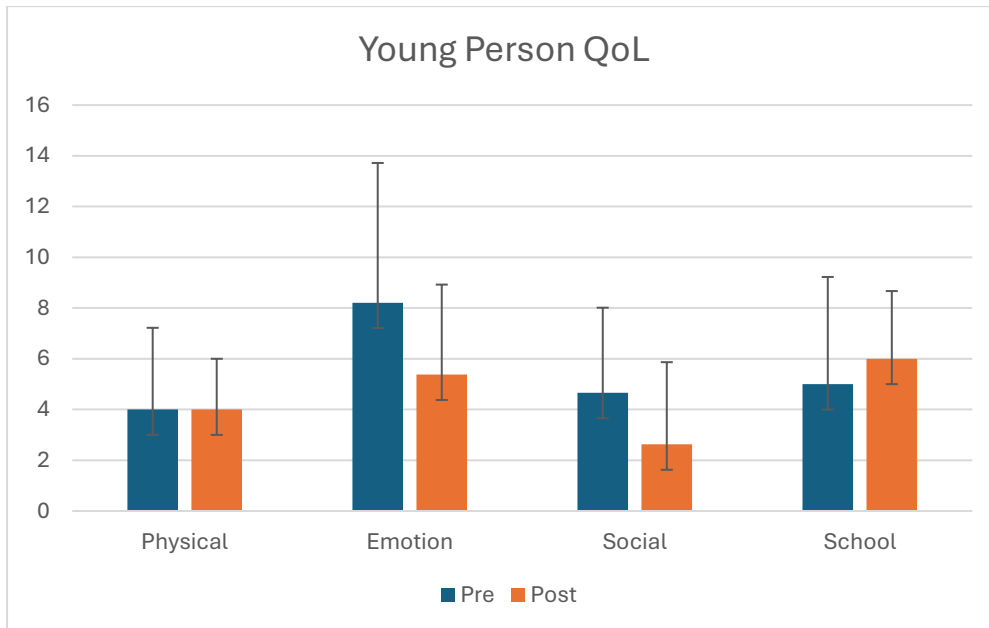
Figure 10. Pre- and Post- secondary school Zone West parent-report PedsQL scores (Mean, SD)



Mean parent-report QoL scores indicate reported improvement over time in their young person's physical, emotional and social and functioning but marginally greater challenge in school functioning (1 point difference).

Statistical analysis indicated Zone West had a significant impact on young people's **physical functioning** ( $p < 0.05$ ), and a highly significant impact on their **emotional functioning** ( $p < 0.010$ ) and **social functioning** ( $p < 0.001$ ).

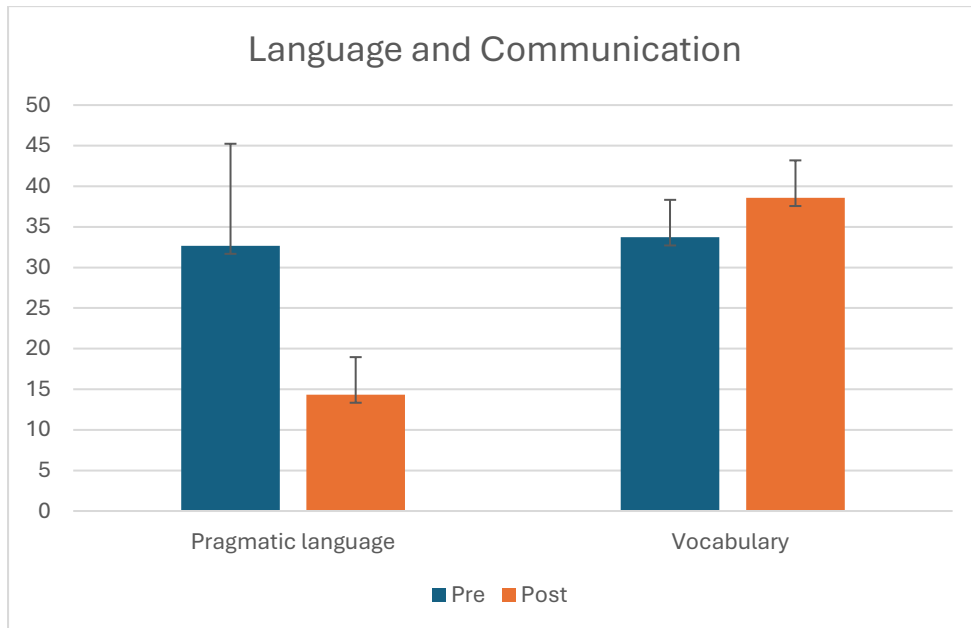
Figure 11. Pre- and Post- secondary school Zone West young-person-report PedsQL scores (Mean, SD)



Mean young-person's self-report QoL scores indicate the young people themselves reported improvement in emotional and social functioning, stability in physical functioning and marginally greater challenge in school functioning (1 point difference).

Statistical analysis indicated a significant effect of Zone West on young **people's emotional functioning** ( $p < 0.05$ ) and a highly significant effect on their **social functioning** ( $p < 0.01$ ).

Figure 12. Pre- and Post- secondary school Zone West parent-reported CCC pragmatic language and young-person-reported vocabulary scores (Mean, SD)



Mean pragmatic language scores indicate parents reported improvement over time in their young person’s pragmatic language skills, and young people reported improvement in their vocabulary scores over time.

Statistical analysis indicated a highly significant effect of zone west on children’s **pragmatic language (p<0.01)** and a very highly significant effect on **vocabulary (p<0.00)**.

### Attendance outcomes

Termly attendance data for secondary school Zone West children were compared to matched control children not receiving Zone West support.

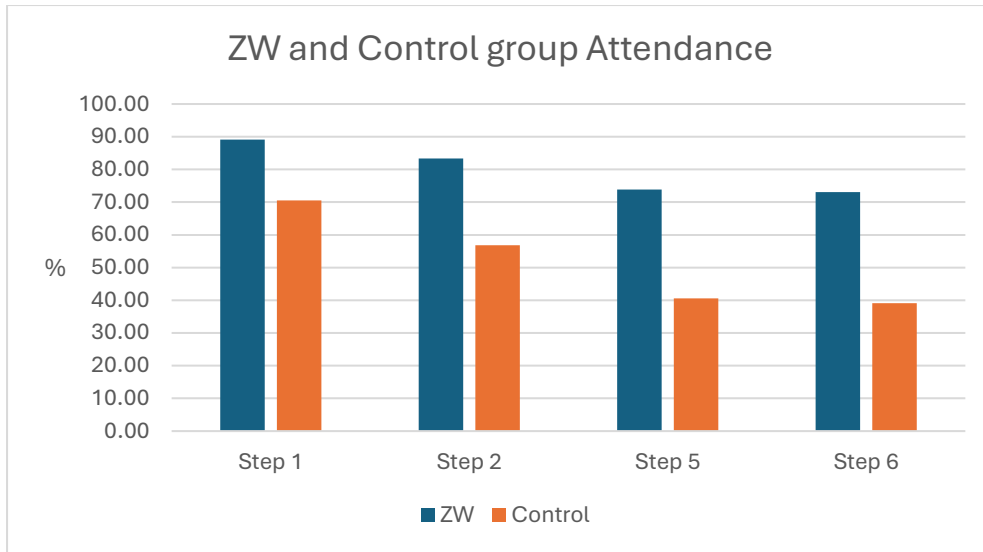
### Descriptive Statistics

Overall comparison (Zone West Vs Controls):

Table 3: Mean termly attendance for ZW children and comparative controls (Yrs 7 & 8 combined)

	Step 1	Step 2	Step 5	Step 6
ZW (n=51)	89.14	83.36	73.83	73.05
Control (n=60)	70.50	56.80	40.55	39.07

Figure 13: Mean attendance scores for ZW and control group children (Yrs 7 & 8 combined)



Mean attendance scores for years 7 and 8 combined indicate higher attendance for Zone West children.

Statistical analysis using the Welsch test indicated there was a highly significant effect of Zone West on attendance scores at all Steps 1-6 ( $p < 0.01$ ), with ZW children scoring significantly higher than controls.

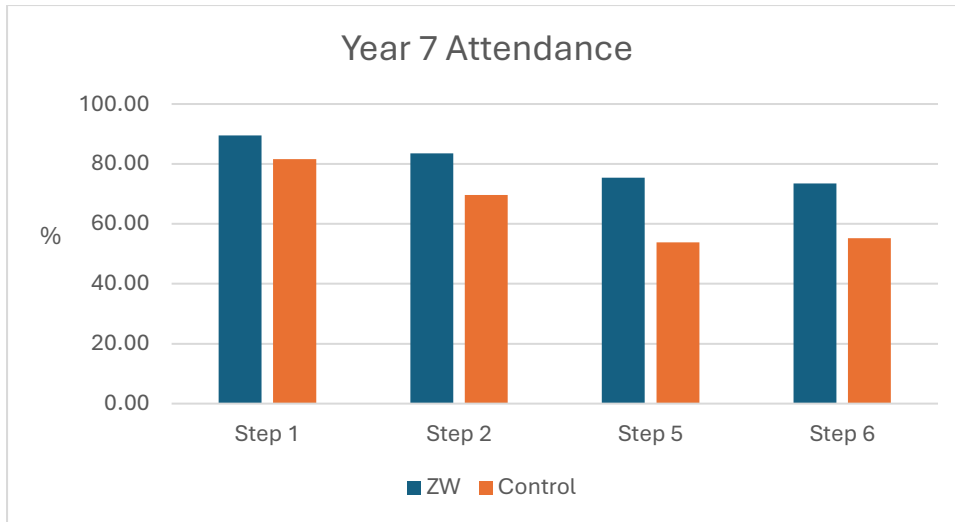
#### Year 7 comparison

Table 14: Mean termly attendance for Year 7 ZW children and comparative controls

	Step 1	Step 2	Step 5	Step 6
ZW (n=27)	89.51	83.48	75.36	73.50
Control (n=30)	81.65	69.59	53.78	55.24



Figure 15: Mean attendance scores for Year 7 ZW children and control group children



Mean attendance scores for year 7 indicate higher attendance for Zone West children.

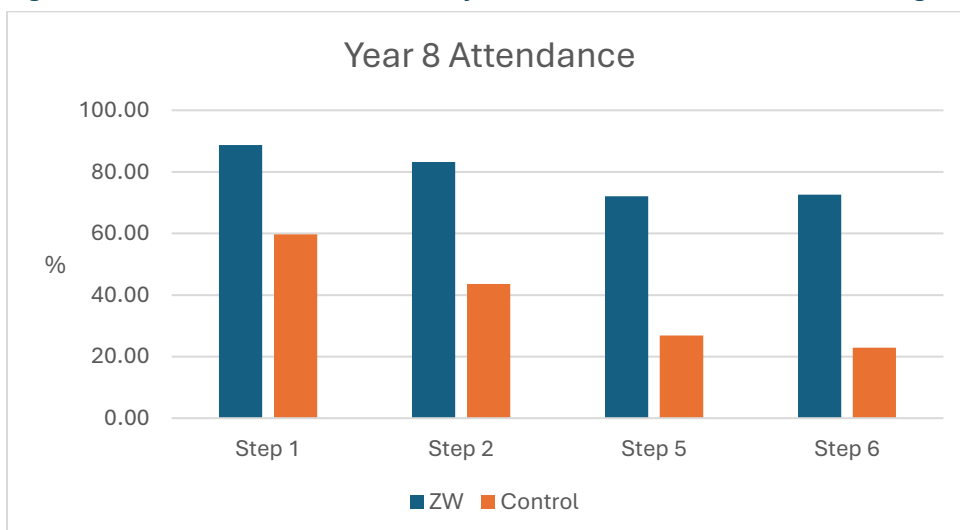
Statistical analysis using the Welsch test indicated there was a significant effect of Zone West on attendance scores of Year 7 children for Steps 2-6 ( $p < 0.05$ ), with ZW children scoring significantly higher than controls.

#### Year 8 comparison

Table 5: Mean termly attendance for Year 8 ZW children and comparative controls

	Step 1	Step 2	Step 5	Step 6
ZW (n=24)	88.73	83.22	72.11	72.55
Control (n=30)	59.74	43.55	26.86	22.90

Figure 16: Mean attendance scores for Year 8 ZW children and control group children



Mean attendance scores for year 8 indicate higher attendance for Zone West children.

Statistical analysis using the Welsch test indicated there was a highly significant effect of Zone West on attendance scores of Year 8 children for Steps 1-6 ( $p < 0.01$ ), with ZW children scoring significantly higher than controls.

### Summary of quantitative outcomes

Quantitative outcomes indicate Zone West has had a significant positive effect on the social-emotional mental health of primary school children, specifically on their emotional, conduct, hyperactivity and peer difficulties. Most notably, the proportion of children who began Zone West with raised-very high levels of mental health difficulties decreased substantially after taking part in Zone West (from 47% to 28%). Outcomes indicate Zone West has also had a significant impact on primary children's language and communication skills.

For young people in secondary school, outcomes indicate that Zone West has had a significant positive impact on their social-emotional mental health also, specifically on their total difficulties, emotional difficulties, hyperactivity and peer difficulties. As observed in the primary cohort, the proportion of young people who began Zone West with raised-very high levels of mental health difficulties decreased substantially after taking part in Zone West (from 59% to 32%). For these young people Zone West has also had a significant positive effect on their quality of life, specifically their physical, emotional and social functioning, and on their language and vocabulary skills. Whilst no significant outcomes were found for school functioning as measured by the quality of life questionnaire, school attendance outcomes have indicated consistent and highly significant positive effects of Zone West on young people's school attendance compared to young people who don't receive Zone West.

Dr J Charlton

February 2024