

Analysis of staff data

Sample

The sample described in this section is based on 275 members of staff from 7 schools who were taking part in the RSA's Comprehensive Approach to Mental Health Training in School programme (4 primary/first/middle and 3 secondary schools) and who completed both pre- and post-training questionnaires. This represents 58.8% of those who completed the baseline questionnaires before beginning training.

Training attendees came from a range of roles within the school including teaching/teaching assistant (58.0%), leadership (19.3%), pastoral (13.3%) and support/facilities/admin (9.5%) roles.

57.6% of attendees had not previously participated in training on children and young people's mental health.

Measures

In order to assess the impact of the training programme on school staff's literacy and confidence in supporting young people's mental health, staff were administered a specifically-developed questionnaire prior to and after attending training (see Appendix 1).

Data reduction

Due to the large number of variables that were derived from the questionnaire, we first reduced the number of variables for analysis by creating a smaller number of omnibus variables (literacy, confidence, school environment and supportive behaviours). To do this, relevant variables were recoded and summed. Appendix 2 outlines the items included in each of the four domains and lists the associated alphas for internal consistency, which were good overall.

Procedure

Before beginning training, staff were asked to complete a hardcopy of the questionnaire. Staff gave informed consent before completing the questionnaire, and were assured that no one from their school would see their answers. Eight months after having completed the training, all staff who attended the training were emailed an individual link to an online version of the same questionnaire.

Analysis

Data were analysed using Hierarchical Linear Modelling (HLM; (Raudenbush & Bryk, 2002), also called multilevel modelling (Snijders & Bosker, 1999). HLM allows researchers to study the trajectory of individual change over time (i.e., from pre- to post-implementation), and has several advantages over more traditional statistical techniques. Most importantly, HLM is well suited to research in schools because it accounts for the nested structure of the data (pupils are nested within schools), which means that there are likely to be correlations in the data- i.e. pupils or staff from the same school are more likely to respond in a similar way than are pupils or staff from different schools. More traditional statistical methods, on the other hand, assume that data points are completely independent of one another.

We used a three-level random effects model, with repeated measures (pre–post), individuals (members of staff), and the school unit as the three levels. Individuals’ data were fitted with an intercept, which indicates their initial score on a given measure, and a slope, which indicates their rate of change over time on that measure. For each measure we first examine staff scores at pre- and post-training, and the test for differences in the amount of change according to (1) school type (primary/middle or secondary school) and (2) role type (leadership, teaching, pastoral, other).

Results

Table 1 summarises means and standard deviations for teacher scores pre and post training. This initial descriptive analysis suggested potential improvements in scores pre- to post-training with average improvements ranging from 12% to 53%.

Table 1. Overall pre- and post-group means and standard deviations for all domains

	n	Pre-training (baseline)		Post-training (follow-up)		Difference	Average % change
		Mean	SD	Mean	SD		
Mental health literacy (range 7-35)	268	24.02	5.53	27.17	.29	3.15	13.11
Confidence in talking about mental health (range 2-8)	275	4.97	1.42	5.58	1.38	.61	12.27
School environment (range 8-40)	250	25.70	6.03	29.12	.40	3.42	13.31
Staff supportive behaviours (range 0-28)	248	7.58	7.56	11.58	7.74	4.00	52.77

The statistical significance of the differences between these pre and post scores were tested using MLM as described above. We found significant pre–post improvement in all four staff domains, for both primary/first/middle schools and secondary schools. Overall, staff reported a significant Increase in mental health literacy, confidence in talking about mental health, school environment and staff supportive behaviours. See Appendix 3 for full details.

To investigate the improvements in scores from pre to post-training further we considered the interaction between change in scores over time (pre-/post-training) and school type. None of these interactions were significant (see appendix 3).

Next, we investigated whether there was any difference in the amount of change in each of the four domains, according to the type of role carried out by members of staff (teaching/teaching assistant, leadership, pastoral and ‘other’ which included support/facilities/admin roles). None of the interaction terms were statistically significant, indicating that there was no meaningful difference in the amount of change between pre and post-implementation reported by staff doing each of these roles (see Figures 1-4). Please note that time along the x-axis in each of these figures refers to change between pre- and post-implementation.

Figure 1. Change in literacy scores according to staff role type

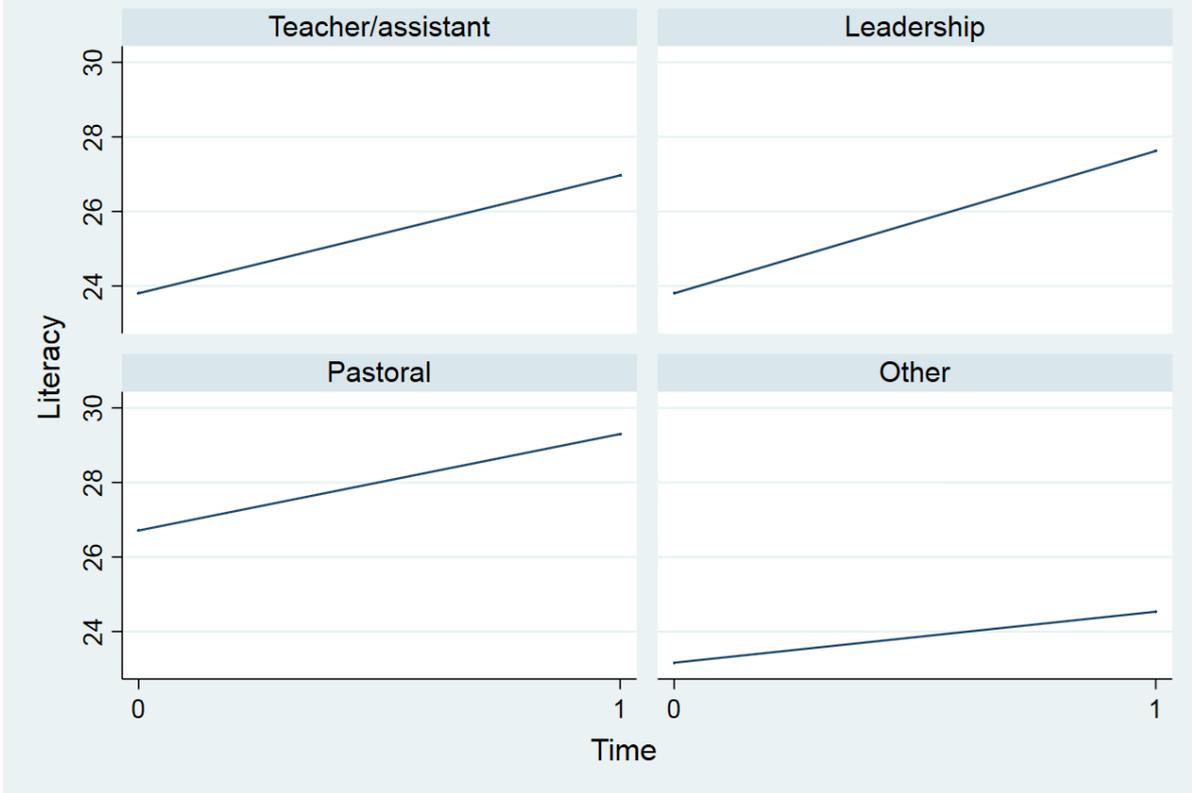


Figure 2. Change in confidence scores, according to staff role type

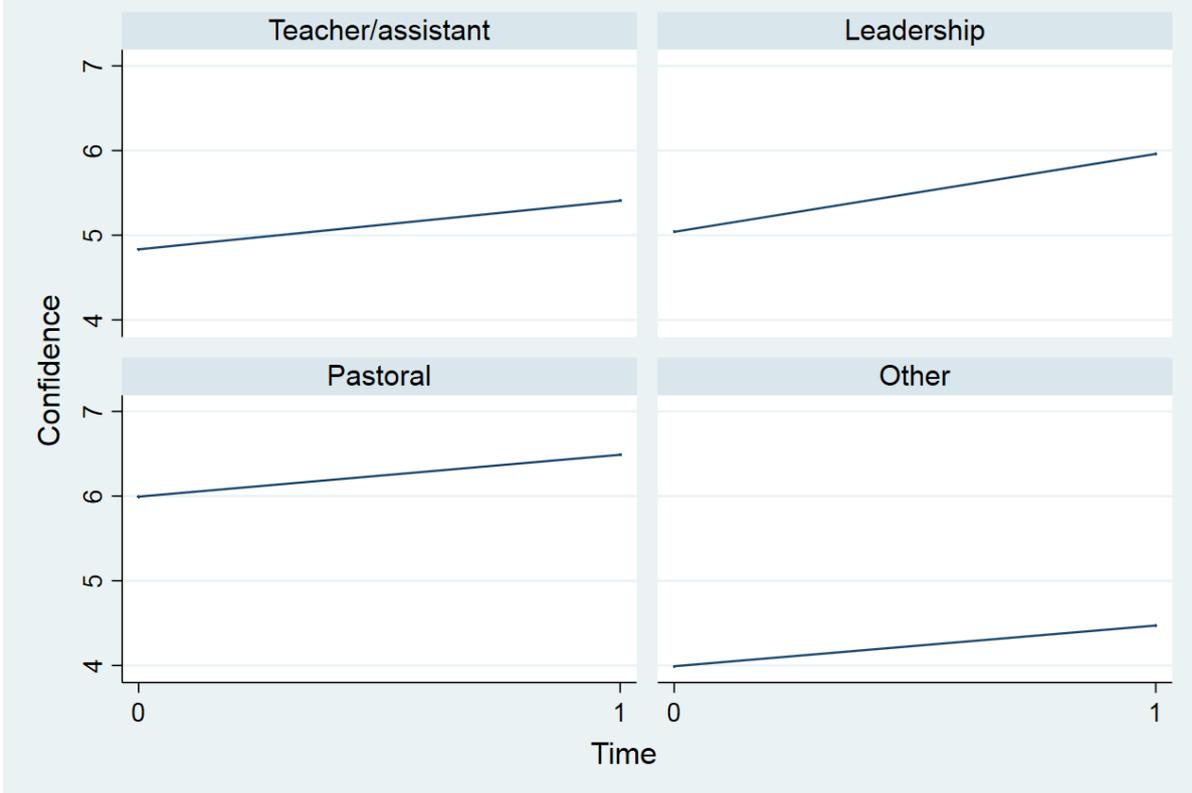


Figure 3. Changes in school environment scores, according to staff role type

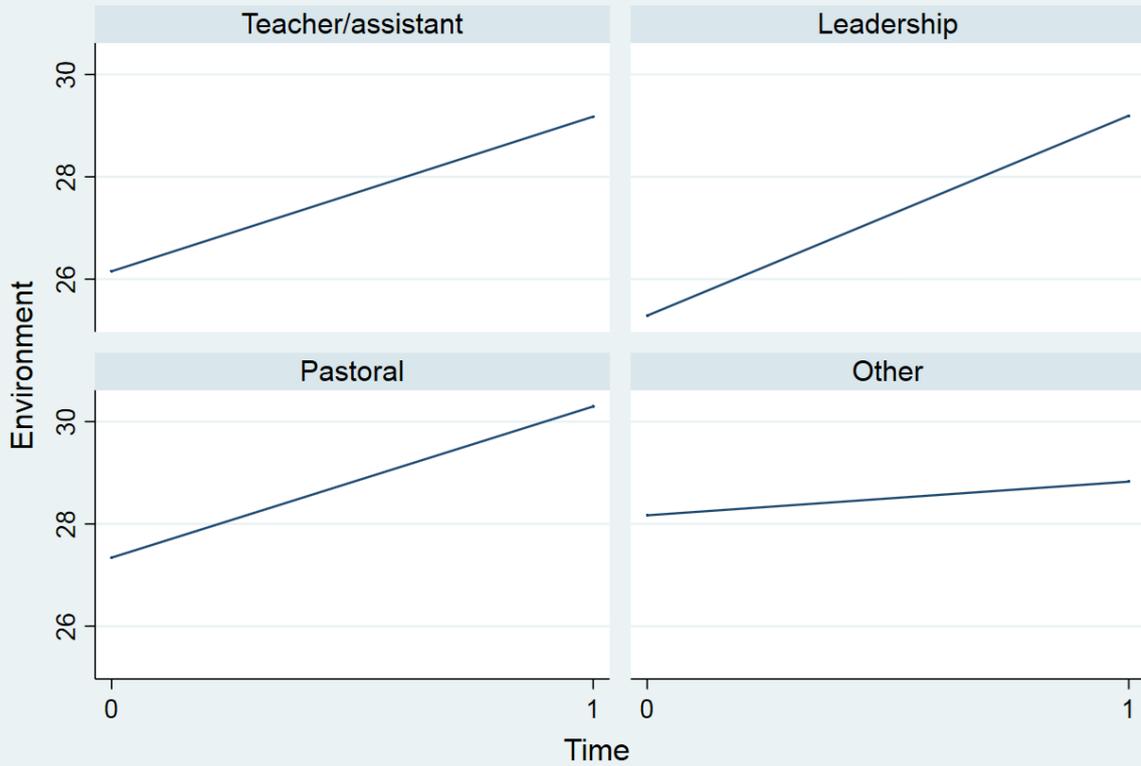
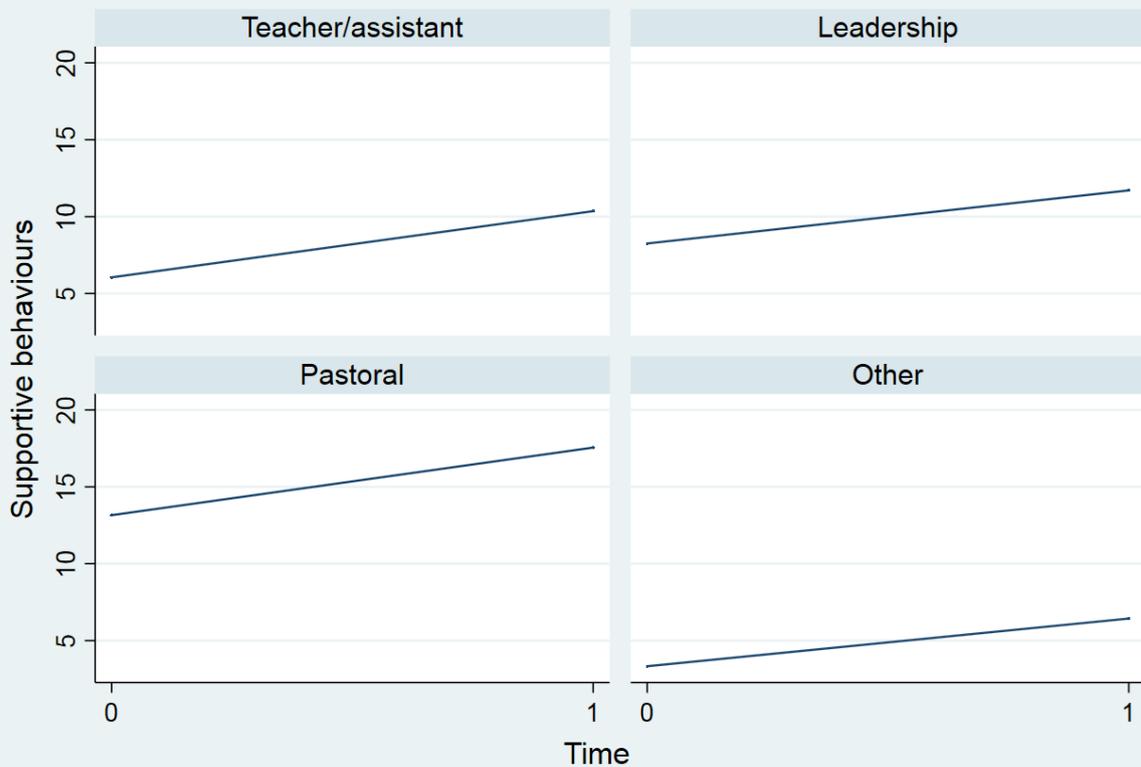


Figure 4. Change in supportive behaviours, according to staff role type



What does this mean?

The analysis indicates that eight months after having attended the training, staff in both primary/middle and secondary schools reported greater awareness and literacy around their pupils' mental health, greater confidence in talking about mental health, and an increase in their own supportive behaviours (such as having a conversation with a pupil, awareness raising, or signposting). They also reported a more supportive school environment at the whole-school level around pupils' mental health. However, as stated above, the extent of improvement in these domains over time did not vary according to staff role type, meaning that teaching staff, leadership staff, pastoral staff and other roles experienced similar levels of benefits. Neither did it vary according to school type, suggesting a similar pattern of improvement across primary/middle and secondary schools.

Please note that without a matched counterfactual sample, who did not receive the training, it is not possible to attribute changes in these four domains to the training with any certainty.

Analysis of pupil data

Sample

The sample described here comprises 347 pupils from 3 primary/middle schools and 716 pupils from 4 secondary schools, who completed both baseline and follow-up questionnaires. This represents 63.2% of primary school pupils and 65.4% of secondary school pupils who completed the baseline questionnaire. The sample size for each measure varied slightly according to the completeness of the data. The 7 schools included are a selection of those under the sponsorship of the Royal Society of Arts (RSA) who were taking part in the RSA's Comprehensive Approach to Mental Health Training in School programme.

Of the primary/middle school pupils, 50.7% were female (n= 176), 72.3% (n= 251) were in year 5 at baseline and 27.7% (n= 196) were in year 7. Of the secondary school pupils, 49.7% were female (n=294), 45.4% (n= 325) were in year 7 at baseline and 54.6% (n= 391) were in year 9.

Measures

Pupils completed the online [Wellbeing Measurement Framework](#) (WMF), a battery of validated questionnaires (tailored to each age group) that assesses constructs such as positive wellbeing, behavioural or emotional difficulties, the presence and strength of protective factors such as perceived support at school, home and in the community, ability to deal with stress and manage emotions. Below we detail the specific measures included in the primary and secondary school versions of the WMF.

Primary school (completed by primary and middle schools)

Positive wellbeing

Pupils' positive mental wellbeing was measured using the Student Life Satisfaction Scale (SLSS; Huebner, 1991; 1991). Pupils are asked about the extent to which they agree or disagree with a series of 7 general statements about their life. Responses are given using a 6-point scale from 'strongly disagree' to 'strongly agree'. Total scores can range from 7-49, with higher scores representing greater wellbeing. Internal consistency in the sample was good (Cronbach's alphas= .85).

Mental health difficulties

Mental health difficulties were measured using the Me and My Feelings (MAMF; Deighton et al., 2013; Patalay, Deighton, Fonagy, Vostanis and Wolpert, 2014), a 16-item measure comprising two subscales; emotional and behavioural difficulties. Participants respond to short statements using a 3-point scale of 0 "never", 1 "sometimes" or 2 "always". Total scores on the emotional and behavioural subscales can range from 0-20 and 0-12 respectively, with higher scores representing greater levels of difficulties. Internal consistency in the sample was good, with Cronbach's alphas of .79 for the emotional difficulties subscale, and .82 for the behavioural difficulties subscale.

Resilience

Resilience (risk and protective factors) was measured using the Student Resilience Scale (SRS; Sun and Stewart, 2003; Lereya et al., 2016). The SRS is a 47-item measure comprising 12 subscales measuring respondents' perceptions of their individual characteristics as well as protective factors/sources of support in their environment. Here, 10 of the 12 subscales have been used: family connection, school connection, community connection, participation in home and school life, participation in community life, self-esteem, empathy, problem solving, goals and aspirations and peer support. Respondents are asked to respond to a series of statements (e.g. "When I need help, I find someone to talk to") on a five-point Likert scale of 1 "never" to 5 "always". Total scores vary according to each subscale, with high scores representing higher levels of personal qualities (e.g. self-esteem) or higher levels of external support. Internal consistency in this sample was good, with Chronbach's alpha ranging from .63 to .93.

Secondary schools

Positive wellbeing

Pupils' positive wellbeing was measured using the short version of the Warwick–Edinburgh Mental Wellbeing Scale (SWEMWBS; Stewart-Brown et al., 2009). The SWEMWBS comprises seven, positively-worded items which asks respondents about their thoughts and feelings over the past two weeks. Respondents answer using a five-point scale ranging from 'none of the time' to 'all of the time'. Score can range from 7-35 with higher scores indicative of greater positive wellbeing. Internal consistency in the sample was good, with Cronbach's alphas of .77.

Mental health difficulties

Mental health difficulties in secondary school pupils were measured using the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997; 2001), a 25-item measure comprising five subscales; emotional difficulties, behavioural difficulties, peer problems, hyperactivity, and prosocial behaviour. Participants respond to short statements using a 3-point scale of 0 "not true", 1 "somewhat true" or 3 "certainly true". Total scores on each subscale can range from 0-10, with higher scores representing greater levels of difficulties. Internal consistency in the sample was acceptable, ranging from Cronbach's alphas of .57-.77.

Self-regulation

Self-regulation was measured using a subscale of the Trait Emotional Intelligence Questionnaire – Adolescent- Short Form (TEIQUE; Petrides, Sangareau, Furnham, and Frederickson, 2006). This subscale of the TEIQUE comprises 6 statements, to which pupils are asked to indicate the degree to which they agree using a 7-point scale, ranging from 'disagree' to 'agree'. Total scores can range from 6-42, which higher scores indicating that pupils are better able to manage their emotions. Internal consistency in the sample was acceptable, with Cronbach's alphas of .64

Coping with stress

Perceived stress was measured using the 4-item version of the Perceived Stress Scale (PSS; Cohen, Kamarck and Mermelstein, 1983; Cohen and Williamson, 1988). Pupils are presented with 4 statements about their thoughts and feelings and must indicate the frequency with which they have experienced these feelings using a five-point scale ranging from 'never' to 'very often'. Scores can range from 0-16, with lower scores indicating better coping skills. Internal consistency in the sample was acceptable, with Cronbach's alphas of .63.

Resilience

Resilience (risk and protective factors) in the secondary school sample was also measured using the Student Resilience Scale (SRS; Sun and Stewart, 2003; Lereya et al., 2016), see above. In the secondary school version of the WMF we use just 9 of the 12 subscales have been used: family connection, school connection, community connection, participation in home and school life, participation in community life, empathy, problem solving, goals and aspirations and peer support. This is because the reliability of the removed subscale (self-esteem) was poor in this age group. Internal consistency in this sample was good, with Chronbach's alpha ranging from .75 to .92.

Procedure

Pupils completed the WMF online, in teacher-facilitated sessions in school first in Spring 2017 and again in Spring 2018. Pupils completed the WMF in a lesson as part of their normal school day. Parental consent was obtained via the school prior to pupils completing the survey, and pupils' assent was also obtained via an extra page at the beginning of the online survey. The online system was managed by the research team, with pupils logging in using a password provided to them. Pupils were reassured that neither their teachers nor their parents would ever be shown their individual responses.

Analysis

As with the data collected from pupils, staff data were analysed using HLM. Again, we used a three-level model, with repeated measures (pre-post), individuals (pupils), and the school unit as the three levels. Individuals' data were fitted with an intercept, which indicates their initial score on a given measure, and a slope, which indicates their rate of change over time on that measure. Data were represented at the individual level by random effects for the intercept, and by random effects for both the intercept and the slope at the school level. For each measure we examine pupils' scores at pre- and post-training and, if statistically significantly different, test for differences in the amount of change according to (1) pupil gender (male or female) and (2) year group (year 5 versus year 6 in primary schools; year 7 versus year 9 in secondary schools)). To do this we interaction terms in the model. The statistics relevant to this interaction are noted in Appendix 5. Effect sizes were calculated as above.

To control for the problem of multiple comparisons, and thereby increasing the Type I error rate (i.e. finding a significant result when there isn't one) we applied a Bonferroni correction.

Results

Primary school pupils

Of the fourteen measures completed by pupils in primary/middle schools, analyses indicated a significant difference in pupils' responses between pre- and post-staff training on two, 'participation at home and school' and 'problem solving'. Pupils reported a significant reduction in both participation at home and school ($B = -.81$, $SE = .25$, $z = -3.27$, $p < .001$, 95% CI[-1.30 - -.33], $d = -.21$) and problem solving ($B = -.76$, $SE = .22$, $z = -3.44$, $p < .001$, 95% CI[-1.19 - -.33], $d = -.22$). Including interaction terms into the model indicated no difference in this pattern according to either pupil gender or year group.

Please see Appendices 4, 5 and 6 for tables of means and standard deviations and estimated model parameters for all measures.

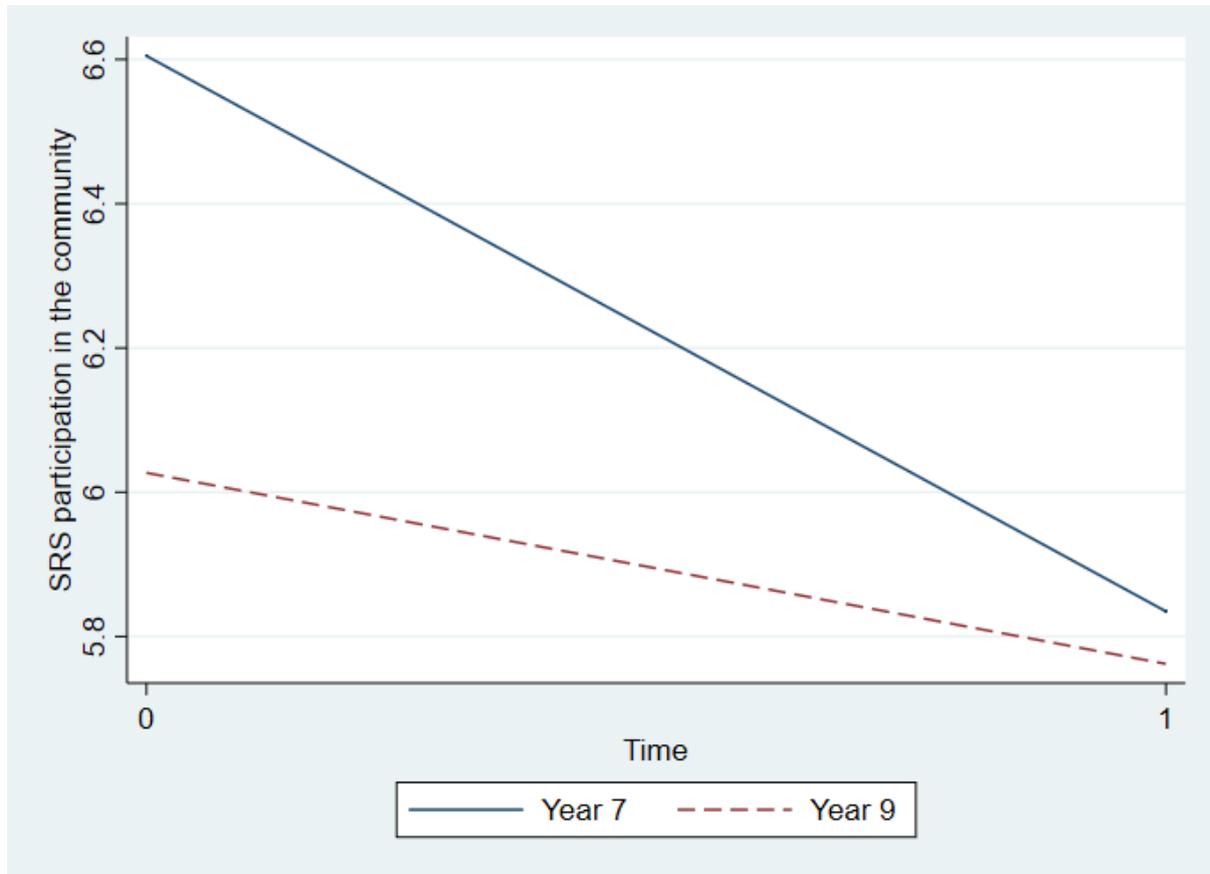
Secondary school pupils

Of the seventeen measures, we found a significant difference in pupil scores between pre- and post-staff training on just one, 'participation in the community'. At follow-up, pupils reported significantly less participation in the community ($B = -.52$, $SE = .10$, $z = -4.98$, $p < .001$, 95% CI[-.72-.31], $d = -.17$).

Please see Appendices 7, 8 and 9 for tables of means and standard deviations and estimated model parameters for all measures.

Adding interactions terms to test for gender and year group differences indicated a differential pattern of change according to year group only ($B = .50$, $SE = .21$, $z = 2.36$, $p < .001$, 95% CI[.09-.92]). As shown in Figure 5, closer examination of the amount of change reported by pupils in year 7 and year 9 indicated that the reduction in participation in the community was largely accounted for by pupils in year 7.

Figure 5. Pre-post change in SRS participation in community scores, according to pupils in year 7 and year 9.



What does this mean?

These analyses indicate that there is no discernible change in constructs associated with pupils' mental health, wellbeing, and resilience eight months after staff training has taken place in their school. Again, without a matched counterfactual sample against which to compare the current sample, it's not possible to extract fluctuation (or stability) associated with expected developmental changes as pupils grow older from any fluctuation (or stability) associated with the staff training.

However, no pupil effects were expected in this short term follow-up. Instead, these data from pupils are presented here to demonstrate the approach needed to track long term improvement and to give a general sense of change over time in the pupil population.

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Appendix 1: Staff questionnaire

RSA Academies: Evaluation of a comprehensive approach to mental health training in schools

Dear Colleague,

Thank you for taking the time to complete this questionnaire. It forms part of an independent evaluation of the comprehensive approach to mental health training in schools which is being carried out by the Evidence Based Practice Unit on behalf of the RSA Academies.

The purpose of the questionnaire is to capture the views and experiences of a range of professionals working within schools, regarding the support that is available for children and young people with mental health issues in your school. With your permission, we will ask you to complete the same questionnaire again in June 2018 to find out whether anything has changed.

The survey should take around 10 minutes to complete and includes four sections, as follows:

- A. Knowledge and confidence in relation to mental health issues
- B. Arrangements for mental health support in your school
- C. Accessing professional advice and support for children and young people's mental health
- D. Monitoring information

We will assign your responses a unique code, and this will appear on any data we collect from you so that we can match your responses now with your responses at follow-up (June 2018). All of your answers will be confidential and will not be shared with anyone in your school or in the RSA in any way which might identify you.

If you have any questions about the questionnaire or the evaluation, please get in touch at the following email address: ebpu@annafreud.org.

A. Knowledge and confidence in relation to mental health issues

A1. To what extent would you agree/disagree with the following statements about your knowledge of children and young people's mental health?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't Know
a) I feel equipped to identify behaviour that may be linked to a mental health issue	<input type="checkbox"/>				
b) Appropriate support to identify mental health issues in children is available in my school for all classroom teachers	<input type="checkbox"/>				
c) I know how to help children with mental health issues access appropriate support	<input type="checkbox"/>				
d) I am knowledgeable about a wide range of mental health issues	<input type="checkbox"/>				
e) I am aware of risk factors and causes of mental health issues in children and young people	<input type="checkbox"/>				
f) I know the things I can do as a member of school staff to promote and support emotional well-being of young people	<input type="checkbox"/>				
g) I know the procedure to follow in my school when a child presents with a mental health issue	<input type="checkbox"/>				

A2. How often do you talk to children in your school about their mental health and wellbeing?

a) Daily	b) Weekly	c) Monthly	d) Less than monthly	e) Never
<input type="checkbox"/>				

A3. How confident do you feel about talking to children about their mental health and wellbeing?

Very confident	Quite confident	Not very confident	Not at all confident
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A4. How often do you talk to parents and carers about the mental health and wellbeing of children in your school?

a) Daily	b) Weekly	c) Monthly	d) Less than monthly	e) Never
<input type="checkbox"/>				

A5. How confident do you feel about talking to parents and carers about the mental health and wellbeing of children in your school?

Very confident	Quite confident	Not very confident	Not at all confident
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A6. Have you ever participated in training on children and young people’s mental health? *Note: this includes any kind of training, whether delivered internally, externally, or self-directed (e.g. online). It does not include participation in more general safeguarding awareness training.*

a) Yes	<input type="checkbox"/>
b) No	<input type="checkbox"/>

A7. How long is it since you last participated in training on children and young people’s mental health?

a) Within the past year	<input type="checkbox"/>
b) Within the past two years	<input type="checkbox"/>
c) More than two years ago	<input type="checkbox"/>
d) Don’t know / can’t remember	<input type="checkbox"/>

A8. If there was one thing that would help to make it easier to support children and young people with mental health issues within your role, what would this be? Please give brief details below. (Max 150 words)

A9. If there was one area where additional training in your role would be helpful to support children and young people with mental health issues what would it be? Please give brief details below. (Max 150 words)

B. Arrangements for mental health support in your school

B1. What role(s) do you hold within your school? (Tick as many as apply)

a) Assistant head teacher	<input type="checkbox"/>
b) Deputy head teacher	<input type="checkbox"/>
c) Head teacher	<input type="checkbox"/>
d) Inclusion coordinator	<input type="checkbox"/>
e) Learning mentor	<input type="checkbox"/>
f) Pastoral lead (e.g. head of year)	<input type="checkbox"/>
g) SENCO	<input type="checkbox"/>
h) Senior manager (other)	<input type="checkbox"/>
i) Senior teacher	<input type="checkbox"/>
j) School nurse	<input type="checkbox"/>
k) Teacher	<input type="checkbox"/>
l) Teaching assistant	<input type="checkbox"/>
m) Other (please specify)	<input type="checkbox"/>

B2. How long have you worked at your current school?

a. Less than one academic year	<input type="checkbox"/>
b. Between one and 3 years	<input type="checkbox"/>
c. Between 4 and 6 years	<input type="checkbox"/>
d. 7 years or over	<input type="checkbox"/>

B3. To what extent do you agree with the following statements about mental health support within your school?

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
a) Children and young people's mental health is afforded a high priority within the school	<input type="checkbox"/>				
b) Staff mental health is afforded a high priority within the school	<input type="checkbox"/>				
c) Children and young people's mental health is reflected within 'whole school' policies and initiatives	<input type="checkbox"/>				
d) Support for mental health issues is adequately resourced within my school, in terms of staff time and specialist support	<input type="checkbox"/>				
e) Children in my school have confidence in the support that is available to them for mental health issues	<input type="checkbox"/>				
f) Staff in my school have confidence in the support that is available to them for mental health issues	<input type="checkbox"/>				
g) I know what mental health support is available for children within my school	<input type="checkbox"/>				
h) I feel well supported by specialist colleagues within my school (e.g. educational psychologists, school nurses, counsellors)	<input type="checkbox"/>				

B4. How significant are the following potential barriers to providing effective mental health support for children within your school?

	Very significant	Quite significant	Not very significant	Not at all significant	Don't know
a) Lack of information about locally available support for mental health issues	<input type="checkbox"/>				
b) Poor communication between different agencies	<input type="checkbox"/>				
c) Lack of national policy for mental health in schools	<input type="checkbox"/>				
d) Low priority afforded to mental health within the school inspection regime	<input type="checkbox"/>				
e) Negative attitudes towards mental health amongst staff in my school	<input type="checkbox"/>				
f) Lack of capacity within my school (e.g. time, availability, training)	<input type="checkbox"/>				
g) Recruitment and retention difficulties with specialist staff in my school	<input type="checkbox"/>				
h) Influence of my school's safeguarding policy	<input type="checkbox"/>				
i) Lack of capacity amongst NHS Child and Adolescent Mental Health Services (CAMHS)	<input type="checkbox"/>				
j) Lack of capacity amongst other mental health services in your local area (e.g. voluntary services)	<input type="checkbox"/>				
k) Other (specify)	<input type="checkbox"/>				

C. Accessing professional advice and support for children and young people’s mental health

The questions in Section C refer to the 2016-17 school (academic) year, unless stated otherwise. This covers the 12 months period from September 2016 to September 2017.

C1. Which (if any) of the following activities did you undertake, during the 2016-17 school year? Please tick all that apply.

	On a continuous basis	Monthly	Every few months	A few times per year	Never
a) Discussed mental health issues with a child(ren) on a one-to-one basis	<input type="checkbox"/>				
b) Discussed mental health issues with a child(ren) in a group situation	<input type="checkbox"/>				
c) Took part in mental health awareness-raising activities in the classroom	<input type="checkbox"/>				
d) Took part in mental health awareness-raising activities delivered via special assemblies or campaigns	<input type="checkbox"/>				
e) Signposted a child(ren) to written sources of advice or information for mental health issues (including online resources)	<input type="checkbox"/>				
f) Signposted a child(ren) to support for mental health issues (within your school (e.g. SENCO, school nurse, or counsellor)	<input type="checkbox"/>				
g) Signposted a child(ren) to external support for mental health issues (e.g. NHS CAMHS, voluntary sector, or GP)	<input type="checkbox"/>				
h) Other (specify)	<input type="checkbox"/>				

C2. Approximately how often did you have contact with the following types of professionals and / or support services, during the 2016-17 school year?

	On a continuous basis	Monthly	Every few months	A few times per year	Never
a) Mental health support within your school (e.g. SENCO, school nurse, or counsellor)	<input type="checkbox"/>				
b) NHS Child and Adolescent Mental Health Services (CAMHS)	<input type="checkbox"/>				
c) Other mental health services in your local area (e.g. voluntary services)	<input type="checkbox"/>				

C3. Please identify the type(s) of professionals with whom you had contact within your school, in relation to children and young people’s mental health, during the 2016-17 school year (tick all that apply)

a) SENCO	<input type="checkbox"/>
b) Inclusion coordinator / pastoral manager	<input type="checkbox"/>
c) Learning mentor	<input type="checkbox"/>
d) School nurse	<input type="checkbox"/>
e) School counsellor	<input type="checkbox"/>
f) Clinical psychologist	<input type="checkbox"/>
g) Educational psychologist	<input type="checkbox"/>
h) Other (specify)	<input type="checkbox"/>

D. Monitoring information

D1. Please identify your gender.

a) Male	<input type="checkbox"/>
b) Female	<input type="checkbox"/>
c) Transgender	<input type="checkbox"/>
d) Prefer not to say	<input type="checkbox"/>

D2. Please indicate how long you have been teaching/working in a school.

a) Less than one year	b) 1-3 years	c) 4-6 years	d) 7-10 years	e) 10-15 years	f) More than 15 years
<input type="checkbox"/>					

D3. Please identify your ethnic group:

<i>White</i>	<i>Mixed</i>	<i>Asian or Asian British</i>	<i>Black or Black British</i>	<i>Other ethnic group</i>
British <input type="checkbox"/>	White & Black Caribbean <input type="checkbox"/>	Indian <input type="checkbox"/>	Caribbean <input type="checkbox"/>	Chinese <input type="checkbox"/>
Irish <input type="checkbox"/>	White & Black African <input type="checkbox"/>	Pakistani <input type="checkbox"/>	African <input type="checkbox"/>	Gypsy or Traveller <input type="checkbox"/>
		Bangladeshi <input type="checkbox"/>		
Other <input type="checkbox"/>	Other <input type="checkbox"/>	Other <input type="checkbox"/>	Other <input type="checkbox"/>	Other <input type="checkbox"/>
Prefer not to say <input type="checkbox"/>				

Thank you for taking part in this evaluation.

Appendix 2: Staff questionnaire Items included in each of the four domains and associated alphas for internal consistency.

Alphas for all four domains were excellent (Chronbach, 1951), indicating that the items within them coherently represent the same underlying domain. Analyses were then carried out on these four omnibus variables.

Domain	Items	Chronbach's alpha		
		Primary/middle	Secondary	Total
Mental health literacy	I feel equipped to identify behaviour that may be linked to a mental health issue	.78	.84	.83
	Appropriate support to identify mental health issues in children is available in my school for all classroom teachers			
	I know how to help children with mental health issues access appropriate support			
	I am knowledgeable about a wide range of mental health issues			
	I am aware of risk factors and causes of mental health issues in children and young people			
	I know the things I can do as a member of school staff to promote and support emotional well-being of young people			
	I know the procedure to follow in my school when a child presents with a mental health issue			
Confidence in talking about mental health	How confident do you feel about talking to children about their mental health and wellbeing?	.84	.85	.84
	How confident do you feel about talking to parents and carers about the mental health and wellbeing of children in your school?			
School environment	Children and young people's mental health is afforded a high priority within the school	.88	.88	.88
	Staff mental health is afforded a high priority within the school			
	Children and young people's mental health is reflected within 'whole school' policies and initiatives			
	Support for mental health issues is adequately resourced within my school, in terms of staff time and specialist support			

	Children in my school have confidence in the support that is available to them for mental health issues			
	Staff in my school have confidence in the support that is available to them for mental health issues			
	I know what mental health support is available for children within my school			
	I feel well supported by specialist colleagues within my school (e.g. educational psychologists, school nurses, counsellors)			
Staff supportive behaviours	Discussed mental health issues with a child(ren) on a one-to-one basis	.90	.91	.91
	Discussed mental health issues with a child(ren) in a group situation			
	Took part in mental health awareness-raising activities in the classroom			
	Took part in mental health awareness-raising activities delivered via special assemblies or campaigns			
	Signposted a child(ren) to written sources of advice or information for mental health issues (including online resources)			
	Signposted a child(ren) to support for mental health issues (within your school (e.g. SENCO, school nurse, or counsellor)			
	Signposted a child(ren) to external support for mental health issues (e.g. NHS CAMHS, voluntary sector, or GP)			

Appendix 3. Estimated model parameters for all domains, showing effect of school type on the intercept, effect of Time (slope), and the effect of school type on slope (interaction)

	Intercept			Slope			School type x Time interaction		
	B	SE B	z	B	SE B	z	B	SE B	z
Mental health literacy	23.77	.73	32.69	3.31	.89	3.72*	-1.73	1.77	-.98
Confidence in talking about mental health	4.82	.09	53.71	.58	.13	4.58*	-.31	.26	-1.21
School environment	26.26	.91	28.79	3.49	.88	3.99*	-1.43	1.78	-.80
Staff supportive behaviours	6.73	.90	7.46	3.88	.63	6.15*	-1.88	1.31	-1.44

* $p < .001$

Appendix 4. Baseline and follow-up means and standard deviations (SD) for all primary/middle school measures

Measure	n	Baseline		Follow-up	
		Mean	SD	Mean	SD
MAMF emotional problems	329	5.52	3.54	5.55	3.83
MAMF behavioural problems	326	2.69	2.49	2.68	2.55
SLSS	309	29.11	4.87	29.02	5.15
SRS home	339	17.66	3.12	17.49	4.40
SRS school	336	17.05	3.71	16.32	3.77
SRS community	329	17.65	3.53	17.67	3.50
SRS participation in community	335	6.80	2.70	6.68	2.78
SRS peer support	309	53.21	11.47	50.40	12.97
SRS participation at home and school	334	13.91	3.91	13.00	3.96
SRS self-esteem	344	12.07	12.07	11.75	2.97
SRS empathy	347	8.49	1.94	8.27	2.00
SRS problem solving	334	11.45	3.33	10.75	3.52
SRS goals and aspirations	335	8.53	1.92	8.08	2.24

Appendix 5. Estimated model parameters for all measures, showing the effect of Time (slope) on the outcome for primary/middle school pupils

	Intercept			Slope		
	B	SE B	z	B	SE B	z
MAMF emotional problems	5.53	.18	29.99	-.25	.53	-.47
MAMF behavioural problems	2.77	.11	25.47	-.02	.17	-.12
SLSS	28.97	.22	132.36	.09	.33	.29
SRS home	17.55	.14	129.60	-.08	.20	-.37
SRS school	17.07	.21	81.93	-.28	.42	-.65
SRS community	17.71	.26	68.90	.09	.23	.37
SRS participation in community	6.85	.12	57.17	-.15	.18	-.84
SRS peer support	53.24	.84	63.21	-2.23	.81	-2.76
SRS participation at home and school	13.90	.17	83.94	-.81	.25	-3.27*
SRS self-esteem	12.09	.19	65.25	-.16	.39	-.40
SRS empathy	8.44	.08	100.20	-.18	.13	-1.43
SRS problem solving	11.47	.15	77.94	-.76	.22	-3.44*
SRS goals and aspirations	8.46	.15	57.82	-.19	.27	-.72

* $p < .001$

Appendix 6. Estimated model parameters for interactions between pupil gender and time, and year group and time, for primary/middle school pupils

	Pupil gender x Time interaction			Year group x Time interaction		
	B	SE B	z	B	SE B	z
MAMF emotional problems	-	-	-	-	-	-
MAMF behavioural problems	-	-	-	-	-	-
SLSS	-	-	-	-	-	-
SRS home	-	-	-	-	-	-
SRS school	-	-	-	-	-	-
SRS community	-	-	-	-	-	-
SRS participation in community	-	-	-	-	-	-
SRS peer support	-	-	-	-	-	-
SRS participation at home and school	.24	.52	.47	-.04	.31	-.11
SRS self-esteem	-	-	-	-	-	-
SRS empathy	-	-	-	-	-	-
SRS problem solving	-.41	.46	-.90	-.04	.27	-.15
SRS goals and aspirations	-	-	-	-	-	-

* $p < .001$

Appendix 7. Baseline and follow-up means and standard deviations (SD) for all secondary school measures

Measure	n	Baseline		Follow-up	
		Mean	SD	Mean	SD
SWEMWBS					
SDQ emotional problems	716	3.57	2.58	3.58	2.64
SDQ conduct problems	716	2.53	1.93	2.42	1.92
SDQ hyperactivity	715	4.54	2.42	4.56	2.41
SDQ peer problems	716	2.33	1.84	2.31	1.80
SDQ prosocial	716	6.87	2.04	6.69	2.11
TEIQUE	614	26.00	7.09	26.16	7.31
PSS	629	6.42	3.27	6.44	3.25
SRS home support	632	17.82	3.03	17.64	3.27
SRS school support	633	14.98	4.13	14.38	4.40
SRS community support	615	16.72	4.01	16.51	4.29
SRS participation in community	612	6.29	3.05	5.81	3.06
SRS peer support	569	52.56	10.59	53.04	11.20
SRS participation at home and school	581	13.08	3.65	13.11	3.80
SRS empathy	608	7.78	1.90	7.74	2.01
SRS problem solving	600	10.45	3.33	10.33	3.42
SRS goals and aspirations	605	8.00	2.07	7.82	2.14

Appendix 8. Estimated model parameters for all measures, showing the effect of Time (slope) on the outcome for secondary school pupils

	Intercept			Slope		
	B	SE B	z	B	SE B	z
SWEMWBS	23.97	.45	53.38	-.11	.18	-.62
SDQ emotional problems	3.60	.21	17.07	.05	.08	.67
SDQ conduct problems	2.63	.17	15.21	-.14	.12	-1.21
SDQ hyperactivity	4.74	.33	14.38	-.06	.16	-.37
SDQ peer problems	2.40	.14	16.64	-.01	.06	-.23
SDQ prosocial	6.81	.06	109.37	-.18	.07	-2.47
TEIQU	25.71	.62	41.71	.16	.24	.68
PSS	6.58	.21	31.06	.08	.12	.61
SRS home support	17.65	.19	95.00	-.12	.12	-1.03
SRS school support	14.75	.30	49.47	-.41	.17	-2.38
SRS community support	16.61	.23	72.58	-.24	.17	-1.41
SRS participation in community	6.27	.09	67.89	-.52	.10	-4.98*
SRS peer support	51.93	.84	61.89	.55	.78	.70
SRS participation at home and school	12.89	.34	37.56	.03	.24	.15
SRS empathy	7.70	.11	71.99	-.01	.08	-.13
SRS problem solving	10.34	.34	30.15	-.13	.13	-.99
SRS goals and aspirations	7.93	.21	37.59	-.18	.08	-2.30

p<.001

Appendix 9. Estimated model parameters for interactions between pupil gender and time, and year group and time, for secondary school pupils

	Pupil gender x Time interaction			Year group x Time interaction		
	B	SE B	z	B	SE B	z
SWEMWBS	-	-	-	-	-	-
SDQ emotional problems	-	-	-	-	-	-
SDQ conduct problems	-	-	-	-	-	-
SDQ hyperactivity	-	-	-	-	-	-
SDQ peer problems	-	-	-	-	-	-
SDQ prosocial	-	-	-	-	-	-
TEIQUE	-	-	-	-	-	-
PSS	-	-	-	-	-	-
SRS home support	-	-	-	-	-	-
SRS school support	-	-	-	-	-	-
SRS community support	-	-	-	-	-	-
SRS participation in community	-.19	.24	-.79	.51	.21	2.36*
SRS peer support	-	-	-	-	-	-
SRS participation at home and school	-	-	-	-	-	-
SRS empathy	-	-	-	-	-	-
SRS problem solving	-	-	-	-	-	-
SRS goals and aspirations	-	-	-	-	-	-

* $p < .001$