

CORRELATIONS BETWEEN STROOP PERFORMANCE, OPTIMISM, AND BIG FIVE PERSONALITY TRAITS

HIIT group psychological traits (personality and optimism) correlations with Stroop results in T0 and T1 measurement are presented in Table S1.

Reading interference and reading conditions

At baseline (T0), reading-related Stroop performance showed significant associations with conscientiousness and extraversion. Specifically, error rates in the reading incongruent condition were negatively correlated with conscientiousness ($r = -.42$ to $-.48$, $p < .01$) and extraversion ($r = -.50$, $p < .01$), indicating fewer baseline errors under high-interference reading conditions among participants with higher levels of these traits. No significant associations were observed between reading interference indices and other personality dimensions at T0.

Color naming interference and color naming conditions

At T0, color naming performance was significantly associated with conscientiousness and emotional stability. Greater numbers of errors in both congruent and incongruent color naming conditions were linked to lower conscientiousness ($r = -.45$ and $-.44$, $p < .01$). In addition, emotional stability was negatively associated with percentile rank and T scores across congruent and incongruent color naming tasks (r range = $-.35$ to $-.41$, $p < .05$), indicating slower responding or greater susceptibility to interference among emotionally stable individuals at baseline. Moreover, at T1, associations between personality traits and color naming interference became stronger and more differentiated. Openness to experience emerged as a robust correlate of improved inhibitory control, showing positive associations with percentile rank ($r = .55$, $p < .01$) and T scores ($r = .56$, $p < .01$). In contrast, higher extraversion was associated with greater naming interference ($r = -.36$, $p < .05$), suggesting increased sensitivity to interference during color naming tasks following the intervention.

Error rates and total Stroop completion time

Error-related outcomes further highlighted the role of personality at both time points. At T0, lower conscientiousness was consistently associated with higher error rates across color naming tasks. While after the HIIT intervention (T1), several personality

traits acted as protective factors with respect to accuracy. Fewer errors in the color naming incongruent condition were associated with higher optimism ($r = -.36$, $p < .05$) and conscientiousness ($r = -.51$, $p < .01$). Additionally, higher extraversion was linked to fewer errors in the congruent color naming condition ($r = -.35$, $p < .05$).

In summary, the results indicate that personality traits were meaningfully associated with Stroop task performance in the HIIT group, with more pronounced and differentiated patterns emerging after the intervention. At baseline, conscientiousness, extraversion, and emotional stability were primarily related to error rates and susceptibility to interference. Following HIIT, openness to experience, optimism, conscientiousness, and extraversion emerged as key correlates of inhibitory control and accuracy, particularly in color naming tasks. These findings suggest that HIIT may amplify or reveal trait-specific pathways underlying executive functioning in pregnant women.

EDU group psychological traits (personality and optimism) correlations with Stroop results in T0 and T1 measurement are presented in Table S2.

Reading interference and reading conditions

Before the intervention (T0), significant associations were observed in the EDU group between reading-related Stroop indices and personality traits, particularly agreeableness. Raw scores in the reading congruent condition were positively correlated with agreeableness ($r = .449$, $p < .05$), indicating better baseline reading speed among more agreeable participants. In contrast, percentile rank ($r = -.505$, $p < .05$) and T scores ($r = -.494$, $p < .05$) for the same condition showed negative associations with agreeableness, suggesting that the relationship between agreeableness and reading performance depended on the scoring metric applied.

Following the intervention (T1), reading interference outcomes were mainly associated with emotional stability and agreeableness. Reading interference raw scores were negatively correlated with emotional stability ($r = -.485$, $p < .05$), indicating lower post-intervention interference among emotionally stable participants. Additionally, reading interference percentile rank was positively associated with both agreeableness ($r = .446$, $p < .05$) and emotional stability ($r = .544$, $p < .05$). A similar pattern was found for reading interference T scores, which were positively correlated with emotional stability ($r = .514$, $p < .05$), underscoring the role of emotional stability in post-intervention cognitive control during reading tasks.

HIIT and cognitive control in pregnancy (RCT)

Color naming interference and color naming conditions

At baseline (T0), openness to experience and optimism emerged as key correlates of color naming interference. Color naming interference raw scores were negatively associated with openness to experience ($r = -.537, p < .05$), indicating reduced baseline interference among more open participants. In contrast, color naming interference percentile rank was positively correlated with optimism ($r = .485, p < .05$) and openness ($r = .557, p < .05$), suggesting relatively better performance in this domain. Color naming interference T scores also showed a significant positive correlation with openness to experience ($r = .511, p < .05$), further supporting the link between openness and executive functioning in color naming tasks prior to the intervention.

Error rates and total Stroop completion time

At T0, total errors in the color naming incongruent condition were significantly negatively correlated with agreeableness ($r = -.537, p < .05$), indicating fewer baseline errors under high-interference conditions among more agreeable participants. At T1, accuracy-related outcomes remained linked to agreeableness. Specifically, total errors in the reading incongruent condition were negatively associated with agreeableness ($r = -.460, p < .05$), suggesting fewer post-intervention errors when processing conflicting stimuli among participants with higher levels of agreeableness.

In summary, the results indicate that baseline personality traits were meaningfully associated with Stroop task performance in the EDU group, with distinct patterns observed before and after the intervention. Prior to the intervention, openness to experience, optimism, and agreeableness were primarily related to color naming and reading performance. After the intervention, associations shifted toward emotional stability and agreeableness, particularly in relation to reading interference and error rates. These findings suggest that different personality characteristics may underpin executive functioning at baseline and following exposure to structured educational and physical activity programs.

CORRELATIONS BETWEEN STROOP PERFORMANCE, FEAR OF CHILDBIRTH, WELL-BEING, MENTAL AND PHYSICAL HEALTH AND DEPRESSION

Pre-intervention psychological characteristics of the HIIT group (well-being, depression, fear of childbirth, mental and physical health) and their correlations with Stroop performance at T0 and T1 are presented in Table S3.

Reading interference and reading conditions

At T0, physical component of mental health was positively associated with Stroop reading performance. Specifically, better baseline physical component of mental health correlated with higher performance in the reading congruent condition (percentile rank: $r = .387, p < .05$) as well as in the reading incongruent condition (percentile rank: $r = .437, p < .01$; T score: $r = .417, p < .05$). Conversely, baseline physical health was negatively correlated with reading incongruent raw scores ($r = -.405, p < .05$), indicating fewer difficulties in inhibitory control among women reporting better mental health.

Color naming interference and color naming conditions

Baseline (T0) fear of childbirth showed a significant negative association with color naming interference T scores at T0 ($r = -.354, p < .05$), indicating that higher fear of childbirth was related to poorer inhibitory control in the color naming task prior to the intervention. Moreover baseline (T0) depression demonstrated several significant associations with color naming performance. At T0, higher depression scores were related to poorer performance across both congruent and incongruent color naming conditions (raw scores: $r = -.380$ to $-.408, p < .05$; percentile ranks: $r = .399$ to $.407, p < .05$). Similar relationships persisted at T1, with baseline depression remaining significantly associated with color naming congruent percentile rank and T scores ($r \approx .347-.388, p < .05$). Additionally, baseline mental component of health (mental component) was negatively associated with color naming incongruent T scores at T0 ($r = -.378, p < .05$), suggesting better inhibitory control among women reporting better mental health.

Error rates and total Stroop completion time

At T0, baseline physical component of mental health was positively associated with error rates in both reading congruent ($r = .375, p < .05$) and color naming incongruent conditions ($r = .352, p < .05$). At T1, these associations remained significant for color naming incongruent errors ($r = .379, p < .05$), along with a significant positive association between baseline depression and error rates ($r = .340, p < .05$). Moreover, baseline (T0) physical component of mental health was also negatively associated with total Stroop completion time at T0 ($r = -.344, p < .05$), indicating faster overall task performance among women with better mental health prior to the intervention. This relationship was not observed at T1.

To summarize, the results indicate that baseline psychological functioning, particularly depression, fear of childbirth, and physical component of mental

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health, was meaningfully related to Stroop performance before the intervention and, to a lesser extent, after the HIIT program. Associations were most consistent for color naming tasks and inhibitory control indices, suggesting that pre-intervention mental health may play an important role in executive functioning among pregnant women engaging in HIIT.

Post-intervention psychological characteristics of the HIIT group (well-being, depression, fear of childbirth, mental and physical health) and their correlations with Stroop performance at T0 and T1 are presented in Table S4.

Reading interference and reading conditions

When post-intervention psychological variables were considered, only limited associations with reading-related Stroop indices were observed in the HIIT group. At T0, no significant correlations emerged between post-intervention measures of depression, fear of childbirth, well-being, or mental health components and reading interference indices or reading condition performance.

At T1, a single significant association was identified. Mental health (mental component) measured post-intervention was negatively correlated with reading interference T scores ($r = -.388, p < .05$), indicating that women reporting better post-intervention mental health exhibited lower levels of interference during the reading task. No other reading-related indices showed statistically significant associations at T1.

Color naming interference and color naming conditions

For color naming interference indices, no statistically significant correlations were observed between post-intervention psychological variables and color naming interference (raw scores, percentile ranks, or T scores) at either T0 or T1. Similarly, performance in congruent and incongruent color naming conditions was not significantly associated with post-intervention levels of depression, fear of childbirth, well-being, or mental health at either measurement point. These findings suggest that color naming interference and performance were largely independent of post-intervention psychological functioning in the HIIT group.

Error rates and total Stroop completion time

At T0, several significant associations were observed for error-related outcomes. Higher post-intervention depression was associated with more errors in the reading congruent condition ($r = .368, p < .05$), whereas higher well-being was associated with fewer errors in the same condition ($r = -.439, p < .01$). Additionally, higher post-intervention fear of childbirth was positively correlated with errors in the reading incongruent

condition ($r = .369, p < .05$), while better mental health (physical component) was negatively associated with errors in this condition ($r = -.343, p < .05$).

At T1, most error-related associations observed at T0 were no longer present. However, fear of childbirth measured post-intervention showed a significant positive association with total errors in the color naming incongruent condition ($r = .370, p < .05$), indicating more errors under high-interference conditions among women reporting greater childbirth-related fear after the intervention.

In summary, the results indicate that post-intervention psychological functioning showed only modest and selective associations with Stroop task performance in the HIIT group. Reading interference at T1 was negatively related to post-intervention mental health, suggesting better inhibitory control among women with higher mental component of health. Error-related outcomes were more sensitive to post-intervention psychological condition, particularly depression and fear of childbirth, although these associations were not consistently observed across time points. Overall, cognitive performance following HIIT appeared largely independent of post-intervention psychological characteristics, with isolated effects emerging primarily in high-interference conditions.

Pre-intervention psychological characteristics of the EDU group (well-being, depression, fear of childbirth, mental and physical health) and their correlations with Stroop performance at T0 and T1 are presented in Table S5.

Reading interference and reading conditions

In the EDU group, correlations between pre-intervention psychological variables and reading-related Stroop indices were generally weak, with only limited significant associations observed. Starting from baseline (T0) results, no statistically significant relationships were found between depression, fear of childbirth, well-being, or mental health and reading interference indices or reading condition performance.

At T1, several significant associations emerged for error-related reading outcomes rather than interference indices. Specifically, higher levels of depression ($r = .583, p < .01$) and fear of childbirth ($r = .597, p < .01$) were strongly associated with a greater number of errors in the reading congruent condition. No significant correlations were observed for reading interference scores or reaction-time-based reading measures at T1.

Color naming interference and color naming conditions

With regard to color naming interference, no statistically significant correlations were identified between pre-intervention psychological variables and interfer-

ence indices (raw scores, percentile ranks, or T scores) at either T0 or T1. Similarly, performance in the congruent and incongruent color naming conditions did not show significant associations with psychological variables across measurement points, indicating that color naming speed and efficiency were largely independent of baseline depression, fear of childbirth, well-being, and mental health in the EDU group.

Error rates and total Stroop completion time

Error-related outcomes showed the most consistent and meaningful relationships with psychological variables in the EDU group. At T0, well-being was positively associated with errors in the reading incongruent condition ($r = .448, p < .05$), suggesting more errors during high-interference reading among women reporting higher well-being. While at T1, psychological correlates of errors became more pronounced ($r = .450, p < .05$). In addition to reading congruent errors being related to depression and fear of childbirth, fear of childbirth was also positively associated with errors in the color naming congruent condition ($r = .504, p < .05$).

In summary, the results indicate that pre-intervention psychological characteristics in the EDU group were weakly related to Stroop interference and speed-based performance measures. However, psychological variables, particularly depression and fear of childbirth, were strongly associated with post-baseline error rates, suggesting that emotional distress may primarily influence accuracy rather than processing speed or inhibitory control. These findings highlight a differential sensitivity of Stroop outcome domains to psychological functioning in pregnant women participating in educational interventions.

Post-intervention psychological characteristics of the EDU group (well-being, depression, fear of childbirth, mental and physical health) and their correlations with Stroop performance at T0 and T1 are presented in Table S6.

Reading interference and reading conditions

In the EDU group, associations between post-intervention psychological variables and reading-related Stroop outcomes were modest and selective. At baseline (T0), no statistically significant correlations were observed between post-intervention measures of depression, fear of childbirth, well-being, or mental health and reading interference indices. However, several moderate, non-significant trends were evident, particularly for fear of childbirth and mental health.

At T1, fear of childbirth emerged as the most consistent correlate of reading interference. Specifically, fear of childbirth was negatively associated with reading interference percentile rank ($r = -.520,$

$p < .05$) and reading interference T scores ($r = -.453, p < .05$). These findings indicate greater post-intervention interference during reading tasks among women reporting higher levels of childbirth-related fear. No other reading interference or reading condition indices reached statistical significance at T1.

Color naming interference and color naming conditions

No statistically significant associations were detected between post-intervention psychological variables and color naming interference (raw scores, percentile ranks, or T scores) at either T0 or T1.

Error rates and total Stroop completion time

Error-related Stroop outcomes showed no statistically significant correlations with post-intervention psychological variables at either T0 or T1.

In summary, the results indicate that post-intervention psychological functioning in the EDU group was only weakly associated with Stroop task performance. Fear of childbirth emerged as the sole significant psychological correlate, being linked to increased reading interference following the intervention. Overall, Stroop performance in the EDU group appeared largely independent of post-intervention depression, well-being, and mental health, suggesting that cognitive control outcomes following the educational program were relatively robust to variations in psychological state.

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Table S1*Correlation matrix for HIIT group between Stroop performance, optimism, and Big Five personality traits*

Group	HIIT, <i>n</i> = 34							<i>HIIT and cognitive control in pregnancy (RCT)</i>
	Optimism	Big Five personality traits					Openness to experience	
		Extra- version	Agree- ableness	Conscien- tiousness	Emotional stability			
Reading Interference – Raw score	T0	-.113	-.105	-.161	-.034	-.103	.053	
	T1	-.034	-.059	.101	.113	.093	.087	
Reading Interference – Percentile rank (PR)	T0	-.079	.170	-.087	-.081	-.021	-.329	
	T1	.071	.049	-.178	-.122	-.045	-.073	
Reading Interference – T score	T0	-.064	.171	-.011	-.002	-.019	-.312	
	T1	-.103	-.355*	.197	.068	-.200	.175	
Color Naming Interference – Raw score	T0	.093	-.197	.066	.055	-.212	.078	
	T1	-.217	-.313	.022	-.146	.011	-.570**	
Color Naming Interference – PR	T0	.122	-.023	.217	.242	.133	-.109	
	T1	.178	.266	-.028	.114	-.059	.547**	
Color Naming Interference – T score	T0	.092	-.001	.237	.250	.160	-.126	
	T1	.170	.272	.019	.123	-.046	.556**	
Reading – Congruent Condition (Raw score)	T0	.064	.036	.076	-.063	.195	-.180	
	T1	.047	.077	.120	.056	.263	-.178	
Reading – Congruent Condition (PR)	T0	-.056	-.021	.053	.144	-.140	.092	
	T1	-.029	-.083	-.007	-.019	-.245	.111	
Reading – Congruent Condition (T score)	T0	-.073	-.038	-.027	.062	-.192	.158	
	T1	-.074	-.129	-.027	-.061	-.302	.138	
Reading – Incongruent Condition (Raw score)	T0	.050	-.81	.013	-.132	.149	-.010	
	T1	.038	.056	.160	.104	.299	-.134	
Reading – Incongruent Condition (PR)	T0	-.054	.059	-.029	.065	-.127	.034	
	T1	.000	-.046	-.075	-.060	-.281	.052	
Reading – Incongruent Condition (T score)	T0	-.119	.043	-.054	.037	-.195	.030	
	T1	-.033	-.087	-.064	-.082	-.295	.061	
Total Errors – Reading Congruent Condition	T0	-.196	-.095	-.371*	-.422*	-.079	.008	
	T1	-.027	-.041	.154	-.069	.073	.095	
Total Errors – Reading Incongruent Condition	T0	-.312	-.495**	.140	-.472**	-.263	-.084	
	T1	.051	.055	.020	.085	.170	.023	

Table S1 continues

Table S1*Table S1 continued*

Group		HIIT, <i>n</i> = 34						
		Optimism	Big Five personality traits					
			Extra- version	Agree- ableness	Conscien- tiousness	Emotional stability	Openness to experience	
Dominika M. Wilczyńska,	Color Naming – Congruent Condition (Raw score)	T0	-.048	-.029	-.093	-.116	.047	.115
	T1	.025	.098	.180	.091	.239	.034	
Tamara Walczak- Kozłowska, Marcelina Hejła,	Color Naming – Congruent Condition (PR)	T0	-.083	-.113	-.237	-.089	-.397*	.129
	T1	.000	-.110	-.201	-.043	-.253	-.010	
Henryk Olszewski, Anna Szumilewicz	Color Naming – Congruent Condition (T score)	T0	-.180	-.122	-.209	-.206	-.402*	.094
	T1	-.003	-.097	-.137	-.114	-.161	-.121	
	Color Naming – Incongruent Condition (Raw score)	T0	.089	.109	.143	.033	.316	-.079
	T1	-.057	-.025	.184	.032	.240	-.191	
	Color Naming – Incongruent Condition (PR)	T0	-.090	-.136	-.137	-.018	-.347*	.061
	T1	.052	.005	-.186	-.019	-.270	.212	
	Color Naming – Incongruent Condition (T score)	T0	-.234	-.207	-.065	-.170	-.342*	.009
	T1	.072	.038	-.177	-.058	-.226	.200	
	Total Errors – Color Naming Congruent Condition	T0	-.287	-.198	-.019	-.447**	-.028	-.184
	T1	-.118	-.346*	.095	-.072	-.214	.020	
	Total Errors – Color Naming Incongruent Condition	T0	-.330	-.299	.053	-.442**	-.287	-.275
	T1	-.359*	-.219	.070	-.505**	-.211	-.039	
	Total Stroop Test Completion Time	T0	0.53	-.013	.153	-.018	.261	-.090
	T1	-.008	.014	.179	.095	.237	-.146	

Note. *Correlation is significant at the .05 level (2-tailed);**correlation is significant at the .01 level (2-tailed).

Table S2

Correlation matrix for EDU group between Stroop performance, optimism, and Big Five personality traits

Group	EDU, <i>n</i> = 20						
	Optimism	Big Five personality traits					
		Extra- version	Agree- ableness	Conscien- tiousness	Emotional stability	Openness to experience	
Reading Interference – Raw score	T0	-.311	-.244	-.383	-.171	-.398	-.103
	T1	-.328	-.058	-.390	.004	-.485*	-.253
Reading Interference – Percentile rank (PR)	T0	.072	.317	.400	.164	.398	-.103
	T1	.296	.031	.446*	-.039	.544*	.179
Reading Interference – T score	T0	.057	.305	.379	.183	.377	.098
	T1	.314	.015	.437	-.012	.514*	.257
Color Naming Interference – Raw score	T0	-.382	.031	-.196	-.198	-.203	-.537*
	T1	-.363	-.230	-.299	-.062	-.107	-.094
Color Naming Interference – PR	T0	.485*	.021	.231	.274	.239	.557*
	T1	.399	.186	.329	-.019	.121	.106
Color Naming Interference – T score	T0	.390	-.050	.199	.211	.218	.511*
	T1	.287	.253	.270	.033	.090	.049
Reading – Congruent Condition (Raw score)	T0	-.069	.167	.449*	-.037	-.075	.095
	T1	.207	-.105	.326	-.058	.128	.148
Reading – Congruent Condition (PR)	T0	.039	-.219	-.505*	.004	.010	-.027
	T1	-.252	.110	-.378	-.002	-.164	-.181
Reading – Congruent Condition (T score)	T0	.067	-.180	-.494*	.020	.054	-.057
	T1	-.187	.121	-.396	.055	-.150	-.141
Reading – Incongruent Condition (Raw score)	T0	-.102	.085	.306	-.083	-.186	.058
	T1	.005	-.111	.070	-.045	-.137	-.005
Reading – Incongruent Condition (PR)	T0	.051	-.140	-.356	.021	.112	-.030
	T1	-.062	.100	-.118	-.018	.085	-.030
Reading – Incongruent Condition (T score)	T0	.080	-.114	-.323	.058	.153	-.038
	T1	-.022	.096	-.099	.020	.105	-.017
Total Errors – Reading Congruent Condition	T0	-.012	.424	-.267	.309	.083	-.146
	T1	-.327	-.089	-.218	-.136	-.319	-.289
Total Errors – Reading Incongruent Condition	T0	-.144	.329	-.412	.232	-.061	-.024
	T1	-.245	.328	-.460*	.250	-.194	-.208

HIIT and cognitive control in pregnancy (RCT)

Table S2 continues

Table S2*Table S2 continued*

Group		EDU, <i>n</i> = 20						
		Optimism	Big Five personality traits					
			Extra- version	Agree- ableness	Conscien- tiousness	Emotional stability	Openness to experience	
Dominika M. Wilczyńska,	Color Naming – Congruent Condition (Raw score)	T0	.001	–.047	.389	–.080	–.274	–.020
		T1	–.017	–.111	.243	–.133	–.185	–.085
Tamara Walczak- Kozłowska, Marcelina Hejła,	Color Naming – Congruent Condition (PR)	T0	.001	.076	–.382	.095	.249	.031
		T1	.034	.095	–.174	.111	.230	.064
Henryk Olszewski, Anna Szumilewicz	Color Naming – Congruent Condition (T score)	T0	–.062	.086	–.433	.053	.255	.004
		T1	–.013	.166	–.270	.175	.167	.078
	Color Naming – Incongruent Condition (Raw score)	T0	–.113	–.039	.330	–.140	–.336	–.178
		T1	–.148	–.208	.175	–.176	–.253	–.133
	Color Naming – Incongruent Condition (PR)	T0	.125	.056	–.336	.150	.327	.174
		T1	.178	.207	–.138	.150	.282	.095
	Color Naming – Incongruent Condition (T score)	T0	.053	.011	–.310	.163	.356	.199
		T1	.169	.210	–.130	.217	.276	.130
	Total Errors – Color Naming Congruent Condition	T0	–.347	–.400	.029	.207	.128	–.051
		T1	–.092	–.019	.265	.094	.263	–.042
	Total Errors – Color Naming Incongruent Condition	T0	–.330	.207	–.537*	.265	–.072	–.057
		T1	–.253	.007	–.424	.101	–.162	–.223
	Total Stroop Test Completion Time	T0	–.103	.098	.324	–.128	–.249	–.089
		T1	–.016	–.092	.116	–.065	–.163	–.078

Note. *Correlation is significant at the .05 level (2-tailed).

Table S3

Correlation matrix for HIIT group between Stroop performance and psychological variables measured pre-intervention (depression, fear of childbirth, well-being and mental health)

Group	HIIT, n = 34						<i>HIIT and cognitive control in pregnancy (RCT)</i>
	Pre-intervention						
	Depression	Fear of childbirth	Well-being	Mental health			
			Physical component	Mental component			
Reading Interference – Raw score	T0	.083	–.012	–.070	–.184	.159	
	T1	.006	–.004	–.090	.026	.021	
Reading Interference – Percentile rank (PR)	T0	.039	–.040	.017	.267	.049	
	T1	.024	.022	–.014	–.006	.053	
Reading Interference – T score	T0	–.051	–.054	.049	.296	.021	
	T1	.219	.130	–.018	–.385*	–.323	
Color Naming Interference – Raw score	T0	.080	.273	.097	.136	–.118	
	T1	.123	–.137	.144	.138	.167	
Color Naming Interference – PR	T0	.111	–.272	–.061	.046	–.281	
	T1	–.085	.152	–.168	–.141	–.223	
Color Naming Interference – T score	T0	.005	–.354*	–.073	.067	–.185	
	T1	–.103	.108	–.156	–.110	–.193	
Reading – Congruent Condition (Raw score)	T0	–.177	.013	–.117	–.270	–.094	
	T1	–.272	–.073	–.130	–.176	.071	
Reading – Congruent Condition (PR)	T0	.159	–.015	.137	.387*	.120	
	T1	.317	.089	.172	.235	–.109	
Reading – Congruent Condition (T score)	T0	.174	–.005	.137	.308	.094	
	T1	.268	.140	.210	.182	–.110	
Reading – Incongruent Condition (Raw score)	T0	–.055	.028	–.177	–.405*	–.114	
	T1	–.269	–.072	–.159	–.165	.084	
Reading – Incongruent Condition (PR)	T0	.118	.010	.166	.437**	.108	
	T1	.283	.096	.211	.200	–.073	
Reading – Incongruent Condition (T score)	T0	.117	–.013	.151	.417*	.096	
	T1	.282	.129	.231	.189	–.114	
Total Errors – Reading Congruent Condition	T0	.251	–.082	–.330	.089	.158	
	T1	–.043	.103	.218	.278	–.110	
Total Errors – Reading Incongruent Condition	T0	.336	.085	–.130	–.264	–.240	
	T1	–.104	–.014	–.111	.233	–.011	

Table S3 continues

Table S3*Table S3 continued*

Group	HIIT, <i>n</i> = 34						
	Pre-intervention						Mental health
	Depression	Fear of childbirth	Well-being	Physical component	Mental component		
Dominika M. Wilczyńska,	Color Naming – Congruent Condition (Raw score)	T0	-.053	-.151	-.057	-.148	-.063
		T1	-.366*	.016	-.050	-.161	.067
Tamara Walczak- Kozłowska,	Color Naming – Congruent Condition (PR)	T0	.399*	.179	-.047	.261	-.139
		T1	.347*	.000	.012	.134	-.037
Marcelina Hejła, Henryk Olszewski, Anna Szumilewicz	Color Naming – Congruent Condition (T score)	T0	-.408*	.111	-.035	.268	-.115
		T1	.388*	-.027	.090	.144	-.092
	Color Naming – Incongruent Condition (Raw score)	T0	-.380*	.018	.066	-.267	.189
		T1	-.312	-.037	.010	-.105	.132
	Color Naming – Incongruent Condition (PR)	T0	.407*	.007	-.085	.289	-.199
		T1	.320	.048	-.034	.109	-.123
	Color Naming – Incongruent Condition (T score)	T0	.291	.044	-.195	.176	-.378*
		T1	.302	.064	.006	.061	-.136
	Total Errors – Color Naming Congruent Condition	T0	.186	-.125	-.106	.375*	.017
		T1	.045	-.204	.021	.075	-.182
	Total Errors – Color Naming Incongruent Condition	T0	.338	.022	-.170	.352*	-.017
		T1	.340*	-.188	-.178	.379*	-.116
	Total Stroop Test Completion Time	T0	-.206	.033	-.088	-.344*	.014
		T1	-.263	-.037	-.150	-.178	.081

Note. *Correlation is significant at the .05 level (2-tailed); **correlation is significant at the .01 level (2-tailed).

Table S4

Correlation matrix for HIIT group between Stroop performance, and psychological variables measured post-intervention (depression, fear of childbirth, well-being and mental health)

Group	HIIT, n = 34						<i>HIIT and cognitive control in pregnancy (RCT)</i>
	Post-intervention						
	Depression	Fear of childbirth	Well-being	Mental health			
			Physical component	Mental component			
Reading Interference – Raw score	T0	.054	–.014	–.123	.145	.043	
	T1	–.033	–.099	.179	–.037	–.042	
Reading Interference – Percentile rank (PR)	T0	.143	.131	–.019	.029	.204	
	T1	.041	.105	–.182	–.052	.148	
Reading Interference – T score	T0	.095	.137	.062	–.001	.194	
	T1	.286	.211	–.029	–.245	–.388*	
Color Naming Interference – Raw score	T0	.062	.237	.093	.181	–.099	
	T1	.170	.207	–.073	–.097	.146	
Color Naming Interference – PR	T0	–.025	–.118	.064	–.220	–.003	
	T1	–.132	–.211	.037	.058	–.187	
Color Naming Interference – T score	T0	–.073	–.113	.044	–.182	.049	
	T1	–.152	–.194	.072	.082	–.183	
Reading – Congruent Condition (Raw score)	T0	–.166	–.207	–.187	–.059	.125	
	T1	–.207	–.186	–.076	.002	.138	
Reading – Congruent Condition (PR)	T0	.135	.227	.288	.114	–.024	
	T1	.231	.199	.150	.010	–.043	
Reading – Congruent Condition (T score)	T0	.153	.254	.207	.075	–.077	
	T1	.186	.318	.131	.012	–.108	
Reading – Incongruent Condition (Raw score)	T0	–.148	–.242	–.301	–.051	–.024	
	T1	–.216	–.225	.002	–.013	.120	
Reading – Incongruent Condition (PR)	T0	.148	.258	.239	.088	.028	
	T1	.237	.225	.074	.010	–.006	
Reading – Incongruent Condition (T score)	T0	.173	.296	.206	.081	–.14	
	T1	.195	.306	.075	.026	–.044	
Total Errors – Reading Congruent Condition	T0	.368*	.334	–.439**	.105	.044	
	T1	–.137	–.057	.120	.202	–.169	
Total Errors – Reading Incongruent Condition	T0	.317	.369*	–.239	–.343*	–.333	
	T1	–.084	–.041	.193	–.174	.103	

Table S4 continues

Table S4*Table S4 continued*

Group		HIIT, <i>n</i> = 34					
		Post-intervention					
		Depression	Fear of childbirth	Well-being	Mental health		
			Physical component	Mental component			
Dominika M. Wilczyńska, Tamara Walczak- Kozłowska, Marcelina Hejła, Henryk Olszewski, Anna Szumilewicz	Color Naming – Congruent Condition (Raw score)	T0	-.031	.001	-.166	-.203	-.247
		T1	-.284	-.109	.096	.044	-.005
	Color Naming – Congruent Condition (PR)	T0	.258	.202	-.060	.152	-.152
		T1	.274	.053	-.070	-.076	-.035
	Color Naming – Congruent Condition (T score)	T0	.308	.316	-.111	.143	-.088
		T1	.270	.126	-.109	-.052	.072
	Color Naming – Incongruent Condition (Raw score)	T0	-.241	-.171	.061	-.044	.134
		T1	-.214	-.027	.067	.006	.054
	Color Naming – Incongruent Condition (PR)	T0	.264	.197	-.055	.058	-.122
		T1	.228	.031	-.057	-.016	-.102
	Color Naming – Incongruent Condition (T score)	T0	.157	.221	-.171	.151	-.221
		T1	.194	.043	-.063	-.001	-.032
	Total Errors – Color Naming Congruent Condition	T0	.268	.187	-.141	-.085	-.027
		T1	.175	.188	.151	-.121	-.206
	Total Errors – Color Naming Incongruent Condition	T0	.287	.214	-.132	-.046	-.060
		T1	.270	.370*	-.242	.120	-.077
Total Stroop Test Completion Time	T0	-.197	-.235	-.114	-.031	.074	
	T1	-.222	-.164	-.019	.072	.102	

Note. *Correlation is significant at the .05 level (2-tailed); **correlation is significant at the .01 level (2-tailed).

Table S5

Correlation matrix for EDU group between Stroop performance, and psychological variables measured pre-intervention (depression, fear of childbirth, well-being and mental health)

Group	EDU, n = 20						<i>HIIT and cognitive control in pregnancy (RCT)</i>
	Pre-intervention						
	Depression	Fear of childbirth	Well-being	Mental health			
			Physical component	Mental component			
Reading Interference – Raw score	T0	.249	–.023	.094	.048	.091	
	T1	.302	.101	.170	.023	–.112	
Reading Interference – Percentile rank (PR)	T0	–.215	.015	–.106	–.058	–.081	
	T1	–.336	–.225	–.208	.016	.195	
Reading Interference – T score	T0	–.253	.083	–.065	–.072	–.085	
	T1	–.292	–.142	–.174	–.019	.142	
Color Naming Interference – Raw score	T0	.128	.283	.012	–.044	–.319	
	T1	–.082	.156	–.381	–.105	.036	
Color Naming Interference – PR	T0	–.244	–.264	.079	.107	.308	
	T1	.096	–.255	.336	.117	–.023	
Color Naming Interference – T score	T0	–.120	–.279	.018	.055	.284	
	T1	.088	–.167	.349	.104	–.049	
Reading – Congruent Condition (Raw score)	T0	.160	.169	.244	–.168	.243	
	T1	.140	.049	–.024	.292	–.117	
Reading – Congruent Condition (PR)	T0	–.224	–.228	–.210	.107	–.097	
	T1	–.127	–.044	.120	–.330	.145	
Reading – Congruent Condition (T score)	T0	–.195	–.191	–.246	.113	–.146	
	T1	–.184	–.040	.136	–.285	.131	
Reading – Incongruent Condition (Raw score)	T0	.221	.150	.254	–.141	.251	
	T1	.263	.089	.066	.242	–.150	
Reading – Incongruent Condition (PR)	T0	–.228	–.200	–.211	.127	–.225	
	T1	–.221	–.126	.050	–.334	.231	
Reading – Incongruent Condition (T score)	T0	–.221	–.171	–.242	.123	–.245	
	T1	–.242	–.108	–.002	–.288	.175	
Total Errors – Reading Congruent Condition	T0	–.229	.214	.153	–.072	.319	
	T1	.583**	.597**	–.051	–.333	–.398	
Total Errors – Reading Incongruent Condition	T0	–.003	.047	.448*	.011	.369	
	T1	.028	.172	.450*	.066	.177	

Table S5 continues

Table S5*Table S5 continued*

Group	EDU, <i>n</i> = 20						
	Pre-intervention						
	Depression	Fear of childbirth	Well-being	Mental health			
			Physical component	Mental component			
Dominika M. Wilczyńska, Tamara Walczak- Kozłowska, Marcelina Hejła, Henryk Olszewski, Anna Szumilewicz	Color Naming – Congruent Condition (Raw score)	T0	.173	.225	.040	–.037	–.024
		T1	.252	.153	–.166	.175	–.202
	Color Naming – Congruent Condition (PR)	T0	–.177	–.232	.023	.009	.023
		T1	–.221	–.184	.164	–.178	.160
	Color Naming – Congruent Condition (T score)	T0	–.195	–.264	–.009	.020	.059
		T1	–.289	–.108	.219	–.182	.203
	Color Naming – Incongruent Condition (Raw score)	T0	.211	.308	.043	–.050	–.121
		T1	.263	.231	–.323	.163	–.220
	Color Naming – Incongruent Condition (PR)	T0	–.237	–.304	–.018	.067	.102
		T1	–.233	–.260	.282	–.158	.218
	Color Naming – Incongruent Condition (T score)	T0	–.249	–.346	–.032	.046	.167
		T1	–.280	–.207	.359	–.153	.232
	Total Errors – Color Naming Congruent Condition	T0	.053	.331	–.389	–.059	–.243
		T1	–.024	.504*	–.151	–.101	–.120
	Total Errors – Color Naming Incongruent Condition	T0	–.110	.259	.109	–.063	.086
		T1	.067	.335	.206	–.240	–.023
	Total Stroop Test Completion Time	T0	.305	.289	.180	–.176	.086
		T1	.252	.164	.021	.250	–.233

Note. *Correlation is significant at the .05 level (2-tailed); **correlation is significant at the .01 level (2-tailed).

Table S6

Correlation matrix for EDU group between Stroop performance, and psychological variables measured post-intervention (depression, fear of childbirth, well-being and mental health)

Group		EDU, n = 20					<i>HIIT and cognitive control in pregnancy (RCT)</i>
		Post-intervention					
		Depression	Fear of childbirth	Well-being	Mental health		
				Physical component	Mental component		
Reading Interference – Raw score	T0	-.109	.423	.161	-.018	-.041	
	T1	.361	.387	-.028	-.232	-.274	
Reading Interference – Percentile rank (PR)	T0	.076	-.416	-.185	.007	.025	
	T1	-.414	-.520*	-.009	.224	.314	
Reading Interference – T score	T0	.091	-.422	-.135	.010	.030	
	T1	-.369	-.453*	.059	.205	.311	
Color Naming Interference – Raw score	T0	-.047	.214	-.180	.305	-.024	
	T1	-.372	.263	-.239	.328	-.153	
Color Naming Interference – PR	T0	.105	-.143	.173	-.263	-.007	
	T1	.296	-.308	.220	-.299	.178	
Color Naming Interference – T score	T0	.077	-.226	.219	-.307	.053	
	T1	.336	-.309	.227	-.304	.171	
Reading – Congruent Condition (Raw score)	T0	-.165	-.212	.251	-.428	.350	
	T1	.181	-.041	-.111	-.161	-.058	
Reading – Congruent Condition (PR)	T0	.102	.228	-.132	.360	-.296	
	T1	-.188	.067	.211	.133	.046	
Reading – Congruent Condition (T score)	T0	.117	.233	-.205	.370	-.315	
	T1	-.160	.142	.189	.161	.017	
Reading – Incongruent Condition (Raw score)	T0	-.184	-.073	.279	-.402	.312	
	T1	.321	.155	-.102	-.244	-.179	
Reading – Incongruent Condition (PR)	T0	.196	.059	-.188	.379	-.344	
	T1	-.321	-.162	.240	.166	.153	
Reading – Incongruent Condition (T score)	T0	.198	.075	-.238	.380	-.324	
	T1	-.298	-.152	.176	.209	.140	
Total Errors – Reading Congruent Condition	T0	-.141	.403	-.028	-.040	.104	
	T1	-.055	.115	-.124	-.233	.143	
Total Errors – Reading Incongruent Condition	T0	-.192	.209	.422	.075	.080	
	T1	.086	.251	.353	.002	-.116	

Table S6 continues

Table S6*Table S6 continued*

Group	EDU, <i>n</i> = 20						
	Post-intervention						
	Depression	Fear of childbirth	Well-being	Mental health			
			Physical component	Mental component			
Dominika M. Wilczyńska,	Color Naming – Congruent Condition (Raw score)	T0	-.153	.133	.042	-.293	.398
		T1	-.026	-.182	-.158	-.147	.269
Tamara Walczak- Kozłowska,	Color Naming – Congruent Condition (PR)	T0	.191	.135	.006	.270	-.415
		T1	.069	.167	.140	.150	-.279
Marcelina Hejła, Henryk Olszewski, Anna Szumilewicz	Color Naming – Congruent Condition (T score)	T0	.140	.153	.002	.272	-.399
		T1	.048	.187	.199	.127	-.250
	Color Naming – Incongruent Condition (Raw score)	T0	-.167	-.071	-.011	-.204	.392
		T1	-.160	-.117	-.265	-.056	.259
	Color Naming – Incongruent Condition (PR)	T0	.183	.085	.012	.224	-.418
		T1	.146	.148	.188	.113	-.305
	Color Naming – Incongruent Condition (T score)	T0	.182	.062	.060	.194	-.359
		T1	.197	.052	.285	.044	-.266
	Total Errors – Color Naming Congruent Condition	T0	.125	-.063	-.176	.079	.011
		T1	.103	-.041	-.021	-.033	.165
	Total Errors – Color Naming Incongruent Condition	T0	-.006	.307	.166	.035	.045
		T1	.126	.361	.145	-.156	.028
	Total Stroop Test Completion Time	T0	-.174	-.020	.173	-.427	.337
		T1	.298	.129	-.169	-.218	-.136

Note. *Correlation is significant at the .05 level (2-tailed).