

Mindfulness-based school interventions: A systematic review of outcome evidence quality by study design

Mindfulness

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Online Resource 4

Results and Evidence Grades from MBSI studies, Broken Down by Research Design, Evaluation Design and Control Group Type

Color Coding:

Research Design: quantitative, mixed, qualitative

Evaluation Design: RCTs, pre-post, single-case designs/case studies/series

Control Group Type: active, passive, no control group

Category	Results	Reference # – Research Design Breakdown (Study Evidence Rating #)	Reference # – Eval. Design Breakdown	Reference # – Control Group Breakdown	Grade of Evidence (Across Studies)
1) Wellbeing	↑ wellbeing	35 (1++), 45 (3), 64 (2-), 67 (1-), 68 (2-)	35, 45, 64, 67, 68	35, 45, 64, 67, 68	A
	= wellbeing	10 (1++), 16 (1-), 22 (2-), 32 (1-), 33 (1-)	10, 16, 22, 32, 33	10, 16, 22, 32, 33	A
	↑ feelings of contentment	13 (2-)	13	13	D
	↓ life satisfaction	65 (1-)	65	65	C
2) Self-compassion	<i>Self-compassion/intrapersonal</i>				
	↑ self-compassion	13 (2-)	13	13	D
	↑ intrapersonal strengths	73 (1-)	73	73	C
	↑ embracing life	45 (3)	45	45	D
	↑ self-acceptance	15 (1-)	15	15	C
	↑ school self-concept	58 (1+)	58	58	B
	↓ inferiority complex	45 (3)	45	45	D
3) Social functioning	<i>Social relationships</i>				
	↑ interpersonal problems	28 (2-)	28	28	D
	↑ interpersonal strengths	73 (1-)	73	73	C
	↑ psychosocial functioning	73 (1-)	73	73	C
	↑ relationships with others	71 (2-)	71	71	D
	↑ prosocial behavior	60 (1++), 71 (2-)	60, 71	60, 71	A
	= psychosocial adjustment	47 (2-)	47	47	D
	↑ empathy	45 (3), 58 (1+)	45, 58	45, 58	B
	= empathy	53 (1-)	53	53	C
	↑ connection with others	45 (3)	45	45	D
	= compassion	53 (1-)	53	53	C
	↑ caring/respect for others	11 (2-)	11	11	D
	↑ social competence	25 (1+)	25	25	B
	↑ social skills	6 (2-)	6	6	D
	↓ social problems	52 (1-)	52	52	C
<i>Social participation</i>					
↑ collaboration	19 (3)	19	19	D	
↑ communication	19 (3)	19	19	D	

	↑ participation in activities	11 (2-)	11	11	D
	Social bias				
	↓ Stereotype/prejudice towards Israeli-Palestinian outgroup	9 (1+)	9	9	B
4) Mental health	Depression				
	↓ depressive symptoms	8 (2+), 12 (1-), 20 (1-), 46 (1-), 48 (2-), 54 (1+)	8, 12, 20, 46, 48, 54	8, 12, 20, 46, 48, 54	B
	= depressive symptoms	16 (1-), 18 (1++), 32 (1-), 33 (1-)	16, 18, 32, 33	16, 18, 32, 33	A
	↓ rumination	62 (1-)	62	62	C
	Anxiety				
	↓ anxiety symptoms	7 (2-), 8 (2+), 41 (2-), 48 (2-), 62 (1-), 63 (1+)	7, 8, 41, 48, 62, 63	7, 8, 41, 48, 62, 63	B
	↓ GAD	42 (1++)	42	42	A
	↓ state and trait anxiety	6 (2-)	6	6	D
	= anxiety	16 (1-), 32 (1-), 33 (1-)	16, 32, 33	16, 32, 33	C
	↓ worry	42 (1++)	42	42	A
	↓ panic disorder	42 (1++)	42	42	A
	↓ OCD	42 (1++)	42	42	A
	↓ psychosomatic complaints	49 (2+)	49	49	C
	↓ internalizing problems	14 (1-), 18 (1++), 27 (1-), 42 (1++)	14, 18, 27, 42	14, 18, 27, 42	A
	Suicidality				
	↓ suicidal thoughts	44 (2+)	44	44	C
	Trauma				
	↓ posttraumatic symptoms	63 (1+)	63	63	B
	Eating disorder				
	↓ dietary restraint	1 (1-)	1	1	C
	↓ thin ideal internalization	1 (1-)	1	1	C
	↓ eating disorder symptoms	1 (1-)	1	1	C
	↓ psychosocial impairment	1 (1-)	1	1	C
	= weight/shape concern	32 (1-), 33 (1-)	32, 33	32, 33	C
	↓ weight/shape concern	1 (1-)	1	1	C
5) Self-regulation and emotionality	Self-regulation				
	↑ self-regulation	23 (2-), 28 (2-), 44 (2+), 53 (1-), 66 (1+)	23, 28, 44, 53, 66	23, 28, 44, 53, 66	B
	↑ emotion regulation	4 (2-), 15 (1-), 49 (2+), 58 (1+), 71 (2-)	4, 15, 49, 58, 71	4, 15, 49, 58, 71	B
	↑ resilience	70 (1++)	70	70	A
	↑ coping skills	63 (1+)	63	63	B
	↑ distress tolerance	59 (3)	59	59	D
	↑ emotional awareness	49 (2+)	49	49	C

	↑ emotional clarity	49 (2+)	49	49	C
	↑ feelings of relaxation	15 (1-)	15	15	C
	↑ relaxed in school	66 (1+)	66	66	B
	↑ calmness	15 (1-)	15	15	C
	↑ self-control	11 (2-), 75 (2-)	11, 75	11, 75	D
	↑ effortful control	64 (2-)	64	64	D
	↑ anger management skills	68 (2-)	68	68	D
	↑ executive function	31 (1++), 34 (2-), 43 (1++), 52 (1-), 77 (1-)	31, 34, 43, 52, 77	31, 34, 43, 52, 77	A
	↑ cognitive control	50 (2+), 58 (1+)	50, 58	50, 58	B
	↑ cognitive inhibition	74 (2+)	74	74	C
	Emotionality				
	↑ positive mood	45 (1-), 55 (1+)	45, 55	45, 55	B
	↓ negative feelings	9 (1+), 21 (2+), 37 (1+)	9, 21, 37	9, 21, 37	B
	↓ negative affect = negative affect	15 (1-), 45 (3), 69 (2-), 16 (1-)	15, 45, 69, 16	15, 45, 69, 16	C
6) Mindful awareness	Mindfulness				
	↑ mindfulness	10 (1++), 21 (2+), 23 (2-), 37 (1+), 59 (3)	10, 21, 23, 37, 59	10, 21, 23, 37, 59	A
	= mindfulness	22 (2-), 33 (1-), 38 (2+)	22, 33, 38	22, 33, 38	C
	↑ awareness of thoughts	76 (1+)	76	76	B
	↑ awareness of feelings	76 (1+)	76	76	B
	↑ awareness of emotions	76 (1+)	76	76	B
	↑ awareness of bodily sensations	76 (1+)	76	76	B
	↑ being present in life	76 (1+)	76	76	B
	↑ sense of efficacy	59 (3)	59	59	D
	↓ mind wandering	58 (1+)	58	58	B
	Positive outlook				
	↑ optimism	23 (2-), 57 (1-)	23, 57	23, 57	C
	↑ positive thinking	23 (2-)	23	23	D
	Perspective-taking				
	↑ perspective-taking	58 (1+)	58	58	B
7) Attentional focus	Attention				
	↑ attention	11 (2-), 22 (2-), 31 (1++), 37 (1+), 53 (1-), 66 (1+), 72 (2-)	11, 22, 31, 37, 53, 66, 72	11, 22, 31, 37, 53, 66, 72	A
	↑ selective attention	51 (2+)	51	51	C
	↑ attention awareness	23 (2-)	23	23	D
	↑ concentration	55 (1+)	55	55	B
	↑ controlled thoughts	75 (2-)	75	75	D
	↑ on-task behavior = task-shifted facilitation	36 (2-), 56 (2-), 1 (1-)	36, 56, 1	36, 56, 1	D
	↓ attention problems	14 (1-), 18 (1++), 48 (2-)	14, 18, 48	14, 18, 48	A
	↓ distractibility	66 (1+)	66	66	B
	↓ off task behaviors	24 (3), 56 (2-)	24, 56	24, 56	D
	↓ ADHD behaviors	51 (1+), 60 (1++)	51, 60	51, 60	A

	Impulsivity				
	↓ impulsivity	26 (1+)	26	26	B
8)	Psychological stress				
Psychological and physiological stress	↓ stress	5 (1+), 17 (2-), 29 (2-), 46 (1-), 49 (2+), 67 (1-), 68 (2-), 75 (2-)	5, 17, 29, 46, 49, 67, 68, 75	5, 17, 29, 46, 49, 67, 68, 75	B
	↑ stress	28 (2-), 61 (2-)	28, 61	28, 61	D
	= stress	16 (1-)	16	16	C
	Physiological stress				
	↑ stress physiology – skin temperature/conductivity	40 (1+)	40	40	B
	↓ stress physiology – cortisol	58 (1+)	58	58	B
	↓ right amygdala activation to fearful stimulus	5 (1+)	5	5	B
	↓ tiredness	15 (1-)	15	15	C
	↓ aches/pains	15 (1-)	15	15	C
	↑ sleep	7 (2-)	7	7	D
	↑ functional connectivity	5 (1+)	5	5	B
	↑ brain plasticity	5 (1+)	5	5	B
9) Problem behaviors	↓ aggression	26 (1+), 48 (2-), 52 (1-)	26, 48, 52	26, 48, 52	B
	↓ disruptive behaviors	39 (2-)	39	39	D
	↓ conduct behavior	2 (2+), 48 (2-), 60 (1++), 71 (2-)	2, 48, 60, 71	2, 48, 60, 71	A
	↓ externalizing problems	14 (1-), 27 (1-)	14, 27	14, 27	C
10) Academic performance	General academic performance				
	↑ school specific efficacy	28 (2-)	28	28	D
	↑ academic performance	6 (2-), 8 (2+), 25 (1+)	6, 8, 25	6, 8, 25	B
	↑ creativity	19 (3)	19	19	D
	↑ critical thinking	19 (3)	19	19	D
	↑ meta cognition	69 (2-)	69	69	D
	↑ auditory-verbal memory	55 (1+)	55	55	B
	↑ GPA	3 (1+)	3	3	B
	↑ data-driven information processing	74 (2+)	74	74	C
	↑ academically engaged behavior	24 (3)	24	24	D
	↑ positive attitude towards academic subjects	37 (1+)	37	37	B
	↓ test anxiety	51 (1+)	51	51	B
	↓ cognitive errors	50 (2+)	50	50	C
	Math				

	↑ math performance	58 (1+)	58	58	B
	↑ math score	3 (1+)	3	3	B
	Reading				
	↑ grades in reading	2 (2+)	2	2	C
	= reading fluency	30 (3)	30	30	D
	Science				
	↑ grades in science	2 (2+)	2	2	C
	Social studies				
	↑ social studies score	3 (1+)	3	3	B
11)	↑ satisfaction with program	61 (2-)	61	61	D
Acceptability	↑ understanding and willingness to use strategies	61 (2-)	61	61	D
	↑ acceptance of mindfulness	7 (2-), 32 (1-), 68 (2-)	7, 32, 68	7, 32, 68	C

Note. ↑ increase, ↓ decrease, = no change, GAD = Generalized Anxiety Disorder, OCD = Obsessive Compulsive Disorder. See Appendix C for numbered list of included studies.