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The simultaneous impact of interventions on optimism and depression: A meta-analysis

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Abstract

The positive psychology approach to mental-health-related interventions suggests that a dual focus on positive and problematic characteristics is beneficial and that positive and negative characteristics interact. The present study explored the link between optimism and depression outcomes in intervention studies that assessed both optimism and depression outcomes. A meta-analysis examined effect sizes for depression and optimism and links between depression and optimism outcomes. Eighteen studies with a total of 2153 participants were included. Across studies the weighted effect sizes for the impact of interventions on both depression ($g = 0.46$) and optimism ($g = 0.38$) were significant. Optimism and depression outcomes were associated with one another ($r(17) = 0.58$). Meta-regression analyses also indicated linkages between the two outcomes in that the optimism effect sizes moderated depression effect sizes and depression effect sizes moderated optimism effect sizes. The results of the study lend support to a dual focus on positive and problematic characteristics.

KEYWORDS
depression, interventions, meta-analysis, optimism

1 | INTRODUCTION

The positive psychology approach emphasizes understanding and facilitating development of strengths and positive characteristics (Seligman et al., 2005). Applied to treatment of mental health problems, a positive psychology clinical approach holds that a dual focus on positive and problematic characteristics is beneficial (Wood & Tarrier, 2010). Positive and negative characteristics interact and promoting positive characteristics may assist in the treatment of disorders (Wood & Tarrier, 2010).

Optimism is an example of an important positive characteristic included in the positive psychology approach. Depression is an example of a disabling mental health problem. These two characteristics can exemplify the dual focus of the positive psychology approach on positive and problematic characteristics.

1.1 | Optimism

Optimistic individuals have favorable expectations for the future (Carver et al., 2010). Optimism is associated with higher levels of subjective well-being, better coping strategies and better physical health (Carver et al., 2010). Optimism is changeable and can be increased through interventions (Malouff & Schutte, 2017). Examining the ties of optimism and depression can provide insights regarding the nature of depression and potential change agents related to depression. Higher levels of optimism have been found to be correlated with lower levels of depression in various populations (Carver et al., 2010; Tindle et al., 2012; Uribe et al., 2021). Such studies, examining concurrent associations between optimism and depression indicate that the two are related, but separate characteristics. For example, in a meta-analysis of multiple studies, Uribe et al. (2021) reported an

association of −0.54 between optimism and depression, suggesting that higher optimism is associated with lower depression, but that the two share only 29% variance. Examining the concurrent impact of interventions on optimism and depression may provide further insights regarding the co-occurrence and ties between optimism and depression, adding to information obtained in non-intervention correlational studies.

1.2 | Depression

Depression is a prevalent mental health disorder that is characterized by sadness and lack of interest in activities, and can have very debilitating effects (World Health Organisation, 2021). Higher levels of depression are associated with a number of negative outcomes, ranging from greater risk of coronary heart disease (Rugulies, 2002) to higher rates of suicide (Yoshimasu et al., 2008). Depression is changeable and can be successfully treated through various interventions (Barth et al., 2016). Such interventions include interventions based on the positive psychology approach (Car et al., 2021).

1.3 | Aim of the present study

The aim of the study was to explore the link between optimism and depression outcomes in intervention studies that assessed both optimism and depression. The conceptual foundation for the aim of the study was the positive psychology-based proposition that positive and negative characteristics interact (Wood & Tarrier, 2010). The positive clinical psychology model proposed by Wood and Tarrier (2010) suggests multiple types of interactions between positive and negative clinical characteristics. Positive characteristics may serve as a buffer between challenging life events and experience of distress and clinical symptoms, such as those of depression. For example, greater optimism may make it more likely that challenging events are appraised or reappraised as an opportunity rather than a threat and that individuals higher in optimism seek out supportive resources with the expectation of a positive outcome from such actions. Conversely, negative emotions comprising depression may reduce optimism. Thus, strengthening optimism may be associated with lessened depression, and likewise, lessening depression may be associated with increased optimism.

Further, this positive clinical model (Wood & Tarrier, 2010) suggests that there is value in considering both positive characteristics, such as gratitude or optimism and negative characteristics, such as vulnerability to stress or hostility, when predicting clinical symptoms, as positive characteristics are more likely to have features that differ from clinical symptoms, such as symptoms of depression.

A taxonomy developed by Larsen et al. (2021) suggests the usefulness of examining concomitant characteristics. The model provides an additional foundation for examining how interventions might impact both optimism and depression through a category, described as 'engaging in behaviors causing changes in the conscious state of mind or predominant emotion' (p. 10) in the taxonomy that suggests examining co-occurring health-related characteristics in this category. An intervention that increases optimism and decreases depression may result in a change of mind represented by optimism and a change in emotion represented in part by depression.

As both optimism and depression are important across various practice areas, including psychology, psychiatry, nursing, and education, among others, findings regarding the linking of optimism and depression may have implications for theoretical models, such as the positive psychology clinical model (Wood & Tarrier, 2010) and the interdisciplinary taxonomy proposed by Larsen et al. (2021) and outcomes of interest in a variety of disciplines.

As a number of intervention studies using random assignment designs, which provide information regarding causality have assessed both optimism and depression as outcomes, a meta-analytic approach was used in the present study. Meta-analyses allow estimation of effect sizes across multiple studies, have a larger sample size than any of the individual included studies, and enable testing of the effect of moderating variables across studies. The hypotheses tested in the present meta-analytic study were as follows:

1. Across intervention studies assessing both optimism and depression as outcomes, there would be a significant effect for the optimism outcome indicating an impact of interventions on optimism.
2. Across intervention studies assessing both optimism and depression as outcomes, there would be a significant effect for the depression outcome indicating an impact of interventions on depression.
3. Across intervention studies assessing both optimism and depression as outcomes, depression and optimism outcomes would be significantly associated.
4. Across intervention studies assessing both optimism and depression as outcomes, optimism would significantly moderate depression.
5. Across intervention studies assessing both optimism and depression as outcomes, depression would significantly moderate optimism.

2 | METHOD

The meta-analysis was registered on the PROSPERO registration site (see https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=362236). Inclusion criteria for studies were that they used random assignment to intervention or control conditions, measured the effect of the intervention on both optimism and depression in the same participants, and provided adequate statistical information to allow calculation of effect sizes. The databases PubMed, PsycINFO Proquest, EBSCO, EBSCO Open Dissertations, and Scopus were searched using the terms depression AND optimism AND (treatment OR intervention OR training) in

subject terms, titles, and abstracts as allowed by the respective databases. Authors of identified studies were contacted and asked for unpublished results they might have that fit the inclusion criteria. Authors of studies lacking statistical information needed for the meta-analysis were contacted to request this information. The search concluded in December 2022.

The PRISMA flow chart in Figure 1 shows the result of the search, which resulted in 18 articles reporting information for studies with a total of 19 effect sizes for both depression and optimism. One of the studies reported effect sizes for two comparisons for both depression and optimism, involving contrasting of the intervention condition with two control conditions; these effect sizes were averaged, resulting in 18 effect sizes for both outcomes. The total number of participants across studies was 2153.

For each study, the following information used in the meta-analysis was extracted: source details, effect size information for depression, effect size information for optimism, and number of participants. For descriptive purposes, mean age and gender composition of samples, information regarding the nature of the intervention, details regarding samples, and nature of the scales used were also recorded. One researcher extracted this information. To check the reliability of coding of information used in the meta-analysis, a second researcher independently coded the information that was the basis of the effect size calculations. Agreement in coding was 100%.

3 | RESULTS

Table 1 shows the characteristics of include studies. Comprehensive Meta-Analysis Version 3.3 (Borenstein et al., 2014) calculated the overall weighted effect sizes for both depression and optimism and calculated publication bias statistics. Hedges' g was used as the effect size for both outcomes. Hedges' g is similar to Cohen's d, but corrects a bias in d. According to Borenstein et al. (2009), a random-effects model, as supported by a significant heterogeneity analysis, should be used when the true effect may not be stable across studies. For the studies included in the meta-analysis, heterogeneity statistics showed a significant Q Statistic ($Q = 84.40$ $p = 0.0001$) and a high I^2 index ($I^2 = 79.85$) for depression and a significant Q Statistic (66.51, $p = 0.0001$) and a high I^2 index ($I^2 = 74.44$) for optimism. These results indicate heterogeneity. Thus, a random-effects model was appropriate in calculating the weighted effect sizes.
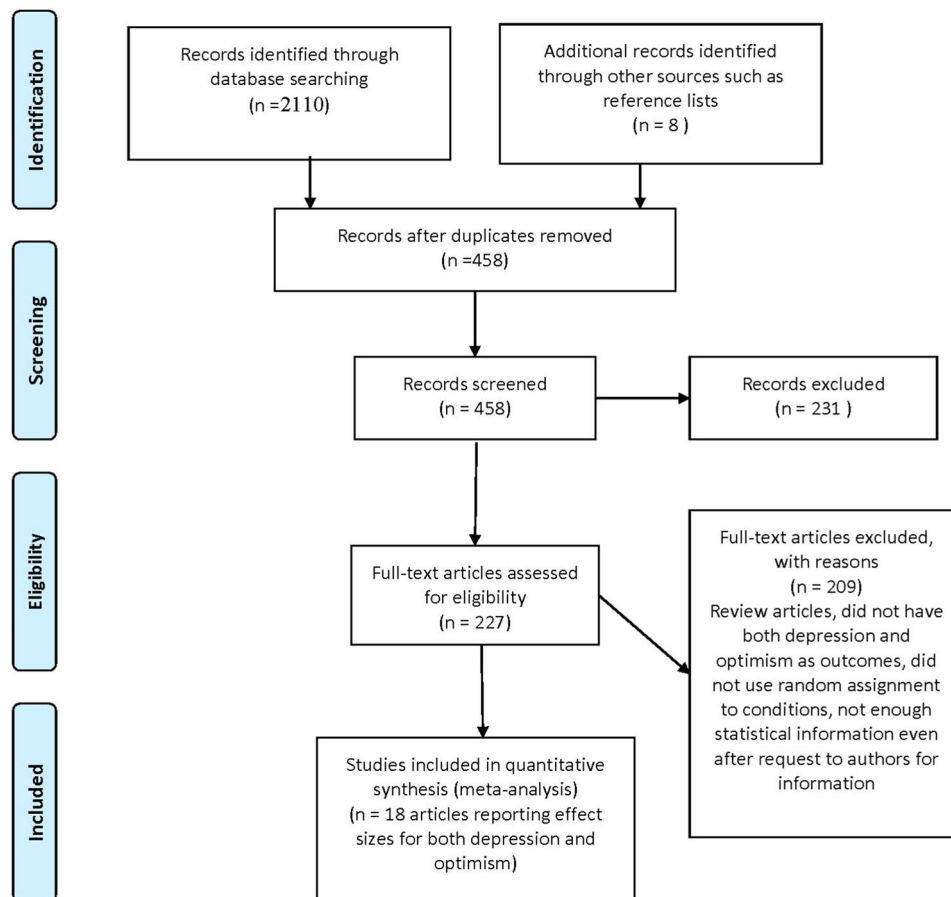

FIGURE 1 PRISMA flow chart showing search process.

TABLE 1 Characteristics of RCTs included in the meta-analysis.

Study	Population	Intervention type	Intervention duration in weeks	Mean age of sample	Sex	Depression measure	Depression g	Optimism measure	Optimism g	N
Barry et al. (2019)	University students	Mindfulness	8	38	Mixed	DASS-D	0.33	Psy Cap Q-O	0.26	72
Batista et al. (2022)	University students	Journaling	1	23	Mixed	PH Q-D	0.07	LOT-R	−0.03	172
Chesney et al. (2003)	HIV positive adults	Coping training	10	–	Men	CES-D	0.27	LOT-R	0.33	90
Ducasse et al. (2019)	Suicidal inpatients	Gratitude	1	42	Mixed	BDI	0.27	O 0-10	0.40	84
Freedman et al. (2021)	Patients with MS	Mix of positive psychology exercises, such as focus on strengths and gratitude	5	54	Mixed	CES-D	0.46	LOT-R	1.11	198
Funakubo et al. (2022)	Individuals with metabolic syndrome	Information on benefits of laughter and laughter and breathing exercises	12	61	Mixed	G D S	0.06	LOT-R	0.20	235
Hallford & Mellor (2016)	young adults	Cognitive-reminiscence therapy focused on meaing and self-efficay	6	21	Mixed	DASS-D	0.48	LOT-R	0.26	26
Hallford et al. (2022)	Young adults	Positive-memory cognitive-reminiscence therapy	3	25	Mixed	DASS-D	0.65	LOT-R	0.32	62
Kjellgren et al. (2011)	Individuals with neck or back pain	Flotation relaxation	7	54	Mixed	HADS	0.35	LOT	0.18	36
Krifa et al. (2022)	Health care students	CARE program (orientation of attention towards the positive, compassion and self-compassion, and engagement in meaningful actions)	8	–	Mixed	DASS-	0.29	LOT-R	0.29	334
Lengacher et al. (2009)	Breast cancer patients	Mindfulness	6	–	Women	CES-D	0.65	LOT	0.48	82
Li and Li (2020)	Young adults	Mindfulness	9	20	Mixed	Zung D	1.47	PPQ-O	1.11	240
Liau et al. (2016)	University students	Best possible self-activity	0.14	18	Mixed	CES-D	−0.05	LOT-R	0.12	162
Mohammadi et al. (2018)	Heart-disease patients	Optimism training	8	53	Mixed	HADS-D	0.47	LOT-R	0.88	61
Pietrowsky & Mikutta (2012)	Depressed patients	Best possible self and three good things activities	3	44	Mixed	BDI-II	0.40	LOT-R	0.34	17
Sánchez-Jáuregui et al. (2019)	Breast biopsy patients	Hypnosis for relaxation and relaxing music	0.14	48	Women	HADS-D	0.63	O therm	−0.31	115

TABLE 1 (Continued)

Study	Population	Intervention type	Intervention duration in weeks	Mean age of sample	Sex	Depression measure	Depression g	Optimism measure	Optimism g	N
Schonert-Reichl et al. (2015)	Children	Mindfulness	12	10	Mixed	SPQC-D	0.58	Resilience	0.87	99
Shoshani et al. (2016)	Children with cancer	Making a wish, positive expectations	0.14	10	Mixed	BFI-D	0.89	LOT-R	0.36	68

Key for depression measures: DASS-D = Depression, Anxiety and Stress Scale Depression: PH Q-D = Patient Health Questionnaire Depression; CES-D = Center for Epidemiologic Studies Depression; BDI & BDI II = Beck Depression Inventory and revised scale; G D S = Geriatric Depression Scale; HADS-D = Hospital Anxiety and Depression Scale Depression; Zung D = Zung Self-Rating Depression Scale; SPQC-D = Seattle Personality Questionnaire for Children Depression; BFI = Brief Symptom Inventory Depression.

Key for optimism measures: Psy Cap O-Q = Psychological Capital Questionnaire Optimism; LOT & LOT-R = Life Orientation Test and revived version; O 0-10 = Current optimism rating on 0-10 scale; PPQ-O = Positive Psychological Capital Questionnaire Optimism; O therm = optimism thermometer 0-10 rating; Resilience O = Resiliency Inventory Optimism.

3.1 | Weighted effect sizes for depression and optimism

The weighted effect size across studies for depression was $g = 0.46$, 95% CI [0.25, 0.66], $SE = 0.11$, $p < 0.0001$. Figure 2 shows the forest plot for depression. The weighted effect size across studies for optimism was $g = 0.38$, 95% CI [0.20, 0.56], $SE = 0.94$, $p < 0.0001$. Figure 3 shows the forest plot for optimism. The significant effect sizes indicate that interventions impacted both depression and optimism.

Publication bias analyses for depression outcomes showed that effect sizes were symmetrically distributed. Duvall and Tweedie's trim and fill analysis did not suggest eliminating any studies. Publication bias analyses for optimism outcomes showed that effect sizes were also symmetrically distributed. Duvall and Tweedie's trim and fill analysis did not suggest eliminating any studies.

3.2 | Linking depression and optimism effects of interventions

Interventions impacted depression and optimism in similar ways, with possible bidirectional influences. The effect sizes for depression and optimism outcomes were associated, as shown by a significant correlation between depression and optimism effect sizes, $r(17) = 0.58$, 95%CI [.16, 0.84], $p = 0.01$. Meta-regression analyses using Comprehensive Meta-Analysis Version 3.3 (Borenstein et al., 2014) investigated the moderation of optimism effect sizes on depression outcomes and the moderation of depression effect sizes on optimism outcomes. In these analyses the intervention condition (positive psychology intervention or control) was the independent variable, and in the first moderation analysis depression effect sizes were the conceptual outcome variable, with optimism effect sizes serving as the moderator, or linking variable. In the second moderation analysis, optimism effect sizes were the conceptual outcome variable, with depression effect sizes serving as the moderator, or linking variable. Optimism moderated depression with a coefficient of 0.59, $SE = 0.33$, 95% CI [0.16, 1.02], $p = 0.007$. Depression moderated optimism with a coefficient of 0.62, $SE = 0.18$, 95%CI [0.26, 0.98], $p = 0.0008$. Thus, both moderation analyses were significant. The overlap in confidence intervals of these two moderation analyses suggest similar moderating effects of optimism on depression and depression on optimism.

3.3 | Study quality

The studies used random assignment to condition, a design preferred for providing information regarding causality. They mostly used standard, psychometrically sound measures such as the Beck Depression Inventory-II for depression and the Life Orientation Test-R for optimism. Thus study quality was high across studies.
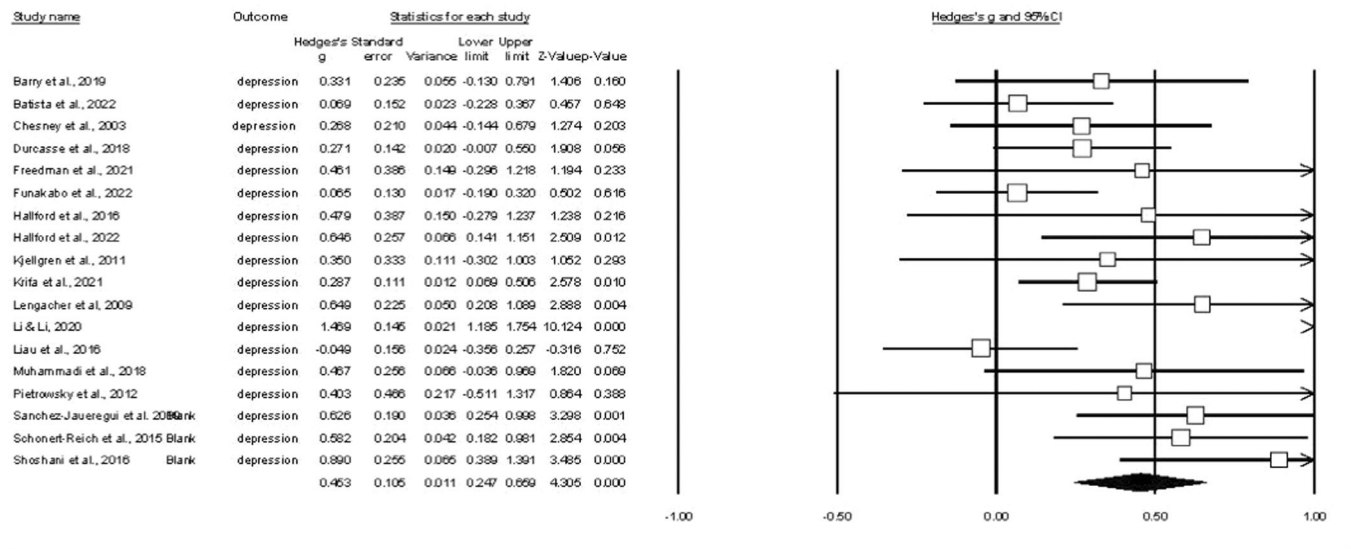
Study name	Outcome	Hedges's g	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value	Hedges's g and 95% CI
Barry et al., 2019	depression	0.331	0.235	0.055	-0.130	0.791	1.406	0.160	
Batista et al., 2022	depression	0.069	0.152	0.023	-0.228	0.367	0.457	0.648	
Chesney et al., 2003	depression	0.268	0.210	0.044	-0.144	0.679	1.274	0.203	
Durcasse et al., 2018	depression	0.271	0.142	0.020	-0.007	0.550	1.908	0.056	
Freedman et al., 2021	depression	0.461	0.386	0.149	-0.296	1.218	1.194	0.233	
Funakabo et al., 2022	depression	0.065	0.130	0.017	-0.190	0.320	0.502	0.616	
Hallford et al., 2016	depression	0.479	0.387	0.150	-0.279	1.237	1.238	0.216	
Hallford et al., 2022	depression	0.646	0.257	0.066	0.141	1.151	2.509	0.012	
Kjellgren et al., 2011	depression	0.350	0.333	0.111	-0.302	1.003	1.052	0.293	
Krifa et al., 2021	depression	0.287	0.111	0.012	0.069	0.506	2.578	0.010	
Lengacher et al., 2009	depression	0.649	0.225	0.050	0.208	1.089	2.888	0.004	
Li & Li, 2020	depression	1.469	0.145	0.021	1.185	1.754	10.124	0.000	
Liau et al., 2016	depression	-0.049	0.156	0.024	-0.356	0.257	-0.316	0.752	
Muhammadi et al., 2018	depression	0.467	0.256	0.066	-0.036	0.969	1.820	0.069	
Pietrowsky et al., 2012	depression	0.403	0.466	0.217	-0.511	1.317	0.864	0.388	
Sanchez-Jaueregui et al. 2009Blank	depression	0.626	0.190	0.036	0.254	0.998	3.298	0.001	
Schonert-Reich et al., 2015 Blank	depression	0.582	0.204	0.042	0.182	0.981	2.854	0.004	
Shoshani et al., 2016 Blank	depression	0.890	0.255	0.065	0.389	1.391	3.485	0.000	
		0.453	0.105	0.011	0.247	0.659	4.305	0.000	

FIGURE 2 Forest plot for depression.

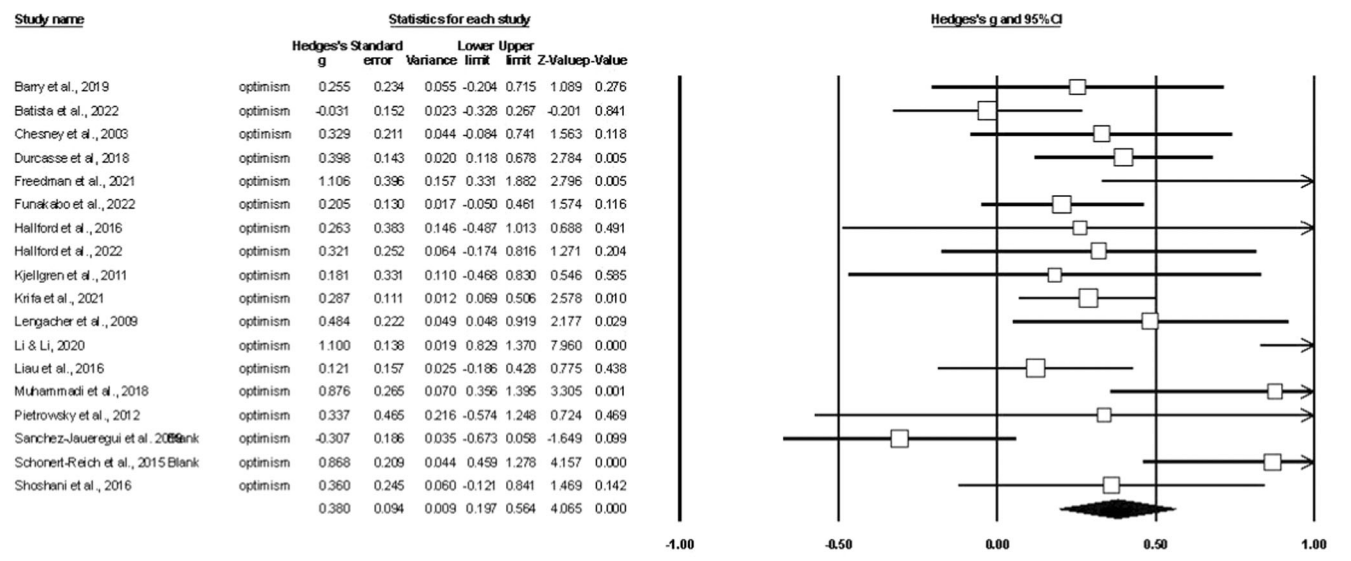| Study name	Outcome	Hedges's g	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value	Hedges's g and 95% CI
Barry et al., 2019	optimism	0.255	0.234	0.055	-0.204	0.715	1.089	0.276	
Batista et al., 2022	optimism	-0.031	0.152	0.023	-0.328	0.267	-0.201	0.841	
Chesney et al., 2003	optimism	0.329	0.211	0.044	-0.084	0.741	1.563	0.118	
Durcasse et al, 2018	optimism	0.398	0.143	0.020	0.118	0.678	2.784	0.005	
Freedman et al., 2021	optimism	1.106	0.396	0.157	0.331	1.882	2.796	0.005	
Funakabo et al., 2022	optimism	0.205	0.130	0.017	-0.050	0.461	1.574	0.116	
Hallford et al., 2016	optimism	0.263	0.383	0.146	-0.487	1.013	0.688	0.491	
Hallford et al., 2022	optimism	0.321	0.252	0.064	-0.174	0.816	1.271	0.204	
Kjellgren et al., 2011	optimism	0.181	0.331	0.110	-0.468	0.830	0.546	0.585	
Krifa et al., 2021	optimism	0.287	0.111	0.012	0.069	0.506	2.578	0.010	
Lengacher et al., 2009	optimism	0.484	0.222	0.049	0.048	0.919	2.177	0.029	
Li & Li, 2020	optimism	1.100	0.138	0.019	0.829	1.370	7.960	0.000	
Liau et al., 2016	optimism	0.121	0.157	0.025	-0.186	0.428	0.775	0.438	
Muhammadi et al., 2018	optimism	0.876	0.265	0.070	0.356	1.395	3.305	0.001	
Pietrowsky et al., 2012	optimism	0.337	0.465	0.216	-0.574	1.248	0.724	0.469	
Sanchez-Jaueregui et al. 2009Blank	optimism	-0.307	0.186	0.035	-0.673	0.058	-1.649	0.099	
Schonert-Reich et al., 2015 Blank	optimism	0.868	0.209	0.044	0.459	1.278	4.157	0.000	
Shoshani et al., 2016	optimism	0.360	0.245	0.060	-0.121	0.841	1.469	0.142	
		0.380	0.094	0.009	0.197	0.564	4.065	0.000	

FIGURE 3 Forest plot for optimism.

4 | DISCUSSION

A positive-psychology-based approach to mental health treatment suggests that positive and negative characteristics interact (Wood & Tarrier, 2010). This proposition was the conceptual foundation for the present meta-analytic study. The study focused on optimism as a positive characteristic and depression as a negative and problematic characteristic. The study explored whether across intervention studies using random assignment to condition designs that assessed both depression and optimism as outcomes these outcomes would be linked.

Intervention studies using random assignment to condition can help identify causality; thus random assignment to condition designs that assess both depression and optimism as outcomes may set into motion processes that facilitate lessening of depression and set into motion processes that increase optimism. Some of these processes may be specific to either the lessening of depression or the increase of optimism. Additionally, there may be a bidirectional relationship between optimism and depression as a result of interventions. For example, increases in optimism may result in decreases in depression through reappraisal facilitated by optimism, and decreases in depression may result in increases in optimism as a negative mindset subsides.

The first two hypotheses of the present study, namely that across intervention studies assessing both optimism and depression as outcomes, there would be a significant weighted effect size for optimism outcomes and depression outcomes, were supported. Across the 18 positive psychology intervention random-assignment studies assessing both depression and optimism as outcomes, interventions had a significant impact on both depression and optimism as shown by the significant weighted effect sizes. The meta-analysis of the depression outcome found a g, similar to Cohen's d, of 0.46, showing that the interventions led to a lessening of depression, and the meta-analysis of the optimism outcome found a g of 0.38, showing that the interventions led to increased optimism. These are medium effect sizes, indicating that the interventions across studies had an impact on both outcomes, providing a basis for the testing of the linking hypotheses.

Hypotheses 3 to 5 related to the linking of outcomes and were as follows: across intervention studies assessing both optimism and depression as outcomes, depression and optimism outcomes would be significantly associated, optimism would significantly moderate depression and depression would significantly moderate optimism. These hypotheses were also supported.

Across studies, the effect size for optimism was correlated with the effect size for depression at $r = 0.58$, a medium effect size indicating that the depression and optimism outcomes impacted by the interventions shared substantial variance of 34% (0.58 squared). This level of shared variance suggests that across studies the effect sizes are linked, but that optimism and depression outcomes are not the same outcome as the two do account for separate variance. The meta-regressions examining this linking of outcomes further showed that across studies the effect size moderation of optimism outcomes for depression outcomes was similar to the moderation of depression outcomes for optimism outcomes. Together these results suggest a linking and possible bidirectional interaction between the impact of interventions on depression and optimism.

The notion of bidirectional outcomes is supported by results of intervention studies primarily targeting depression and by intervention studies primarily targeting optimism. For example, Pietrowsky and Mikutta (2012) used a positive psychology intervention to ameliorate depression in depressed patients and found an increase in optimism along with a decrease in depression. Sergeant and Mongrain (2014) found that an intervention targeting optimism reduced depression.

The results of the present meta-analysis provide support for the positive psychology-based proposition that a useful approach to mental health considers the interaction between positive and negative characteristics, as in the positive clinical model proposed by Wood and Tarrier (2010) and the benefit of harnessing positive characteristics. Interventions based on the positive psychology approach have been effective in assisting those with poor mental health (Carr et al., 2021; Lee Duckworth et al., 2005). Recognition of the links between positive and negative or problematic characteristics can be useful in both implementing interventions based on the positive psychology approach and in interventions based on other approaches.

In the present meta-analysis there were not enough studies using any one type of intervention to make a moderator analysis focused on intervention type meaningful. However, inspection of effect sizes for the impact of positive psychology interventions incorporating mindfulness suggests that such interventions were particularly promising in impacting depression. Inspections of effect sizes for the impact of positive psychology interventions on optimism suggested that specific optimism training, a mix of positive psychology exercises, and mindfulness training were most promising. The usefulness of mindfulness-based interventions is supported by meta-analytic findings regarding the general beneficial effects of mindfulness interventions, such as mindfulness-based stress reduction (Khoury et al., 2015).

A few cautions should be kept in mind regarding the results of the present study. First, the association between improvement in optimism and depression does not show causation. Second, the association may have been inflated by same-method, same-source bias in studies where measures was all self-report (see Podsakoff et al., 2012). Third, the linking of positive and negative outcomes impacted by interventions was examined through just two exemplars, optimism and depression respectively, limiting general conclusions regarding linking of other positive and negative outcomes.

Future research might explore the links between positive characteristics and mental health problems both through meta-analytic techniques and empirical designs. For example, meta-analytic approaches might examine the links of various positive characteristics, such as gratitude and self-efficacy, with mental health problems related to anxiety. Empirical designs might explore further simultaneous and possible interactive impact of interventions on various positive characteristics and various mental health problems. Longitudinal designs could further untangle the bidirectional and possibly cyclical effects of positive and negative characteristics. Intervention designs might explore optimal approaches to impacting optimism to ameliorate depression or other mental health problems.

From an interdisciplinary perspective, optimism and depression are relevant to a number of areas, including psychology, education, medicine, and workplace functioning, Further investigation of the interactions of optimism, depression and characteristics tied to optimism or depression in various contexts, such as physical health and academic settings may provide insight into how such contexts impact outcomes. Such research may also contribute to theories and models relating to the nominological net of human functioning, such as in the interdisciplinary model proposed by Larsen et al. (2021).

In conclusion, the findings of the present study have implications for the positive psychology approach, clinical practice, and possibly for general models of human functioning.

ACKNOWLEDGMENTS

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data used in the meta-analysis is available on the Open Science Framework platform under the name 'Linking Depression and Optimism Effects of Interventions Meta-Analysis data file' at https://osf.io/muadt/.

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PEER REVIEW

The peer review history for this article is available at https://www.webofscience.com/api/gateway/wos/peer-review/10.1002/mhs2.79.

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