Sánchez-Cisneros, D., Rodríguez-Hernández, G., Juárez Lugo, C., Orozco Vargas, A., Flores-Pérez, V. (2024). Therapeutic models in positive clinical interventions for reducing depressive symptoms in adults: a systematic review. *Interacciones, 10*, e415. http://dx.doi.org/10.24016/2024.v10.415

PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Therapeutic models in Positive Clinical Interventions to reduce depressive symptoms in adults: a systematic review.
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	**Introduction:** Depression is currently one of the most commonly suffered mental disorders worldwide. Although there are valuable and effective psychotherapeutic models for its treatment, most of them focus on reducing symptoms and illness. Meanwhile, the Positive Psychology approach promotes well-being by developing and implementing strategies called Positive Clinical Interventions (PCI), aimed at improving the development and satisfaction of people with the goal of promoting health, quality of life and excellence. **Methods:** The aim of this research was to synthesize the available evidence on the effectiveness of PCIs according to the type and therapeutic model implemented to increase well-being and reduce depressive symptoms in adults, as well as to identify their value and balance between innovation and efficacy. The search for information was carried out in PubMed, PsycINFO and SCOPUS, the guidelines of the PRISMA statement were followed and the methodological quality of the studies was evaluated. Our review has been registered in PROSPERO (CRD42024551678). **Results:** The methodological quality of the studies was assessed using the Effective Public Heatl Practice Project (EPHPP), which made it possible to include six of the 178 studies evaluated in the systematic review. Second and third generation therapeutic models were identified. All studies reported improvement in depressive symptoms and increased well-being immediately after the intervention and up to six months later. **Conclusion: According** to the results, PCIs are effective, but studies with more rigorous protocols and methods are required to avoid biases.
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Based on the recognition of well-being and psychopathology as two independent but related constructs (Westerhof & Keyes, 2010). The Positive Psychology (PsP) approach has gained relevance for the promotion of well-being (Armijo-Olivo et al., 2012), which has allowed the boom in the scientific productivity of PsP, evidencing that positive traits prevent mental illness (Stemmler et al., 2021), through the study of positive emotions (Seligman, 2003), kindness (Alden & Trew, 2013), optimism (Carver et al., 2010) and gratitude (Wood et al., 2010), which has allowed the development and implementation of strategies to improve the development and satisfaction of people with the purpose of promoting health, quality of life and excellence (Snyder, 2000). Positive Clinical Interventions (PCI), incorporate a wide range of PsP principles (Seligman et al., 2014) compatible with clinical psychological theories because of their solid epistemological and methodological core (Arias, 2013). PCIs are broad and inclusive and have as their main objective to increase well-being and not only reduce the symptoms of some psychological state, as they are developed in different fields of psychology (Schueller & Parks, 2014) to favor positive emotional experience (Contreras & Esguerra, 2006), disease prevention and favor well-being (Lopez-Linares et al., 2023), through pathways consistent with positive theory and the pillars associated with PERMA theory (Seligman, 2011). Among the PCIs aimed at reducing depressive symptoms and promoting well-being, some types are identified, including well-being therapies, aimed at reducing symptomatology and promoting well-being (Berrocal et al., 2008). A second group can be defined as positive psychotherapy, interventions aimed at improving well-being and personal growth by promoting positive characteristics, positive emotions and character strengths such as optimism, kindness and gratitude (Páez-Salas, 2008). A third therapeutic approach is identified with Acceptance and Commitment Therapy (ACT) which is framed in a relational model that links behavioral principles to both pathology and thriving growth (Ciarrochi & Kashdan, 2013). PCIs in their various types have proven useful in addressing depressive disorder (Furchtlehner et al., 2019; Seligman, 2019) and favoring the construction of resources that optimize well-being (Silton et al., 2020); as well as the reduction of suicidal ideation, stress and anxiety symptoms (Craske et al., 2019; Stemmler et al., 2021). PCIs have evidenced their effectiveness in increasing well-being character strengths and quality of life, also in decreasing depression and other disorders such as anxiety and stress, in both clinical and non-clinical populations of children and

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			adults in different regions (Bohlmeijer et al., 2017). All of these with similar efficacy and a range of possibilities in terms of best practices and implementation, related to recording evidence, sample power, blinding of participants and evaluators, as well as in the presentation of results (Carr et al., 2020); as well as adding value and balance between innovation and the ability to increase well-being and decrease depression.
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	The aim of this research was to synthesize the available evidence on the effectiveness of PCIs according to the type and therapeutic model implemented to increase well-being and reduce depressive symptoms in adults from any field of psychology, as well as to verify their methodological characteristics in the sense proposed by Carr et al. (2020).
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	The review included: a) studies with symptom reduction as an explicit objective, b) interventions based on PP, c) interventions with positive effects, d) interventions aimed at adults, e) experimental studies. Excluded were: a) positive psychology interventions focused on educational and occupational areas, b) non-experimental studies, systematic and theoretical reviews, other than psychology, f) self-help or online interventions.
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	A search for information was conducted in PubMed, PsycINFO and SCOPUS databases, starting on October 15, 2023, limiting the search for information to five previous years, from 2018 to 2023.
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	A search for information was carried out in the PubMed databases by combining the terms and Boolean operators: *adult* AND *positive psychology* OR *positive clinical psychology* AND treatment AND *depression OR depressive disorder* and PsycINFO and SCOPUS by combining the terms and Boolean operators: *adult* AND *positive psychology* OR *positive clinical psychology* AND *depression.*
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	The selection of the studies was carried out by three researchers. First, the title and abstract were reviewed in the original language. In a second stage, the document was peer-reviewed in extenso and disputes were resolved on the basis of the stated objective, the established inclusion and exclusion criteria, and the expertise of the investigators. All the papers were written in English.
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable,	For metadata extraction, emptying tables were designed that included information related to the general characteristics of the studies and participants, methodological aspects, the content and theoretical basis of the PCIs and their main findings. It should be noted that the selected studies had all the data required for the analysis.

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		details of automation tools used in the process.	
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Records identified from: Databases (n = 211) PubMed (n = 58) PsycInfo (n = 109) Scopus (n = 44).... Records eliminated before screening: Duplicate records (n = 33).... Publications searched for retrieval (n = 178).... Publications not retrieved (n = 0). Thirty-five full-text records were evaluated, and only 6 studies were included. Records excluded by full-text review were for positive educational and occupational psychology interventions (*n* = 11) and self-help or online interventions (*n* = 18).
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	To assess the methodological quality of the studies and the risk of bias, the Effective Public Heatl Practice Project (EPHPP) was used. This instrument evaluates the methodological quality of primary studies of various designs using the quality criteria: selection bias, study design, confounding factors, blinding, data collection methods, withdrawals and dropouts, completeness of the intervention and statistical analyses (Deeks et al., 2003).
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	The evaluation of the documents was carried out by peers to identify the sections to be evaluated and to triangulate the results obtained. Only studies with moderate to strong methodological quality were selected. After this analysis, a total of six studies remained, 2.9% of the total number of studies reviewed, from which the corresponding information was extracted for the present review.
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	-
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of	-

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		missing summary statistics, or data conversions.	
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	For metadata extraction, emptying tables were designed that included information related to the general characteristics of the studies and participants, methodological aspects, the content and theoretical basis of the PCIs and their main findings.
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	-
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	-
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	-
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	It should be noted that the selected studies had all the data required for the analysis.
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	-
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Our study identified 211 records, 178 records underwent title and abstract review, 35 records were evaluated at full text, and only 6 studies were included. The list of all records that were screened out at full text and excluded is presented in Supplementary Material 3. The selection process can be seen in Figure 1.
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain	

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		why they were excluded.	
Study characteristics	17	Cite each included study and present its characteristics.	In terms of publication locations, the interventions were developed in countries such as the United States (Raque-Bogndan et al., 2020; Stemmler et al., 2021), some countries in Europe (Furchtlehner et al., 2019; Geschwind et al., 2019; González-Robles et al., 2019) and Australia (Whiting et al., 2019). All of them developed in clinical settings (see Table 1). In terms of participant characteristics, all six studies considered individuals of both sexes (Furchtlehner et al., 2019; Geschwind et al., 2019; González-Robles et al., 2019; Raque-Bogdan et al., 2020; Stemmler et al., 2021: Whiting et al., 2019). The minimum age was 18 (Furchtlehner et al., 2019; Geschwind et al., 2019; González-Robles et al., 2019; Raque-Bogdan et al., 2020; Stemmler et al., 2021: Whiting et al., 2019) and up to 65 years, with the exception of one study that looked at people up to 82 years (Raque-Bogdan et al., 2020) (see Table 1).
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Of the six studies assessed, five present strong methodological quality in terms of participant selection, study design, confounding factors, blinding, data collection methods, withdrawals and dropouts, intervention completeness, and statistical analyses (Geschwind et al., 2019; Gonzalez-Robles et al., 2019; Stemmler et al., 2021: Whiting et al., 2019), with the exception of one (Furchtlehner et al., 2019) that presents moderate quality mainly in the blinding criterion. Regarding research design, five studies used an experimental design with control group (Furchtlehner et al., 2019; Geschwind et al., 2019; González-Robles et al., 2019; Stemmler et al., 2021: Whiting et al., 2019), one more performed a single experimental group design (Raque-Bogdan et al., 2020). Only four investigations report conducting follow-up, which ranged from one to 12 months after treatment (Furchtlehner et al., 2019; Gonzalez-Robles et al., 2019; Raque-Bogdan et al., 2020; Whiting et al., 2019). Two studies report no follow-up at all (Geschwind et al., 2019; Stemmler et al., 2021) (see Table 1). In all cases, recruitment of participants was by invitation to those who met the characteristics required in each study (Furchtlehner et al., 2019; Geschwind et al., 2019; González-Robles et al., 2019; Raque-Bogdan et al., 2020; Stemmler et al., 2021: Whiting et al., 2019). Assignment to experimental or control groups was randomized (Furchtlehner et al., 2019; Geschwind et al., 2019; González-Robles et al., 2019; Stemmler et al., 2021: Whiting et al., 2019) with the exception of the single group study (Raque-Bogdan et al., 2020) (Table 1). To determine sample size four studies performed power analysis with Cohen's d (Furchtlehner et al., 2019; Geschwind et al., 2019; González-Robles et al., 2019; Raque-Bogdan et al., 2020), another study operationalized its variables into binary factors producing two groups with similar size (Stemmler et al., 2021) and yet another relied on analysis of other research to determine the target sample size (Whiting et al., 2019).
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	As can be seen in Table 3, all six studies reviewed report at the end of the intervention an improvement in depressive symptoms (Furchtlehner et al., 2019; Geschwind et al., 2019; González-Robles et al., 2019; Raque-Bogdan et al., 2020; Stemmler et al., 2021; Whiting et al., 2019), improvements in positive affect (Geschwind et al., 2019; Stemmler et al., 2021; Whiting et al., 2019), increased self-compassion and mindfulness (Raque-Bogdan et al., 2020), improved optimism and subjective happiness (Geschwind et al., 2019) and quality of life (González-Robles et al., 2019). Regarding the effects assessed at follow-up, three studies report consistent results after three and up to six months of the intervention (Furchtlehner et al., 2019; González-Robles et al., 2019; Raque-Bogdan et al., 2020) and another reports inconsistency in the effects after the intervention at one-month follow-up (Whiting et al., 2019).
Results of syntheses	20a	For each synthesis, briefly summarize the characteristics and risk of bias among contributing studies.	Of the six studies assessed, five present strong methodological quality in terms of participant selection, study design, confounding factors, blinding, data collection methods, withdrawals and dropouts, intervention completeness, and statistical analyses (Geschwind et al., 2019; Gonzalez-Robles et al., 2019; Stemmler et al., 2021: Whiting et al., 2019), with the exception of one (Furchtlehner et al., 2019) that presents moderate quality mainly in the blinding criterion.
	20b	Present results of all statistical	

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		syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Regarding research design, five studies used an experimental design with control group (Furchtlehner et al., 2019; Geschwind et al., 2019; González-Robles et al., 2019; Stemmler et al., 2021: Whiting et al., 2019), one more performed a single experimental group design (Raque-Bogdan et al., 2020). Only four investigations report conducting follow-up, which ranged from one to 12 months after treatment (Furchtlehner et al., 2019; Gonzalez-Robles et al., 2019; Raque-Bogdan et al., 2020; Whiting et al., 2019). Two studies report no follow-up at all (Geschwind et al., 2019; Stemmler et al., 2021) (see Table 1). In all cases, recruitment of participants was by invitation to those who met the characteristics required in each study (Furchtlehner et al., 2019; Geschwind et al., 2019; González-Robles et al., 2019; Raque-Bogdan et al., 2020; Stemmler et al., 2021: Whiting et al., 2019). Assignment to experimental or control groups was randomized (Furchtlehner et al., 2019; Geschwind et al., 2019; González-Robles et al., 2019; Stemmler et al., 2021: Whiting et al., 2019) with the exception of the single group study (Raque-Bogdan et al., 2020) (Table 1). To determine sample size four studies performed power analysis with Cohen's d (Furchtlehner et al., 2019; Geschwind et al., 2019; González-Robles et al., 2019; Raque-Bogdan et al., 2020), another study operationalized its variables into binary factors producing two groups with similar size (Stemmler et al., 2021) and yet another relied on analysis of other research to determine the target sample size (Whiting et al., 2019).
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	The instruments used to assess depressive symptoms, as well as the different measures related to PsP, it is appreciated that the most used instruments to measure depression were: the Beck Depression Inventory (BDI-II) (Furchtlehner et al., 2019; Gonzalez-Robles et al., 2019; Stemmler et al., 2021), Patient Health Questionnaire ([PHQ-8] Raque-Bogdan et al., 2020), the Hospital Anxiety and Depression Scale ([HADS] Whiting et al., 2019), Quick Inventory of Depressive Symptoms ([QIDS-SR-16] Geschwind et al., 2019) and Montgomery Asberg Depression Rating Scale ([MADRS] Furchtlehner et al., 2019). With respect to PsP measures the most commonly used instrument was the Depression Remission Questionnaire Positive and Negative Affect Scale (PANAS) (Geschwind et al., 2019; Gonzalez-Robles et al., 2019; Stemmler et al., 2021; Whiting et al., 2019). To measure the other elements of PsP each study used different instruments (Table 3).
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	-
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	-
DISCUSSION			

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Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	This systematic review is relevant in analyzing PCIs from a broader and more inclusive scientific conception and their impact on the human experience. It was fully identified that PCIs favor positive emotional experience (Lopez-Linares et al., 2023), disease prevention and well-being (Seligman, 2003).
	23b	Discuss any limitations of the evidence included in the review.	The diversity of the components of PPD worked on in PCIs limits the panorama in terms of the effectiveness of the interventions. Therefore, it is important for health professionals to join efforts and consider prospective research on positive models, designs and components to contribute to the development of PCIs for the treatment of depression and enhancement of well-being.
	23c	Discuss any limitations of the review processes used.	
	23d	Discuss implications of the results for practice, policy, and future research.	The present study synthesizes the findings on PCI that have as main objective to increase well-being and not only to reduce depressive symptoms in adults from any field of psychology. For which, the EPHPP, a tool that was used for the assessment of risk of bias and has high content and construct validity and makes use of tangible information, contrary to what happens with other research quality assessment tools that make use of subjective judgments (Armijo-Olivo et al., 2012; Jackson et al., 2005; Thomas et al., 2004), allowed identifying the quality of the studies included in this systematic review, and thus, confirming their clinical effect, relevant for clinicians, researchers and public policy makers. In other words, the reviewed studies can guide recommendations for future research and clinical practice.
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Therapeutic models in Positive Clinical Interventions to decrease depressive symptoms in adults: a systematic review [CRD42024551678].
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	You can access the review protocol at the following link: https://www.crd.york.ac.uk/prospero/
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	-
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	The first author is grateful to the National Council of Humanities, Science and Technology for the awarding of grant 1278685 for graduate studies in the Master's program in Psychology and Health at the UAEM Ecatepec University Center of the Autonomous University of the State of Mexico (Universidad Autónoma del Estado de México).
Competing interests	26	Declare any competing interests of review authors.	The authors declare that they have no conflicts of interest.
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted	-

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		from included studies; data used for all analyses; analytic code; any other materials used in the review.	