The efficacy of hypnotherapy on reducing burnout and related psychopathologies: A protocol of the systematic review and meta-analysis

Santosha Veeramachaneni, Elizabeth Park, Jeffrey Martin, Marc Ringor, Gregory Brown, Anne Weisman, Kavita Batra

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Abstract

Background: Hypnosis is a focused state of consciousness that enhances concentration, attention, and responsiveness to suggestion. It has shown efficacy in treating psychiatric disorders such as depression, anxiety, and PTSD. However, its potential for addressing burnout and related symptoms remains underexplored. This systematic review and meta-analysis aims to assess the effectiveness of hypnotherapy in alleviating symptoms of burnout and associated conditions, including depression, anxiety, and PTSD.

Objective: To evaluate the efficacy of hypnotherapy in treating burnout and its related psychopathologies, including depression, anxiety, and PTSD.

Methods: A comprehensive search will be conducted across PubMed, Scopus, and PsycINFO for peer-reviewed, English-language observational and experimental studies published up to February 2024. Only studies with adults (18+) who received hypnotherapy for psychiatric symptoms will be included. Data extraction will focus on treatment effects related to burnout and associated psychiatric conditions. Statistical analysis will be performed using Comprehensive Meta-Analysis (CMA, version 3.0). A random-effects model will be used to account for heterogeneity, with Cochran's Q and I^2 statistics to assess variability. Subgroup analyses will explore moderators such as sociodemographic factors, country, and study quality. Sensitivity analyses will identify influential studies, and publication bias will be assessed using funnel plots and Egger's test. All analyses will be two-sided (p < 0.05), and results will be presented in forest plots.

Results: Full-text screening will be completed by December 2024, with data extraction and analysis ending in March 2025. Findings will be finalized and submitted for publication by Summer 2025.

Conclusions: Hypnotherapy may be a promising adjunctive treatment for burnout and related psychiatric disorders, offering improved symptom control and well-being.

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Key Words: hypnosis, hypnotherapy, burnout, depression, anxiety

Abstract

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Projected Results: Full-text screening will be completed by December 2024, with data extraction and analysis ending in March 2025. Findings will be finalized and submitted for publication by Summer 2025.

Possible Conclusions: Hypnotherapy may be a promising adjunctive treatment for burnout and related psychiatric disorders, offering improved symptom control and well-being.

Introduction

Burnout, characterized by exhaustion, cynicism, and inefficacy, is a pervasive form of job-related stress that significantly impacts work efficiency and overall well-being [1-4]. Particularly critical in the healthcare sector, burnout among nurses and physicians not only diminishes their productivity and job satisfaction but also adversely affects patient care, leading to increased medical errors and reduced patient satisfaction [5-6]. This issue extends beyond healthcare professionals, as

burnout is prevalent among medical students, with nearly half reporting symptoms, highlighting the need for early intervention [7]. Moreover, burnout shares overlapping features with several mental health disorders, including depression, anxiety, and PTSD, which complicates its management. Research has demonstrated a positive correlation between burnout and depression, indicating that the emotional exhaustion characteristic of burnout aligns closely with symptoms of major depressive disorder (MDD) [8-11]. Similarly, the cynicism dimension of burnout can manifest as irritability and a negative attitude, which are commonly associated with depressive moods. Anxiety, too, plays a significant role in the burnout process, influencing feelings of inefficacy and exhaustion [3]. Studies suggest that anxiety not only exacerbates burnout but may also serve as a stable trait that influences its progression over time. Furthermore, PTSD shares characteristics with burnout, particularly in the realms of emotional exhaustion and depersonalization. Evidence shows a significant relationship between burnout symptoms and PTSD, particularly in high-stress professions such as firefighting and nursing [12, 13].

Given these complex interconnections, it is clear that burnout does not exist in isolation. Its symptoms often overlap with those of depression, anxiety, and PTSD, suggesting a need for comprehensive approaches to treatment. Hypnosis, defined as a state of consciousness involving focused attention and reduced peripheral awareness, has emerged as a therapeutic tool with a rich history that dates to ancient practices [14]. Recent studies have highlighted the efficacy of hypnosis in treating various psychological and physical conditions, including depression, anxiety, and PTSD [15-17]. For instance, meta-analyses have shown that hypnosis can significantly alleviate depressive symptoms, often demonstrating improvements comparable to established psychological interventions like cognitive and interpersonal therapy [15].

Hypnosis has also been shown to be effective in reducing anxiety, particularly in specific populations such as cancer patients and individuals preparing for surgery [18]. Its ability to create a

relaxed state of mind helps patients redirect their focus away from anxiety-inducing stimuli, which may be particularly beneficial for healthcare professionals and students experiencing burnout. Additionally, hypnosis has demonstrated promise in addressing PTSD symptoms by allowing individuals to access traumatic memories in a controlled manner, thereby facilitating emotional processing and improving sleep quality [19]. Notably, both hypnosis and self-hypnosis have garnered attention as potential interventions for burnout. Studies suggest that self-hypnosis may alleviate burnout symptoms by promoting compassion satisfaction and enhancing job engagement [20]. A study involving anesthesiologists revealed that participation in a medical hypnosis training program resulted in significant improvements across all three dimensions of burnout [21]. Furthermore, self-hypnosis has shown effectiveness in reducing stress levels among medical students preparing for exams, indicating its potential as a preventative measure against burnout [22].

Given the intricate relationships between burnout and other psychopathologies, this review aims to systematically examine the literature on the effects of hypnosis on symptoms of burnout, depression, anxiety, and PTSD. To the authors' best knowledge, this will be the first systematic review specifically focusing on how hypnosis can be utilized to alleviate symptoms across these interconnected mental health challenges. By addressing this gap, the review aspires to provide valuable insights into potential interventions for enhancing the well-being of healthcare workers and students facing burnout and associated mental health issues.

Methods

Ethical Considerations and Protocol Registration

As this study does not have the direct involvement of human participants, an institutional ethical

review will not be warranted. However, to adhere to a strict methodology, the protocol of this systematic review and meta-analysis has been registered on PROSPERO (CRD42024497817, registered on January 23, 2024. The record details can be seen at https://www.crd.york.ac.uk/prospero/#recordDetails. PROSPERO is an international database of prospectively registered systematic reviews, which provides a unique permanent registration number to the protocol that prevents duplication, thereby reducing reporting bias.

Review Question

Our review question is as follows: What is the effect of hypnosis or hypnotherapy in treating psychological morbidities, including depression, anxiety, and chronic stress, among the general population?

Inclusion and Exclusion Criteria

The PECOS framework (Figure 1) was used to develop the eligibility criteria for this systematic review. We plan to include studies with adult participants over the age of 18 who have received hypnosis or hypnotherapy as a treatment modality for psychiatric pathologies.

Study designs that will be included in this systematic review and meta-analysis are as follows: randomized controlled trials, case-control studies, cohort studies, case series, and other observational and experimental studies.

Studies that will be excluded are as follows: Reviews, duplicates, commentaries, opinions, letters to the editor, position papers, and gray literature will be excluded.

We have not specified a time frame criterion, as hypnosis in psychiatry has been documented as a treatment modality for hundreds of years and it was important to include all eligible historical studies in our analysis.

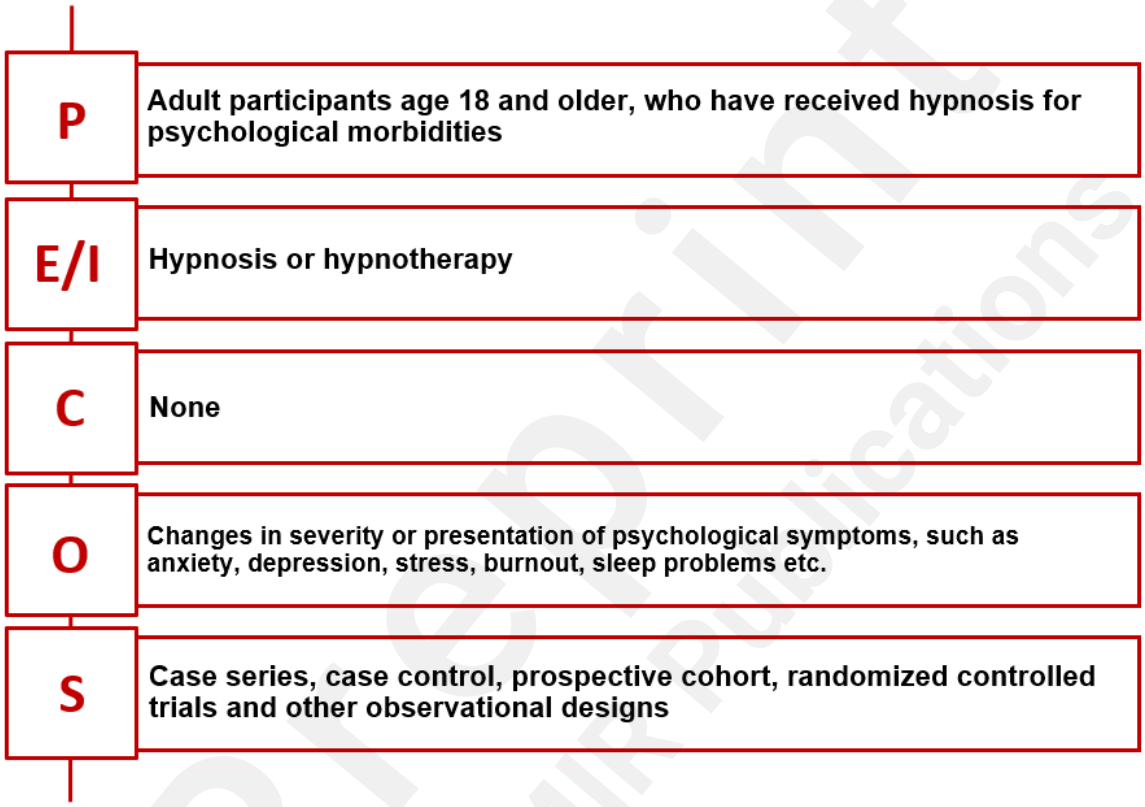


Figure 1: PECOS framework for the eligibility criteria of the studies used in this review

Informational Sources and Search Strategy

A systematic search of bibliographical electronic databases was conducted on all English-language human studies. Articles were not excluded based on the date published. A comprehensive search and article retrieval strategy was planned by the study's investigators, guided by a library subject matter expert, to find potentially relevant articles in the following databases: PubMed, Scopus, and

PsycINFO. In accordance with the search development and optimization method proposed by Bramer et al (2018), the search strategy was developed in PubMed and then was translated into the syntax of Scopus and PsycINFO [1]. The search strategy was optimized for each database using a thesaurus, free-text search terms as well as MeSH terms. Informed by the PECOS/PICOS framework, search strings for each database were developed iteratively and revised as new search terms were discovered. In consultation with a subject matter expert, the search strategy will be finalized based on the Peer Review of Electronic Search Strategies (PRESS) 2015 Evidence-Based Checklist [2]. The following search terms were used: (‘stress’, ‘depression’, ‘anxiety’, ‘Hamilton Anxiety Scale’, ‘HAM-A’, ‘Hamilton Depression Rating Scale’, ‘HAM-D’, ‘Beck Depression Inventory’, ‘Patient Health Questionnaire’, ‘PHQ-9’, ‘self-hypnosis’, ‘hypnosis’, ‘hypnotherapy’, ‘anxiety disorders’, ‘anxiety management’, ‘anxiety screening’, ‘anxiety sensitivity’, ‘Depression Screening’, ‘Major Depression’, ‘stress’, ‘stress and coping measures’, and ‘stress management’. A combination of appropriate Boolean operators (AND, OR), truncation, and the MeSH terms were used. Table 1 includes the full search strategy in detail.

Table 1: Search strategy used in this review

PubMed		Inclusion/ Exclusion	Number of Articles	Total Number of Articles in Search
#1	(self-hypnosis OR hypnosis [MH] OR hypnotherapy)	Inclusion: English	16366	
#2	(stress OR depression OR anxiety	Inclusion: English	3747069	

	OR Hamilton Anxiety Scale OR HAM-A OR Hamilton Depression Rating Scale OR HAM-D OR Beck Depression Inventory OR Patient Health Questionnaire OR PHQ-9 OR psychological symptoms OR psychiatric symptoms OR mental health OR burnout OR sleep OR insomnia OR dysphoria OR mood OR post-traumatic stress disorder OR bipolar)			
#3	#1 AND #2	Exclusion: Books and Documents		4976
Scopus				
#1	(self-hypnosis OR hypnosis OR hypnotherapy)	Inclusion: English	55176	
#2	(stress OR depression OR anxiety OR Hamilton Anxiety Scale OR HAM-A OR Hamilton Depression Rating Scale OR HAM-D OR Beck Depression Inventory OR Patient Health Questionnaire OR PHQ-9 OR psychological	Inclusion: English	653218	

	symptoms OR psychiatric symptoms OR mental health OR burnout OR sleep OR insomnia OR dysphoria OR mood OR post-traumatic stress disorder OR bipolar)			
#3	#1 AND #2	Inclusion: Article, Review		7539
PsychINFO				
#1	(DE "Hypnosis" OR DE "Hypnotherapy")	Inclusion: English	**12,538**	
#2	(DE “Major Depression" OR DE "Depression (Emotion)" OR DE "Depression Screening" OR DE "Affective Disorders" OR DE "Anxiety" OR DE "Anxiety Disorders" OR DE "Anxiety Screening" OR DE "Stress" OR DE "Stress Management" OR DE "Stress and Coping Measures" OR DE "Burnout" OR DE "Sleep Wake Disorders" OR DE "Insomnia" OR DE "Bipolar Disorder" OR DE "Bipolar I	Inclusion: English	**526,748**	

	Disorder" OR DE "Bipolar II Disorder" OR DE "Posttraumatic Stress Disorder" OR DE "Psychiatric Symptoms" OR DE "Mental Health")			
#3	#1 AND #2	Inclusion: Academic Journal		**983**

Screening

All references will be imported into the systematic review tool Rayyan for screening [23]. After deduplication, all references will be assessed by two independent reviewers to check for inclusion and exclusion criteria. Titles, abstracts, and full texts of articles will be screened in a systematic and sequential manner. All reasons for exclusion will be documented at each step of screening. A PRISMA flow diagram will be used for describing the study selection process (Figure 2).

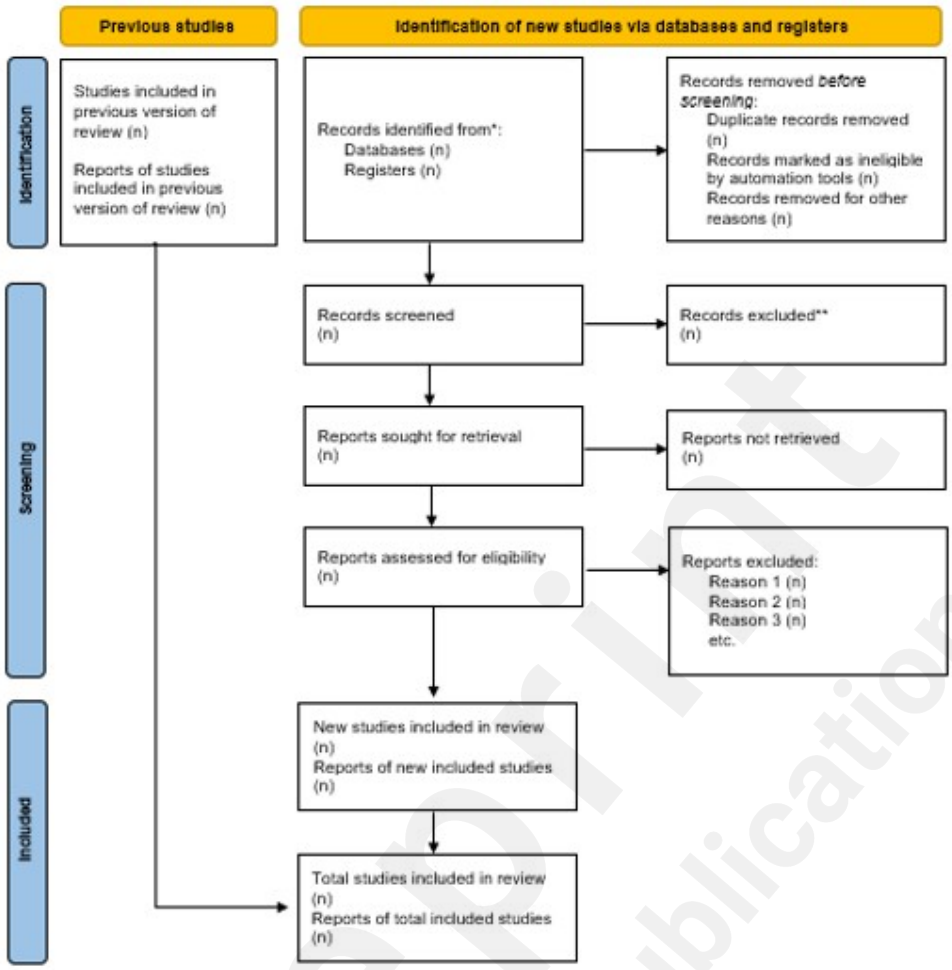


Figure 2: PRISMA Diagram

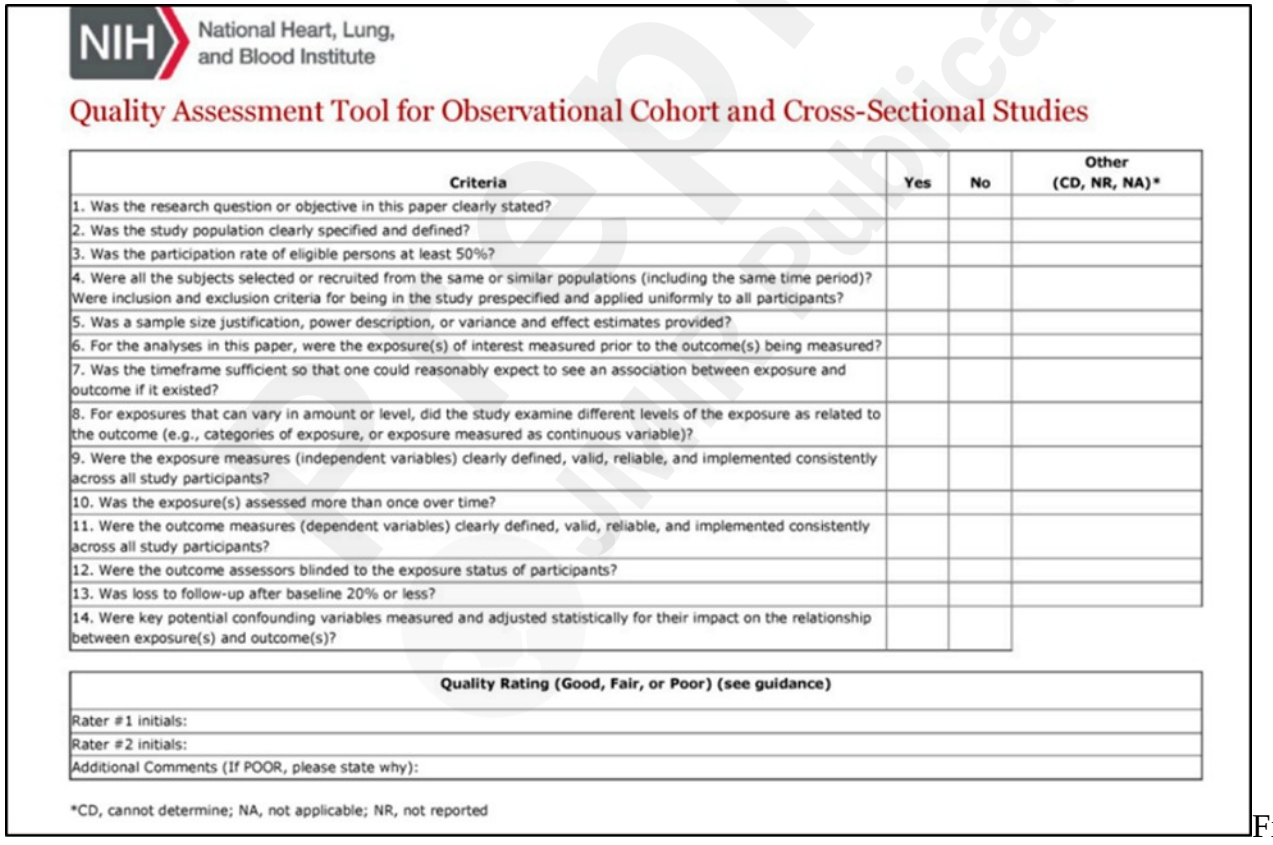
Data Extraction and Main Data Elements

Two reviewers will independently extract the relevant data elements from the eligible full texts of the articles and will record these variables in a standardized code book. A double extraction method will be used to ensure accuracy and completeness. After data extraction, disparities will be resolved by consensus and discussion with the third reviewer or a “tie-breaker”. Attempts to contact the corresponding authors of the included articles will be made if more information about the individual study data is needed. However, since this is a time-bound project such an attempt will only be made in a window of four weeks. The following data elements will be extracted: author name, publication year, study country, study design, the time point of data collection, recruitment method, type of

survey tool used and scoring criteria, sample size, participants' characteristics (e.g., age, gender, sexual orientation, gender identity), intervention type, effect on psychological morbidities).

Quality or Risk of Bias Assessment

For the quality assessments of the included studies, the National Heart, Lung and Blood Institute (NHLBI) quality assessment tool will be used [24]. Two reviewers will assess the quality of the full-texts and will perform scoring independently. The Kappa statistics will be calculated to measure the interrater agreement. The NHLBI tool has 14 items in the checklist to evaluate all essential components of original research studies. Quality will be rated as poor (0–4 out of 14 questions), fair (5–10 out of 14 questions), or and good (11–14 out of 14 questions) as guided by the tool (Figure 3).



NIH National Heart, Lung, and Blood Institute

Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies

Criteria	Yes	No	Other (CD, NR, NA)*
1. Was the research question or objective in this paper clearly stated?			
2. Was the study population clearly specified and defined?			
3. Was the participation rate of eligible persons at least 50%?			
4. Were all the subjects selected or recruited from the same or similar populations (including the same time period)? Were inclusion and exclusion criteria for being in the study prespecified and applied uniformly to all participants?			
5. Was a sample size justification, power description, or variance and effect estimates provided?			
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?			
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?			
8. For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as continuous variable)?			
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?			
10. Was the exposure(s) assessed more than once over time?			
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?			
12. Were the outcome assessors blinded to the exposure status of participants?			
13. Was loss to follow-up after baseline 20% or less?			
14. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?			

Quality Rating (Good, Fair, or Poor) (see guidance)
Rater #1 initials:
Rater #2 initials:
Additional Comments (If POOR, please state why):

*CD, cannot determine; NA, not applicable; NR, not reported

Figure 3: National Heart, Lung, and Blood Institute's Study Quality Assessment Tool.

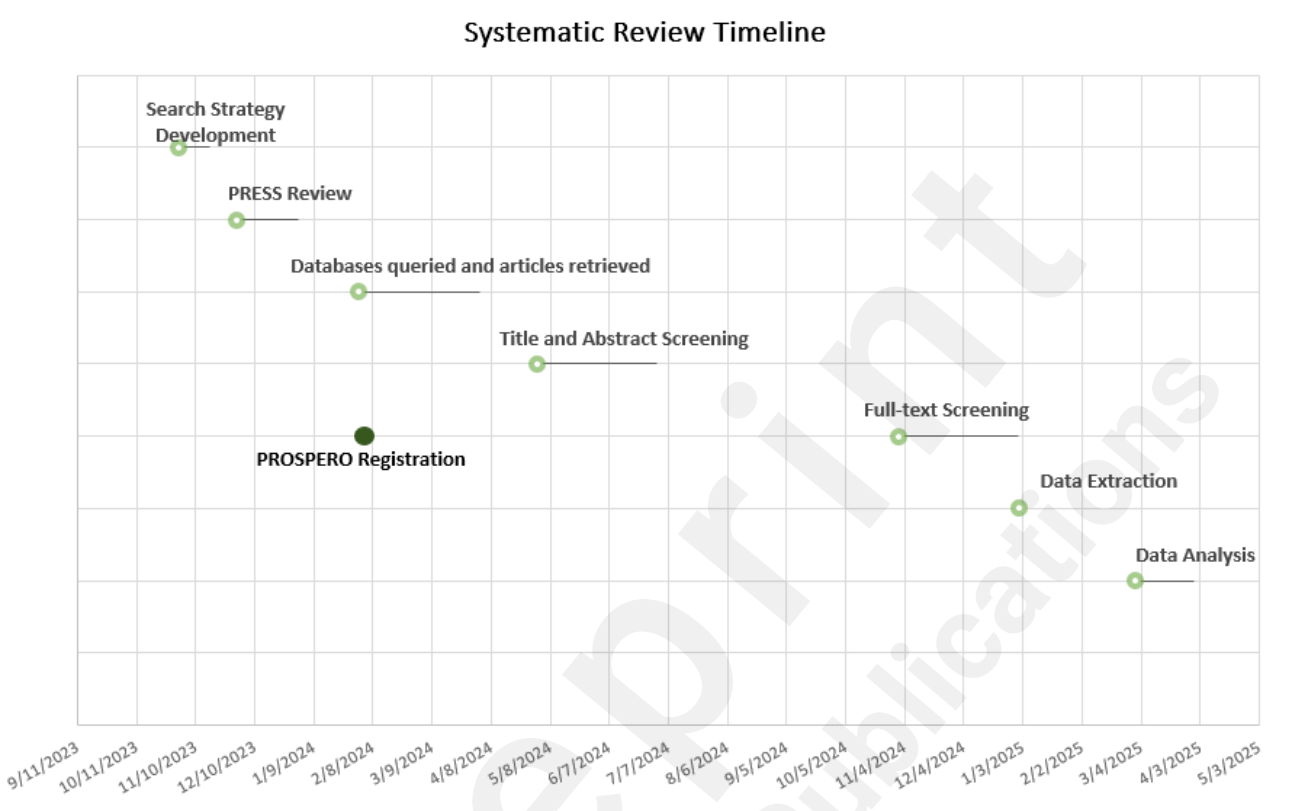
Statistical Plan

First, results of all finally included studies will be described succinctly in the form of a summary table. The pooled estimates with a confidence interval of 95% will be generated using the Comprehensive Meta-analysis Package (CMA version 3.0, Englewood,NJ, USA). A random-effects model will be used to calculate pooled estimates as this is a more robust estimate regardless of heterogeneity. Cochran's Q and I^2 statistics will be used as indicators of heterogeneity. If enough studies are available in subgroups, then further analyses based on moderator variables, such as sociodemographic variables, country, and by quality of the studies) will also be conducted. Sensitivity analysis will be conducted to identify studies that may severely affect the pooled prevalence. A funnel plot and Egger linear regression test will be used to assess publication bias. The significant level will be set as two-sided and p 0.05. Forest plots will be used to present the data. In the meta-analysis of factors, variables common to all participants will be pooled quantitatively to examine the effect of the intervention on various psychopathologies.

Results

Development of the search strategy for the meta-analysis began in November 2023. The search strategy underwent PRESS review with academic librarians in December 2023 followed by the PROSPERO registration in January 2024. Databases were queried and articles were retrieved between February 2024 and April 2024. Title and abstract screening started in May 2024 and will continue by the end of June 2024. Full-text screening will take place in the month of November with following data extraction during December 2024. Data analysis will take place between January and February 2024. It is anticipated that findings will be synthesized and reported by Summer 2025. Findings will be organized, summarized, and submitted for publication in a peer-reviewed journal. The goal of this work is to provide a comprehensive analysis and enhance understanding of the effectiveness of hypnosis in treating psychological morbidities. A timeline is provided in Table 2.

Table 2: Gantt Chart of Systematic Review Timeline



Discussion

Though hypnosis has been a therapeutic tool for centuries, to date there have been very few systematic reviews regarding its use in the treatment of psychiatric pathologies. While the use of hypnotherapy in clinical settings has recently gained resurgence, the practice has been subject to controversy surrounding its efficacy and impacts on psychiatric patients [25]. Hypnosis differs from interventions such as cognitive behavioral therapy and mindfulness due to its' focus on inducing a state of increased suggestibility, which allows the patient to experience an altered state of agency. Due to this, subsequent changes to thoughts, actions, and symptoms feel involuntary and outside the patient's control [26]. Our study aims to conduct a comprehensive systematic review of the currently

available literature investigating the efficacy of hypnotherapy for burnout, stress, depression, anxiety, and other psychiatric symptoms. Though there have been studies and systematic reviews regarding hypnosis as a treatment, their focus is on its impacts on pain, physical health, and mood disturbances secondary to illness or hospitalization [27]. Limited reviews have been conducted regarding the use of hypnosis to treat psychopathology symptoms, and none have focused on the treatment of burnout [28, 29]. Our study's focus is on the efficacy of hypnosis in treating primary psychiatric illness and symptoms in relation to burnout, an area of research that still requires further investigation.

Burnout in physicians, including trainees, is a prevalent issue, with studies finding 45-55% of physicians and medical students reporting at least one symptom of burnout [7, 30]. Furthermore, burnout can be considered an occupational hazard, and is shown to diminish health outcomes for both healthcare providers and patients [31-34]. Burnout's comorbidity with psychopathologies such as depression, anxiety, and PTSD increases strain on the healthcare system, as the experience of burnout can perpetuate symptoms of other disorders [35, 36]. Thus, addressing this growing crisis is imperative to maintaining the integrity of the healthcare workforce and improving care for patients. Current research in burnout prevention and treatment primarily focuses on interventions such as cognitive behavioral therapy and mindfulness [37, 38]. To date, there has been no systematic review to investigate the efficacy of hypnosis on burnout symptoms in physicians or medical students. Examining the impact of hypnosis and hypnotherapy on burnout symptoms can provide a valuable avenue for identification, prevention, and treatment of burnout in healthcare professionals.

Strengths and Limitations

One strength of our review is the breadth of psychiatric pathology included in our investigation. While current studies primarily focus on the efficacy of hypnotherapy on specific psychiatric illness, our comprehensive study will allow us to aggregate the data and directly compare the effects of hypnotherapy on different symptoms and pathologies. This will better allow clinicians

to understand which conditions may be more responsive to hypnotherapy. Additionally, many of the current studies regarding the use of hypnosis and hypnotherapy consolidate it with similar techniques, such as mindfulness meditation or guided imagery. We created an operational definition of hypnosis and hypnotherapy, and thus our review will be able to better distinguish and isolate the use and impacts of hypnosis as a treatment. Furthermore, we did not impose a time limit on the studies we included, thereby ensuring that historical data on the use of hypnosis was also considered. This approach allowed for a robust and thorough understanding of hypnosis as a standalone therapeutic intervention across a wide range of psychiatric conditions.

Our review's focus on the larger scale impacts of hypnosis on psychiatric pathology presents certain limitations. Primarily, the lack of a comparison treatment or placebo group makes it difficult to quantify the effects of hypnotherapy, especially in contrast to current gold-standard treatments. Additionally, due to the breadth of psychiatric illnesses we plan to include in our review, our study will not investigate the specific effects of hypnosis on individual pathologies, such as its impact on mania versus depression in bipolar disorder or its efficacy in different types of depressive disorders. Excluding related therapeutic modalities like guided meditation, visualization, and autogenic training based on our operational definition of hypnosis, may exclude beneficial techniques that share similarities with hypnosis [39]. Furthermore, our focus on individuals with primary psychiatric disorders, while excluding those with significant comorbidities or psychiatric symptoms secondary to other conditions (e.g., surgical anxiety or depressed mood due to chronic pain or illness), limits the generalizability of our findings. This exclusion may prevent us from understanding the full potential of hypnosis across a broader range of psychological and psychosomatic conditions, indicating areas where further research is necessary. These weaknesses present opportunities for further research.

Our systematic review will provide a comprehensive understanding of the efficacy of hypnotherapy techniques in treating psychiatric illness. As a non-pharmaceutical treatment approach,

hypnotherapy may be a cost-effective tool with a low physical side effect profile which can easily be performed as an adjunctive treatment without the risk of negative pharmacological interactions [40]. Furthermore, hypnotherapy has a broad clinical application, and there have been many studies conducted on the efficacy of hypnotherapy in treating many different disorders and symptoms, including insomnia and sleep disorders, acute and chronic pain disorders, and functional neurological disorders [41-43]. By appreciating the current evidence surrounding this treatment modality, clinicians in all specialties will be well-informed in using hypnotherapy. Additionally, as this comprehensive review will investigate the impact of hypnotherapy on many different psychiatric symptoms, clinicians will also better understand the efficacy of hypnotherapy in treating various disorders and symptoms, thereby informing their clinical practice.

Conclusions

In conclusion, our review focuses on the overall efficacy of hypnotherapy in treating various psychopathologies, an area that requires further study, especially due to the re-emergence of hypnotherapy in the 21st century after facing controversy. Newer research points to the potential effectiveness of hypnotherapy, including evidence for functional brain changes, but a comprehensive review including a wide range of psychopathologies has not yet been conducted. Our study will provide valuable insight into the use of this therapeutic modality in psychiatric clinical practice. Further research needs to be conducted to identify the impacts of hypnosis on specific diagnoses, the efficacy of different techniques in hypnotherapy, and the use of hypnotherapy for treatment of non-psychiatric disorders.

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Funding Statement:
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Data Availability:
Supplemental data is available upon request to the corresponding authors.

Authors' Contributions:

Conceptualization, G.B., K.B., A.W., S.V.

Methodology, K.B., S.V.

Formal Analysis, K.B.

Investigation, G.B., E.P., J.M., S.V., M.R.

Resources, G.B., K.B., A.W.

Data Curation, G.B., K.B., S.V., E.P., J.M., M.R.

Writing – Original Draft Preparation, G.B., K.B., A.W., S.V., E.P., J.M., M.R.

Writing – Review & Editing, G.B., K.B., A.W., S.V.

Supervision, G.B., K.B, A.W.

Project Administration, G.B., K.B., A.W., S.V.

Conflicts of Interest: The authors of this protocol have no conflicts to declare.

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