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Hypnotherapy as a method of smoking cessation: a systematic review

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Abstract

Purpose: Hypnotherapy is a method to stop smoking. But the effectiveness needs to be proven. **Methods:** a systematic review was conducted on articles published between 2012-2022 that examined hypnotherapy as a smoking cessation intervention. **Results:** four relevant studies were obtained. Two studies discussed the effectiveness of hypnotherapy over relaxation and nicotine replacement therapy (NRT). One study examined the effect of individual hypnosis susceptibility on the effectiveness of hypnotherapy. Finally, the study discusses the effect of brain waves on hypnotherapy through EEG assessment. **Conclusion:** Hypnotherapy intervention is superior to NRT but not superior to the relaxation method. Individuals with higher susceptibility are proven to have more influence on hypnotherapy interventions. Hypnotherapy has been shown to affect brain wave activity through EEG assessment. Further research is needed regarding the effectiveness of hypnotherapy on various population characters.

Keywords: hypnotherapy; hypnosis; smoking cessation; tobacco

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INTRODUCTION

Smoking is a risk factor as well as the leading cause of different health problems. Exposure to cigarette smoke is dangerous for the fetus in the womb, children, and passive smokers. The dangers of cigarette smoke cause harm to health from the child's phase to the next phase in life (1). There are overall consistent results in the literature on the negative effects of exposure to cigarette smoke on the fetus, postpartum, and elderly, namely premature birth, low birth weight, impaired fetal growth, sudden infant death syndrome, neurodevelopmental and behavioral problems, obesity, hypertension, type 2 diabetes mellitus, impaired lung function, and asthma. The accumulated negative health effects on maternal smoking during pregnancy, lactation, and passive exposure to secondhand smoke contribute to adverse postnatal outcomes (2). Active and passive smokers have been shown to increase breast cancer risk (3). Based on a prospective cohort study of 1.6 million men and women in South Korea, it was found that smoking status is an independent risk factor for lung cancer incidence and mortality in both men and women (4). Other studies have shown that up to a third (30.5%) of deaths worldwide from the lip and oral cancer are caused by smoking (5). The use of smokeless tobacco products in Asia, the Middle East, and Africa is also associated with dangerous health problems, including death from cancer, cerebro-vascular disease, and increased morbidity from most smoking-related cancers, particularly oral cancer (6).

After China and India, Indonesia has the largest number of active smokers worldwide (7). A 2015 study found that more than 25% of Indonesia's population are active smokers, of which 89% are men (1). The number

of smokers in Indonesia did not decrease for 15 years from 1990 to 2015 (7). The number of smokers in these three countries – China, India, and Indonesia, account for more than 50% of smokers worldwide (7).

Interventions to quit smoking can use pharmacological, non-pharmacological, and multimodal methods (8). Some studies have identified cognitive processes associated with the desire to smoke as targets for intervention. One intervention that may be effective for this cognitive process is the hypnotic suggestion intervention (9). Cognitive hypnotherapy is one of the contemporary evidence-based therapeutic modalities that combines cognitive behavioral therapy with hypnosis (10). A meta-analysis of 18 studies of cognitive hypnotherapy of various emotional disorders demonstrated that adding a hypnotic therapy modality to cognitive behavioral therapy substantially improved treatment outcomes (11). Several retrospective studies on hypnotherapy have also shown promising results for smoking cessation efforts (12). However, the research was conducted with different sampling methods, interventions, and assessments, making it difficult to determine the effectiveness of hypnotherapy on smoking cessation efforts. For this reason, a systematic review of various studies related to hypnotherapy is needed.

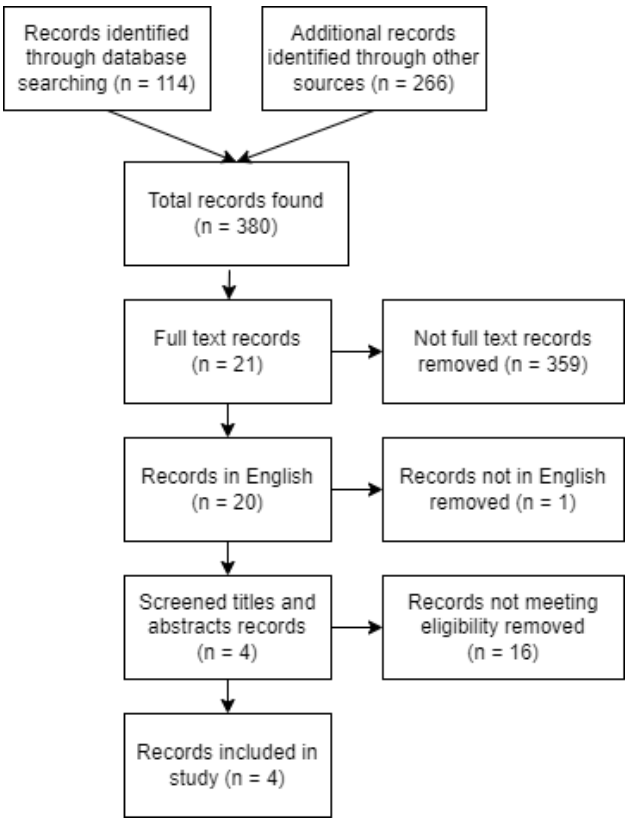

Figure 1. Prism diagram

METHODS

Search Strategy. For this systematic review, article searches were performed on three databases (PubMed, Scopus, and Cochrane). The search was conducted on articles published from 2012 to 2022. The terms used in the article search were hypnotherapy, hypnosis, and smoking cessation.

Inclusion and Exclusion Criteria. The articles that have been obtained are then filtered by excluding articles with incomplete text, paid articles, and articles with irrelevant titles and abstracts. The next exclusion criteria are articles that are not in English.

RESULTS

From three databases: PubMed, Scopus, Cochrane, and other databases, a total of 380 articles were obtained, then in the screening of the full text, in English, and from 2012 to 2022, 20 articles were obtained. Subsequently, the relevant titles and abstracts were screened to obtain 4 articles. This paper reviews the effectiveness of hypnotherapy methods as an effort to quit smoking based on these 4 articles.

Almost all the articles reviewed show that hypnotherapy interventions affect smoking cessation efforts. Hypnotherapy reduces the desire to smoke and is superior to NRT intervention methods for smoking cessation, although it has not been shown to be more effective than relaxation methods. The effect of hypnotherapy on smoking cessation efforts can also be seen from the EEG examination.

DISCUSSIONS

Smoking is a major risk factor for various negative health effects for all ages and genders. The application of hypnotherapy methods has been widely used as an intervention modality for smoking cessation efforts. Hypnotherapy is part of a non-pharmacological, alternative, or complementary method that uses a psychological approach to change human behavior or habits. This review focuses on publications on the effectiveness of hypnotherapy as a smoking cessation method.

Effect of hypnotherapy based on EEG assessment

The post-hypnotherapy EEG assessment showed that the intervention affected the waves emitted from certain regions of the brain (14). There was increased activity of delta waves in the bilateral frontal region and theta waves in the right frontal region. Alpha, beta, and gamma waves are also decreased in the bilateral frontal and posterior regions. This change in wave activity is a comparison of the results of the EEG

Table 1. Study Characteristics

Title	Year	Country	Study Design	Sample Size (n)	Sample Age (years)	JK Sample
Group hypnosis vs. relaxation for smoking cessation in adults: a cluster-randomised controlled trial (13)	2013	Switzerland	Experimental	257	>18	F 47.1%
Effect of hypnotic suggestion on cognition and craving in smokers (9)	2020	US	Experimental	33	18 - 65	F 54.55%
Delta coherence in resting-state EEG predicts the reduction in cigarette craving after hypnotic aversion suggestions (14)	2017	China	Experimental	42	20 - 48	F 0%
Hypnotherapy is more effective than nicotine replacement therapy for smoking cessation: Results of a randomized-controlled trial (15)	2014	US	Experimental	155	18 - 75	F 47%

recording in the baseline phase with the hypnosis phase. This pattern of EEG wave changes can be concluded as a state of change in the individual's level of consciousness. This can be a marker of the depth of the hypnotic phase and the basis of momentum for giving suggestions. Knowing the affected region, it can be used as the basis for developing other intervention methods by targeting certain areas of the brain. The post-hypnosis TCQ assessment also showed that there was a decrease in the desire to smoke.

Hypnotherapy effectiveness based on individual vulnerability

Each individual has a different level of vulnerability to hypnotherapy. Objectively, this can be assessed using the SHSS assessment. The results showed that individuals with high susceptibility to hypnotherapy had a greater influence on cognitive processes, namely suppressing the desire to smoke after being given the intervention. However, if using the Classic or Smoking Stroop Effect assessment, the susceptibility to hypnotherapy and its interventions did not have a significant effect (9). This is presumably due to the sample's expectation that hypnosis affects smoking cessation, not performance on computer tests. Thus, the suppression of smoking urges through hypnotic induction can be further enhanced through the provision of deep relaxation suggestions and sleep hypnosis to suppress stress levels which further suppresses the desire to smoke.

Effectiveness of hypnotherapy vs. relaxation

Both methods have something in common when it comes to targeting behavior. The hypnotherapy method has advantages in terms of withdrawal symptoms which are lighter than other psychological approaches, namely relaxation. However, hypnotherapy is no more effective at stopping smoking than relaxation methods (13). The success rate of quitting smoking or decreasing the number of cigarettes consumed per day in the hypnotherapy is not better than the relaxation method. However, both methods have similar success rates.

The success of the hypnotherapy method is influenced by several factors, namely strong smoking cessation motivation, support from the social environment, follow-up relationships with therapists, and acceptance of suggestions when the intervention is in a relaxed state. The results of this study can represent a population with similar sociodemographic, cultural, and strong motivation to quit smoking.

Effectiveness of Hypnotherapy Compared to NRT

Hypnotherapy has been shown to be superior to NRT in changing behavior patterns and increasing smoking cessation rates in patients being treated for smoking-related illnesses (15). Hypnotherapy's effect can be in the form of increasing motivation and self-confidence to suppress the desire to smoke. There was a difference in the success of the intervention in the type of patient, where more patients who were treated for heart disease managed to quit smoking than patients who were treated for lung disease. The success of this method can be strengthened by regular follow-up and continuous motivational improvement.

Table 2. Summary of Systematic Review Results

1. Study: Maria Dickson-Spillmann, Severin Haug, and Michael P Schaub
   Year: 2013
   Sample: 257 smokers aged over 18 years with consumption of more than 5 cigarettes per day, intend to quit smoking, and are not currently using other smoking cessation methods. Exclusion criteria: alcoholics or other addictive substances have psychotic symptoms based on the therapist's statement at the beginning of the therapy session.
   Intervention: Beginning with filling out informed consent and questionnaires. The intervention was a single session of hypnotherapy by the therapist for a total of 100 minutes (divided into 3 sessions: education, hypnosis, and debriefing), the control group performed a relaxation intervention by the same therapist. The assessment was carried out in the second week and sixth month after the intervention, namely assessing the rate of smoking cessation and the number of cigarettes consumed daily.
   Results: Hypnotherapy intervention was not more effective than relaxation for smoking cessation. 6 months post-intervention, 14.7% of the hypnotherapy group and 17.8% of the relaxation group quit smoking. The intervention did not affect the number of cigarettes consumed (13).

2. Studies: J.W. Bollinger, C.W. Beadling, A.J. Waters
   Year: 2020
   Sample: 33 adult smokers aged 18-65 years with consumption of more than 5 cigarettes per day, using English as the main language, having addresses and numbers that can be contacted. Exclusion criteria: color vision impairment, recent major changes in life, history of Schizophrenia, Bipolar, Psychosis, Personality Disorder, and PTSD.
   Intervention: Beginning with filling out informed consent, questionnaires, and taking basal breath samples to measure CO levels. Interventions included the implementation of the Classic Stroop Task and Smoking Stroop Task in alternating hypnotic and free hypnosis states, filling out post-intervention questionnaires, questions and answers related to side effects, and the Stanford Hypnotic Susceptibility Scale (SHSS) assessment. The control group underwent the same intervention without the hypnosis session. Assessment in the form of the results of the Classic Stroop Task and Smoking Stroop Task in 2 conditions, SHSS, CO levels, and a post-intervention questionnaire.
   Results: susceptibility to hypnosis was not proven to have an effect on the results of the Classic or Smoking Stroop Effect assessment, but it significantly affected the individual's smoking desire (9).

3. Study: Xiaoming Li, Ru Ma, Liangjun Pang et al
   Year: 2017
   Sample: 42 male smokers aged 20-48 years with consumption of more than 8 cigarettes per day and have smoked for more than 2 years.
   Intervention: Beginning with filling out informed consent and Tobacco Craving Questionnaire (TCQ) and basal EEG examination for 8 minutes resting phase. The intervention was in the form of hypnosis, then a resting phase EEG was performed again for 8 minutes post-intervention. Assessment in the form of changes in EEG results and re-filling TCQ post-intervention.
   Results: there are changes in the results of post-intervention EEG examination in the form of an increase in the frequency of delta and theta waves and a decrease in the frequency of alpha and beta waves in certain regions. This means that there is an effect of hypnotherapy intervention on the desire to smoke in certain regions of the brain so that it can be used as a target to treat addiction to nicotine with other intervention methods (14).

4. Study: Faysal M. Hasan, Sofija E. Zagarins, Karen M. Pischke et al
   Year: 2014
   Sample: 164 smokers who were hospitalized due to heart and lung disease from October 2006 to May 2009 were selected by randomized control trial method. Exclusion criteria: have a terminal illness, history of substance abuse, major psychiatric disorders (Schizophrenia, Bipolar, Personality Disorder), pregnancy, difficulty to follow up due to language or cognitive barriers, have a history of undergoing hypnotherapy or using NRT within the last 6 months.
   Intervention: Beginning with filling out the Informed Consent and taking a basal urine sample to check the levels of cotinine (nicotine metabolites). The sample was divided into 4 groups with different interventions: the use of NRT for 1 month, a single session of hypnotherapy for 90 minutes, a combination of NRT and hypnotherapy, and the self-quit group. The assessment was carried out at week 12 and week 26 post-hospitalization with a re-examination of urine cotinine levels and self-reported smoking cessation rates.
   Results: The rate of smoking cessation in the hypnotherapy group was superior to that of the NRT group. The smoking cessation rate in the combination hypnotherapy and NRT group was similar to that in the hypnotherapy group (15).

CONCLUSION

Smoking is a risk factor and even the cause of various negative impacts on health. These negative impacts can be experienced by active and passive smokers of various ages. Even so, the population of smokers around the world to date has reached 1.2 billion people with Indonesia being the third country with the most smokers in the world. For this reason, interventions are needed to reduce the level of cigarette consumption. In general, these interventions are divided into pharmacological and non-pharmacological groups. Hypnotherapy methods are part of non-pharmacological interventions that target behavior change. Until now, hypnotherapy methods still need to be developed to find out more precise implementation techniques. Its advantages have been proven in several studies. However, improvements are still needed in various aspects. Each country with its own population has different characteristics that can affect the effectiveness of hypnotherapy for smoking cessation efforts. In addition, the popularity of this method also needs to be further increased if it is proven to be effective in stopping smoking habits.

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