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Эффективность гипнотерапии в лечении синдрома раздражённого кишечника. Систематический обзор с метаанализом

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АННОТАЦИЯ

Обоснование. Гипнотерапия — один из методов лечения синдрома раздражённого кишечника.

Цель. Оценить эффективность её применения и выявить наиболее оптимальные условия проведения.

Материал и методы. Проанализированы научные медицинские базы данных PubMed, EMBASE, eLibrary за период с 2005 по 2022 г. Отбирали исследования, проведённые на взрослых выборках пациентов с подтверждённым диагнозом «синдром раздражённого кишечника» на основании Rome II–IV с группой контроля. Включённые исследования анализировали на наличие рисков предвзятости и публикационного смещения. Оценка клинической эффективности проведена на основании сравнения данных редукции гастроинтестинальной симптоматики, психоэмоционального состояния. Посредством субгруппового анализа выполнено сравнение эффективности групповой и индивидуальной гипнотерапии, а также количества проводимых сессий.

Результаты. 9 исследований (867 пациентов) были включены в итоговый метаанализ. Гипнотерапия значимо эффективнее снижает выраженность гастроинтестинальной симптоматики у пациентов с синдромом раздражённого кишечника в сравнении с контролем (SMD=0,25 [95% CI 0,02–0,49], I^2=53%, p=0,03), при этом, положительный эффект терапии сохранялся до года (SMD=0,34 [95% CI 0,07–0,60], p=0,01). В результате гипнотерапии происходило выравнивание психоэмоционального фона (SMD=1,09 [95% CI от –1,27 до 3,44], p=0,37), однако результаты были незначимы. Проведение групповой гипнотерапии (SMD=0,35 [95% CI 0,01–0,70], p=0,05) и большего количества гипнотерапевтических сессий в ходе курса лечения (SMD=0,35 [95% CI 0,14–0,57], p=0,001) оказалось эффективнее.

Вывод. По результатам проведённого систематического обзора справедливо предположить, что наиболее эффективным способом применения гипнотерапии у пациентов с синдромом раздражённого кишечника, в том числе с устойчивыми к терапии формами, служит проведение более 7 сессий групповой гипнотерапии чаще, чем раз в неделю, с минимальным временем сессии 45 мин.

Ключевые слова: *синдром раздражённого кишечника, гипноз, систематический обзор, метаанализ, психотерапия*.

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Efficacy of hypnotherapy in the treatment of irritable bowel syndrome. A systematic review with meta-analysis

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ABSTRACT

BACKGROUND. Hypnotherapy is one of the treatments for irritable bowel syndrome (IBS).

AIM. Meta-analysis was to evaluate the effectiveness of its use and to identify the most optimal conditions for its implementation.

MATERIALS AND METHODS. We analyzed Scientific medical databases PubMed, EMBASE, eLibrary for the period from 2005 to 2022. Studies performed on adult samples of patients with a confirmed diagnosis of IBS on the basis of Rome II–IV with a control group were selected. Included studies were analyzed for risks of bias and publication bias. Clinical efficacy was assessed by comparing data on gastrointestinal symptoms reduction and psychological condition. A subgroup analysis was used to compare the effectiveness of group and individual hypnotherapy, as well as the number of sessions conducted.

RESULTS. Nine studies (867 patients) were included in the final meta-analysis. Hypnotherapy was significantly more effective in reducing gastrointestinal symptoms in patients with IBS compared to controls (SMD=0.25 [95% CI 0.02–0.49], I^2=53%, p=0.03), with positive effects persisting up to one year (SMD=0.34 [95% CI 0.07–0.60], p=0.01). Hypnotherapy resulted in an equalization of the psychological distress (MD=1.09 [95% CI from –1.27 to 3.44], p=0.37), but the results were not significant. Group hypnotherapy (SMD=0.35 [95% CI 0.01–0.70], p=0.05) and higher amount of hypnotherapy sessions during treatment (SMD=0.35 [95% CI 0.14–0.57], p=0.001) were more effective.

CONCLUSION. Based on the results of this systematic review, it is fair to assume that the most effective use of hypnotherapy in patients with IBS, including those with therapy-resistant forms, is more than 7 sessions of group hypnotherapy more than once a week with a minimum session time of 45 minutes.

Keywords: *irritable bowel syndrome, hypnosis, systematic review, meta-analysis, psychotherapy.*

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BACKGROUND

Irritable bowel syndrome (IBS) is a chronic functional bowel disease of unknown etiology [1]. Along with the identified genetic predisposition [2], distress [3] and dysfunction of the brain–gut axis [4] are significant in disease formation, leading to visceral hypersensitivity and changes in intestinal motility [5].

The most common manifestations of IBS include abdominal pain, discomfort, bloating, flatulence, constipation or diarrhea, and a false urge to defecate [6]. The symptoms described are registered on average in 10%–15% of the general population [7]. At the same time, about 5%–10% of patients have drug-resistant forms of IBS [8], and 20%–35% of patients need correction of their emotional and mental status [9], which jointly determines the high relevance of the subject under consideration.

IBS treatment is based on diet and lifestyle modifications, symptomatic treatment, antidepressant pharmacotherapy, and psychotherapy [1, 3]. In addition to correcting the psycho-emotional state, psychotherapy can reduce pain severity, decrease visceral hypersensitivity, and normalize intestinal motility [10]. One of the methods of psychotherapy for IBS is gut-oriented hypnotherapy, which is based on the Manchester Protocol [11–13].

The results of previous meta-analyses indicate the efficiency of hypnotherapy in IBS [14–17]. However, the presence of nonincluded controlled studies and the lack of publications in Russian-language scientific periodicals prompted us to write this systematic review.

This study evaluates the efficiency of hypnotherapy in treating IBS and identifies the most optimal conditions for using this method.

MATERIALS AND METHODS

1. Search strategy for a systematic review and selection of articles.

The search for original studies following the PRISMA criteria [18, 19] was performed in the scientific medical databases PubMed, EMBASE, and eLibrary for the period from 2005 to 2022 in the Russian or English languages.

Relevant references were searched using the keywords “Irritable bowel syndrome”/“IBS” + “Hypnotherapy”/“Hypnosis” in accordance with the MeSH nomenclature. Authors K.V.M. and A.V.T. selected the articles independently by titles and abstracts and then performed the selection by the full texts. In case of any disputable issues, the final decision was made by K.V.D.

2. Inclusion criteria.

Randomized controlled studies and controlled studies were selected, in which:

1) group or individual gut-oriented hypnotherapy was used as a therapy method in one of the studied groups of patients;

2) there was a control group (standard treatment, diet, pharmacotherapy, other psychological/psychotherapeutic methods of therapy, waiting list, or other);

3) the age of the respondents was 16–65 years;

4) the diagnosis of IBS, including drug-resistant IBS, complied with the Rome criteria II–IV revisions.

3. Criteria for noninclusion in the study.

1) the presence of secondary (including postoperative) variants of the course of IBS;

2) data published in the gray segment of the scientific literature (abstracts, book chapters, others).

4. Clinical parameters under study.

1. Reduction of gastrointestinal symptoms:

a) Immediately after the course of therapy;

b) 12 months after the course of therapy.

2. Reduction of distress due to hypnotherapy (HADS scale total score).

3. Comparison of the efficiency of group and individual hypnotherapy (according to the reduction of gastrointestinal symptoms).

4. Comparison of the efficiency of the number of hypnotherapy sessions performed (>6 and ≤6) (according to the reduction of gastrointestinal symptoms).

5. Control points of monitoring.

Evaluation of the studied clinical parameters before and after the therapy, during long-term follow-up, and 12 months after the start of therapy (if any).

6. Assessment of research bias.

The risk of research bias was assessed based on the criteria proposed by the Cochrane Collaboration [20]. Respondent enrollment bias, allocation bias (randomization), efficacy bias, detection bias, risk of attrition error, reporting bias, and the overall risk of bias on the lowest score were assessed.

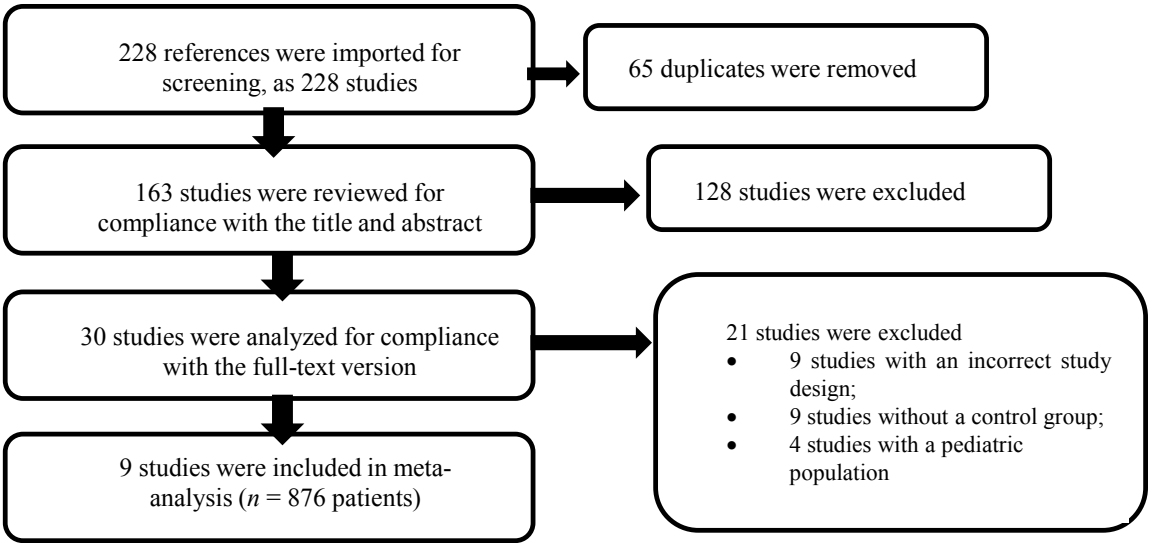

Fig. 1. PRISMA diagram

7. Statistical analysis of data.

Statistical analysis was performed using Review Manager 5.4 program [21]. Due to the statistically significant moderate heterogeneity of the studies selected (I^2 = 53%), a random effects model with inverse variance was chosen to generalize the results [22]. Considering the evaluation of the clinical effects of therapy on various scales, the standardized mean difference was chosen as a measure of comparison, except for the distress assessment according to the total score of the HADS[1] scale (mean difference was compared) [23].

Thus, the initial indicators for comparison were values of the difference between the means before and after the therapy with a 95% confidence interval. The confidence interval for the difference in the means was calculated by applying the equation of the root of the sum-of-squares of standard deviations before and after therapy. In cases when it was required to calculate the total effect of individual and group hypnotherapy, the built-in calculator Review Manager 5.4 was used.

8. Estimation of publication bias

Publication bias was estimated using a funnel plot in Review Manager 5.4 [24].

RESULTS

Using the described search strategy, 228 studies were initially found. At stage 1 of the analysis, 65 duplicates were excluded. During the review of the titles and abstracts, the authors K.V.M. and A.V.T. selected 30 of 163 original studies. During the subsequent selection of articles for full-text analysis, 21 studies were excluded. The remaining 9 studies with a total number of patients (n = 867) were included in the meta-analysis (Fig. 1).

A description of the main characteristics and design of the included studies with brief conclusions is presented in Table 1.

In assessing the risk of bias in studies, only 1 study was revealed to have a low overall level of bias [32], 5 studies had a high risk of bias [25, 27–29, 31], and in 3 cases, it was not possible to assess the risk of bias due to the lack of a complete description of the research methodology [26, 30] (Table 2).

The studied parameters of clinical efficacy were analyzed using the rating scales, namely IBS-SSS [27, 29–32], IBS-GI [26], IBS-IS [28], and 3-component symptom rating scale [25] to assess the severity of symptoms. Following the opinion of some researchers, the HADS scale can be used to assess the presence of distress in respondents by its total score [33, 34], which we performed based on the results of 6 studies [26–29, 31, 32].

All studies, except one [27], indicate the effective use of hypnotherapy in IBS patients based on the reduced severity of gastrointestinal symptoms. It is noteworthy that the study describing the lack of effect of hypnotherapy compared its use with biofeedback. In contrast, most other studies have a negative control group, except for one [29]. At the same time, special attention should be paid to 6 studies [25, 26, 28,

[1]HADS — Hospital Anxiety and Depression Scale.

Table 1. General characteristics of the studies selected.

Author, year, country, study type, journal	Inclusion criteria	Patients	Treatment group (n) / Control (n)	Treatment type / Type of control	Session characteristics	Efficacy assessment methods, FUFM (long-term effect control points)
Roberts [25], 2006, Great Britain, RCT, Brit. J. Gen. Pract.	18–65 years old, IBS, refractory IBS, Rome II criteria	81	40	IH	30 min, 5 sessions, 5 weeks	3-component symptom rating scale, IBS-QoL, FUFM = 3, 6, 12 months
			41	Observation		
Lindfors 1 [26], 2012, Sweden, RCT, Am. J. Gastronterol.	≥18 years old, refractory IBS, Rome II criteria	90	45	IH	60 min, 12 sessions, 12 weeks	IBS-GI, IBS-QoL, HADS, FUFM = 3 months
			45	Waiting list		
Lindfors 2 [26], 2012, Sweden, RCT, Am. J. Gastronterol.		48	25	IH		
			23	Waiting list		
Dobbin [27], 2013, Great Britain, RCT, J. R. Coll. Physicians Edinb.	Women 18–60 years old, IBS, Rome III criteria	61	30	IH	25 min, 3 sessions, 12 weeks	IBS-SSS,HADS, FUFM = 3 months
			31	Biofeedback		
Moser [28], 2013, Austria, RCT, Am. J. Gastronterol.	18–70 years old, refractory IBS, Rome III criteria	89	46	GH	45 min, 10 sessions, 12 weeks	IBS-IS,HADS, FUFM = 3, 6, 12 months
			43	Conversation with a therapist		
Peters [29], 2016, Australia, RCT, Alimentary Pharmacology and Therapeutics	≥18 years old, Rome III criteria, IBS + celiac disease	49	25	IH	60 min, 6 sessions, 6 weeks	IBS-SSS, IBS-QoL, HADS, FUFM = 6 months
			24	FODMAP diet		
Berens [30] 2018, Switzerland, RCT, J. Psychosom. Res.	18–65 years old Rome III, refractory IBS	30	16	GH	90 minutes 12 sessions 12 weeks	IBS-SSS; IBS-QoL; GAD-7, HADS-D; FUFM = End of treatment
			14	Waiting list		
Peter [31], 2018, Austria, CSS, PLoS ONE	18–75 years old, Rome III criteria, refractory IBS	74	37	GH	45 min, 10 sessions, 12 weeks	IBS-SSS, VAS Qol, HADS-D, FUFM = 10–12 months after the last session
			37	Waiting list		
Flik [32], 2019, Netherlands, RCT, Lancet Gastroenterol. Hepatol.	18–65 years old, IBS, Rome III criteria	345	146	IH	45 min, 6 sessions, 12 weeks	IBS-SSS, HADS,IBS-QoL, FUFM = 3 and 12 months from the start of treatment
			146	GH	60 min, 6 sessions, 12 weeks	
			53	Training therapy	1 conversation with a therapist	

Note: IBS—irritable bowel syndrome; RCT—randomized controlled trial; CSS—cross-sectional study; IH—individual hypnotherapy; GH—group hypnotherapy; IBS-SSS, IBS-GI, IBS-IS—scales for the severity of gastrointestinal symptoms; IBS-QoL—scale for assessing the quality of life of IBS patients; HADS—Hospital Anxiety and Depression Scale; GAD-7—Generalized Anxiety Disorder Scale; VAS—visual analog scale.

Table 2. Bias assessment results.

Study	Selection bias	Distribution bias	Efficiency bias	Detection bias	Risk of attrition error	Reporting bias	Overall risk of bias
Roberts, 2006 [25]	low	low	high	high	low	low	high
Lindfors 1, 2011 [26]	low	—	—	—	low	low	—
Lindfors 2, 2012 [26]	low	—	—	—	low	—	—
Dobbin, 2013 [27]	—	—	—	—	high	low	high
Moser, 2013 [28]	low	low	—	—	high	low	high
Peters, 2016 [29]	low	—	—	high	high	low	high
Berens, 2018 [30]	low	low	—	—	low	—	—
Peter, 2018 [31]	high	high	high	—	—	—	high
Flik, 2019 [32]	low	low	low	low	low	low	low

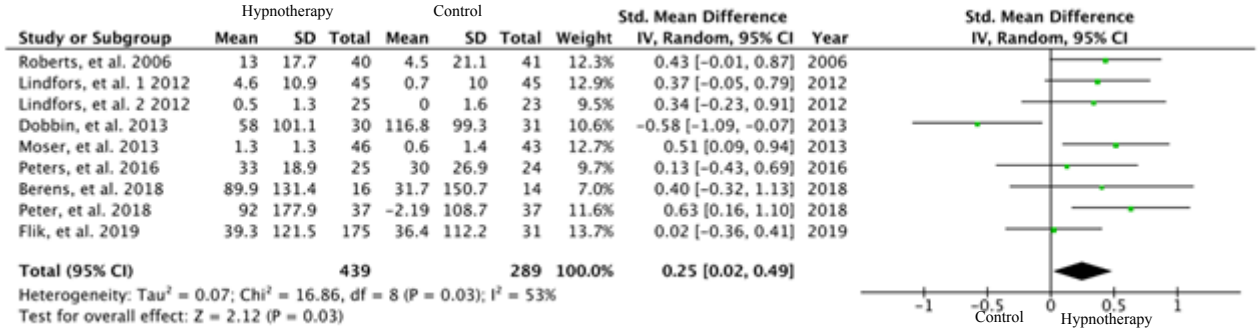

Fig. 2. Standardized difference in the mean severity of gastrointestinal symptoms.

30, 31] in which all or most of the respondents had refractory or drug-resistant forms of IBS; that is, the standard therapy previously used was ineffective.

Based on the analysis, the overall standardized difference in the mean changes in gastrointestinal symptom severity when using hypnotherapy compared with the control groups was SMD = 0.25 [95% CI 0.02–0.49]. It was significantly higher (p = 0.03) with moderate study heterogeneity (I^2 = 53%) (Fig. 2).

The efficiency of hypnotherapy in the long-term (12 months after treatment) is maintained (SMD = 0.34 [95% CI 0.07–0.60], p = 0.01) and increases in some cases [25, 29, 32], especially when using group hypnotherapy [32] (Fig. 3).

A more pronounced decrease in the total score of the HADS scale as an indicator of the level of distress in the intervention groups compared with the control groups was registered at the end of therapy (MD = 1.09 [95% CI from −1.27 to 3.44]); however, the results were not significant (p = 0.37). At the same time, the level of heterogeneity in the included studies was high (I^2 = 71%) (Fig. 4).

Five studies used individual hypnotherapy as a treatment method [25–27, 29]; 3 studies used group hypnotherapy [28, 30, 31]; 1 study divided the intervention group into two equal subgroups, where individual or group therapy was used [32]. The decrease in the severity of gastrointestinal symptoms immediately after group hypnotherapy was significantly higher compared with controls (SMD = 0.35 [95% CI 0.01–0.70], p = 0.05) than after individual hypnotherapy (SMD = 0.14 [95% CI −0.14–0.43], p = 0.32) (Fig. 5).

When comparing the efficiency of reducing the severity of gastrointestinal symptoms depending on the number of hypnotherapy sessions performed during the treatment period, it was revealed that 7 sessions or more had a significantly better effect than in the control group (SMD = 0.35 [95% CI 0.14–

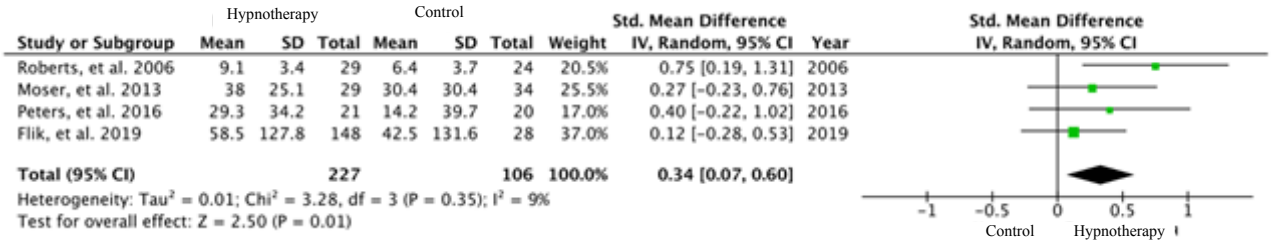

Fig. 3. Standardized difference in the mean severity of gastrointestinal symptoms 12 months

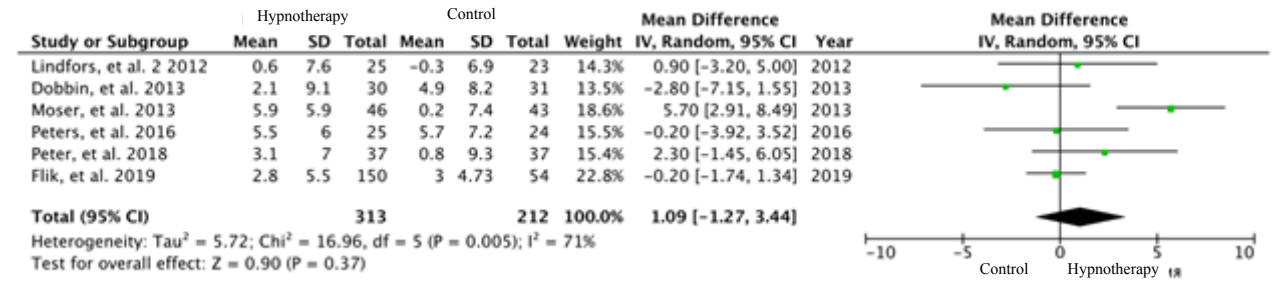

Fig. 4. Difference in the average severity of distress (HADS total score)

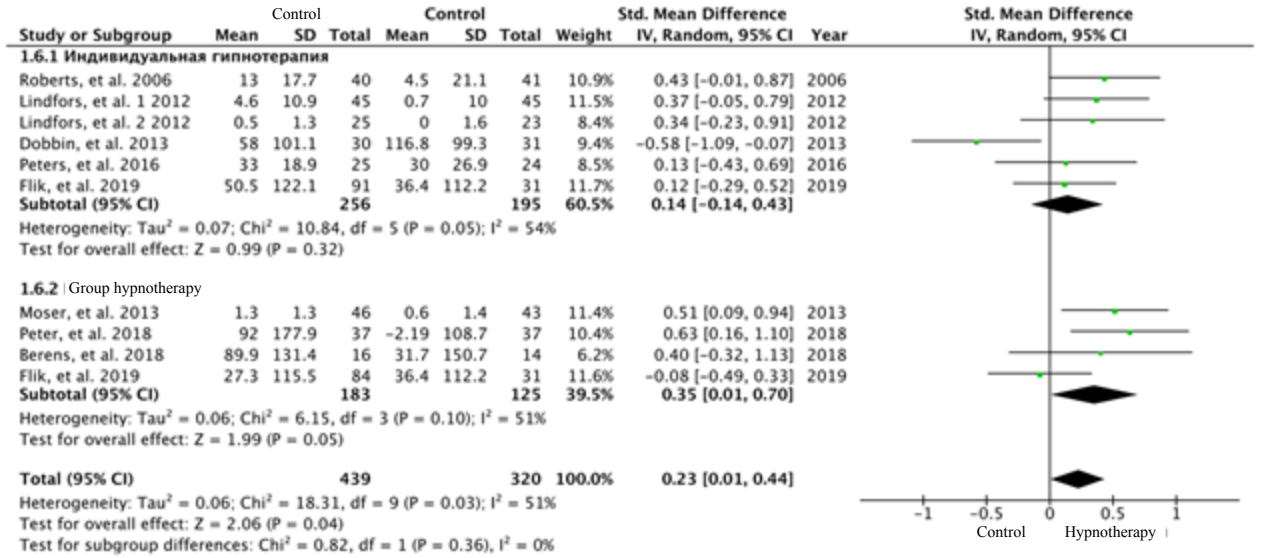

Fig. 5. Standardized difference in the average severity of gastrointestinal symptoms when comparing individual and group hypnotherapy.

0.57], $p = 0.001$) compared with fewer sessions (SMD = 0.05 [95% CI −0.36–0.45], $p = 0.81$). However, it should be noted that the group of studies with many sessions was nonheterogeneous ($I^2 = 0\%$) (Fig. 6).

When assessing publication bias, a relatively even distribution of studies was recorded on both sides of the central trend axis, except for the study [27], which suggests a minimum publication bias (Fig. 7).

DISCUSSION

This systematic review with meta-analysis had two global aims, namely to evaluate the efficiency of hypnotherapy in the treatment of IBS and an attempt to identify the most optimal conditions for using this method. As part of achieving the former aim, the efficiency of hypnotherapy in IBS patients,

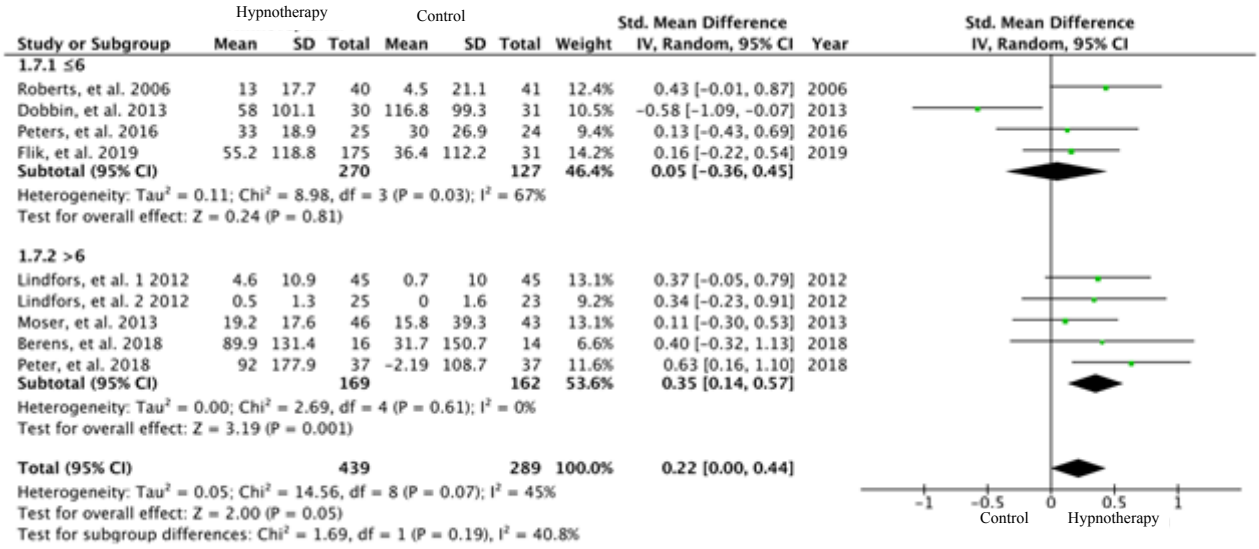

Fig. 6. Standardized difference in the mean severity of gastrointestinal symptoms for 6 sessions or fewer compared with more than 6 sessions.

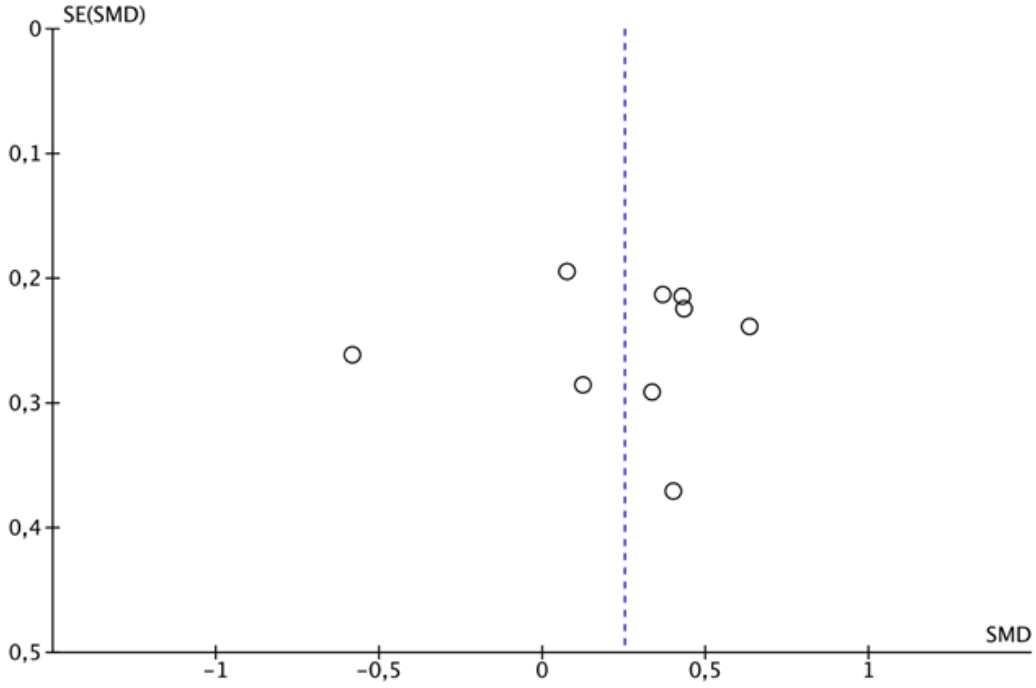

Fig. 7. Funnel plot for estimating publication bias.

described in previous meta-analyses [14–16], was confirmed. Moreover, given the recommendations for using hypnotherapy only as a third line of therapy and, consequently, a large proportion of patients with therapy-resistant forms in the samples of the above studies, we can assume a significantly higher efficiency of hypnotherapy in the early stages of IBS treatment.

The systematic review 1 [17] revealed insignificant differences between the use of hypnotherapy and control groups in reducing the severity of gastrointestinal symptoms. At the same time, questions arose when evaluating the results presented in this review, where the authors compared the efficiency of hypnotherapy in reducing the severity of gastrointestinal symptoms at the end of therapeutic sessions, along with the results of long-term follow-up, which, in our opinion, is a methodological error. By dividing the control points into stages after therapy and in the long-term (after 12 months), we ensured that the efficiency of hypnotherapy only increases with time.

The study [28], in which the control group was

treated using biofeedback, reflects the superiority of the latter over hypnotherapy concerning reducing the severity of gastrointestinal symptoms. However, the authors indicate that differences were not significant in post hoc tests. In addition, there was a high risk of evaluation bias in this study.

The effect of hypnotherapy in an isolated form is not enough to correct the general psycho-emotional state properly. Therefore, we paid attention to using an integrated approach in treating IBS patients, including explanatory psychotherapeutic conversations and possible additional correction of the condition with psychopharmacotherapy methods [16, 35].

In the course of achieving research aim 2, the following criteria for the effective use of hypnotherapy in IBS patients were identified:

1) Hypnotherapy should be conducted in a group, considering the greater clinical efficiency along with economic feasibility;

2) At least 7 hypnotherapy sessions are required during the treatment period;

Additional criteria for the most effective practical application of this method were identified in a previous meta-analysis [17]:

3) It is much more effective to conduct more than 1 session per week;

4) A larger amount of hypnotherapy sessions (more than 8 sessions with more than 6 hours of total contact) significantly exceeds the efficiency of a smaller amount of interventions.

Despite the rigorous methodology of conducting a systematic review with meta-analysis in accordance with the Cochrane guidelines, our study has several limitations.

1. The total number of studies (n = 9), and their total sample (n = 867), are relatively small. The inclusion of only English-language publications and the noninclusion of data from nonpeer-reviewed studies may shorten this list;

2. Our systematic review is more in line with the last one conducted in 2021 [17]. However, its number of studies exceeds that by two and has a more rigorous data extraction methodology.

CONCLUSIONS

1. Based on the results of the systematic review, it can be assumed that the most effective method to use hypnotherapy in patients with IBS, including those with therapy-resistant forms, is conducting more than 7 sessions of group hypnotherapy more than once a week, with a minimum session time of 45 minutes.

2. Our data enable the recommendation of an integrated approach to treating IBS using the hypnosuggestive method at the first stages of treatment.

ДОПОЛНИТЕЛЬНО

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Contribution of the authors. *K.V. Markin* and *A.V. Temnyi* independently screened titles and abstracts, subsequently examined full text articles for inclusion, and assessed the risk of bias; disagreements were adjudicated by a third reviewer *K.V. Dnov*; *K.V. Markin* was the author responsible for statistical processing of data and presentation of results.

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