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Original Research Article

The effectiveness of self-hypnosis to reduce the intensity of nausea vomiting in emesis patients

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ABSTRACT

Background: Pregnancy triggers various physical and psychological changes, including common first-trimester symptoms like nausea and vomiting. Self-hypnosis can help alleviate these symptoms, offering an alternative treatment for pregnant women.
Methods: This double-blind randomized controlled trial (RCT) included 44 pregnant women with gestational ages less than 20 weeks, selected through purposive and total sampling. Participants were divided into two groups: the treatment group (n=22) received self-hypnosis recordings with water sounds, while the control group (n=22) received recordings of water sounds only. Both groups listened to the recordings for 15 minutes each morning and night over a period of 4 weeks. The study took place in the Kedunggalar Health Center area from June to July 2023. The PUQE-24 instrument measured nausea and vomiting severity before the intervention and weekly for four weeks thereafter. Data were analyzed using independent sample t-test and repeated measures analysis of variance (ANOVA).
Results: The treatment group experienced a statistically significant reduction in nausea and vomiting intensity, as indicated by PUQE-24 scores, at week I ($p=0.013$), week II ($p=0.000$), week III ($p=0.000$), and week IV ($p=0.000$). The treatment group showed a greater reduction in mean PUQE-24 scores compared to the control group ($p<0.05$). Clinically, nausea and vomiting intensity decreased from moderate to mild or none in the treatment group, while the control group showed no significant changes.
Conclusions: Self-hypnosis is effective in reducing the intensity of nausea and vomiting in patients with emesis gravidarum.

Keywords: Self-hypnosis, Hypnosis, Emesis gravidarum, Nausea, Vomiting

INTRODUCTION

Physical and psychological changes are brought about by pregnancy, which is a medical state. The incidence of nausea and vomiting during pregnancy is one of these alterations. During the first trimester of pregnancy, nausea and vomiting are common symptoms made by expectant mothers.[1] Up to 80% of pregnant women experience nausea and vomiting, or emesis.[2] One of the earliest and most prevalent signs of pregnancy is emesis gravidarum, which can be quite stressful. In the first trimester of pregnancy, 44% of women experience vomiting and 66% of women feel nausea.[3]

Hyperemesis gravidarum, or intense nausea and vomiting in pregnant women, can range from mild to extremely severe and can be fatal. It can cause profuse vomiting, dehydration, electrolyte imbalance, and weight loss.[4] Emesis can have a negative effect on the economy and quality of life, frequently resulting in women missing work.[5] Eight in ten (81%) of the women surveyed by the 2017 Indonesian Demographic and Health Survey (SDKI) reported no pregnancy-related problems. Of the individuals who did, five percent suffered from heavy bleeding, three percent had ongoing vomiting, swelling in the hands, feet, and face, or headaches accompanied by seizures, two percent had heartburn, one percent had an

early rupture of the membranes, and eight percent had other pregnancy-related issues such as elevated fever, epilepsy, fainting, anaemia, and hypertension.[6]

According to the 2018 National Riskesdas Report on disorders or complications experienced by mothers during pregnancy, 20% experienced persistent vomiting or diarrhea, 2.4% had high fever, 3.3% had hypertension, 0.9% had reduced fetal movement, 2.6% had bleeding from the birth canal, 2.7% experienced water breaking and leg swelling with seizures, 2.3% had prolonged cough, 1.6% had chest pain or palpitations, and 7.2% had other disorders or complications.[7] The morbidity of emesis with psychological disorders can prolong the duration of emesis, exacerbate symptoms and vomiting levels, and increase psychological dysfunction in terms of anxiety, sleep disturbances, and mood disorders.[8]

In 2020, there were 11,452 pregnant women, and 1,024 of them had chronic energy deficiency (CED). Of them, 54% were the result of malnutrition brought on by nausea and vomiting during pregnancy.[9]

Important psychological treatments, like behavioural therapy, MBCT, hypnosis, and progressive muscle relaxation, help lessen nausea and vomiting during pregnancy. Based to his thorough study, hypnosis can lessen the severity of nausea and vomiting in expectant mothers who experience it on a regular basis.[10] Medical hypnoses is thought to be the best treatment for nausea and vomiting in expectant mothers. It not only enhances the women's emotional health during the pregnancy but also shortens hospital stays.[11] Some Studies discovered hypnosis can lessen the severity of nausea and vomiting in expectant mothers provide more evidence for this. Further evidence for this comes from studies that found hypnosis can reduce the intensity of nausea and vomiting in expecting moms.[12]

METHODS

All data were processed using statistical package for the social sciences (SPSS) version 25. This study utilized a double-blind, randomized controlled trial (RCT) design and was conducted from June to July 2023 in the Kedunggalar Community Health Center area in Ngawi, East Java. The study focused on pregnant women with gestational ages of less than 20 weeks who attended the maternity class at the Kedunggalar Community Health Center.

The subjects were pregnant women with gestational age of less than 20 weeks who participated in the maternity class in the working area of Kedunggalar Community Health Center, Ngawi, East Java, during the study period. The sample was obtained by total sampling. The first step was to record pregnant women in their first trimester who participated in the maternity class in the working area of Kedunggalar Community Health Center, Ngawi, East Java. Then, sample restriction was carried out based on inclusion and exclusion criteria that had been established.

The inclusion criteria for the study were as follows: participants had to be able to read and write, speak Indonesian, own and operate an Android smartphone, be under 40 years of age, have a gestational age of less than 20 weeks, consume 400 mcg of folic acid daily (provided by the health center), and be willing to participate in the research by signing an informed consent form.

The exclusion criteria for the study were as follows: participants with hearing impairments that hinder verbal communication, those taking antiemetic drugs or medications that can cause nausea and vomiting, and those using traditional therapies to reduce nausea and vomiting. Additionally, individuals with high-risk pregnancies (such as multiple pregnancies or molar pregnancies), mental disorders undergoing treatment, or comorbidities like gastrointestinal and related organ disorders, metabolic disorders, cancer (undergoing chemotherapy), history of severe head trauma, central nervous system disorders, cognitive impairment, severe respiratory disorders, heart disease, hypertension, and other conditions that could worsen nausea and vomiting were excluded. Furthermore, participants with unwanted pregnancies, those who had previously received self-hypnosis training for emesis, severe nausea and vomiting (total PUQE-24 score ≥12), severe anxiety, depression, or stress (total DASS21 score ≥17), and L-MMPI scores >10 were also excluded from the study.

The sampling technique in this study was total sampling. Total sampling is a sampling technique where the number of samples equals the population. The reason for using total sampling was due to the population being less than 100.

RESULTS

Table 1 details the demographic and clinical characteristics of the 44 pregnant women participants, split equally into treatment and control groups. The majority in both groups were aged between 18 and 35 years, with a near-equal distribution of primigravida and multigravida women. Educational attainment was primarily high school level, and nearly all participants reported monthly incomes of at least 2 million Rupiah. Most women engaged in regular exercise, and spirituality levels were mostly moderate across both groups. Gestational ages were largely between 16 and 19 weeks. The majority of participants were housewives, with others working as entrepreneurs, civil servants, or private employees. Mental health metrics, including depression, anxiety, and stress levels, showed no significant differences between groups. The homogeneity in these characteristics allows for a clear attribution of any observed differences in nausea and vomiting to the intervention rather than to baseline demographic or clinical factors.

Table 2 shows that the treatment group experienced a significant reduction in the average intensity of nausea and vomiting over the course of the study. Initially, both groups had a mean score of 7.95. However, by the first week, the treatment group's mean intensity decreased to 6.55, while the control group's score remained higher at 7.86, indicating a significant difference (p=0.013). This trend continued with the treatment group showing further reductions to 5.23 in the second week (p=0.000), 4.18 in the third week (p=0.000), and 3.55 in the fourth week (p=0.000), whereas the control group's scores remained relatively unchanged. These results highlight the effectiveness of self-hypnosis in reducing nausea and vomiting symptoms among the treatment group compared to the control group. The significant reduction in the mean intensity of nausea and vomiting in the treatment group occurred from week one to week four, while no significant reduction was observed in the control group from before to week four after hypnosis, as shown in the graph in Figure 1.

Table 3 demonstrates the significant reduction in the average incidence of nausea and vomiting in the treatment group compared to the control group. From before hypnosis (T0) to the first week (T1), the treatment group showed a substantial mean reduction of 1.409 (p=0.000), whereas the control group had a negligible change of 0.091 (p=1.000). This trend continued through week two (T2), week three (T3), and week four (T4), with the treatment group showing mean reductions of 2.727 (p=0.000), 3.773 (p=0.000), and 4.409 (p=0.000) respectively. In contrast, the control group exhibited minimal changes throughout the study period. The consistent and statistically significant reductions in the treatment group highlight the effectiveness of self-hypnosis in alleviating symptoms of nausea and vomiting during pregnancy.

Table 4 shows a significant improvement in the intensity of nausea and vomiting in the treatment group over the study period. At the start (T0), both the treatment and control groups had equal distributions, with 50% of participants in each group experiencing moderate and mild symptoms. By the first week (T1), 63.6% of the treatment group reported no vomiting, while 36.4% experienced mild symptoms. In contrast, the control group showed no change, maintaining a 50% distribution between mild and moderate symptoms.

Table 1: Characteristics of respondents.

Characteristics (min-max, mean, SD)	Treatment (n=22)		Control (n=22)		P value	P value ***
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)		
Age (years)						
<18	5	22.7	6	27.3	0.826*	0.728
18-3	17	77.3	16	72.7		
Parity						
Primigravida	11	50.0	9	40.9	0.665**	1.000
Multigravida	11	50.0	13	59.1		
Education						
Elementary school	1	4.5	1	4.5	0.459**	1.000
Middle school	2	9.1	2	9.1		
High school	16	72.7	15	68.2		
Diploma/bachelor's degree	3	13.6	4	18.2		
Income (Million Rupiah)						
<2	2	9.1	2	9.1	0.639**	1.000
≥2	20	90.9	20	90.9		
Exercise habit						
Exercise	19	86.4	18	81.8	0.380**	0.23
No	3	13.6	4	18.2		
Spiritual						
Moderate	20	90.9	20	90.9	0.639*	0.317
High	2	9.1	2	9.1		
Gestational age (weeks)						
<16	4	18.2	4	18.2	0.917*	1.000
16-19	18	81.8	18	81.8		
Occupation						
Housewife	10	45.5	11	50.0	0.392**	0.763
Entrepreneur	4	18.2	5	22.7		
Civil servant	4	18.2	3	13.6		
Private employee	4	18.2	3	13.6		

Continued.

Characteristics (min-max, mean, SD)	Treatment (n=22)		Control (n=22)		P value	P value ***
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)		
Depression						
No depression	15	68.2	14	63.6	0.753*	0.343
Mild depression	7	31.8	8	36.4		
Anxiety						
No anxiety	17	77.3	17	77.3	0.642*	0.16
Mild anxiety	5	22.7	5	22.7		
Stress						
Not stressed	16	72.7	16	72.7	1.000*	0.500
Mild stress	6	27.3	6	27.3		

*Independent sample t test, **Chi square, ***logistic regression

Table 2: Comparison of the average intensity of nausea and vomiting.

Time	Average intensity of nausea and vomiting		Sig (2-tailed)
	Treatment (n=22)	Control (n=22)	
T0 (pre-hypnosis)	7.95	7.95	1.000*
T1 (week-1)	6.55	7.86	0.013*
T2 (week-2)	5.23	7.77	0.000*
T3 (week-3)	4.18	7.73	0.000*
T4 (week-4)	3.55	7.68	0.000*

*Independent sample t test

Table 3: Decrease in the average incidence of nausea and vomiting.

Time	Treatment		Control	
	Mean difference	Sig	Mean difference	Sig
T0-T1	1.409	0.000*	0.091	1.000*
T0-T2	2.727	0.000*	0.182	0.425*
T0-T3	3.773	0.000*	0.227	0.215*
T0-T4	4.409	0.000*	0.273	0.303*
T1-T2	1.318	0.000*	0.091	1.000*
T1-T3	2.364	0.000*	0.136	0.829*
T1-T4	3.000	0.000*	0.182	1.000*
T2-T3	1.045	0.000*	0.045	1.000*
T2-T4	1.682	0.000*	0.091	1.000*
T3-T4	0.636	0.002*	0.045	1.000

*Repeated measures ANOVA test

Table 4: Comparison of nausea and vomiting intensity levels between the experimental and control groups.

Time	Treatment (n=22), N (%)			Control (n=22) , N (%)		
	No vomiting	Mild intensity	Moderate intensity	No vomiting	Mild intensity	Moderate intensity
T0 (pre-hypnosis)		11 (50)	11 (50)		11 (50)	11 (50)
T1 (week-1)		14 (63.6)	8 (36.4)		11 (50)	11 (50)
T2 (week-2)		22 (100)			11 (50)	11 (50)
T3 (week-3)	7 (31.8)	15 (68.2)			11 (50)	11 (50)
T4 (week-4)	12 (54.5)	10 (45.5)			11 (50)	11 (50)

In the second week (T2), all participants in the treatment group reported no vomiting, indicating a notable improvement, whereas the control group's symptoms remained unchanged. By the third week (T3), 31.8% of the treatment group still reported no vomiting, and 68.2% had mild symptoms, while the control group continued to show no improvement. Finally, in the fourth week (T4), 54.5% of the treatment group reported no vomiting and 45.5% had mild symptoms, with the control group again showing no significant change.

These findings highlight the effectiveness of self-hypnosis in significantly reducing the intensity of nausea and vomiting among pregnant women in the treatment group, while the control group experienced no significant changes in symptom intensity throughout the study period.

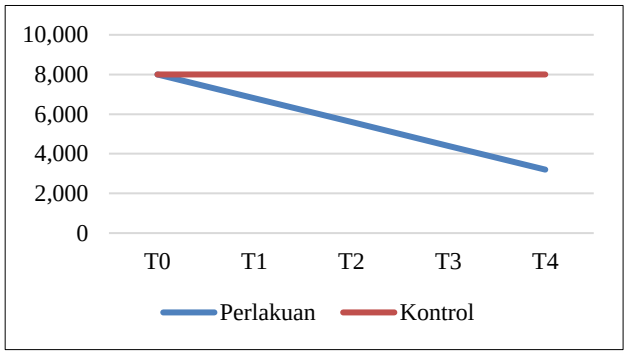

Figure 1: Comparison of the mean intensity of nausea and vomiting between the experimental and control groups.

DISCUSSION

The study indicates that self-hypnosis is a highly effective non-pharmacological method for managing nausea and vomiting in patients with emesis gravidarum. Similar to previous research, the treatment group demonstrated a significant mean reduction in symptom severity from before hypnosis (T0) to the first week (T1), with a decrease of 1.409 (p=0.000), while the control group showed a negligible change of 0.091 (p=1.000). This trend persisted through week two (T2), week three (T3), and week four (T4), with the treatment group exhibiting mean reductions of 2.727 (p=0.000), 3.773 (p=0.000), and 4.409 (p=0.000) respectively. In contrast, the control group experienced minimal changes throughout the study. The consistent and statistically significant reductions in the treatment group underscore the efficacy of self-hypnosis in alleviating symptoms of nausea and vomiting during pregnancy.

Previous research has shown varying degrees of success with non-pharmacological interventions for managing nausea and vomiting during pregnancy. For instance, a systematic review by Smith et al highlighted the efficacy of psychological interventions, including hypnosis, in alleviating symptoms of nausea and vomiting in pregnancy (NVP).[13] Similarly, a study by Sahebi et al found that hypnosis significantly reduced the frequency and severity of NVP compared to control interventions.[14]

In the current study, significant reductions in mean nausea and vomiting scores were observed in the treatment group from the first week (T1) through the fourth week (T4). This aligns with the findings of Sahebi et al, who reported that hypnosis can effectively reduce NVP symptoms over a sustained period. The consistent improvement observed in this study underscores the potential of self-hypnosis as a practical and accessible treatment modality.[14]

The mechanisms through which hypnosis alleviates NVP are not fully understood but may involve alterations in the perception of symptoms and the modulation of physiological responses through relaxation techniques. Studies suggest that hypnosis may influence the autonomic nervous system, reducing stress and anxiety, which are known to exacerbate NVP symptoms.[15]

The practical implications of these findings are significant for clinical practice. Self-hypnosis offers a non-invasive, cost-effective, and easily accessible option for pregnant women struggling with NVP. The study's results suggest that integrating self-hypnosis into prenatal care programs could enhance the quality of life for expectant mothers and reduce the need for pharmacological interventions, which often carry risks of side effects.[16]

Limitations

While the study provides robust evidence for the efficacy of self-hypnosis, certain limitations must be acknowledged. The sample size was relatively small, and the study was conducted in a single geographic location, which may limit the generalizability of the findings. Future research should aim to replicate these results in larger, more diverse populations and explore the long-term benefits and potential mechanisms of self-hypnosis in managing NVP.

Additionally, further studies should investigate the optimal frequency and duration of hypnosis sessions to maximize therapeutic outcomes. Understanding individual differences in response to hypnosis could also lead to more personalized treatment approaches.

CONCLUSION

The study conclusively shows that self-hypnosis is a highly effective method for significantly reducing the intensity of nausea and vomiting in pregnant women experiencing emesis gravidarum.

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