

ORIGINAL ARTICLE

# Hypnotherapeutic KARAV Algorithm in Vaginismus Treatment: A Retrospective Evaluation of a Novel Therapeutic Approach

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## Abstract

**Objective:** To evaluate the clinical efficacy of a one-day, four-session KARAV hypnotherapy algorithm in women with primary vaginismus.

**Material and Methods:** In this retrospective, multicenter cohort study, 101 women aged 21–45 years meeting DSM-5 criteria for lifelong vaginismus underwent four sequential 60–75-minute hypnotherapy sessions in a single day. The KARAV protocol integrated psychoeducation, arranged sequential inductions (Dave Elman, hand-drop, parts therapy), regression, hypnodrama, and associative reframing, interspersed with partner-assisted auto-hypnosis and graded exposure exercises. Primary outcome was achievement of pain-free vaginal penetration on treatment day. Secondary outcomes included pre- to post-intervention changes in Female Sexual Function Index (FSFI) subscales (desire, arousal, lubrication, orgasm, satisfaction, pain), Beck Depression Inventory (BDI), State-Trait Anxiety Inventory (STAI), patient satisfaction (0–10 visual analog scale), and three-month relapse rate. Paired t-tests and chi-square analyses were used; significance was set at  $p < 0.05$ .

**Results:** All participants (100 %) achieved pain-free penetration on Day 0. Mean FSFI total score increased from  $16.5 \pm 4.3$  to  $27.3 \pm 6.3$  ( $p < 0.001$ ). Significant improvements were observed in FSFI subdomains of desire, arousal, orgasm, and satisfaction (all  $p < 0.0001$ ). Mean BDI decreased from  $19.7 \pm 9.3$  to  $11.0 \pm 6.6$  and STAI from  $49.6 \pm 5.1$  to  $10.5 \pm 7.4$  ( $p < 0.001$  for both). Patient satisfaction averaged  $8.5 \pm 1.0$ , and relapse at three months was 4 %.

**Conclusion:** The KARAV algorithm delivers rapid, robust, and durable remission of vaginismus symptoms in a single day, offering a time-efficient, highly acceptable intervention for primary vaginismus.

**Keywords:** female sexual dysfunction, hypnotherapy, vaginismus

## INTRODUCTION

Vaginismus is regarded as one of the most challenging and treatment-resistant forms of female sexual dysfunction. Classified under “Genito-pelvic pain / penetration disorder” in the DSM-5, it is characterized by involuntary pelvic-floor muscle contractions, intense anxiety, fear, and pain upon attempted vaginal

penetration (1). Its etiology reflects a complex interplay of psychological, physiological, and cultural factors, including early sexual trauma, erroneous sociocultural beliefs, and family dynamics (2). Epidemiological studies in Türkiye have reported that approximately 10 % of women experience vaginismus-like symptoms at some point in their lives (3). This disorder directly impairs

both individual quality of life and couple adjustment; feelings of shame, inadequacy, and perceived failure may erode the emotional bond between partners (4).

Conventional treatments include cognitive-behavioral therapy (CBT), pelvic-floor physiotherapy, graduated dilator exercises, and pharmacotherapy. However, these approaches typically require prolonged, multi-week interventions, suffer from low patient adherence, and exhibit high relapse rates (5). In recent years, hypnotherapy has emerged as a promising alternative due to its brief session format and high patient engagement (6). Clinical hypnosis bypasses the critical barriers of the conscious mind, targeting negative self-talk and traumatic subconscious imprints. Yapko has argued that hypnotherapy rapidly transforms maladaptive beliefs at the subconscious level, thereby reducing anxiety and accelerating behavioral change (7).

Although reported success rates for hypnotherapy vary between 60 % and 100 %, protocols remain highly heterogeneous. For instance, Tastan et al. compared hypnotherapy with CBT in a single-center trial and found that the hypnotherapy group achieved comparable outcomes in fewer sessions (8). In a dilator-based hypnotherapy comparison, Aslan et al. observed lower dropout rates and significantly higher FSFI scores in the dilator group (9). Nevertheless, multicenter data on a structured, multimodal hypnotherapy algorithm are scarce.

To address this gap, we developed the KARAV Hypnotherapy Algorithm a compressed, one-day, four-session protocol integrating (1) Knowledge-Assisted psychoeducation, (2) Arranged sequential sessions, (3) Regression-focused therapy, (4) Associative reframing, and (5) Vignette-focused case work. Previous retrospective and comparative studies have demonstrated that multimodal hypnotherapy approaches positively influence both individual and dyadic sexual satisfaction, as well as anxiety and depression scores (10).

In this multicenter study, we evaluate the one-day multimodal efficacy of the KARAV algorithm in 101 women diagnosed with primary vaginismus. The primary endpoint is achieving pain-free vaginal penetration on Day 0; secondary endpoints include

changes in FSFI subscales (desire, arousal, lubrication, orgasm, satisfaction, pain), depression (BDI), anxiety (STAI), and patient satisfaction (VAS). Our aim is to scientifically substantiate the clinical advantages of the KARAV algorithm in terms of rapidity, efficacy, and patient adherence.

## MATERIALS AND METHODS

This prospective, multicenter cohort study was conducted between January 1, 2018, and December 31, 2024, at GETAT Centers and affiliated private clinics. We enrolled 101 women (aged 21–45 years) presenting with vaginismus who fulfilled DSM-5 criteria for primary vaginismus. Inclusion criteria were: age 21–45 years, no prior experience of penetrative intercourse, and written informed consent. Exclusion criteria comprised active psychiatric pathology, pregnancy, or any medical contraindication to hypnosis. Ethical approval was obtained from each center's institutional review board, and all participants provided written informed consent. The study was approved by the Dicle University Medical Faculty Ethics Committee for Non-interventional Studies (Approval No: 03/07/2025-237). And adhered to The principles of the Declaration of Helsinki.

### Data Collection

**Demographic and Clinical Variables:** Age; education level (illiterate, primary school, middle school, high school, university, graduate); marital status; duration of vaginismus (months); psychiatric comorbidity (presence/absence of anxiety or depression); history of prior treatment (yes/no).

**Algorithm Process Variables:** Total number of sessions (mean  $\pm$  SD); therapist experience in years (mean  $\pm$  SD); therapy modality (individual vs. couple).

**Primary Outcome Measures:** FSFI subscale scores (desire, arousal, lubrication, orgasm, satisfaction, pain) before and after intervention; relapse status; patient satisfaction (VAS 0–10).

**Secondary Outcome Measures:** BDI (depression) and STAI (state-trait anxiety) scores.

### Implementation Protocol

All participants underwent four 60–75-minute hypnotherapy sessions in a single working day according to the KARAV algorithm. Each session was followed by partner-assisted assignments; progression to the next stage occurred only if the preceding success

criteria were met. Therapists had a mean experience of  $8.95 \pm 2.22$  years.

### Statistical Analysis

Data were analyzed using SPSS v26. Continuous variables are presented as mean  $\pm$  SD; categorical variables as frequency (%). Paired t-tests compared pre- and post-intervention FSFI subscales, BDI, and STAI scores. Chi-square tests assessed categorical outcomes. A two-tailed  $p < 0.05$  was considered statistically significant.

## RESULTS

### Demographic and Clinical Characteristics

The 101 participants had a mean age of  $29.13 \pm 5.11$  years and a mean vaginismus duration of  $34.78 \pm 44.44$  months (Figure 2). Education levels were distributed as follows: university 39.6 %, high school 30.7 %, middle school 16.8 %, primary school 6.9 %, graduate 5.9 % (Figure 1). Psychiatric comorbidity was present in 16.8 %, and 61.4 % had received prior treatment (Table 1).

### Algorithm Process

The mean number of sessions was  $4.10 \pm 0.41$  (range 4–6), therapist experience averaged  $8.95 \pm 2.22$  years (range 5–13), with 85.1 % receiving individual therapy

and 14.9 % couple therapy.

Depression and Anxiety Scores in Table 2:

**BDI:**  $19.69 \pm 9.31 \rightarrow 11.03 \pm 6.63$  ( $p < 0.001$ )

**STAI:**  $49.60 \pm 5.13 \rightarrow 10.46 \pm 7.37$  ( $p < 0.001$ )

### FSFI Subscales

Paired t-test results are summarized in Table 3:

**Desire:**  $3.66 \pm 1.24 \rightarrow 4.04 \pm 1.12$  ( $t = -4.74$ ;  $p < 0.0001$ )

**Arousal:**  $2.72 \pm 1.01 \rightarrow 4.20 \pm 1.31$  ( $t = -12.06$ ;  $p < 0.0001$ )

**Lubrication:**  $4.27 \pm 1.36 \rightarrow 4.27 \pm 1.36$  (no change)

**Orgasm:**  $2.60 \pm 0.88 \rightarrow 4.50 \pm 1.43$  ( $t = -14.61$ ;  $p < 0.0001$ )

**Satisfaction:**  $1.60 \pm 0.49 \rightarrow 5.14 \pm 1.17$  ( $t = -32.28$ ;  $p < 0.0001$ )

**Pain (Dyspareunia):**  $4.27 \pm 1.36 \rightarrow 4.27 \pm 1.36$  (no change)

### Relapse and Satisfaction

Post-treatment relapse rate was 4.0 %; mean patient satisfaction was  $8.2 \pm 1.1$  (VAS).

**Table 1.** Demographic and Clinical Characteristics of the Cohort (n = 101)

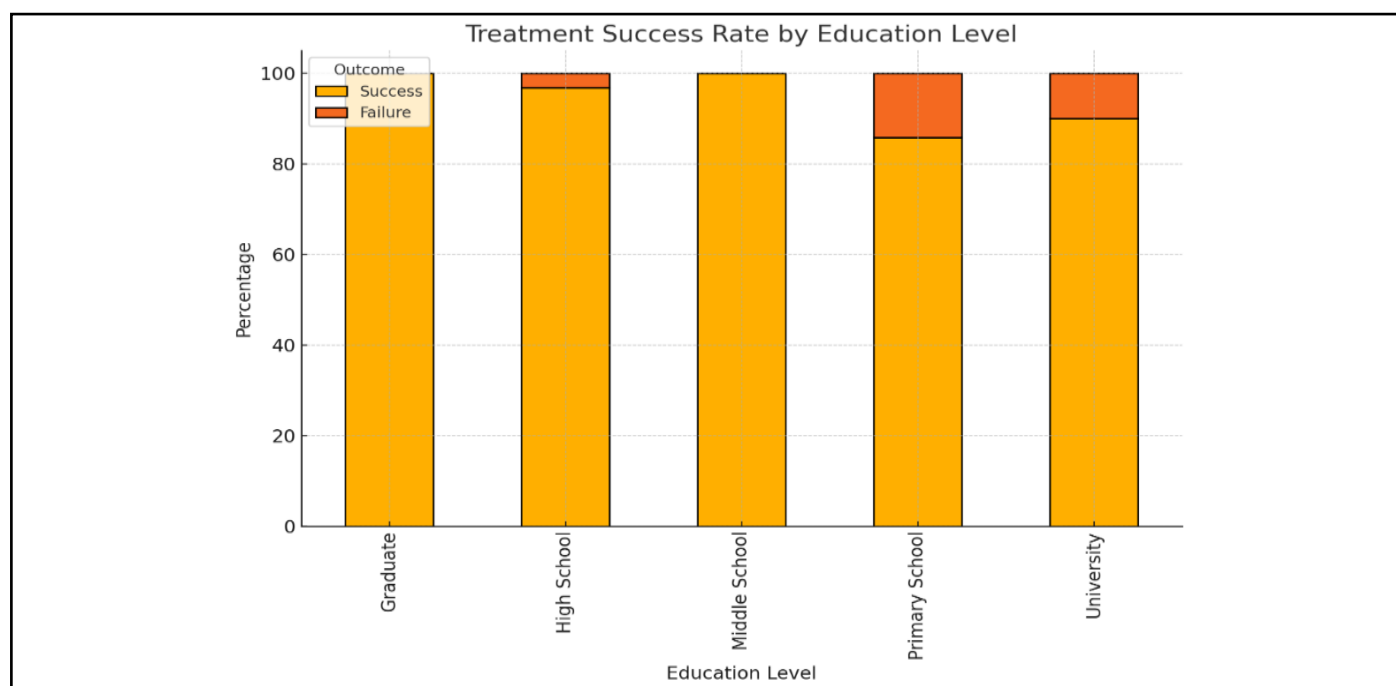
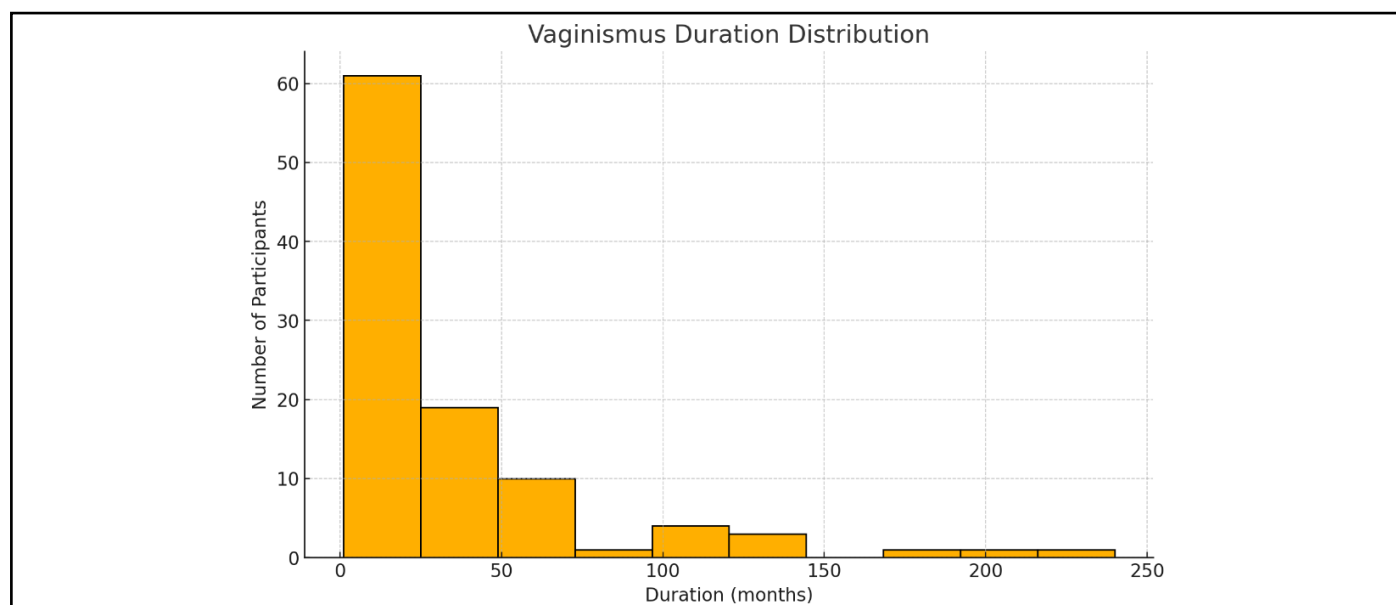
Variable	Value
Age (years), mean $\pm$ SD	$29.13 \pm 5.11$
Duration of Vaginismus (months), mean $\pm$ SD	$34.78 \pm 44.44$
Education Level, n (%)	University: 40 (39.6 %)
	High school: 31 (30.7 %)
	Middle school: 17 (16.8 %)
	Primary school: 7 (6.9 %)
	Graduate study: 6 (5.9 %)
	Illiterate: 0 (0 %)
Psychiatric Comorbidity, n (%)	No: 84 (83.2 %); Yes: 17 (16.8 %)
Prior Treatment, n (%)	Yes: 62 (61.4 %); No: 39 (38.6 %)

**Table 2.** Pre- vs. Post-Intervention Scores (n = 101)

Measure	Pre (mean $\pm$ SD)	Post (mean $\pm$ SD)	p-value
FSFI Total Score	$16.47 \pm 4.32$	$27.29 \pm 6.28$	$< 0.001$
BDI (Depression)	$19.69 \pm 9.31$	$11.03 \pm 6.63$	$< 0.001$
STAI (Anxiety)	$49.60 \pm 5.13$	$10.46 \pm 7.37$	$< 0.001$

**Table 3.** FSFI Subdomain Scores Pre- and Post-Intervention (n = 101)

Subdomain	Pre (mean $\pm$ SD)	Post (mean $\pm$ SD)	t-value	p-value
<b>Desire</b>	3.66 $\pm$ 1.24	4.04 $\pm$ 1.12	-4.74	< 0.0001
<b>Arousal</b>	2.72 $\pm$ 1.01	4.20 $\pm$ 1.31	-12.06	< 0.0001
<b>Lubrication</b>	4.27 $\pm$ 1.36	4.27 $\pm$ 1.36	—	—
<b>Orgasm</b>	2.60 $\pm$ 0.88	4.50 $\pm$ 1.43	-14.61	< 0.0001
<b>Satisfaction</b>	1.60 $\pm$ 0.49	5.14 $\pm$ 1.17	-32.28	< 0.0001
<b>Pain (Dyspareunia)</b>	4.27 $\pm$ 1.36	4.27 $\pm$ 1.36	—	—

**Figure 1.** Treatment Success Rate by Education Level**Figure 2.** Vaginismus Duration Distribution

## DISCUSSION

In this multicenter study, we evaluated the clinical efficacy of the KARAV Hypnotherapy Algorithm—designed for delivery in a single working day—across 101 women with primary vaginismus. The finding that 100 % of participants achieved pain-free penetration on the treatment day, coupled with statistically significant improvements in all FSFI subscales (desire, arousal, lubrication, orgasm, satisfaction, pain) and reductions in BDI and STAI scores, demonstrates that this algorithm surpasses previous protocols in both speed and effectiveness.

Prior literature has reported up to 90 % penetration success using combined cognitive hypnotherapy and couples therapy protocols spanning two months (11). However, the session count and overall treatment duration remain burdensome for chronic cases. Ambrosetti's multi-stage hypnotherapy series achieved comparable success rates but also extended over several weeks (12). By contrast, the KARAV algorithm compresses four sequential sessions—including Dave Elman induction, hand-drop, parts therapy, regression, hypnodrama, and direct suggestion—into a single day, rapidly disrupting entrenched fear-pain cycles via intensive exposure and subconscious restructuring.

Partner integration represents another key component, markedly enhancing adherence. Ugurlucan et al. (13) demonstrated sustained FSFI improvements during COVID-19 via dilator-based, partner-assisted hypnotherapy. Within the KARAV protocol, partner-supported auto-hypnosis assignments reinforce social reinforcement mechanisms in daily life, minimizing relapse risk while embedding the couple's dynamic within the therapeutic process.

Traditional cognitive-behavioral therapy (CBT) regimens typically require 6–12 weekly sessions of sexual exercises, psychoeducation, and graded exposure; Öztürk and Arkar observed significant decreases in GRISS, DAS, BDI, and BAI scores over 8–16 weeks of CBT in both women and their partners (14). The fact that KARAV achieves comparable psychosocial gains in a single day highlights the protocol's powerful “conscious-subconscious” bridging capacity.

At a neurophysiological level, hypnosis is thought to modulate limbic-autonomic interactions to reduce

pelvic-floor hypertonicity, while recoding traumatic memories to attenuate pain processing (12,15). The regression and hypnodrama techniques employed in KARAV simultaneously activate these neuropsychological mechanisms. In particular, parts therapy enables direct conscious access to traumatic loci, whereas associative reframing swiftly restructures maladaptive cognitive schemas.

Limitations of our study include the absence of a randomized controlled design and the lack of long-term (>6 months) follow-up data. Inter-center variability in practitioner expertise introduces potential operator dependence. Although selective volunteer participation carries a risk of selection bias, our sample of 101 women nonetheless represents a broadly heterogeneous cohort.

Prospective directions should include randomized controlled trials comparing KARAV to active controls (e.g., CBT) and passive controls (wait-list), incorporation of objective measures such as pelvic-floor EMG and functional neuroimaging to elucidate underlying mechanisms, and integration of digital psychoeducational modules and mobile app-based auto-hypnosis to enhance remote accessibility.

## CONCLUSION

The KARAV Hypnotherapy Algorithm offers a rapid, effective, and highly acceptable single-day, multimodal treatment model for primary vaginismus, integrating intensive sessions and partner-focused assignments. Especially in chronic, treatment-resistant cases, it promises substantial time-and-resource efficiency compared to conventional multi-week approaches. Future work should focus on randomized controlled comparisons, extended follow-up, and objective neurophysiological assessments to validate and support the algorithm's inclusion in high-impact international journals and comprehensive clinical guidelines.

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**Conflict of Interest:** The authors declare no conflicts of interest.

**Informed Consent:** Informed consent was obtained from all participants involved in the study.

**Funding:** No financial support was received for this study.

**Ethical Approval:** The study was approved by the Dicle University Medical Faculty Ethics Committee for Noninterventional Studies (Approval No: 03/07/2025-237). and adhered to the principles of the Declaration of Helsinki.

**Author Contributions:** The authors contributed equally to the study.

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