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**Original Article**

# The effectiveness of medical hypnosis to decrease anxiety score, improve the quality of life and improve skin lesions of vitiligo patients at Dr. Moewardi and Sebelas Maret Hospital, Surakarta

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## Abstract

***Background*** Vitiligo patients makes experience lack of confidence, anxiety and decreased quality of life. Medical Hypnosis as non pharmacological treatment has gained recognition as an effective therapy.

***Methods*** Experimental double-blind pre and post control group design with purposive sampling approach. Anxiety examination was carried out with the Hamilton Anxiety Rating Score (HARS) instrument, quality of life examination with the Vitiligo Quality of Life Index (VitiQol) instrument and the severity of vitiligo lesions with VASI (Vitiligo Area Scoring Index). It included 32 vitiligo patients at the Dermatology outpatients of Dr. Moewardi Surakarta Hospital and UNS Hospital. The intervention group was given Medical Hypnosis for 4 sessions. Statistical analysis was carried out with Mann-Whitney and t-test.

***Results*** There was a statistically significant decrease in the average HARS pre- posttest with a value of p=<0.001 (p<0.05) and a statistically significant decrease in the average VitiQol pre-posttest with a value of p=<0.001 (p<0.05), but in the VASI score there was a statistically insignificant decrease with a value of p=0.317 (p>0.05).

***Conclusion*** There was a significant difference in HARS and VitiQol scores after receiving Medical Hypnosis between the treatment group and the control group in vitiligo patients, but Medical Hypnosis was not effective in decreasing the severity of vitiligo lesions assessed with VASI scores.

***Key words***
Vitiligo; Anxiety; Quality of life; Vitiligo severity; Medical hypnosis.

## Introduction

Vitiligo patients experience disabilities because of social discrimination and psychological burden.[1] Vitiligo patients often report shyness, lack of self-confidence, social anxiety, loss of self-esteem, body image problems, and decreased quality of life (QoL).[2]

The incidence of vitiligo is between 0.5–2% of the world's population, of which 30% have a family history.[3] Incidence of vitiligo between (2017-2019) 105 outpatients of 28,591 from dermatology departement in Dr. Moewardi Hospital Surakarta, Indonesia.[4] Prevalence of depression and anxiety among vitiligo patient's

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was around 12.2-25.3% and 12-34%, where women have a higher level of anxiety than men.[1,2,5]

Quality of Life was the tool use to measure the effectiveness of an action, intervention, or therapy given.[6] Psychodermatological cases need non-pharmacological management. There is a relationship between stress and vitiligo exacerbations, so non-pharmacological management can be used to reduce the effects of chronic vitiligo, such as anxiety and decreased QoL.[1,7] Psychotherapy plays a positive and effective role in the rehabilitation of vitiligo patients.[8] Medical hypnotherapy is an effective therapy for stress-related disorders. Suggestions are the most commonly used method to reduce discomfort from anxiety.[9,10]

Previously, research in the form of CBT psychotherapy for vitiligo patients had been carried out by Papadopoulos in 1999. The aim of this study was to know the effectiveness of medical hypnosis on anxiety and QoL for vitiligo patients.

## Methods

This study was an analytic double blind pre and post control group design conducted at the dermatology departement, Dr. Moewardi Hospital and Sebelas Maret University Hospital, from December 2022-February 2023. *Inclusion criteria* was the patients at dermatology clinic at Dr. Moewardi Hospital and Sebelas Maret University Hospital who were diagnosed with vitiligo in a stable lesion state with segmental and non-segmental vitiligo lesion types, aged 18-65 years, agreed to participate in the study, able to understand and can speak Indonesian, met anxiety/anxiety diagnosis criteria based on the HARS instrument with a score of 14-27, Vitiligo patients with VitiQol score (Vitiligo Quality of Life Index).

*Exclusion criteria* was patients with severe mental disorders that were assessed through interviews, patients experiencing sensory disturbances that interfere with medical hypnosis interventions, patients currently taking anti-anxiety medication.

Anxiety examination was carried out with the Hamilton Anxiety Rating Score (HARS) instrument, quality of life examination with the Vitiligo Quality of Life Index (VitiQol) instrument and the severity of vitiligo lesions with VASI (Vitiligo Area Scoring Index), The intervention group was given Medical Hypnosis for 4 sessions. Statistical analysis was carried out with Mann-Whitney and t-test.

## Results

Characteristics of the study subjects were age, gender, vitiligo type **(Table 1)**. The comparison between HARS treatment group and control groups in the pretest sample obtained p=0.587,

**Table 1** Characteristics of research subjects.

| *Characteristics* | *Total (n=32)* | *Group* | | *p-value (significant: p < 0.05)* |
|---|---|---|---|---|
| | | *Treatment (n=16)* | *Control (n=16)* | |
| Age | 40.25±15.59 | 37.75 ±15.56 | 42.75±15.72 | 0.451 |
| Gender | | | | 0.433 |
| Man | 9 (28.1%) | 6 (37.5%) | 3 (18.8%) | |
| Woman | 23 (71.9%) | 10 (62.5%) | 13 (81.3%) | |
| Vitiligo type | | | | 0.865 |
| Non-segmental | 24 (75.0%) | 13 (40.6%) | 11 (68.8%) | |
| Segmental | 8 (25.0%) | 3 (18.8%) | 5 (31.3%) | |

**Table 2** Difference test HARS between the treatment and control groups.

| *Group* | *HARS* | | *p-values* | *HARS difference mean±SD (delta)* | *95%CI* |
|---|---|---|---|---|---|
| | *Pre mean±SD* | *Post mean±SD* | | | |
| Treatment | 18.25±4.40 | 11.06±5.71 | <0.001c* | 7.19±2.34 | 5.94 to 8.44 |
| Control | 16.88±3.56 | 15.69±4.38 | 0.080c | 1.19±2.48 | -0.14 to 2.51 |
| *p-values* | 0.587a | 0.015b* | | <0.001a* | |

*Information:* *significant: p < 0.05. The delta value is the mean difference value±SD between posttest and pretest results.

**Table 3** Difference test VitiQol between the treatment and control groups.

| *Group* | *VitiQol score* | | *p-values* | *VitiQol difference mean±SD (delta)* | *95% CI* |
|---|---|---|---|---|---|
| | *Pre mean±SD* | *Post mean±SD* | | | |
| Treatment | 38.69±22.55 | 23.50±15.50 | <0.001* | 15.19±10.15 | 9.78 to 20.60 |
| Control | 30.50±20.25 | 29.19±19.90 | 0.098d | 1.38 ±3.07 | -0.31 to 2.94 |
| *p-values* | 0.365 | 0.374 | | <0.001* | |

*significant if the test p <0.05. The delta value is the mean difference value±SD between posttest and pretest results.

which means no statistically significant difference was present. HARS post-test obtained (p=0.015) which indicates a statistically significant difference. The results showed *Medical Hypnosis indicated* significant changes in HARS compared to the control group, the decrease in HARS in the treatment group was more than that in the control group **(Table 2)**.

VitiQol between treatment and control groups in the pretest sample obtained (p=0.365), not statistically different. Post-test VitiQol obtained (p=0.374), not a statistically significant difference. This can be interpreted that giving treatment *Medical Hypnosis* effectively improve the quality of life as seen from the VitiQol score of vitiligo patients. The difference in VitiQol changes in the post-pre control group was not statistically significant (p=0.098).

Severity of the vitiligo lesions with the VASI score in each intervention did not show a significant difference between the treatment and control groups (p=0.317). This shows that giving treatment *Medical Hypnosis* had no effect on reducing the severity of vitiligo lesions as assessed by the VASI score **(Table 5)**.

## Discussion

In this study the results obtained indicate that Medical Hypnosis can reduce anxiety levels, as measured by changes in the HARS score. Consistent with a previous study, Karrasch *et al.* (2022), Hypnotherapy interventions are interventions that provide relaxation and relieve stress. One session of Hypnotherapy can induce relaxation and improve anxiety in individuals who experience chronic stress and improve QoL. There was an effect within 2 weeks one session of hypnotherapy intervention.[11]

Hypnotherapy can disrupt this negative process in two ways at a physiological level. Hypnotherapy-induced relaxation can reduce somatic symptoms by influencing inflammatory activity, because anxiety is associated with an increase in pro-inflammatory cytokines, besides that there is a decrease in heart rate, changes in brain activity and connectivity, and reduced stress hormones. The second mechanism is that the hypnotic trance condition causes a temporary decrease in the activity of the prefrontal cortex, where the prefrontal cortex functions as a cognitive control network involved in emotional

**Table 4** Difference Test VASI between the treatment and control groups.

| *Group* | *VASI score* | | *p-values* | *VASI difference mean±SD (delta)* | *95% CI* |
|---|---|---|---|---|---|
| | *Pre mean±SD* | *Post mean±SD* | | | |
| Treatment | 2.10±1.63 | 2.09±1.64 | 0.317b | 0.01±0.04 | -0.01 to 0.03 |
| Control | 2.46±1.53 | 2.45±1.53 | 0.317b | 0.01±0.03 | -0.01 to 0.02 |
| *p-values* | 0.520a | 0.520 a | | 0.964 a | |

significant :p<0.05. The delta value is the mean difference value±SD between posttest and pretest results

**Table 5** Changes in the Degree of Severity of the VASI score in each intervention session.

| *Group* | *VASI score* | | | | | | *p-values* |
|---|---|---|---|---|---|---|---|
| | *Pre* | *T1* | *T2* | *T3* | *T4* | *Post* | |
| Treatment | 2.10 | 2.10 | 2.10 | 2.10 | 2.10 | 2.09 | 0.416 b |
| Control | 2.46 | 2.46 | 2.46 | 2.46 | 2.46 | 2.45 | 0.416 b |
| *p-values* | 0.520a | 0.520 a | 0.520 a | 0.520 a | 0.520 a | 0.520 a | |

*significant if the test resulted in p <0.05.

regulation.[12]

In this study, there was an increase QoL vitiligo patients in VitiQol scores who received Medical Hypnosis intervention. Similar to previous studies, hypnotherapy has been used in a number of skin diseases, but few studies have measured its impact on quality of life. In previous studies, Hypnotherapy 4 sessions for 1 month in psoriasis, can increase QoL and decrease DLQI score.[13]

Hypnotherapy provides relaxation by affecting inflammatory activity, lowering heart rate, changing brain activity and connectivity and reducing stress hormones.[12] Hypnotherapy causes a temporary decrease in activity of the prefrontal cortex (as cognitive control network involved in emotion regulation) reducing stress, psychological disorders and improving QoL.[14]

In this study, *Medical Hypnosis* treatment *did* not reduce the severity of vitiligo lesions as assessed by the VASI score, but clinically it still needs further evaluation. Research investigating the effectiveness of Medical Hypnosis on vitiligo patients has never been conducted. In previous studies, Hypnotherapy in psoriasis every week for 12 weeks, when observed after 3 months showed a decrease in the PASI score.[15] Alexandere *et al.* reported that combination of phototherapy with topical corticosteroids and or oral antioxidants in vitiligo patients can reduce the severity of vitiligo within 6 months.[16]

Van *et al.* reported that everyday human life depends on gene expression and protein synthesis. Formation of new networks, coding new memories takes four weeks to six months. This biological change is a fact that becomes a natural time parameter for the neuroscience of hypnosis therapy.[17]

VASI is recommended for assessment of affected surface area and degree of depigmentation. The progress and efficacy of vitiligo treatment can be evaluated by the VASI score. Follow-up assessments are recommended at 3 and/or 6 months after starting treatment in vitiligo patients.[18] In this study, with a small observation time, the results obtained in the form of Medical Hypnosis had no effect on reducing the severity of vitiligo lesions as assessed by the VASI score, so further research

is needed with a longer observation time in the future.

Limitations of this study are that the examination of anxiety scores and QoL was only carried out at the beginning (pre-test) and at the end (post-test), so it is not known exactly when the HARS and VitiQol scores began to decrease. Further follow-up was not carried out to find out how long this could last. The changes in vitiligo lesions were only observed for around 1.5 months, so there were no significant changes in vitiligo lesions after the intervention was given.

## Conclusion

Medical Hypnosis was effective in decreasing anxiety as assessed by the HARS score, where the results obtained showed a significant decrease in the pre- pos-ttest HARS. Medical Hypnosis was effective on the quality of life score as assessed by the VitiQol score, where the results showed a significant decrease in the mean pre-posttest VitiQol statistically. Hypnosis was not effective in reducing the severity of vitiligo lesions as assessed by the VASI score.

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