# Dark Retreats: Sensory Deprivation and Mindfulness Practice

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## Introduction

Dark retreats offer a unique approach to self-discovery and mindfulness practice. In these retreats, individuals willingly immerse themselves in complete darkness, eliminating external stimuli to heighten introspection and inward focus.

This practice traces its roots to Tibetan Buddhist tradition, where darkness was believed to facilitate heightened awareness. In the Tibetan tradition, a dark retreat is an advanced form of meditation that involves complete seclusion in total darkness. This practice is designed to deepen one's meditative experience and is often associated with the Dzogchen tradition of Tibetan Buddhism. The typical duration of such retreat is 49 days, and during each week, practitioners perform specific visualizations, often combined with breath holding. The goal of dark retreat is an emergence of spontaneous and vivid visionary experiences, which are interpreted as expressions of the nature of the mind (Reynolds, 2011).

In a secular and modern context, dark retreats have become increasingly popular. There are more than two dozen such centres in the Czech Republic alone. Similar centres exist in many European countries and on other continents. Duration of the stay typically varies between 4-14 days, and participants spend this time alone in a house which is adapted to ensure uninterrupted visual sensory deprivation. In some centres, a short counselling session is provided once per day.

Sensory deprivation research has started in the 1950s with the work of researchers like Donald Hebb. However, the field faced ethical scrutiny as it became associated with coercive interrogation techniques, leading to a decline in its prevalence (Raz, 2013). In later decades the term Restricted Environmental Stimulation Therapy (REST) started to be used instead of sensory deprivation. It is often used as a form of therapy to help individuals with anxiety, depression, and other mental health conditions. It is assumed that by limiting the stimuli to which individuals are exposed, REST can help reduce stress and promote relaxation (Suedfeld & Bow, 1999).

Dark retreats, as are commonly practised, differ markedly from earlier Chamber REST protocols. The main difference is the length of stay, usually between 4-7 days, compared with 24 hours or less in REST. In addition, participants in the REST studies were encouraged not to engage in intensive activities. In contrast, during dark retreats, individuals often engage in activities, such as exercise, yoga, meditation, or breathing practices. Dark retreats share certain similarities with mindfulness meditation - defined as a practice that involves focusing one's attention on thoughts, feelings, and physical sensations while accepting and managing these experiences without distractions. Similarly, restricted environmental stimulation, such as dark retreat, fosters observation of one's mind and present moment sensations. Sensory restriction eliminates distractions, compelling individuals to focus on the present moment. Activities are performed slowly and with concentration, one task at a time, free from daily distractions such as books, media, and electronic devices. As a result, dark retreat may activate cognitive processes similar to those cultivated through meditation, leading to enhanced mindfulness (Malůš et al., 2016).

## Participants and Procedure

The retreat was done in Terapie Tmou Kozlovice center. Most participants booked a seven-day stay at that centre, which is a typical length. Several people finished after 5 or 6 days. Therefore, the mean length of actual stay was 6.3 days.
For the majority of the participants, it was their 1st retreat.
188 people who booked retreats at the Kozlovice Centre were contacted by a research assistant and invited to participate in the study. A link to online questionnaires was sent to those who agreed to participate. Participants received no compensation for their involvement. The pre-test was done between 14-3 days before the retreat. Subsequently, a post-test was done 5-7 days after completing the retreat. Follow-up data was collected approximately one month after the retreat. Some participants did not complete the questionnaires or send the follow-up data. 88 participants filled in both pre-test and post-test FFMQ-SF, and 61 responded also at a 1-month follow-up. Some participants responded only at the follow-up but not at the post-test.

## Measure

The Czech version of the FFMQ-15 is a 15-item measure, derived from the original 39-item Five Facet Mindfulness Questionnaire. This shorter version of the questionnaire evaluates five key facets of mindfulness, including acting with awareness, describing experiences, non-judgment of inner thoughts, non-reactivity to negative emotions and thoughts, and observation of internal and external environments. The FFMQ-15-CZ has demonstrated strong psychometric characteristics, such as good reliability, with alpha coefficient 0.77, and coefficients above 0.70 for most facets (Kořínek et al., 2019, Bohlmeijer et al., 2011).

## Results

Descriptive statistics for pre-test, post-test and follow-up are presented below:

Table 1: Descriptive statistics

| | Pre-test | Post-test | Follow-up |
|---|---|---|---|
| Valid | 153 | 88 | 67 |
| Missing | 0 | 65 | 86 |
| Mean | 54.569 | 58.136 | 58.000 |
| Std. Deviation | 8.706 | 8.656 | 9.279 |
| Minimum | 30.000 | 38.000 | 35.000 |
| Maximum | 73.000 | 75.000 | 75.000 |

Because of participant attrition at the follow-up measurement, we first analysed data on a larger sample of participants who completed only the pre-test and post-test. The data met the assumptions for parametric statistics. A paired samples t-test was conducted on pre-test and post-test scores. The difference was significant, and the effect size was d = 0.54, meaning that over 70% of the post-test scores were above the mean of the pre-test scores.

Table 2: Paired Samples T-Test

| | | | | | | | 95% CI for Cohen's d | |
|---|---|---|---|---|---|---|---|---|
| | | | t | df | p | Cohen's d | SE Cohen's d | Lower | Upper |
| Post-test | - | Pre-test | 5.092 | 87 | < .001 | 0.543 | 0.079 | 0.318 | 0.765 |

*Note.* Student's t-test.

Subsequently, we conducted a repeated measures ANOVA on a smaller sample of participants who completed a follow-up. There was a significant and large main effect (η2 = 0.188). Post-hoc comparisons show significant differences between pre-test and post-test, between pre-test and follow-up, but not between post-test and follow-up – which means that increases in FFMQ-SF scores were maintained for at least one month after the retreat.

Table 3: Repeated measures ANOVA

| Cases | Sum of Squares | df | Mean Square | F | p | η² |
|---|---|---|---|---|---|---|
| RM Factor 1 | 487.388 | 2 | 243.694 | 13.935 | < .001 | 0.188 |
| Residuals | 2098.612 | 120 | 17.488 | | | |

*Note.* Type III Sum of Squares

Figure 1: ANOVA descriptives

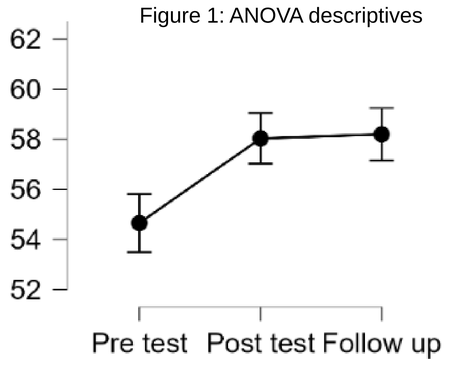


Figure 2: T-test descriptives

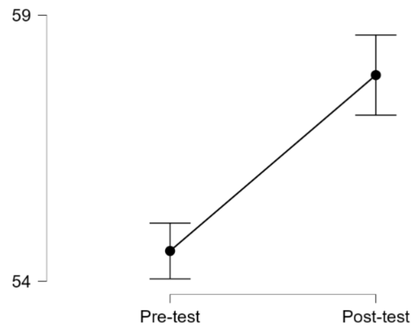


Table 4: Post Hoc Comparisons

| | | Mean Difference | SE | t | Cohen's d | $p_{holm}$ |
|---|---|---|---|---|---|---|
| Pre test | Post test | −3.377 | 0.757 | −4.460 | −0.376 | < .001 |
| | Follow up | −3.541 | 0.757 | −4.676 | −0.394 | < .001 |
| Post test | Follow up | −0.164 | 0.757 | −0.216 | −0.018 | 0.829 |

*Note.* P-value adjusted for comparing a family of 3

## Limitations and further work

This study is a pretest-posttest design without a control group. Participants self-recruited and paid for the dark retreat. It is, therefore, very likely that they had expectations regarding the effects of the retreat, and those expectations may have influenced the answers. Additionally, dark retreats may attract people with specific characteristics who may not represent the general population. However, current findings align with a prior smaller-scale study conducted at a separate dark retreat center, involving distinct participants (Malůš et al., 2016).

## Bibliography

Bohlmeijer, E., Ten Klooster, P. M., Fledderus, M., Veehof, M., & Baer, R. (2011). Psychometric Properties of the Five Facet Mindfulness Questionnaire in Depressed Adults and Development of a Short Form. Assessment, 18(3), 308–320.
Kořínek, D., Benda, J., & Žitník, J. (2019). Psychometrické charakteristiky krátké české verze dotazníku pěti aspektů všímavost (FFMQ-15-CZ). Ceskoslovenska Psychologie, 63(1).
Malůš, M., Kupka, M., & Dostál, D. (2016). Existential meaning in life, mindfulness and self-esteem in the context of restricted environmental stimulation. Psychology and its Contexts, 7(2), 59-72.
Raz, M. (2013). Alone Again: John Zubek and the Troubled History of Sensory Deprivation Research. Journal of the History of the Behavioral Sciences, 49(4), 379–395.
Reynolds, J. M. (2011). The practice of Dzogchen in the Zhang-Zhung tradition of Tibet: translations from the Bonpo Dzogchen practice manual: Vajra Publications.
Suedfeld, P., & Bow, R. A. (1999). Health and therapeutic applications of chamber and flotation restricted environmental stimulation therapy (REST). Psychology & Health, 14(3), 545–566.