Treatment for Maladaptive Daydreaming:
A pioneering study on the development and evaluation of an online therapeutic intervention based on mindfulness meditation and self-monitoring

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ABSTRACT

Daydreaming is a mental activity in which the person temporarily disconnects from his immediate environment and during which, the connection with reality is blurred and partially replaced by a visual fantasy experienced during waking hours (Singer, 1996; Klinger, 1982). Maladaptive Daydreaming (MD) is an Immersive Daydreaming (ID) that enables a sense of presence in a fantasy world rich in plot and characters (Somer, Somer & Jopp, 2016a). It is an act of dissociation (Ross, 2018; Somer, 2019; Ross, Ridgway & George, 2020), with characteristics of behavioral addiction (Pietkiewicz, Nęcki, Bańbura & Tomalski, 2018) and compulsion (Salomon-Small, Somer, Harel & Soffer-Dudek, 2021), which occurs with high frequency and intensity, causes distress, or impairs academic, interpersonal, or professional functioning (Somer, 2002).

Many sufferers of maladaptive daydreaming describe that they began engaging in this mental activity as children (Somer, Somer & Jopp, 2016a), sometimes even before experiencing significant distress in their lives. These descriptions support the notion that there may be an “early tendency” (pre-disposition) that allows for a strong sense of presence during daydreaming (Schimmenti, Somer & Regis, 2019). Some daydreamers do so maladaptively in order to escape a painful reality (Somer, Somer & Halpern, 2019) that stems, among other things, from trauma (Abu-Rayya, Somer & Knane, 2020), loneliness, or social dysfunction (Bigelsen & Schupak, 2011; Herscu, 2015; Abu-Rayya, Somer & Knane, 2020). Daydreaming has a highly comorbidity, for example, with ADHD, Obsessive-Compulsive Disorder, Anxiety Disorder, and depression (Somer, Soffer-Dudek & Ross, 2017).
Those who struggle with maladaptive daydreaming exhibit high levels of psychological distress (Dujić, Antičević & Mišetić, 2020) and shame, so they rarely seek help (Bigelsen & Schupak, 2011). The difficulty in finding specialists for this problem leads many to experiment with a variety of treatment methods that are not meant for this disorder and are, therefore, in most cases, less successful (Somer, Somer & Jopp, 2016b). At the time of the commencement of the present study, two case studies of effective treatment for maladaptive daydreaming had been documented in the literature using medication (Schupak & Rosenthal, 2009) or psychotherapy (Somer, 2018). The main objective of this study was to construct and evaluate effective, research-based treatment for reducing maladaptive daydreaming.

First was conducted an exploratory study, in bottom-up approach (Martin & Turner, 1986). Ten popular websites were systematically scanned that documented personal testimonials of attempts to cope with maladaptive daydreaming and to reduce it. We mapped the techniques described in these sources, calculated their prevalence, and divided them into categories, as is customary in the content-analysis method (Bauer & Gaskell, 2000). Using the information gathered, we conducted a general mapping of coping techniques. Next, we sampled a focus group of ten participants, as is acceptable in this research method (Francis et al., 2010), whom we interviewed using a semi-structured interview constructed for the purpose of this study. Six women and four men aged 23-54 (M = 32.6) were interviewed in English using Skype encrypted software. We coded the respondents’ responses and grouped their responses into two categories: “coping techniques” and “auxiliary factors”. Based on the findings of the preliminary study, we formulated a treatment protocol that combines mindfulness skills, self-monitoring skills, psycho-educational work, and increased motivation.

In order to overcome accessibility limitations and other barriers in receiving psychological help, we built an online therapy protocol. In recent decades, a trend has developed of providing diverse psychological services over the Internet (Barak et al., 2009). As part of this trend, computerized programs are being developed in which the patient can work by himself without direct human involvement (Kaltenthaler et al., 2008). Findings from studies have consistently shown that these programs are effective enough (Cuijpers et al., 2010), and produce
reasonable rates of change (Wilks, Zieve & Lessing, 2016) and high satisfaction (Klein et al., 2009).

The intervention model: In light of the literature and the findings of the exploratory study, our model assumes maladaptive daydreaming is a dissociative disorder, that develops as an addictive behavior with compulsive characteristics. Therefore, we concluded that treatment for this phenomenon should be based on treatment modules that are effective for dissociation experiences, and compulsive and addictive behavior, and should be based on mindfulness training, along with cognitive-behavioral intervention (CBT) of self-monitoring. Also, we included motivational and psycho-educational work in our intervention. We hypothesized that compared to people with maladaptive daydreaming who would continue to face and treat the problem in ways that familiar to them, people who participated in the protocol intervention program we made would respond by reducing the symptoms of maladaptive daydreaming and improving their functioning.

Method: For the purpose of this study, we constructed a computerized and online self-help intervention program lasting eight weeks, accompanied by the researchers by e-mail. We tested its effectiveness with a randomized controlled trial (RCT, Jadad & Enkin, 2008) in a double-blind setting. 557 subjects who met the inclusion criteria for the study were randomly assigned according to the subject's gender category, to create gender equality between the groups (Kim & Shin, 2014), to three study groups: the experimental group that underwent full intervention including mindfulness practice and self-monitoring, the comparison group that underwent partial intervention including mindfulness only, and waiting group that did not undergo any intervention in the study at all. This group’s subjects were asked to do as much as they can to reduce their daydreaming activity, while some of them participate in an online support group or other types of therapy, that are not part of this research design. Therefore, this group, the waiting group, was functioned as a “treatment as usual” group (TAU; Blais et al., 2013). 353 subjects completed the program and responded to post-measurement (dropout rate of 36.6%), of whom: 114 subjects in the experimental group, 125 subjects in the comparison group, and 114 subjects in the waiting group. Six months after the end of the program, an additional dropout rate of about 30% was observed at follow-up, so that the overall dropout rate in the study was 55%.
The study sample included: 76% female, 77% singles, and 69% with an academic education (bachelor's degree or higher). There were no differences in the frequencies of sex, marital status, and education level between the three study groups. We collected background information using three tools: a childhood trauma questionnaire (CTQ; Bernstein et al., 2003), a clinical history questionnaire, and a demographic details questionnaire. We measured the change according to five assessment tools: the 16-items Maladaptive Daydreaming Scale (MDS-16; Somer et al., 2016), the Daydreaming Frequency Scale (DDFS-12; Singer & Antrobus, 1970), the Daydreaming Work and Social Adjustment Scale (based on WSAS; Mundt et al., 2002), the Brief Symptom Inventory (BSI-53; Derogatis, 1993), and the Outcome Questionnaire (OQ-45.2; Lambert et al., 1996). Alongside these, through a Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), we measured the extent to which participants acquired the mindfulness skill, and the degree of self-monitoring through daily reporting of the time devoted to maladaptive daydreaming.

**Findings**: The findings of the study demonstrated that participants using the program significantly reduced maladaptive daydreaming, with a large effect size. Recovery rates were measured from 21% in the comparison group to 34% in the experimental group that reported monitoring as required. The improvement rates following participation in the program, by the reliable change index and cut-off point, ranged from 26% to 41% on average, with an advantage to the group that performed monitoring as required with improvement rates between 39% and 50%. In calculating less stringent indices, like for example a less severe cut-off point, an improvement was seen in about 80% - 90% of the subjects who participated in the program. Among the waiting group subjects, which continue their “treatment as usual”, there was almost no improvement at all (2%-4%) although all were members of online support groups and some participated in other treatments as well. Participation in the program was also associated with a reduction in symptoms of mental distress, anxiety and depression, and improvement in social functioning and interpersonal relationships. These findings were also maintained at follow-up, six months after the end of treatment. The experimental subgroup continued to improve and slightly reduce the indices of maladaptive daydreaming even more during this period. In addition, differential satisfaction was observed with a positive average, with those who were able to improve more as a result of the program being more satisfied with it. The study findings
showed that the intervention program was more helpful to subjects without a psychiatric diagnosis and without previous psychiatric hospitalizations. Childhood trauma and demographic variables did not explain the degree of change in any of the study variables, but age had a weak but significant negative correlation with the degree of change in indices for maladaptive daydreaming (young people improving more).

**Discussion:** This study demonstrated the effectiveness of the first intervention program constructed to treat maladaptive daydreaming. Mindfulness exercises seem to have helped to cope with this dissociative phenomenon by helping to focus attention on the “outside” while encouraging non-judgmental awareness. The addition of self-monitoring exercises helped participants become more aware of the maladaptive mental activity. The very act of self-documentation seems to have helped raise awareness of daydreaming triggers and possible alternative behaviors. This helps reduce this compulsive and addictive behavior. The findings of the study are encouraging, as they indicate effective treatments for maladaptive daydreaming, and constitute a basis for optimism for those suffering from this phenomenon. With both research and practical implications, this study contributes important findings to the body of existing research concerning the mechanism underlying maladaptive daydreaming, as well as a pioneering treatment protocol. Alongside these contributions, we believe that the study had several limitations, including: 1) in the absence of other maladaptive daydream treatment programs with which to compare, the pioneering nature of the research resulted in the program being built and evaluated by the research team; 2) an online sampling issue and 3) collection only of self-report data; 4) issues related to the manner of an online intervention. We offer several possible directions for further investigation, including: 1) examination of the program by an independent team of researchers, 2) further examination and evaluation of the program components through offline methods, and 3) examination and evaluation of additional treatment components to those found in the present study.