Self-Reported Medication and Recreational Drug Effectiveness in Maladaptive Daydreaming

Colin A. Ross, MD, Melina West, PhD,† and Eli Somer, PhD‡*

Abstract: Maladaptive daydreaming is a proposed disorder characterized by excessive daydreaming that causes subjective distress and/or interferes with function. The daydreaming involves complex inner worlds, characters, and plots that are understood by the person as fantasy, and the daydreaming may occupy many hours per day. The disorder has good reliability and validity in studies using a structured interview and a self-report measure developed for it. To date, no information on the responses of maladaptive daydreamers to either recreational or prescription drugs has been available. The authors obtained survey data from 202 participants who completed the Maladaptive Daydreaming Scale-16. The results indicated that this population has tried many different recreational drugs and has been prescribed many different psychotropic medications. Most of the participants reported little to no effect of drugs or medications on daydreaming, although tentative recommendations can be made in favor of prescribing antidepressants and against the use of marijuana for individuals with maladaptive daydreaming.

Key Words: Maladaptive daydreaming, psychotropic medications, recreational drugs

(*J Nerv Ment Dis* 2020;208: 77–80)

Maladaptive daydreaming (MD) is a proposed disorder characterized by excessive daydreaming that causes subjective distress and/or interferes with daily functioning. The daydreaming involves complex inner worlds with many characters and plots, and it often has an addictive or compulsive quality to it (Abu-Rayya et al., 2019a; Bigelsen et al., 2016; Schupak and Rosenthal, 2009; Somer, 2002, 2018; Somer et al., 2016b, 2016c, 2019). Maladaptive daydreamers may spend many hours per day absorbed in their inner worlds, which they know to be fantasies. MD is often accompanied by extensive comorbidity, including attention deficit disorder, obsessive compulsive disorder, and dissociative disorders, but not psychotic disorders (Somer et al., 2017a). There is a self-report measure, the Maladaptive Daydreaming Scale-16 (MDS-16), showing excellent psychometric properties not only in English (Somer et al., 2016a) but also in Hebrew (Jopp et al., 2018), Arabic (Abu-Rayya et al., 2019b), and Italian (Schimmenti et al., 2019), as well as a clinician-administered interview for MD, the Structured Clinical Interview for Maladaptive Daydreaming, that has demonstrated that MD can be diagnosed with good reliability (Somer et al., 2017a).

One case study of an individual with MD reported a decrease in MD symptoms with the use of the antidepressant fluvoxamine (Schupak and Rosenthal, 2009). However, other than this one case, there is no information available concerning the responses of individuals with MD to psychiatric medications or recreational drugs and alcohol. We conducted an online survey to gather information about the frequency with which maladaptive daydreamers have been prescribed psychiatric medications, the types of medications, and their perceived benefits and side effects. We gathered the same information about recreational drugs. Our aim was to gather preliminary information about which compounds might be the subject of future research and, possibly, of clinical trials.

*The Colin A. Ross Institute for Psychological Trauma, Richardson, Texas; †Department of Psychological Sciences, University of Connecticut, Storrs, Connecticut; and ‡School of Social Work, University of Haifa, Haifa, Israel.
Send reprint requests to Colin A. Ross, MD, The Colin A. Ross Institute for Psychological Trauma, 1701 Gateway #349, Richardson, TX 75080.
E-mail: rossinst@rossinst.com.

ISSN: 0022-3018/20/20801–0077
DOI: 10.1097/NMD.0000000000001091

METHODS

Participants

A total of 261 participants were recruited through advertisements posted on online forums, social media pages, and Web sites related to MD, inviting interested individuals with MD to partake in a study on the effects of prescribed and recreational drugs in MD. A total of 261 completed the online survey. Of these, 59 responses were excluded from the analyses due to reporting nonuse of medication or drugs (50), completing the form incorrectly (5), being younger than 18 years (3), and not being proficient in English (1). Thus, data from 202 participants were analyzed (142 females, 50 males, and 10 "other"; $M_{age} = 26.53$, SD = 9.55). Thirty-seven different countries were represented in the sample, with 47% of participants from North America, 25% from Europe/United Kingdom, and the remainder from Asian, Middle Eastern, African, and South Pacific countries. Participants had an average of 14.91 years of education (SD = 3.03), and 130 (64.4%) participants reported having been diagnosed with a mental health condition, with many reporting comorbid diagnoses. Mental health conditions reported included depression (65), anxiety (58), obsessive compulsive disorder (23), attention deficit hyperactivity disorder (19), posttraumatic stress disorder (14), borderline personality disorder (8), autism spectrum disorder (6), psychotic disorders (6), and dissociative disorders (4).

Assessment

Demographic Information

Participants indicated their age, sex, English proficiency, country of residence, years of education, and mental health status.

The 16-item Maladaptive Daydreaming Scale

Degree of MD was measured using the MDS-16 (Somer et al., 2016a, 2017b). The MDS-16 measures MD characteristics on four subscales: yearning (*e.g.*, "When you first wake up in the morning, how strong has your urge been to immediately start daydreaming"), kinesthesia (*e.g.*, "How often are your current daydreams accompanied by physical activity such as pacing, swinging or shaking your hands?"), impairment (*e.g.*, "When you know you have something important or challenging to pay attention to or finish, how difficult was it for you to stay on task and complete the goal without daydreaming?"), and music use (*e.g.*, "Some people notice that certain music can trigger their daydreaming. To what extent does music activate your daydreaming?"). Participants respond to each item using a scale ranging from 0% (never) to 100% (extremely frequent), with 10% increments, and overall scores are the average of each item. A cutoff score of 50 has been identified as the appropriate discrimination between MDers and non-MDers (Somer et al., 2017b), and the measure has shown high criterion-related validity ($r = 0.58$, $p = 0.01$), test-retest reliability ($r = 0.92$), and excellent sensitivity (95%) and high specificity (89%) levels (Somer et al., 2017b).

TABLE 1. Self-Reported Effect of Medications and Recreational Drugs on Symptoms of MD—Total Sample ($N = 202$)

Medication	Greatly Increased (2)	Slightly Increased (1)	No Effect (0)	Slightly Decreased (−1)	Greatly Decreased (−2)	%*	CS†
Antidepressants ($n = 159$)	7	14	89	42	7	30.8	−0.18
SSRIs ($n = 114$)	3	8	63	33	7	35.1	−0.29
Stimulants ($n = 21$)	4	2	8	6	1	33.3	0.10
Antipsychotics ($n = 42$)	1	3	23	11	4	35.7	−0.33
Benzodiazepines ($n = 17$)	1	4	7	4	1	29.4	0.00
Anticonvulsants ($n = 15$)	2	0	11	1	1	13.3	0.07
Alcohol ($n = 64$)	10	14	18	14	8	34.4	0.06
Cannabis ($n = 118$)	38	21	26	21	10	26.3	0.48
Hallucinogens ($n = 31$)	9	6	5	4	7	35.5	0.19

*Percentage reporting slightly or greatly decreased symptoms.

†Composite score; negative values indicate an average decrease in symptoms of MD.

Medication and Drugs Questionnaire

Participants were asked a series of questions regarding their use of psychiatric medications and drugs, including the age at which they first used psychiatric medications and drugs, whether they were currently using psychiatric medications, the last time they used a recreational drug, and how often they used recreational drugs. Participants were given the opportunity to list their current psychiatric medications (if applicable) and up to three psychiatric medications used in the past. In addition, participants were given the opportunity to list up to five recreational drugs that they had used. For each medication and drug listed, participants were asked how the substance influenced their daydreaming on a 5-point Likert-type scale (1 = greatly increased daydreaming, 2 = slightly increased daydreaming, 3 = no effect, 4 = slightly decreased daydreaming, and 5 = greatly decreased daydreaming). In addition, participants indicated the degree of side effects for each substance on a scale from 1 (none) to 5 (extreme). Finally, participants were given the opportunity to include any additional comments. We did not ask whether participants had used more than one substance at the same time, so no data were gathered in that regard.

RESULTS

MDS-16 scores ranged from 21.88 to 94.38 ($M = 65.60$, SD = 15.34); of the 202 participants, 166 (82.2%) scored above the recommended MDS-16 cutoff score of 50, which is used to make a probable diagnosis of MD disorder. A total of 46 different psychiatric medications were reported having been used, as well as 18 different recreational drugs, resulting in 564 individual ratings of all substances; 159 (78.7%) of the participants reported having ever used psychiatric medications. The participants' ages at first use of psychiatric medications ranged from 4 to 43 years ($M = 19.60$, SD = 7.02); 90 (44.6%) participants reported currently using psychiatric medications. The participants' ages at last use of psychiatric medications (for those not currently using) ranged from 12 to 55 years ($M = 23.48$, SD = 8.20).

Of the 202 participants, 143 (70.8%) reported having ever used recreational substances. The participants' ages at first use of recreational drugs ranged from 10 to 50 years ($M = 17.09$, SD = 4.46). The participants' ages at their most recent use of recreational drugs ranged from 17 to 58 years ($M = 25.90$, SD = 8.69). The participants reported a frequency of drug use in the past year of 22 not at all, 11 once, 38 less than monthly, 20 at least once monthly, 25 at least once a week, 18 most days, and 9 every day. Thus, 52 (36.4%) of the 143 participants who had used recreational drugs reported using them once a week or more throughout the past year.

The overall results for the full sample of 202 participants are shown in shown in Tables 1 and 2. Because they are widely used, selective serotonin reuptake inhibitor (SSRI) antidepressants are listed separately for comparison with antidepressants as a whole. The results for the 166 participants scoring above 50 on the MDS-16 are shown in Tables 3 and 4. There were no clinically striking differences in the patterns of drug

TABLE 2. Self-Reported Side Effects of Medications and Recreational Drugs in MD—Total Sample ($N = 202$)

Medication	None (0)	Mild (1)	Moderate (2)	Severe (3)	Extreme (4)	%*	CS†
Antidepressants ($n = 159$)	35	54	37	11	22	20.8	1.57
SSRIs ($n = 114$)	24	39	26	7	18	21.9	1.61
Stimulants ($n = 21$)	7	2	6	1	5	28.6	1.76
Antipsychotics ($n = 42$)	6	13	9	4	8	28.6	1.83
Benzodiazepines ($n = 17$)	3	6	4	3	1	23.5	1.56
Anticonvulsants ($n = 15$)	5	3	0	3	2	33.3	1.33
Alcohol ($n = 64$)	12	15	14	8	4	18.8	1.30
Cannabis ($n = 118$)	50	36	16	8	8	13.6	1.05
Hallucinogens ($n = 31$)	14	7	2	1	7	25.8	0.28

*Percentage reporting severe or extreme side effects.

†Composite score, average side effect score from 0 to 4.

TABLE 3. Self-Reported Effect of Medications and Recreational Drugs on Symptoms of MD—MDS Score Above 50 (n = 166)

Medication	Greatly Increased (2)	Slightly Increased (1)	No Effect (0)	Slightly Decreased (−1)	Greatly Decreased (−2)	%*	CS†
Antidepressants (n = 135)	6	12	76	36	5	30.4	−0.17
SSRIs (n = 97)	2	7	56	27	5	33.0	−0.27
Stimulants (n = 19)	4	2	7	5	1	31.6	0.16
Antipsychotics (n = 37)	1	3	21	8	4	32.4	−0.30
Benzodiazepines (n = 16)	1	4	6	4	1	31.3	0.00
Anticonvulsants (n = 14)	2	0	11	1	0	7.1	0.21
Alcohol (n = 53)	10	13	18	9	7	30.2	0.19
Cannabis (n = 97)	33	17	22	17	6	23.7	0.56
Hallucinogens (n = 31)	9	6	5	4	7	35.5	1.48

*Percentage reporting slightly or greatly decreased symptoms.

†Composite score; negative values indicate an average decrease in symptoms of MD.

and medication usage, the self-reported benefits, or the side effects in comparing the overall sample with those who scored above 50.

DISCUSSION

As can be seen from Tables 1 to 4, no medication or recreational drug was either extremely effective or extremely harmful in any consistent fashion. We included results for all 202 participants and for those scoring above 50 on the MDS-16 to provide information across the full range of MD severity. Most individuals reported having no effect, positive or negative, from any of the types of medications and recreational drugs, and most reported no or minimal side effects to all of them. A small number of individuals reported either greatly increased or greatly decreased symptoms, but because there was no placebo control group, it is unknown whether these results would differ significantly from placebo. Similarly, a small number of individuals reported extreme side effects, but the side effect patterns did not differ markedly across the different medications and recreational drugs.

In terms of future research, it appears from our results that cannabis may more frequently exacerbate MD than other compounds: 59 of 202 participants reported that cannabis caused their symptoms to be slightly or greatly increased versus 31 who said it made them slightly or greatly decreased. A common trend in the additional comments to the survey was that alcohol and drugs were often used within a social setting; any decrease in daydreaming due to recreational drugs could, in part, be due to the social setting rather than the drug itself. It is possible that the effects of marijuana are due to tetrahydrocannabinol (THC) rather than cannabidiol (CBD). Differential effects might be obtained from high THC–low CBD and high CBD–low THC strains of marijuana; THC is the main psychoactive compound in marijuana, whereas CBD is not psychoactive but may have multiple uses in a range of different disorders and diseases. On the basis of our preliminary data, individuals with MD should probably be cautioned against using marijuana.

In terms of possible beneficial compounds, 49 participants reported that antidepressants caused their symptoms to be slightly or greatly decreased versus 21 who said they made their symptoms slightly or greatly increased. In addition, 15 participants reported that antipsychotics slightly or greatly decreased symptoms, whereas only 4 reported that they increased symptoms. Our data and methodology are not definitive enough to make a strong recommendation, but it appears that if psychotropic medications are prescribed to individuals with MD, antidepressants would be a sensible first choice, especially given the frequently comorbid depression and obsessive compulsive disorder in MD (Somer et al., 2017a). SSRI antidepressants in particular appeared to be a somewhat effective subset of antidepressants; therefore, the more commonly used SSRIs may be a suitable choice as a first-line medication for MD.

One conclusion that could be drawn from our results is that psychotherapy and psychosocial interventions, similar to a recently published case study (Somer, 2018), may prove to be the primary treatment for MD. However, this conclusion would require controlled research studies on the

TABLE 4. Self-Reported Side Effects of Medications and Recreational Drugs in MD—MDS Score Above 50 (n = 166)

Medication	None (0)	Mild (1)	Moderate (2)	Severe (3)	Extreme (4)	%*	CS†
Antidepressants (n = 159)	29	43	33	11	19	18.9	1.62
SSRIs (n = 97)	21	29	25	7	15	22.7	1.65
Stimulants (n = 21)	5	2	6	1	5	28.6	1.95
Antipsychotics (n = 42)	5	12	8	4	8	28.6	1.95
Benzodiazepines (n = 17)	3	6	3	3	1	23.5	1.56
Anticonvulsants (n = 15)	4	3	0	3	2	33.3	1.43
Alcohol (n = 64)	12	15	14	8	4	18.8	1.57
Cannabis (n = 118)	39	29	15	6	8	10.2	1.12
Hallucinogens (n = 31)	14	7	2	1	7	25.8	

*Percentage reporting severe or extreme side effects.

†Composite score, average side effect score from 0 to 4.

responses of individuals with MD to such interventions, which have not been conducted to date. We have received many reports from individuals with MD who have not described any substantial benefit from standard mental health services, either medication or psychotherapy. Along with the present study, these anecdotal reports do not yield any useful guidelines, even preliminary ones, about choices of medication for individuals with MD. We have received a few reports, outside the present study, from individuals who experienced marked benefit from selective serotonin uptake inhibitors, but it is unknown how much of these responses can be attributed to the medication and how much to placebo responses.

LIMITATIONS

Our study has several limitations. The sample size of 202 participants was likely too small to yield information about the less frequently used medications and recreational drugs. All the information was collected online without face-to-face diagnostic interviews to confirm the MD. The sample may have been biased or unrepresentative because the participants were members of online communities for MD. In addition, no information was obtained from the prescribing physicians.

CONCLUSIONS

Our overall conclusion is that no strong recommendations should be made in favor of any type of medication for individuals with MD at this time and until more definitive studies have been conducted. Comorbid disorders should be treated with an available evidence-based medication and/or psychotherapy. However, it appears that tentative recommendations can be made in favor of prescribing antidepressants, particularly SSRIs, and against the use of marijuana for individuals with MD. It may prove to be the case that psychotherapy is a more effective treatment for MD than medications; we recommend that future research investigate this possibility using a therapy protocol specific for MD.

DISCLOSURE

The authors declare no conflict of interest.

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