Research Article

Maladaptive Daydreaming Is Associated With Intensified Psychosocial Problems Experienced by Female Survivors of Childhood Sexual Abuse

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Abstract

We measured maladaptive daydreaming (MD) and psychosocial indices among 194 participants, aged 18-56 years: 99 female survivors of childhood sexual abuse (CSA) and 95 control respondents with no reported history of sexual abuse. Our data show that survivors of CSA scored higher on MD compared to controls. Survivors of CSA with probable MD scored higher on psychological distress, social phobia, and social isolation compared to survivors of CSA without suspected MD, implying that MD might exacerbate the psychosocial problems linked with CSA. MD psychological screening of female survivors of CSA and the development of a treatment module for MD could improve the quality of clinical services provided to survivors.

Keywords

maladaptive daydreaming, trauma survivors, child sexual abuse, psychosocial problems

Introduction

Evidence suggests that daydreaming, an adaptive and prevalent mental activity (McMillan, Kaufman, & Singer, 2013), can also be persistent, difficult to control, time consuming, and dysfunctional, hence maladaptive (Bigelsen, Lehrfeld, Jopp, & Somer,

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2016). Maladaptive daydreaming (MD) is a compulsion for intense fanciful fantasy that can last for hours and be triggered or maintained either by redolent music or repetitive physical movement (e.g., pacing, rocking, or hand movement). A subgroup of respondents with MD (maladaptive daydreamers; MDers) reported that their fantasies involved plots featuring idealized versions of themselves. Others described immersive soap-opera-like plots involving the lives of substitute families or complex inner worlds featuring science fiction or medieval settings. These fantasies evolved over years with protagonists maturing suitably over time (Bigelsen & Schupak, 2011; Somer, 2002; Somer, Somer, & Jopp, 2016b).

While published data indicated that MD can be identified reliably using the Maladaptive Daydreaming Scale (MDS) and diagnosed using a structured interview developed for that purpose (Somer, Soffer-Dudek, Ross, & Halpern, 2017b), little is known about possible developmental trajectories of this form of compulsive fantasy. The seminal paper on MD described six patients in therapy for psychological injuries sustained during adverse childhood experiences (Somer, 2002) and suggested that MD, much like dissociative disorders, may have initially developed as a helpful coping strategy in imaginatively endowed children. However, a later report by Bigelsen and Schupak (2011) suggested that only 27% of self-identified MDers reported childhood trauma of any kind. A later study found no significant differences in reported traumatic experiences between self-identified MDers and controls (Bigelsen et al., 2016), suggesting that childhood trauma is not necessarily a prerequisite to developing MD.

Still, it is possible that sexual abuse trauma may increase the motivation of young victims capable of vivid fantasizing to escape their harsh realities into their imaginary worlds. MDers' descriptions of their experiences showed that when their predisposition for fantasy interacted with childhood adversities, the lure of imagined social worlds became ever more intense as they compensated for painful external circumstances (Somer, Somer, & Jopp, 2016a). Sexual abuse can be experienced as a specially harmful childhood adversity and may thus trigger MD. As in the case of peritraumatic dissociation that can develop into later psychopathology (e.g., Wabnitz, Gast, & Catani, 2013), the negative reinforcement associated with peritraumatic intense in-self absorption can go awry and transform into MD. Yet, to date, no knowledge exists on the impact of MD on survivors of child sexual abuse (CSA) and its relationship to ensuing stresses and psychosocial problems. The purpose of this study was to shed some light on the role MD plays in the lives of female survivors of CSA.

A plethora of research demonstrates the traumatic effects of CSA on female survivors as adults. More specifically, research has shown that female survivors of CSA have an elevated risk to suffer from a broad range of psychological distress including depression, anxiety, and other stress-related symptoms (e.g., Lindert et al., 2014; Maniglio, 2010; Trickett, Noll, & Putnam, 2011). Female survivors of CSA are also reported to suffer from psychosocial impairment such as distorted self-concept, relationship difficulties, and social dysfunction (e.g., Fergusson, Boden, & Horwood, 2008; Maniglio, 2009; Schaefer, Mundt, & Ahlers, 2012). Similarly, systematic reviews have established that a wide range of mental disorders were identified as the outcome of CSA, leading scholars to the supposition that CSA was a significant,

nonspecific risk factor in the development of a host of psychopathologies (e.g., Follette & Vechiu, 2017; Tyler, 2002).

The Four-Factor Traumagenic Model is a pertinent theoretical framework on the mental health outcome of CSA (Finkelhor & Browne, 1985). This model suggests that CSA traumatizes victims by altering their cognitive and emotional orientation to the world and by distorting their self-concept, as well as their affective and social capacities. It is likely, therefore, that female survivors of CSA will be not only sadder, less self-confident, and more socially apprehensive, but that they will report more MD than a comparison group. Furthermore, recent research showed that MD is different from normal daydreaming because MDers experience considerable psychological distress and psychosocial impairment (Bigelsen & Schupak, 2011; Somer, Soffer-Dudek, & Ross, 2017a). Therefore, MD experiences among female survivors of CSA may worsen their psychological state. In this study, we tested the following hypotheses:

> **Hypothesis 1 (H1):** Female survivors of CSA will report more MD and more distress associated with social anxiety and isolation, depression, and lowered self-esteem compared to individuals from a community control group with no known history of childhood sexual abuse.
>
> **Hypothesis 2 (H2):** MD will be associated with exacerbated social anxiety and isolation, distress, depression, and lowered self-esteem among female survivors of CSA.

Method

Participants

A total of 194 Israeli Arab females composed of 99 survivors of CSA between the ages of 7 and 11 years and 95 culturally matched community respondents with no reported history of sexual abuse (control group) responded to our self-report questionnaire. Most participants in both the study and control groups were Muslim, 87% and 75%, respectively; the rest being Christian, Druze, or other. About equal numbers in both groups were married: 43% of female survivors of CSA and 44.1% of their controls. There were more unemployed-status participants among female survivors of CSA than among their counterparts, 47.4% and 31.1%, respectively ($\chi^2_{(2)} = 10.67$, $p = .004$), with the rest being either in full- or part-time employment in both groups. The age of the participants in both groups ranged between 18 and 56 years with a very close mean age: 31.72 ($SD = 9.48$) years for female survivors of CSA and 30.62 ($SD = 10.07$) years for their controls. Female survivors of CSA had relatively fewer years of education than their controls, $M = 11.4$, $SD = 2.23$; $M = 13.02$, $SD = 3.21$, respectively; $t(186) = 3.98$, $p < .001$.

Study Procedure

Ethics approval to conduct the study was obtained from the Human Ethics Committee of the University of Haifa Faculty of Social Welfare & Health Sciences. Female survivors of

CSA were recruited through specialized centers for the treatment of survivors of childhood sexual abuse serving the Israeli Arab society as part of the state welfare services. The participation of female survivors of CSA in the study was completely voluntary. We took measures to avoid any implicit pressure for participation. For example, the women voluntarily responded to calls for participation and were never personally invited to take part in the study by their caretakers. Delivery of the study questionnaires was coordinated and managed by the centers, without any exposure of the respondents to the research team. In all cases, female survivors of CSA completed the questionnaires on their own and assistance was provided when necessary by the centers' staff members who were trained for this task by the third author. To attain a comparable control sample, participant survivors were asked to recruit someone with similar demographic characteristics (e.g., age, religion, education, employment, marital status) and no known history of sexual abuse. Suggested control group participants were contacted and their history verified by the third author who explicitly confirmed none had endured CSA. Social welfare service offices were also approached to provide further potential participants who met targeted demographic characteristics. Questionnaires were handed to controls by the third author, who was available for any requested assistance during the completion process. For all study and control participants, it took between 35 and 45 min to complete the research questionnaire. The forms were administered to all participants in their native language (Arabic). Translation from the source language to Arabic was initially made by a professional bilingual translator. This was followed by a translation quality and accuracy assurance conducted by two native Arab members of our research team, competent in both the source and target languages. Participants were assured of full confidentiality by concealment of their identities and that of the treatment centers and welfare agencies involved.

Measures

Female survivors of CSA and their control participants completed self-report questionnaires, which included the following measures.

Demographics. Information was sought on participants' age, religion (Muslim, Christian, Druze, and other), marital status (married, single, and other), number of years of education, and employment status (full-time employment, part-time employment, and unemployed).

MD. We employed two MD measurements: a subjective self-assessment we termed the *criterion question* and the other was a validated measure, the MDS.

Criterion question. The participants answered a criterion question that meant to classify respondents as meeting or not meeting the criteria for MD (Somer et al., 2017b). The *criterion question* was worded as follows:

> *Daydreaming is a universal human phenomenon that a majority of individuals engage in on a daily basis. For the purposes of the study, we define daydreaming as fantastical*

mental images and visual stories/narratives that are not necessarily part of your life. Therefore, we are not referring to such acts such as reminiscing over past events, planning for future activities such as a meeting with your boss, or thinking about your mental "to do" list. We also do not include pure sexual fantasies in this study. Examples of daydreams that can be included would be hanging out with a favorite celebrity, winning the Nobel Prize, telling off your boss after winning the lottery, or having an affair with an attractive co-worker who isn't the slightest bit interested in you, living in a parallel fantasy world, engaging in heroic or rescue actions, speaking with historical figures, etc. Any daydreams involving fictional characters or plots can also be included. MD is defined as extensive (in terms of duration and/or frequency) daydreaming that can be experienced as addictive, replaces human interaction and/or interferes with academic, interpersonal or vocational functioning and/or creates emotional distress (for example: guilt, shame, frustration, sadness, anxiety). Does your daydreaming fit this description? (a) no or (b) yes. (Somer et al., 2017b; pp. 180-181)

The MDS. Somer et al.'s (2017b) 16-item MDS (MDS-16) was used to gauge participants' self-reported degree of MD experiences: The extent of immersion in daydreaming, the amount of yearning to engage in daydreaming, and the maladaptation associated with it. Typical MD questions include: "Some people experience difficulties in controlling or limiting their daydreaming. How difficult has it been for you to keep your daydreaming under control?"; "If you go through a period of time when you are not able to daydream as much as usual due to real world obligations, how distressed are you by your inability to find time to daydream?"; and "Some people feel distressed or concerned about the amount of time they spend daydreaming. How distressed do you currently feel about the amount of time you spend daydreaming?" Respondents rated their answers on an 11-point Likert-type scale presented as percentages anchored at 0% on the left and 100% on the right, to show how often they have this experience. The MDS demonstrated excellent reliability in the preset study, $\alpha = .96$ and $.94$, for victims of sexual abuse and their controls, respectively.

Social isolation. Participants completed Jong-Gierveld and Van Tilburg's (2006) 6-item Loneliness Scale, such as "I experience a general sense of emptiness." Participants rated their answers on a 6-point Likert-type scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Cronbach's alpha reliability of the scale in the present study was .75 for female victims of sexual abuse and .68 for their control participants.

Social phobia. Social phobia was assessed employing Conner et al.'s (2000) 17-item Social Phobia Inventory (SPIN), such as "I am bothered by blushing in front of people." The SPIN measures respondents' degree of social phobic symptoms they experienced over the past week across three domains (fear, avoidance, and physiological arousal). Participants were asked to respond by using a 6-point Likert-type scale from 1 (*not at all*) to 6 (*extremely*). The SPIN had excellent reliability in the present study, $\alpha = .96$ and $.91$, for the study and control groups, respectively.

Self-esteem. Self-esteem was gauged using Rosenberg's (1965) 10-item self-esteem scale. It comprised statements that relate to how participants view themselves, such as "I am able to do things as well as most other people." The participants were asked to rate these statements on a 6-point Likert-type scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The scale had excellent reliability in the present study, α = .90 and .87, for the study and control groups, respectively.

Quality of social relations. Participants' quality of social relations was measured using Ryff's (1999) 9-item scale which includes items like "I enjoy personal and mutual conversations with family members or friends." Participants were asked to respond by using a 6-point Likert-type scale from 1 (*strongly disagree*) to 6 (*strongly agree*). Cronbach's alpha reliability of this measure in the present research was .88 for female victims of sexual abuse and .85 for their controls.

Psychological distress. We employed a 15-item scale assessing current depression, anxiety, and psychosomatic symptoms as developed by Berry, Phinney, Sam, and Vedder (2006). The scale comprised several existing measures and included items such as "I feel unhappy and sad" (measuring depression), "I feel restless" (assessing anxiety), and "I feel dizzy and faint" (for psychosomatic symptoms). Participants were asked to rate these statements on a 6-point Likert-type scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The measure had excellent reliability in the present study, α = .96 and .91, for the study and control groups, respectively.

Results

H1: Differences Between Female Survivors of CSA and Their Controls

Analysis of covariance (ANCOVA) was used to test the MDS-16 score difference between female survivors of CSA and controls, positing CSA versus control as the independent factor and MD as the dependent factor while controlling for demographic variables (age, years of education, religion—Muslim vs. non-Muslim, job status— employed vs. unemployed, marital status—married vs. unmarried). As hypothesized, the analyses indicated that reported MD was higher among female survivors of CSA compared to controls, $M = 39.09$, $SD = 22.68$; $M = 29.67$, $SD = 20.38$, respectively; $F(1, 177) = 5.21$, $p = .024$; $d = .44$. In addition, in response to our MD criterion question, 27% of the female survivors of CSA confirmed that they met the description of MD, compared to 11% in the control group, $\chi^2_{(1)} = 7.68$, $p = .006$; odds ratio (OR) = 3.08. History of sexual abuse was associated with about three times higher odds for self-identified MD. A further analysis revealed that 33% of female survivors of CSA received a mean MDS-16 score that exceeded 50, the suggested cut-off score that best differentiated MDers from non-MDers (Somer et al., 2017b), compared to 19% in the control group, $\chi^2_{(1)} = 4.62$, $p = .03$; OR = 2.05. Based on this more rigid analysis, female survivors of CSA had about two times higher odds for MD, compared to their controls.

Table 1. Intergroup Differences in Psychosocial Indicators.

	Sexual Abuse Victims (n = 99)		Controls (n = 95)		
	M	SD	M	SD	Cohen's d
Self-esteem	3.65	1.03	4.87	0.77	1.34
Social phobia	3.55	1.23	2.18	0.78	1.33
Social relations	3.25	0.95	4.70	0.82	1.63
Social isolation	4.16	1.0	2.63	0.88	1.62
Psychological distress	4.26	1.19	2.83	1.04	1.28

Multivariate analysis of covariance (MANCOVA) analyses positing group CSA versus control as the independent factor and psychosocial variables as the dependent factor while controlling for the aforementioned demographic variables revealed a statistically significant difference between the two groups, $F(1, 172) = 23.32$, $\lambda = .59$, $p < .001$. As indicated by partial η^2, group affiliation explained a bit more than 40% of the variation in the dependent variables, after demographics were partialled out. Subsequent post hoc analyses of covariance (ANCOVAs), adjusting for multiple comparisons, revealed a statistically significant difference between the two groups in each dependent variable. Compared to controls, female survivors of CSA scored lower on self-esteem, $F(1, 177) = 58.99$, $p < .001$, and quality of social relations, $F(1, 177) = 94.67$, $p < .001$, and scored higher on social phobia, $F(1, 177) = 61.52$, $p < .001$, social isolation, $F(1, 177) = 91.58$, $p < .001$, depression, anxiety, and psychological distress, $F(1, 177) = 55.25$, $p < .001$. Thus, H1 is also confirmed for psychosocial variables. Refer to Table 1 for means and standard deviations. As shown in Table 1, all effect sizes of the differences were large (Cohen, 1988).

H2: MD and Psychosocial Indicators Among Female Survivors of CSA

The same MANCOVA and post hoc ANCOVA analyses reported in testing H1 were also repeated here with the probable diagnosis of MD as the independent factor (Probable MD = 1: ≥50, non-MD = 2: <50; Somer et al., 2017b) and psychosocial variables as the dependent factor. The analyses revealed a statistically significant difference between the two MD-level groups, $F(1, 91) = 3.06$, $\lambda = .85$, $p = .014$, with MD level explaining 11% of the variation in the dependent variables controlling for demographics, as partial η^2 implied. Post hoc ANCOVAs indicated that female survivors of CSA with probable MD ($M \geq 50$) scored higher on social phobia, $F(1, 91) = 4.14$, $p = .045$, social isolation, $F(1, 91) = 5.78$, $p = .019$, and depression, anxiety, and psychological distress, $F(1, 91) = 6.93$, $p = .01$, compared to female survivors of CSA with no suspected MD ($M < 50$). There was no statistically significant difference between the two groups in self-esteem and quality of social relations. Thus, H2 is partially confirmed, depending on the nature of the examined psychosocial variable.

Table 2. Psychosocial Indicators' Differences by MD Level in the Sexual Abuse Sample.

	MD $\geq$50 (n = 33)		MD $<$ 50 (n = 66)		
	M	SD	M	SD	Cohen's d
Self-esteem	3.38	0.97	3.79	1.04	.40
Social phobia	3.97	1.31	3.33	1.15	.52
Social relations	2.93	0.92	3.41	0.93	.52
Social isolation	4.55	0.95	3.97	0.97	.60
Psychological distress	4.75	1.18	4.01	1.12	.64

Note. MD = maladaptive daydreaming.

Refer to Table 2 for means and standard deviations. As Table 2 shows, all effect sizes of the significant differences were moderate (Cohen, 1988). Close to moderate or moderate effect sizes emerged for non-significant differences (i.e., self-esteem, social relations) between female survivors of CSA with probable MD versus female survivors of CSA with no MD.

Discussion

In line with our first hypothesis and in support of existing knowledge on the long-term psychosocial outcomes of female survivors of CSA (e.g., Follette & Vechiu, 2017), our study shows that in comparison to a sample of females without any known history of sexual abuse, female survivors of CSA report lower levels of self-esteem and quality of social relations and higher levels of social phobia, social isolation, depression, anxiety, and psychological distress. The magnitude of all of these inter-group differences was unsurprisingly large. Although not within the main objectives of the present study, our findings also support previous research (e.g., Kaye-Tzadok & Davidson-Arad, 2017) by showing that compared to a control group, unemployment among female survivors of CSA tended to be higher. The unemployment status of female survivors of CSA may conceivably carry negative psychological and social implications.

However, this study is the first to show that female survivors of CSA also experience MD symptoms to a higher degree than controls. Using the MDS-16 cut-off score (Somer et al., 2017b), it emerged that 33% of the female survivors of CSA group could be classified as MDers, compared to 19% of the control group. The evident connection here between childhood sexual abuse and MD tendency supports the existing scarce research (e.g., Bigelsen & Schupak, 2011) and clinical observations (e.g., Somer, 2002) suggesting that childhood trauma increases the likelihood of MD. While the developmental trajectory of trauma MD was beyond the scope of this study, it is plausible to hypothesize that MD can develop under injurious childhood circumstances from which an escape into fantasy might be sought. This theorem gains support from previous accounts by individuals suffering from MD (Somer, 2002; Somer et al., 2016a).

The study of the link between childhood trauma and MD within specific clinical groups, as in the current inquiry, has the potential to illuminate effects of childhood adversities on the development of MD. We suggest that null differences in reported traumatic childhood experiences between MDers and controls (e.g., Bigelsen et al., 2016) may be related to insufficient presence of certain childhood adversities among sampled participants, as well as recall biases. Such methodological shortcomings can be handled in research designs targeting specific populations, as the present study demonstrates. Future research is advised to continue the investigation of MD in particular clinical groups with a verified history of their condition.

It should be noted that by no means do we intend to claim an MD prevalence of 33% among female survivors of CSA. While we identified probable MD using the highly reliable MDS-16 (Somer et al., 2017b), a confirmed diagnosis of MD requires reliance on the Structured Clinical Interview for MD (SCIMD; Somer et al., 2017b), which, due to logistic limitations, was not part of the present inquiry. Employment of a structured psychodiagnostic interview could have also delineated MD from other clinical conditions, thus enabling a better estimation of the strength of the CSA-MD connection. Similarly, the reported prevalence of probable MD among 19% of our control participants cannot reflect a precise estimate of MD prevalence in the general population. This finding is not only due to limited sample size and the omission of the SCIMD. Our reservation is rather based on the manner of selection of the control group. Control participants were selected by the female participants with CSA and by social welfare service offices. While this process helped achieve a reasonable between-group match of demographic variables, a range of unverified clinical conditions among controls, possibly associated with the attained similarity between the samples, may have also boosted the group's MD level. In fact, we suspect that we would have found a larger intergroup difference in MD between female survivors of CSA and controls had we recruited control participants from the wider community.

The study findings supported our second hypothesis showing that female survivors of CSA with probable MD (i.e., scoring ≥ 50 on the MDS-16) reported higher degrees of social phobia, social isolation, depression, anxiety, and psychological distress, compared to survivors scoring lower than the cut-off point on the MDS-16. This finding converges with existing propositions of the interconnection between MD and psychosocial impairment (e.g., Bigelsen & Schupak, 2011; Somer et al., 2017a). Our findings suggest that the propensity for MD is associated with exacerbated psychosocial problems among female survivors of CSA. While this preliminary finding may imply a developmental trajectory from CSA, through MD, to psychosocial problems, the cross-sectional nature of the present study does not permit such definite conclusions. Previous research indicated that certain dysfunctions, such as social isolation, may both precede and succeed MD (e.g., Somer et al., 2017a). A longitudinal research design is better suited to identifying developmental pathways to MD and in differentiating between psychosocial problems preceding MD and those developing as a result of it. Future research on these connections among female survivors of CSA may need to pursue this investigative direction.

The prevalence of dissociative disorders among female survivors of CSA and psychiatric outpatients was assessed as 88% (Anderson, Yasenik, & Ross, 1993) and 29% (Foote, Smolin, Kaplan, Legatt, & Lipschitz, 2006). The current study suggests that one-third of the sampled female survivors of CSA participants might suffer from MD, a pathological form of dissociative absorption. Daydreaming is a highly common natural human activity (Singer, 1966). It is conceivable that some children are endowed with an innate capacity for vivid fantasy (Somer et al., 2017a) and that this ability may be particularly gratifying in attenuating the emotional burden of CSA. The interaction of CSA and the negatively reinforcing outcome of immersive daydreaming (possibly first employed as an effective mode of coping) could have increased the yearning for recompensing fantasies, hence, setting the ground for the development of MD, an addictive form of daydreaming (Somer & Herscu, 2017). MD, in turn, may aggravate psychosocial problems associated with CSA because it competes with attention resources needed for adequate functioning in the real world. It cannot be ruled out that the severity or frequency of sexual abuse may also be significant factors affecting the specific CSA-MD trajectory, as opposed to the CSA-Complex post-traumatic stress disorder (PTSD) or the CSA-Dissociative identity disorder pathway. Furthermore, the interaction between survivors' capacity (trait) for immersive daydreaming and the severity or frequency of sexual abuse might also play a vital role in the CSA-MD relationship. Again, future investigation of these ideas among female survivors of CSA is necessary to clarify such unresolved questions.

At the practical level, the now documented presence of MD among female survivors of CSA and its potential psychosocial implications should probably flag MD as a distinctive clinical feature to be added to the routine assessment of female survivors of CSA. Furthermore, because preliminary evidence suggests that MD can be treated effectively (Somer, 2018), treatment agencies may also consider the adoption of psychotherapy principles that might be helpful in ameliorating MD behavior.

A few study caveats are worth noting. First, despite our deployment of valid and reliable MD and psychosocial measures, the data were collected on a small sample of Israeli Arab female survivors of CSA, limiting the generalizability of our findings. Study replication across a range of cultures and among male survivors of CSA is warranted. Second, while we intended to assess MD both with the criterion question and the MDS-16, we cannot rule out the possibility that the administration of the MD-criterion question before the MDS-16 may have impacted respondents' answers to the MDS-16. Having already classified themselves as MDers, respondents' initial self-definition may have led some of them to score higher on the MDS-16. While this is likely to have equally happened in both the CSA and controls groups (thus less affecting actual intergroup differences), the administration of the MDS-16 before or without the criterion question could have generated a more accurate estimation of MD in both groups. Third, the administration of the MDS-16 as the primary MD measure in the present study limits its conclusions due to potential bias associated with self-reporting. Future studies aiming for the achievement of a more valid assessment of MD should consider the administration of the MDS-16 in conjunction with the SCIMD. Finally, we were not able to account for the severity and type of CSA in the

analyses due to lack of information on these variables. Future research should address this limitation.

Author Contributions

The first two authors equally contributed to all sections of the article. The third author assisted in fieldwork, data gathering, and coding.

Declaration of Conflicting Interests

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