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The role of social anxiety and emotional self-Efficacy in the link between childhood trauma and maladaptive daydreaming among university students: a moderated mediation model

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Abstract

This study investigates the relationship between childhood trauma and maladaptive daydreaming, exploring the mediating role of social anxiety and the moderating influence of emotional self-efficacy. While previous research has established links between childhood adversity and maladaptive daydreaming, the mechanisms underlying this association remain unclear. Using a cross-sectional design, data were collected from 541 university students in Turkey (74% female; M = 25.6). Participants completed self-report measures assessing childhood trauma, social anxiety, maladaptive daydreaming, and emotional self-efficacy. Findings revealed that social anxiety significantly mediated the relationship between childhood trauma and maladaptive daydreaming. Additionally, emotional self-efficacy moderated the impact of childhood trauma on social anxiety, with higher emotional self-efficacy amplifying this relationship. These results suggest that individuals with greater emotional self-efficacy may experience heightened social anxiety following childhood trauma, which in turn increases their likelihood of engaging in maladaptive daydreaming. This study contributes to the understanding of maladaptive daydreaming as a coping mechanism for trauma-related social difficulties and highlights the importance of targeted interventions that address both social anxiety and emotion regulation.

Keywords Childhood trauma · Emotional self-efficacy · Maladaptive daydreaming · Moderated mediation · Social anxiety

Introduction

Maladaptive daydreaming (MD) is an immersive and often uncontrollable fantasy activity that can replace real-world interactions and negatively impact an individual's daily functioning (Soffer-Dudek & Somer, 2022). Unlike ordinary daydreaming, MD involves elaborate narratives with detailed characters and plots, making it a complex psychological phenomenon (Bigelsen et al., 2016). Individuals experiencing MD often find themselves deeply absorbed in their fantasies, detaching from reality and struggling to distinguish between the imagined and the real world (Pietkiewicz et al., 2018; Soffer-Dudek & Somer, 2018). Many describe their daydreaming as compulsive and difficult to regulate (Bigelsen et al., 2016). Studies indicate that those with MD often discover their ability to engage in immersive daydreaming during childhood, facilitated by repetitive behaviors such as pacing and listening to music (Somer et al., 2016a). In many cases, MD emerges as a coping

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mechanism for social and emotional challenges, particularly in individuals who have experienced adverse childhood events (Somer et al., 2016a).

Research has consistently demonstrated a strong link between MD and psychopathology. Studies show that MD frequently coexists with various mental health conditions, including attention deficit hyperactivity disorder (76.9%), anxiety disorders (71.8%), depression (56.4%), and obsessive-compulsive disorder (53.9%) (Somer et al., 2017). Additionally, MD is associated with adverse childhood experiences, particularly physical and sexual abuse (Abu-Rayya et al., 2019; Soffer-Dudek & Somer, 2018). While some studies have suggested that MD may originate as a coping mechanism developed by imaginative children under psychological distress (Somer, 2002), its long-term impact tends to be maladaptive. Survivors of childhood trauma often report using immersive daydreaming to construct soothing inner worlds as a means of psychological escape and compensation (Somer et al., 2016b). However, MD has also been linked to increased social phobia and psychological distress later in life (Abu-Rayya et al., 2019), indicating that what may begin as an adaptive response can ultimately contribute to psychosocial impairment. However, a large-scale study found no significant differences in reported trauma histories between maladaptive daydreamers and non-MDers, highlighting the need to examine additional psychological mechanisms underlying this relationship (Bigelsen et al., 2016).

Early traumatic experiences significantly shape psychological development, often disrupting attachment relationships (Perlman & Doyle, 2012) and increasing the risk of anxiety and depression (Tobin, 2016). Intense and persistent childhood trauma may also contribute to dissociative symptoms (Haferkamp et al., 2015). Ferrante et al. (2020) emphasized that while childhood emotional trauma is not a prerequisite for MD, dissociation can serve as a coping strategy, ultimately fostering the condition. Furthermore, Somer et al. (2020) found that MD is positively correlated with experiences of physical abuse, emotional abuse, and neglect. Similarly, Abu-Rayya et al. (2020) reported that survivors of childhood sexual abuse who exhibited probable MD symptoms also experienced higher psychological distress, social phobia, and social isolation. These findings suggest that while MD may initially function as a defense mechanism against emotional pain, over time, it can contribute to exacerbated psychosocial difficulties (Abu-Rayya et al., 2019).

Despite the well-documented relationship between childhood trauma and MD, relatively few studies have explored mediating variables in this association. Prior research has examined perceived stress (Constantine & Haque, 2024), dissociation and shame (Ferrante et al., 2022), absorption and fantasy dependence (Somer & Herscu, 2017), and defense mechanisms (Musetti et al., 2023). However, the potential role of social anxiety as a mediator remains largely unexplored. Additionally, no studies have investigated factors that may moderate the link between childhood trauma and MD. To address these gaps, the present study proposes a moderated mediation model in which social anxiety mediates the relationship between childhood trauma and MD, while emotional self-efficacy moderates both the direct and indirect pathways of this relationship.

Social anxiety as a mediator

Social anxiety may serve as a critical mechanism linking childhood trauma to MD. Individuals with social anxiety often develop negative self-perceptions and heightened sensitivity to how they are perceived by others, fearing negative evaluation (Rapee & Heimberg, 1997). As the perceived gap between their self-image and societal expectations widens, their social anxiety intensifies (Heimberg et al., 2010). Research suggests that individuals with a history of childhood trauma are more likely to experience social anxiety due to low self-worth (Lamis et al., 2014), diminished self-esteem (Malik & Kaiser, 2016), and distorted beliefs about themselves and others (Brumariu & Kerns, 2008).

There is also evidence suggesting that social anxiety plays a key role in MD. Individuals with heightened social anxiety may engage in MD as a form of avoidance, using fantasy to escape situations that provoke anxiety (Ross et al., 2020). Studies indicate that this avoidance mechanism often begins in childhood, particularly in response to traumatic and socially distressing environments (Somer, 2002; Somer et al., 2016a). Additionally, research shows that individuals with greater social isolation tend to experience more severe MD, supporting the idea that MD serves as a compensatory strategy for emotional distress (Bigelsen & Schupak, 2011; Somer et al., 2016a). Taken together, these findings suggest that social anxiety may mediate the relationship between childhood trauma and MD, with individuals who experience early-life trauma developing social anxiety, which in turn fosters MD as an escape mechanism.

Emotional self-sfficacy as a moderator

Although social anxiety may mediate the relationship between childhood trauma and MD, not all trauma survivors experience the same levels of social anxiety and MD. Emotional self-efficacy may play a role in moderating the negative impact of childhood trauma, potentially acting as a protective factor. In the context of childhood trauma, emotional self-efficacy may function as a protective factor by buffering the negative psychological consequences through enhanced emotional regulation capacity and a stronger sense of internal control (Çutuk & Aydoğan, 2019). Emotional self-efficacy refers to an individual's confidence in their ability to manage emotions effectively,

particularly in stressful or challenging situations (Southam-Gerow, 2014). It encompasses the capacity to recognize, regulate, and express emotions constructively (Wallace & Alden, 1997). Individuals with high emotional self-efficacy tend to demonstrate greater resilience, lower psychological vulnerability (Çutuk & Aydoğan, 2019), and reduced anxiety and rejection sensitivity (Wu et al., 2022).

According to self-efficacy theory (Bandura & Wessels, 1997; Caprara et al., 2008a, b), emotional self-efficacy consists of two dimensions: the ability to manage negative emotions and the ability to express positive emotions. The former involves confidence in regulating distressing emotions and preventing negative outcomes. Research indicates that individuals with high emotional self-efficacy are better equipped to cope with adversity and maintain emotional stability (Muris, 2002). In contrast, those with low emotional self-efficacy struggle with emotion regulation, making them more susceptible to social anxiety and MD. This cycle can become self-reinforcing, as emotional distress triggers prolonged daydreaming, which in turn hinders the development of emotion regulation skills (West & Somer, 2020).

Emotional self-efficacy, conceptualized as individuals' perceived ability to understand, express, and regulate their emotions (Petrides & Furnham, 2001, 2003; Muris, 2002), has been consistently associated with better emotional functioning and psychological well-being. Research suggests that individuals with high emotional self-efficacy are more likely to demonstrate adaptive coping strategies, greater emotional stability, and increased resilience in the face of adversity (Armstrong et al., 2011; Liu et al., 2020). These findings provide theoretical and empirical support for examining emotional self-efficacy as a moderating variable in the relationship between childhood trauma and maladaptive outcomes.

From a theoretical perspective, emotional self-efficacy may moderate the relationship between childhood trauma and social anxiety by influencing how individuals interpret and regulate the emotional consequences of trauma. According to Bandura's self-efficacy theory, individuals with higher perceived emotional self-efficacy tend to appraise stressors as more manageable, which may reduce their vulnerability to anxiety-related responses (Bandura & Wessels, 1997). Furthermore, in non-clinical samples such as university students, variability in emotional competencies can be particularly pronounced, making emotional self-efficacy a relevant moderator to examine. Existing research also highlights that emotional self-efficacy significantly contributes to individual differences in stress reactivity and emotion-focused coping strategies (Caprara et al., 2008a; Muris, 2002). Therefore, investigating its moderating role provides valuable insight into childhood trauma survivors may be more susceptible to social anxiety and, consequently, maladaptive daydreaming.

The present study

Building on the literature, the present study aims to examine the interplay between childhood trauma, social anxiety, and MD through a moderated mediation framework (see Fig. 1). We hypothesize that:

1. Social anxiety mediates the relationship between childhood trauma and MD.
2. Emotional self-efficacy moderates both the direct and indirect effects of childhood trauma on MD, influencing the strength of the mediation pathway.

By testing these hypotheses, this study seeks to contribute to a deeper understanding of the mechanisms underlying MD and its association with childhood trauma, with the ultimate goal of identifying intervention strategies that may mitigate its negative effects.

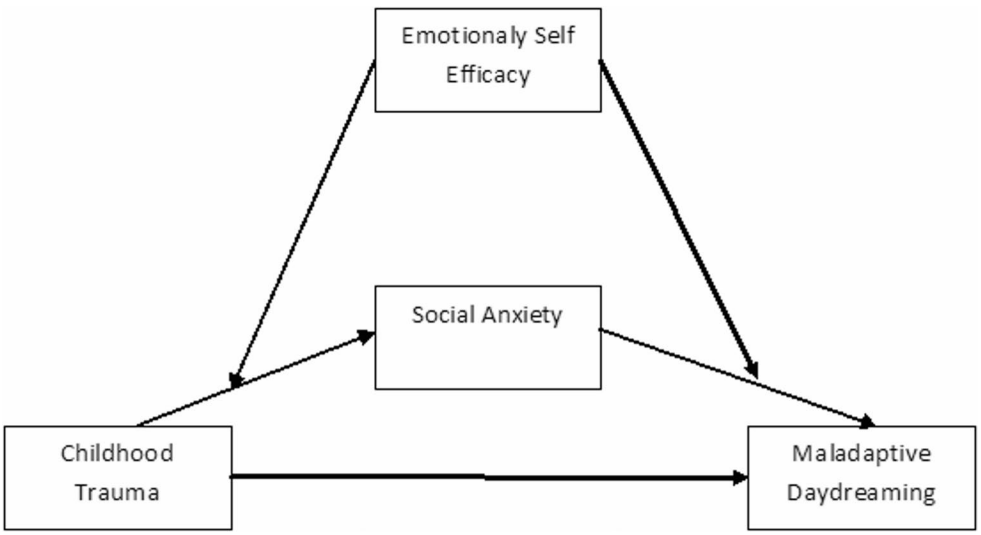

Fig. 1 The proposed moderated mediation model

Method

Participants and procedure

Between October and December 2024, a total of 541 university students from Turkey participated in this study. Informed consent was obtained before data collection, ensuring that participants were aware of their right to withdraw at any time. Confidentiality of responses was strictly maintained. Participants completed the questionnaires in approximately 15 min. A total of 541 valid responses were collected. The sample consisted of 400 women and 141 men, with a mean age of 25.60 years (SD=5.70) and an age range of 18 to 36 years. There were no missing data in the dataset collected for this study. This completeness was likely due to the voluntary nature of participation, which may have encouraged more careful and attentive responses from participants. Students were recruited from three different universities and were enrolled in three faculties: the Faculty of Education, the Faculty of Science and Literature, and the Faculty of Human and Community Sciences. To prevent individuals outside the target population from participating, data collection was conducted during class hours rather than via a publicly shared online link. By inviting students to participate in person during scheduled class sessions, we ensured that only currently enrolled undergraduate students from the targeted study group. Data were collected from students enrolled at three different universities. Participation in the study was entirely voluntary, and informed consent was obtained from all participants prior to data collection. Students who declined to participate or who withdrew at any stage were excluded from the final dataset. The researcher visited classrooms during scheduled class sessions, provided information about the study, and distributed the participation link to students. At least one author remained present throughout the data collection period to address any potential questions from participants. No additional inclusion or exclusion criteria (e.g., psychiatric diagnosis, therapy status) were imposed, as the study aimed to examine a general population of university students.

Measurements

Sociodemographic details

In the first part of the data collection phase, sociodemographic information was included. Information such as the participants' age, gender, and the department they studied were questioned.

Maladaptive daydreaming scale

Maladaptive daydreaming Scale (MDS) was used to measure the level of maladaptive daydreaming. The MDS is a self-report scale consisting of 16 items rated in 10% increments from 0% (never) to 100% (always/extremely often). The average of the 16 items gives the total score. The Cronbach alpha value of the scale developed by Somer et al. (2016b) was determined as 0.95. The validity and reliability study of the Turkish version of the scale was conducted by Metin et al. (2022) and the Cronbach alpha value was determined as 0.89. The higher the scores obtained from the scale, the higher the level of maladaptive daydreaming. In this study, Cronbach's alpha was 0.90. According to the relevant literature, Probable maladaptive daydreaming threshold score is 40 (Soffer-Dudek, 2021) and the average score for probable maladaptive daydreamers in a study is 66.91 (Somer et al., 2021).

Childhood trauma questionnaire

Childhood Trauma Questionnaire was developed by Bernstein et al. (1994). The Turkish validity and reliability study of the scale was conducted by Şar et al. (2012). The Turkish form of the scale consists of 28 items. Participants rate their childhood traumatic experiences on a 5-point Likert-type scale (from "never" to "very often"). The scale has 5 subdimensions: physical, emotional, sexual abuse and emotional and physical neglect. All of the sub-dimensions give a total score. In the Turkish version of the scale, Cronbach alpha value was found to be 0.93. Higher scores indicate the presence of more traumatic experiences. In this study, Cronbach's alpha was 0.88.

Leibowitz social anxiety scale

The 21-item Liebowitz Social Anxiety Scale was developed by Heimberg et al. (1999). The Turkish validity and reliability study of the scale was conducted by Soykan et al. (2003). The scale has a structure in which individuals rate the social relationship and performance situations in which they show fear and avoidance between 0 and 3 points (''none'' and ''severe''). In the Turkish version of the scale, Cronbach alpha value was determined as.97. The higher the scores, the higher the individual's level of fear and avoidance of social relationships and performance situations. In this study, Cronbach's alpha was 0.96.

Emotional self-efficacy scale

Emotional Self-Efficacy Scale is a 32-item self-report scale developed by Kirk et al. (2008). The Turkish validity and reliability study of the scale was conducted by Totan et al. (2010). Participants rate their emotional functioning and their level of understanding and using their emotions on a 5-point Likert scale (from "not at all sure" to "absolutely

sure"). The scale has 4 sub-dimensions: regulating emotions, using emotions as a support for thinking, understanding emotions and perceiving emotions. Emotional self-efficacy level is reached by summing all the items in the scale. The cronbach alpha coefficient for the total scale was calculated as 0.93 and for the sub-dimensions as 0.70, 0.80, 0.83 and 0.77, respectively. Higher scores indicate a better perception of emotional self-efficacy. In this study, Cronbach's alpha was 0.93.

Data analyses

In this study, SPSS was used to organize the data and calculate the descriptive statistics of the data. Statistical analyses were performed with RStudio (R environment v. 4.3.1) using "dplyr", "JSmediation", "ggplot2", "DiagrammeR" packages. The JSmediation package provides a toolkit for performing and reporting moderated mediation analyses (Muller et al., 2005). There were no missing data in the final dataset. Since data collection was conducted in person during classroom sessions, the research team was able to review each completed questionnaire on-site and confirm that all items were answered prior to inclusion in the analysis. To ensure the accuracy of our moderated mediation analysis, we checked several key assumptions. First, we examined linearity by looking at scatterplots and regression diagnostics, confirming that the relationships between our variables followed a linear pattern. Next, we assessed multicollinearity by calculating Variance Inflation Factor (VIF) values, all of which were well below the threshold of 10, indicating that our predictor variables were not overly correlated. We then tested for homoscedasticity by plotting residuals against fitted values and conducting the Breusch-Pagan test. The results suggested that the variability of residuals remained fairly consistent across different levels of the predictor variables. Finally, we checked whether residuals followed a normal distribution using histograms, Q-Q plots, and the Shapiro-Wilk test. The results indicated that residuals were approximately normally distributed, ensuring reliable significance testing. In order to examine the mediating effect of social anxiety in the relationship between childhood traumas and maladaptive daydreaming and the moderating effect of emotional self-efficacy in this relationship, moderated mediation analyses were conducted using the "JSmediation" package. Indirect effects were calculated using Monte Carlo simulation with 5000 iterations (Preacher & Selig, 2012). In this study, the joint significance tests were used instead of bootstrap methods in order to ensure more accurate control over false positive rates in the mediation analysis. This approach was implemented using the JSmediation package in R, based on evidence that joint-significance method outperforms traditional bootstrap techniques in terms of Type I error control (Yzerbyt et al., 2018) (Table 1).

Results

Descriptive statistics

Normality was assessed using skewness and kurtosis values (Tabachnick & Fidell, 2013), while multicollinearity was examined using the variance inflation factor (VIF; Akinwande et al., 2015). Since all VIF values are between 1.01 and 1.09, multicollinearity does not pose a concern. Additionally, the data met the assumption of normality.

Correlation analysis indicated that childhood traumas were positively associated with social anxiety (r=.12, p<.01) and maladaptive daydreaming (r=.26, p<.01). Social anxiety was negatively correlated with both maladaptive daydreaming (r=.28, p<.01) and emotional self-efficacy (r=−.28, p<.01). A weak but significant negative correlation was also observed between maladaptive daydreaming and emotional self-efficacy (r=.09, p<.05).

Of the participants in the study, 73.94% scored above 40 on the maladaptive daydreaming scale, which is considered the cutoff for probable maladaptive daydreaming. Additionally, 40.11% of participants scored above 66.91, which corresponds to the average score of probable maladaptive daydreamers reported in a previous study (Somer et al., 2021). These findings suggest a considerable proportion of the sample exhibits elevated levels of maladaptive daydreaming symptoms.

Moderated mediation analyses

A moderated mediation analysis was conducted to explore whether social anxiety mediates the relationship between

Table 1 Descriptive statistics,correlations, and multicollinearity indicators

Variable	Mean	S.D	Sk	Ku	1	2	3	4	VIF
1.Childhood traumas	49.20	10.39	2.12	2.55		0.12**	0.26**	0.07	1.01
2.Social Anxiety	88.56	27.28	0.76	0.17			0.28**	−0.28*	1.09
3.Maladaptive Daydreaming	60.95	28.91	0.53	0.33				0.09*	
4.Self Efficacy	114.04	20.16	−0.12	0.65					1.08

M = Mean; SD = Standard Deviation; Sk = Skewness; Ku = Kurtosis; VIF = Variance Inflation Factor

*p <.05, **p <.01, **p <.001

Table 2 Moderated mediation analysis results

Effect	Estimate	S.E.	*p*	t
a	0.104*	0.041	0.011	2.54
a'	0.116**	0.038	0.003	3.03
b	8.415***	1.208	<0.001	6.96
b'	−0.198	1.019	0.846	0.19
c	7.919***	1.177	<0.001	6.73
c'	4.948***	1.105	<0.001	4.48

a = effect of childhood traumas on social anxiety; a' = moderation of emotional self-efficacy on the relationship between childhood traumas and social anxiety; b = effect of social anxiety on maladaptive daydreaming; b' = moderation of emotional self-efficacy on the relationship between social anxiety and maladaptive daydreaming; c = total effect of childhood traumas on maladaptive daydreaming; c' = moderation of emotional self-efficacy on the total effect. *p<.05, **p<.01, **p<.001

childhood traumas and maladaptive daydreaming, and whether emotional self-efficacy moderates this mediation. Based on the approach proposed by Muller et al. (2005), a moderated mediation model requires at least one pathway in the causal chain to be influenced by the moderator. Specifically, social anxiety should mediate the relationship between childhood traumas and maladaptive daydreaming, and at least one of the pathways—either from childhood traumas to social anxiety or from social anxiety to maladaptive daydreaming—should be significantly moderated by emotional self-efficacy. The results are presented in Table 2.

As shown in Table 2, childhood traumas have a significant and positive effect on social anxiety (0.104; p=.011). The moderation of emotional self-efficacy on this relationship was positive and significant (0.116; p=.003). Social anxiety has a strong positive effect on maladaptive daydreaming (8.415; p<.001). The moderation of emotional self-efficacy on this relationship was not significant (p=.846). The total effect of childhood traumas on maladaptive daydreaming was significant (7.919; p<.001 and the moderation of emotional self-efficacy had a positive effect on the total effect (4.948; p<.001).

The point estimate for the first stage moderated moderation index was 0.979 and the confidence interval *was [0.324; 1.72*] (Mediated moderation index (First stage)): *Point Estimate: 0.979*, *CI: [0.324; 1.72*. Accordingly, first stage moderated mediation is significant. In other words, since the effect of childhood traumas on social anxiety varies according to the level of emotional self-efficacy, the indirect effect also depends on the moderator. The mediation path model with the coefficients of the paths is shown in Fig. 2.

Conditional indirect effects

To assess how the indirect effect changes across different levels of emotional self-efficacy, analyses were conducted at the mean level (Mode = 0) and one standard deviation above the mean (Mode = 1). The results are presented in Table 3.

As shown in Table 3, the total effect of childhood traumas on maladaptive daydreaming was found to be significantly (p<.001) 7.919. The 95% confidence interval was calculated as [5.612, 10.226]. In addition, the direct effect was 7.066, which was significant (p<.001) and the confidence interval was [4.828, 9.304]. The moderating effect mediated by the first stage was 0.979, which was significant (p<.05) and the confidence interval was [0.311, 1.720].

For specific values of the moderator, the indirect effect for Mode = 0 was calculated as 0.876, which is significant (p<.05) and the confidence interval was [0.207, 1.640]. Finally, the indirect effect for Mode = 1 was calculated as 1.810, which is significant (p<.01). The confidence interval for this effect was calculated as [0.735, 3.110]. According to the results obtained, the analysis of the specific values of the moderator shows that the strength of indirect effects increases significantly and positively in conditions where

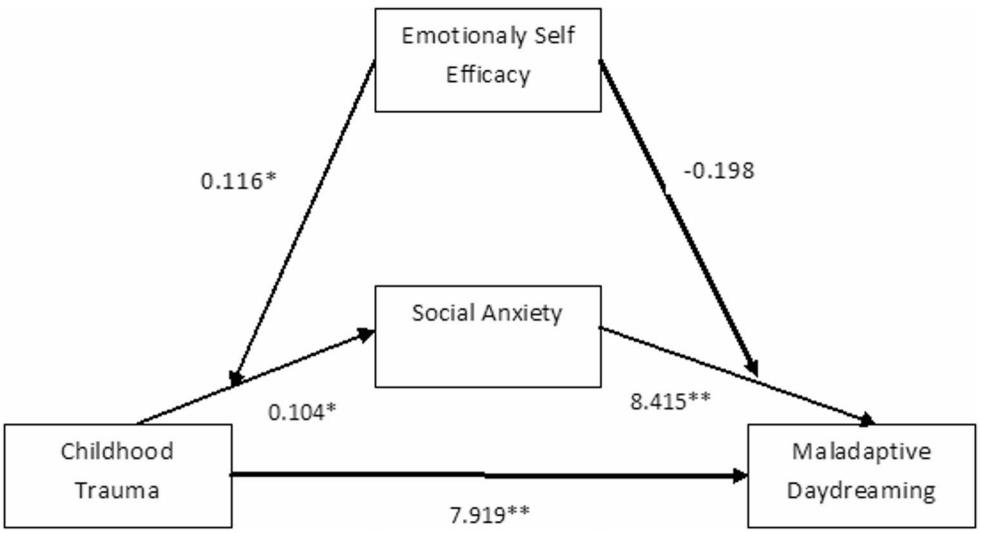

Fig. 2 The moderated mediation model including paths and coefficients

Table 3 Indirect effects for moderator at a specific value

Effect	Estimate	SE	95% C.I.	*p*
Total Effect	7.919***	1.117	[5.612, 10.226]	<0.001
Direct Effect	7.066***	1.142	[4.828, 9.304]	<0.001
First Stage Mediating Moderation	0.979*	0.123	[0.311, 1.720]	<0.05
Conditional Effect (Mod=0)	0.876*	0.321	[0.207, 1.640]	<0.05
Conditional Effect (Mod=1)	1.810**	0.472	[0.735, 3.110]	<0.01

*p<.05. ** p<.01. *** p<.001

emotional self-efficacy is average and high. These findings reveal that childhood traumas affect maladaptive daydreaming through social anxiety and that this effect becomes stronger and more significant as the level of emotional self-efficacy increases.

Overall, these findings highlight that childhood traumas influence maladaptive daydreaming through social anxiety, and that this effect becomes stronger as emotional self-efficacy increases. More specifically, emotional self-efficacy moderates the initial pathway from childhood traumas to social anxiety, amplifying its influence. However, it does not significantly alter the pathway from social anxiety to maladaptive daydreaming. This suggests that individuals with higher emotional self-efficacy may experience greater social anxiety as a result of childhood trauma, which in turn strengthens the indirect effect on maladaptive daydreaming.

Discussion

This study aimed to explore the mediating role of social anxiety in the relationship between childhood trauma and maladaptive daydreaming, while also investigating whether emotional self-efficacy moderates this indirect effect. The findings highlight that social anxiety significantly mediates the link between childhood trauma and maladaptive daydreaming. Additionally, emotional self-efficacy moderates the effect of childhood trauma on social anxiety, though not in the anticipated direction. Given that the study was conducted on a sample of university students, these findings provide valuable insight into the psychological mechanisms influencing young adults navigating academic and social environments. While maladaptive daydreaming (MD) has been increasingly recognized as a clinically significant condition, it is important to acknowledge that it may lie on a spectrum of inner fantasy engagement, ranging from normative daydreaming to pathological immersion. Early research emphasized the adaptive functions of daydreaming, highlighting its role in creativity, problem-solving, and motivational processes (Singer, 2009; Zedelius et al., 2021). However, the maladaptive form of this mental activity is characterized by compulsive, time-consuming, and emotionally immersive fantasy that often impairs academic, social, and occupational functioning (Bigelsen et al., 2016; Somer, 2002; Pietkiewicz et al., 2018). Despite growing clinical evidence linking MD to emotion dysregulation, dissociation, anxiety, depression, and ADHD (e.g., Schimmenti et al., 2019; Soffer-Dudek & Somer, 2022; Catelan et al., 2023), its presentation varies considerably across individuals. While some report severe distress and impairment—evident in the high rates of comorbid psychiatric diagnoses and functional disruption (Soffer-Dudek & Somer, 2022)—others may experience MD-like tendencies without significant clinical impairment. This variability suggests that MD may not be a discrete diagnostic category, but rather a dimensional phenomenon that spans from benign immersive imagination to pathological dissociative absorption. Acknowledging this spectrum perspective is crucial for understanding MD in both clinical and non-clinical populations, and for guiding future diagnostic and therapeutic approaches.

Childhood trauma and maladaptive daydreaming

The association between childhood trauma and maladaptive daydreaming aligns with prior research suggesting that individuals who engage in maladaptive daydreaming often report experiences of bullying, abuse, and neglect during childhood (Somer et al., 2021; Bigelsen & Schupak, 2011; Abu-Rayya et al., 2020). In a university setting, where students are transitioning into independent adulthood, unresolved trauma may manifest in various ways, including excessive engagement in fantasy as a means of coping with academic pressure, social expectations, and emotional distress. This study reinforces the idea that traumatic childhood experiences shape emotional regulation patterns in young adults, potentially increasing the tendency to rely on maladaptive daydreaming as a psychological escape. Recent research suggests that the relationship between childhood trauma and maladaptive daydreaming (MD) is multidimensional and nuanced. Although early studies suggested that not all individuals with MD had traumatic childhood experiences (Bigelsen & Schupak, 2011), current findings suggest that certain types of trauma, particularly emotional neglect and emotional abuse, are more strongly associated with the development and maintenance of MD (Somer et al., 2021). These individuals may develop strategies to soothe themselves by taking refuge in intense fantasy worlds in order to cope with unresolved emotional pain. The vivid inner worlds they create can often function as a compensatory space through idealized relationships and family scenarios in which unmet attachment needs are symbolically met. In

this context, MD can be considered not only an avoidance mechanism but also a type of attachment repair carried out by the individual on their own. On the other hand, some studies suggest that MD may emerge as a form of dissociative adaptation in individuals with high imagination and that these individuals immerse themselves in intense fantasy worlds to escape the stress of reality (Butler, 2011; Somer, 2019). In some individuals, this imaginative preoccupation may also involve the re-enactment of traumatic themes such as captivity, rescue, revenge, or emotional pain; this may serve to unconsciously process the trauma, regain a sense of control, or protect against inevitable emotional injuries (McWilliams, 1994; Somer et al., 2016a). Taken together, these findings suggest that MD can be shaped by both adaptive and maladaptive responses to early experiences and is shaped by the interaction of individual characteristics (e.g., dissociative capacity) and developmental context (e.g., attachment insecurity, emotional deprivation).

The mediating role of social anxiety

The results confirm that social anxiety significantly mediates the relationship between childhood trauma and maladaptive daydreaming. University students who have experienced childhood trauma may struggle with interpersonal relationships, social interactions, and self-perception, making them more vulnerable to social anxiety (Nanda et al., 2016; Bishop et al., 2014). In the university context, social anxiety can be particularly challenging as students must engage in academic discussions, peer collaborations, and networking opportunities, all of which may feel overwhelming. As a result, some students may turn to daydreaming as a protective mechanism to avoid these stressful social situations. This supports the notion that maladaptive daydreaming serves not only as an avoidance strategy but also as a compensatory mechanism for social and emotional difficulties during the university years.

Previous findings support the mediating role of social anxiety in the trauma– pathway. For example, Somer and Herscu (2017) found that while trauma was indirectly linked to MD via absorption, social anxiety was associated with MD through fantasy addiction. Similarly, Herscu's (2015) student-sample study demonstrated that social anxiety predicted MD tendencies mediated by daydreaming dependency. According to the results obtained from our research, social anxiety may emerge as a reflection of the effects of traumatic experiences in childhood on interpersonal relationships. Individuals with a history of trauma may have become hypersensitive to being evaluated, especially in social environments. This hypersensitivity causes the individual to perceive social situations as threatening and to show a tendency to avoid them. This avoidance, which occurs in contexts where social interaction is intense, may lead individuals to seek an alternative coping strategy. Maladaptive daydreaming may come into play at this point as a coping mechanism, causing a need to distance themselves from social environments, turn to the inner world, and have a controllable, idealized reality. In this context, social anxiety functions as a psychological process that increases the individual's tendency to produce introverted fantasies due to childhood trauma. Therefore, the mediating role of social anxiety in this model is of critical importance in terms of making sense of the path leading to MD through the destructive effects of trauma on social functioning, rather than the direct effect of trauma.

The moderating role of emotional self-efficacy

A key contribution of this study is the examination of emotional self-efficacy as a moderator in this model. Interestingly, higher emotional self-efficacy strengthened, rather than buffered, the relationship between childhood trauma and social anxiety. In the context of university students, this may suggest that those with greater emotional self-awareness are more attuned to their distress, making them more sensitive to the lingering effects of early trauma in social settings. While emotional self-efficacy is typically associated with adaptive coping (Bandura et al., 2003; Caprara et al., 2008a), its interaction with trauma may lead to heightened emotional awareness that exacerbates feelings of social anxiety, particularly in young adults navigating personal identity, academic performance, and peer relationships.

One possible explanation is that university students with high emotional self-efficacy engage in more self-reflection and emotional processing. While this can be beneficial for self-development, it may also make past trauma more salient, intensifying their social fears. Prior research suggests that high emotional self-efficacy is linked to deeper emotional introspection (Petrides & Furnham, 2003), which may contribute to increased self-consciousness and self-doubt in social contexts. Additionally, these students may have a strong motivation to regulate their emotions but may struggle to do so effectively if they lack adequate support systems or if their trauma remains unresolved (Kashdan & Roberts, 2004). However, previous research has shown that emotional insight, while generally beneficial, can increase psychological distress in the absence of adequate emotional support (Barlow et al., 2014), suggesting that emotional self-efficacy, which is generally a protective trait, may increase social anxiety in some contexts. Another possible explanation is that the emotional awareness of individuals who experience excessive negative affect due to past trauma is associated with an excessive focus on criticism from themselves or others, which may create a higher sensitivity to social judgment.

Finally, this finding may point to the complex and multidimensional nature of emotional self-efficacy. As Bandura and Wessels (1997) emphasizes, self-efficacy beliefs do not always produce adaptive outcomes regardless of context; their effects may vary depending on specific challenges and environmental conditions. In traumatized individuals, high emotional self-efficacy may lead to greater confrontation with emotions; however, if these individuals lack the necessary regulatory skills or external support, this may lead to increased emotional distress. However, it is not clear exactly how emotional self-efficacy functions in individuals in our study. In this context, future studies should examine how different dimensions of emotional self-efficacy (e.g., understanding and regulating emotions) have different effects on this relationship.

Implications for research and practice

These findings have several important implications for psychological interventions, particularly in university settings. First, the study underscores the need for mental health programs that address the lingering impact of childhood trauma on social functioning in young adults. Universities should consider offering counseling services and peer support groups to help students develop healthier coping strategies for social anxiety. Given that social anxiety serves as a key mediator in the relationship between childhood trauma and maladaptive daydreaming, interventions such as cognitive-behavioral therapy (CBT) that target social anxiety symptoms may reduce students' reliance on maladaptive daydreaming.

Furthermore, the unexpected moderating effect of emotional self-efficacy highlights the complexity of emotional regulation among university students with traumatic backgrounds. While emotional self-efficacy is often viewed as an asset, its role in amplifying social anxiety in this context suggests that interventions should focus on teaching students constructive ways to channel their emotional awareness. Emotion-focused therapy or mindfulness-based interventions may help students balance self-reflection with self-compassion, allowing them to navigate social challenges more effectively without reinforcing anxiety.

Limitations and future directions

While this study provides valuable insights into the psychological mechanisms at play in university students, certain limitations should be noted. First, the cross-sectional design prevents conclusions about causality. Future research should employ longitudinal designs to assess how the relationship between childhood trauma, social anxiety, and maladaptive daydreaming evolves throughout students' academic careers. Furthermore, given the unexpected amplifying effect of emotional self-efficacy on the link between childhood trauma and social anxiety, future studies should also consider using experimental or qualitative methods. These approaches may help uncover the contextual factors or subjective experiences that influence how emotional self-efficacy functions in trauma-exposed individuals. Such designs could provide richer insights into why emotional self-efficacy may intensify, rather than buffer, trauma-related anxiety in some cases. Additionally, reliance on self-report measures may introduce biases, such as social desirability effects. Future studies should consider incorporating behavioral assessments or clinical interviews to enhance the validity of findings. Lastly, this study focused on a non-clinical university sample, limiting the generalizability of the findings to broader populations. Research examining these relationships in diverse groups, including individuals from different educational backgrounds and clinical populations, would provide a more comprehensive understanding of these dynamics. Additionally, the gender distribution in our sample was uneven, with a predominance of female participants. Future research should aim for a more balanced gender representation to examine potential gender-related differences in maladaptive daydreaming. Another limitation is the lack of control for potentially confounding psychological variables such as depression or ADHD, which are frequently comorbid with MD. Including such controls in future studies would help clarify the specificity of the observed associations.

Conclusion

This study enhances our understanding of the pathways linking childhood trauma to maladaptive daydreaming, particularly in university students. The findings confirm that social anxiety is a significant mediator in this relationship, while emotional self-efficacy moderates the indirect effect in a complex manner. These results highlight the importance of tailored psychological interventions for young adults, particularly those struggling with social anxiety and emotion regulation due to past trauma. By integrating targeted mental health programs within university settings, institutions can help students develop adaptive coping strategies that mitigate the risk of maladaptive daydreaming and support their overall well-being.

Authors' contribution All authors whose names appear on this submission made substantial contributions to the work. Specifically, RYT and AA contributed to the study's conception and design, data collection, and formal analysis. RYT and AA was involved in the interpretation of the findings and drafting the manuscript. RYT, AA and FT provided critical revisions and final approval of the manuscript.

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Data availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Ethical standards statement This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical permission was obtained from Hasan Kalyoncu University Research and Publication Ethics Committee for the conduct of the study with the decision dated 20.09.2024 and numbered E-97105791-050.04-68303.

Informed consent Was obtained from all participants before their inclusion in the study. Participants were informed about the purpose, procedures, potential risks, and their right to withdraw at any time without consequence.

Participant consent statement Informed consent was obtained from all participants before their inclusion in the study. Participants were informed about the purpose, procedures, potential risks, and their right to withdraw at any time without consequence.

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References

Abu-Rayya, H. M., Somer, E., & Meari-Amir, S. (2019). The psychometric properties of the Arabic 16-item maladaptiveaydreaming scale (MDS-16-AR) in a multicountry Arab sample. *Psychology of Consciousness: Theory, Research, and Practice,6*(2), 171–183. https://doi.org/10.1037/cns0000183

Abu-Rayya, H. M., Somer, E., & Knane, H. (2020). Maladaptive daydreaming is associated with intensified psychosocial problems experienced by female survivors of childhood sexual abuse. *Violence Against Women,26*(8), 825–837. https://doi.org/10.1177/1077801219845532

Akinwande, M. O., Dikko, H. G., & Samson, A. (2015). Variance inflation factor: As a condition for the inclusion of suppressor variable(s) in regression analysis. *Open Journal of Statistics,5*(07), 754–767. https://doi.org/10.4236/ojs.2015.57075

Armstrong, A. R., Galligan, R. F., & Critchley, C. R. (2011). Emotional intelligence and psychological resilience to negative life events. *Personality and Individual Differences*, *51*(3), 331–336. https://doi.org/10.1016/j.paid.2011.03.025

Baiocchi, M., Friedberg, R., Rosenman, E., Amuyunzu-Nyamongo, M., Oguda, G., Otieno, D., & Sarnquist, C. (2019). Prevalence and risk factors for sexual assault among class 6 female students in unplanned settlements of Nairobi, Kenya: Baseline analysis from the ImPower & Sources of Strength cluster randomized controlled trial. *PLoS One,14*(6), e0213359. https://doi.org/10.1371/journal.pone.0213359

Bandura, A., & Wessels, S. (1997). *Self-efficacy* (pp. 4–6). Cambridge University Press.

Bandura, A., Caprara, G. V., Barbaranelli, C., Gerbino, M., & Pastorelli, C. (2003). Role of affective self-regulatory efficacy in diverse spheres of psychosocial functioning. *Child Development,74*(3), 769–782. https://doi.org/10.1111/1467-8624.00567

Barlow, D. H., Sauer-Zavala, S., Carl, J. R., Bullis, J. R., & Ellard, K. K. (2014). The nature, diagnosis, and treatment of neuroticism: Back to the future. *Clinical Psychological Science*, *2*(3), 344–365. https://doi.org/10.1177/2167702613505532

Bassi, M., Delle Fave, A., Steca, P., & Caprara, G. V. (2018). Adolescents' regulatory emotional self-efficacy beliefs and daily affect intensity. *Motivation And Emotion,42*, 287–298. https://doi.org/10.1007/s11031-018-9669-3

Bernstein, D. P., Fink, L., Handelsman, L., & Foote, J. (1994). *Childhood Trauma Questionnaire (CTQ)* [Database record]. APA PsycTests. https://doi.org/10.1037/t02080-000

Bigelsen, J., & Schupak, C. (2011). Compulsive fantasy: Proposed evidence of an under-reported syndrome through a systematic study of 90 self-identified non-normative fantasizers. *Consciousness and Cognition*, *20*(4), 1634–1648. https://doi.org/10.1016/j.concog.2011.08.013

Bigelsen, J., Lehrfeld, J. M., Jopp, D. S., & Somer, E. (2016). Maladaptive daydreaming: Evidence for an under-researched mental health disorder. *Consciousness and Cognition*, *42*, 254–266. https://doi.org/10.1016/j.concog.2016.03.017

Bishop, M., Rosenstein, D., Bakelaar, S., & Seedat, S. (2014). An analysis of early developmental trauma in social anxiety disorder and posttraumatic stress disorder. *Annals of General Psychiatry*, *13*, 1–14. https://doi.org/10.1201/b18313-3

Brumariu, L. E., & Kerns, K. A. (2008). Mother-child attachment and social anxiety symptoms in middle childhood. *Journal of Applied Developmental Psychology*, *29*(5), 393–402. https://doi.org/10.1016/j.appdev.2008.06.002

Butler, L. D. (2011). Must dissociation be unusual? *Journal of Trauma & Dissociation,12*(4), 454–456. https://doi.org/10.1080/15299732.2011.570234

Caprara, G. V., Giunta, D., Eisenberg, L., Gerbino, N., Pastorelli, M., C., & Tramontano, C. (2008a). Assessing regulatory emotional self-efficacy in three countries. *Psychological Assessment*, *20*(3), 227. https://doi.org/10.1037/1040-3590.20.3.227

Caprara, G. V., Fida, R., Vecchione, M., Del Bove, G., Vecchio, G. M., Barbaranelli, C., & Bandura, A. (2008b). Longitudinal analysis of the role of perceived self-efficacy for self-regulated learning in academic continuance and achievement. *Journal of Educational Psychology*, *100*(3), 525. https://doi.org/10.1037/0022-0663.100.3.525

Catelan, R. F., Zsila, Á., Pietkiewicz, I. J., & Nardi, A. E. (2023). Cross-cultural adaptation and validation of the Brazilian Portuguese version of the maladaptive daydreaming scale (BMDS-16). *Psychiatria I Psychologia Kliniczna*, *23*(3), 129–140. https://doi.org/10.15557/PiPK.2023.0018

Constantine, L., & Haque, S. (2024). Loneliness, Self-Esteem, and Maladaptive Daydreaming in University Students: The Mediating Role of Perceived Stress. https://doi.org/10.21203/rs.3.rs-4538726/v1

Çutuk, Z. A., & Aydoğan, R. (2019). Emotional self-efficacy, resilience and psychological vulnerability: A structural equality modeling study. *Journal of Educational Sciences and Psychology,9*(1), 106–114.

Ferrante, E., Marino, A., Guglielmucci, F., & Schimmenti, A. (2022). The mediating role of dissociation and shame in the relationship between emotional trauma and maladaptive daydreaming. *Psychology of Consciousness: Theory, Research, and Practice,9*(1), 27. https://doi.org/10.1037/cns0000253

González-Díez, Z., Orue, I., & Calvete, E. (2017). The role of emotional maltreatment and looming cognitive style in the development of social anxiety symptoms in late adolescents. *Anxiety, Stress, and Coping,30*(1), 26–38. https://doi.org/10.1080/10615806.2016.1188920

Guerra, C., Farkas, C., & Moncada, L. (2018). Depression, anxiety and PTSD in sexually abused adolescents: Association with self-efficacy, coping and family support. *Child Abuse & Neglect,76*, 310–320. https://doi.org/10.1016/j.chiabu.2017.11.013

Haferkamp, L., Bebermeier, A., Möllering, A., & Neuner, F. (2015). Dissociation is associated with emotional maltreatment in a sample of traumatized women with a history of child abuse. *Journal of Trauma & Dissociation,16*(1), 86–99. https://doi.org/10.1080/15299732.2014.959149

Heimberg, R. G., Horner, K. J., Juster, H. R., Safren, S. A., Brown, E. J., Schneier, F. R., & Liebowitz, M. R. (1999). Psychometric properties of the Liebowitz social anxiety scale. *Psychological Medicine*, *29*(1), 199–212. https://doi.org/10.1017/s0033291798007879

Heimberg, R. C., Brozovich, F. A., & Rapee, R. M. (2010). A cognitive behavioral model of social anxiety disorder: Update and extension. In S. G. Hofmann & P. M. DiBartolo (Eds.), *Social anxiety: Clinical, developmental, and social perspectives* (2nd ed., pp. 395–422). Elsevier Academic Press. https://doi.org/10.1016/B978-0-12-375096-9.00015-8

Herscu, O. (2015). When life becomes a dream: The relationship between maladaptive daydreaming, childhood trauma, absorption, social anxiety, and addiction to daydreaming in a non-clinical student sample (Unpublished master's thesis). *School of Social Work, University of Haifa, Haifa, Israel*.

Kashdan, T. B., & Roberts, J. E. (2004). Social anxiety's impact on affect, curiosity, and social self-efficacy during a high self-focus social threat situation. *Cognitive Therapy and Research*, *28*, 119–141. https://doi.org/10.1023/b:cotr.0000016934.20981.68

Kirk, B. A., Schutte, N. S., & Hine, D. W. (2008). Development and preliminary validation of an emotional self-efficacy scale. *Personality and Individual Differences*, *45*(5), 432–436. https://doi.org/10.1016/j.paid.2008.06.010

Lamis, D. A., Wilson, C. K., Shahane, A. A., & Kaslow, N. J. (2014). Mediators of the childhood emotional abuse-hopelessness association in African American women. *Child Abuse & Neglect,38*(8), 1341–1350. https://doi.org/10.1016/j.chiabu.2013.11.006

Liu, S., You, J., Ying, J., Li, X., & Shi, Q. (2020). Emotion reactivity, nonsuicidal self-injury, and regulatory emotional self-efficacy: A moderated mediation model of suicide ideation. *Journal of Affective Disorders*, *266*, 82–89. https://doi.org/10.1016/j.jad.2020.01.083

Malik, S., & Kaiser, A. (2016). Impact of emotional maltreatment on self esteem among adolescents. *Journal of the Pakistan Medical Association*, *66*(7), 795–798.

McWilliams, N. (1994). Psychoanalytic diagnosis. Guilford.

Metin, S., Gocmen, B., & Metin, B. (2022). Turkish validity and reliability study of maladaptive daydreaming scale. *Psychiatry and Behavioral Sciences*, *12*(1), 1–6. https://doi.org/10.5455/pbs.20210907111754

Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, *89*(6), 852–863. https://doi.org/10.1037/0022-3514.89.6.852

Muris, P. (2002). Relationships between self-efficacy and symptoms of anxiety disorders and depression in a normal adolescent sample. *Personality and Individual Differences*, *32*(2), 337–348. https://doi.org/10.1016/s0191-8869(01)00027-7

Musetti, A., Gori, A., Michelini, G., Di Monte, C., Franceschini, C., & Mariani, R. (2023). Are defense styles mediators between traumatic experiences and maladaptive daydreaming? *Current Psychology*, *42*(30), 26683–26691. https://doi.org/10.1007/s12144-022-03708-5

Nanda, M. M., Reichert, E., Jones, U. J., & Flannery-Schroeder, E. (2016). Childhood maltreatment and symptoms of social anxiety: Exploring the role of emotional abuse, neglect, and cumulative trauma. *Journal of Child & Adolescent Trauma*, *9*, 201–207. https://doi.org/10.1007/s40653-015-0070-z

Perlman, S., & Doyle, A. (2012). Trauma experienced in early childhood. In L. Lopez Levers (Ed.), *Trauma counseling: Theories and interventions*, (pp. 132–145). Springer Publishing Company. https://doi.org/10.1891/9780826106841.0008

Petrides, K. V., & Furnham, A. (2003). Trait emotional intelligence: Behavioral validation in two studies of emotion recognition and reactivity to mood induction. *European Journal of Personality,17*(1), 39–57. https://doi.org/10.1002/per.466

Pietkiewicz, I. J., Nęcki, S., Bańbura, A., & Tomalski, R. (2018). Maladaptive daydreaming as a new form of behavioral addiction. *Journal of Behavioral Addictions*, *7*(3), 838–843. https://doi.org/10.1556/2006.7.2018.95

Preacher, K. J., & Selig, J. P. (2012). Advantages of monte carlo confidence intervals for indirect effects. *Communication Methods and Measures,6*(2), 77–98. https://doi.org/10.1080/19312458.2012.679848

Rapee, R. M., & Heimberg, R. G. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behaviour Research and Therapy*, *35*(8), 741–756. https://doi.org/10.1016/S0005-7967(97)00022-3

Ross, C. A., Ridgway, J., & George, N. (2020). Maladaptive daydreaming, dissociation, and the dissociative disorders. *Psychiatric Research and Clinical Practice*, *2*(2), 53–61. https://doi.org/10.1176/appi.prcp.20190050

Şar, V., Öztürk, P. E., & İkikardeş, E. (2012). Validity and reliability of the Turkish version of childhood trauma questionnaire. *Journal of Medical Sciences*, *32*(4), 1054–1063. https://doi.org/10.5336/medsci.2011-26947

Schimmenti, A., Somer, E., & Regis, M. (2019). Maladaptive daydreaming: Towards a nosological definition. *Annales Médico-psychologiques revue psychiatrique, 177*(9), 865–874. https://doi.org/10.1016/j.amp.2019.08.014

Singer, J. L. (2009). Researching imaginative play and adult consciousness: Implications for daily and literary creativity. *Psychology of Aesthetics, Creativity, and the Arts,3*(4), 190–199. https://doi.org/10.1037/a0016507

Smallwood, J., & Schooler, J. W. (2015). The science of mind wandering: Empirically navigating the stream of consciousness. *Annual Review of Psychology,66*, 487–518. https://doi.org/10.1146/annurev-psych-010814-015331

Soffer-Dudek, N. (2021). *Corrigendum for the MDS-16 (English version) cutoff score*. Unpublished raw data.

Soffer-Dudek, N., & Somer, E. (2018). Trapped in a daydream: Daily elevations in maladaptive daydreaming are associated with daily psychopathological symptoms. *Frontiers in Psychiatry*, *9*, 194. https://doi.org/10.3389/fpsyt.2018.00194

Soffer-Dudek, N., & Somer, E. (2022). Maladaptive daydreaming is a dissociative disorder: Supporting evidence and theory. In M. J. Dorahy, S. N. Gold, & J. A. O'Neil (Eds.), *Dissociation and the dissociative disorders*, (pp. 547–563). Routledge. https://doi.org/10.4324/9781003057314-41

Somer, E. (2002). Maladaptive daydreaming: A qualitative inquiry. *Journal of Contemporary Psychotherapy*, *32*, 197–212.

Somer, E. (2019). On dissociative identity disorder and maladaptive daydreaming. *Frontiers in the Psychotherapy of Trauma and Dissociation*, *3*(1), 14–18. https://doi.org/10.46716/ftpd.2019.0020

Somer, E., & Herscu, O. (2017). Childhood trauma, social anxiety, absorption and fantasy dependence: Two potential mediated pathways to maladaptive daydreaming. *Journal of Addiction, Behavior Therapy & Rehabilitation,5*, 2–5. https://doi.org/10.4172/2324-9005.1000170

Somer, E., Somer, L., & Jopp, D. S. (2016a). Childhood antecedents and maintaining factors in maladaptive daydreaming. *The Journal of Nervous and Mental Disease,204*(6), 471–478. https://doi.org/10.1097/nmd.0000000000000507

Somer, E., Lehrfeld, J., Bigelsen, J., & Jopp, D. S. (2016b). Development and validation of the maladaptiveaydreaming scale (MDS). *Consciousness and Cognition*, *39*, 77–91. https://doi.org/10.1016/j.concog.2015.12.001

Somer, E., Soffer-Dudek, N., & Ross, C. A. (2017). The comorbidity of daydreaming disorder (maladaptive daydreaming). *The Journal of Nervous and Mental Disease*, *205*(7), 525–530. https://doi.org/10.1097/nmd.0000000000000685

Somer, E., Abu-Rayya, H. M., Schimmenti, A., Metin, B., Brenner, R., Ferrante, E., & Marino, A. (2020). Heightened levels of maladaptive daydreaming are associated with COVID-19 lockdown, pre-existing psychiatric diagnoses, and intensified psychological dysfunctions: A multi-country study. *Frontiers in Psychiatry*, *11*, 587455. https://doi.org/10.3389/fpsyt.2020.587455

Somer, E., Abu-Rayya, H. M., & Brenner, R. (2021). Childhood trauma and maladaptive daydreaming: Fantasy functions and themes in a multi-country sample. *Journal of Trauma & Dissociation,22*(3), 288–303. https://doi.org/10.1080/15299732.2020.1809599

Southam-Gerow, M. (2014). A consideration of emotion regulation in the treatment of children and adolescents. *Psychotherapy in Australia*, *20*(2), 68–79.

Soykan, Ç., Özgüven, H. D., & Gençöz, T. (2003). Liebowitz social anxiety scale: The Turkish version. *Psychological Reports*, *93*(3), 1059–1069. https://doi.org/10.2466/pr0.93.7.1059-1069

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics*. (6th). Pearson.

Tobin, M. (2016). *Childhood trauma: Developmental pathways and implications for the classroom.* Australian Council for Educational Research (ACER). https://research.acer.edu.au/learning_processes/20

Totan, T., İkiz, E., & Karaca, R. (2010). The adaptation of the emotional self-efficacy scale to Turkish university students and the examination of the psychometric characteristics of its structure in one and four factors. *Journal of Buca Faculty of Education Dokuz Eylül University, (28)* , 71–95.

Wallace, S. T., & Alden, L. E. (1997). Social phobia and positive social events: The price of success. *Journal of Abnormal Psychology*, *106*(3), 416–424. https://doi.org/10.1037/0021-843x.106.3.416

West, M. J., & Somer, E. (2020). Empathy, Emotion Regulation, and Creativity in Immersive and Maladaptive Daydreaming. *Imagination, Cognition and Personality, 39*(4), 358–373. https://doi.org/10.1177/0276236619864277

Wu, R., Jing, L., Liu, Y., Wang, H., & Yang, J. (2022). Effects of physical activity on regulatory emotional self-efficacy, resilience, and emotional intelligence of nurses during the COVID-19 pandemic. *Frontiers in Psychology*, *13*, 1059786. https://doi.org/10.3389/fpsyg.2022.1059786

Yzerbyt, V., Muller, D., Batailler, C., & Judd, C. M. (2018). Testing the mediational model with the help of the joint significance test. *Journal of Personality and Social Psychology: Attitudes and Social Cognition*, *115*(6), 929–943. https://doi.org/10.1037/pspa0000132

Zedelius, C. M., Protzko, J., Broadway, J. M., & Schooler, J. W. (2021). What types of daydreaming predict creativity?? Laboratory and experience sampling evidence. *Psychology of Aesthetics, Creativity, and the Arts,15*, 596–611. https://doi.org/10.1037/aca0000342