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Original Research

Difficulties in emotion regulation, repetitive negative thinking, and sexual and psychological distress: a two-wave longitudinal mediation study using a transdiagnostic approach

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Abstract

Background: Sexual distress is a critical element in diagnosing sexual dysfunction. Recent research using a cross-sectional design has supported the adequacy of a transdiagnostic approach for its understanding.

Aim: This exploratory study aimed to investigate the mediating role of repetitive negative thinking between difficulties in emotional regulation and sexual and psychological distress in a community sample.

Methods: We used a quantitative longitudinal design with measures including a sociodemographic questionnaire, the Difficulties in Emotion Regulation Scale–Short Form, the Persistent and Intrusive Negative Thoughts Scale, the Sexual Distress Scale–Revised, and the Kessler Psychological Distress Scale.

Outcomes: Data were collected from 64 partnered individuals (85.9% women; age: M = 31.20, SD = 6.46).

Results: Correlational analysis across time revealed significant associations among difficulties in emotion regulation (T1 $r = 0.37$, T2 $r = 0.32$), repetitive negative thinking (T1 $r = 0.30$, T2 $r = 0.27$), psychological distress (T1 $r = 0.37$, T2 $r = 0.55$), and sexual distress (all at $P < .01$) . The total effect of difficulties in emotion regulation on sexual distress was found to be positive ($\beta = 0.20$, $P = .008$) after controlling for frequency of sexual activity ($r = -0.25$, $P < .05$). Longitudinal mediation analysis indicated a significant negative indirect effect from difficulties in emotion regulation on sexual distress via repetitive negative thinking ($\beta = -0.04$, 95% CI [-0.008, -0.001]), suggesting a buffering effect over time on sexual distress.

Clinical Implications: These results highlight the significance of recognizing difficulties in emotion regulation and repetitive negative thinking as coping strategies when examining sexual distress, emphasizing the need to explore the putative efficacy of therapeutic interventions focused on addressing these cognitive processes to decrease adverse sexual-related outcomes.

Strengths and Limitations: These findings highlight the importance of acknowledging difficulties in emotion regulation and repetitive negative thinking as coping strategies in the study of sexual distress. However, the small sample size and the predominance of women participants limit generalizability. Further research with clinical samples and more diverse populations is needed to better understand the relevance of these aspects in assessment and therapy.

Conclusions: The findings imply that repetitive negative thinking may have potentially adaptive effects, indicating a nuanced role in coping strategies within the context of the study.

Keywords: difficulties in emotion regulation; repetitive negative thinking; sexual distress; psychological distress; longitudinal study; transdiagnostic approach.

Introduction

Recent cross-sectional research has taken a transdiagnostic look at sexual distress (SD) and has demonstrated that transdiagnostic processes are related to the experience of SD and that repetitive negative thinking (RNT) may act as a mediator between difficulties in emotional regulation and SD.[1] Sexual distress is a negative emotional experience related to sexuality and an essential feature for the diagnosis of sexual dysfunction.[2,3] Sexual distress has been used as an umbrella concept to study discomfort with different aspects of sexuality and has been associated with different correlates such as frequency of sexual activity,[4,5] relationship length,[6] emotional factors[1,7] and cognitive factors.[8-10] Within this framework, sexual dysfunctions characterized by SD have been integrated into the internalized spectrum of psychopathology,[11,12] sustaining that a transdiagnostic clinical approach that addresses

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dimensions related to emotional problems may be adequate to intervene in sexual problems.

Transdiagnostic mechanisms linking sexual and psychological distress

Transdiagnostic processes refer to shared cognitive, emotional, and behavioral mechanisms that underlie the development and maintenance of multiple psychological disorders rather than being specific to a single diagnosis.[13,14] These processes include factors such as difficulties in emotion regulation, RNT (eg, worry and rumination), and experiential avoidance, which are observed across conditions like anxiety, depression, and sexual dysfunctions.[15] By targeting shared underlying mechanisms that can be found across diverse emotional problems and in comorbid situations, transdiagnostic approaches provide a framework for understanding how various disorders are interconnected and, therefore, allow for interventions that can be used to address multiple emotional problems, even when co-occurring, offering a flexible, efficient, and comprehensive treatment strategy.[16]

Mechanisms such as difficulties in emotion regulation and RNT have been shown to play a key role in the onset and persistence of both SD and psychological distress (PD).[1] By adopting this approach, SD and PD can be understood as sharing common pathways, particularly through mechanisms like RNT, which exacerbate distress and maintain emotional vulnerabilities.[10] This common foundation also supports the development of integrated interventions that target shared underlying mechanisms, aiming to improve both sexual and psychological well-being. Cognitive–affective factors,[17,18] cognitive processing factors,[19,20] RNT,[21] and experiential avoidance[22] have all been identified as transdiagnostic processes related to sexual dysfunction. However, research on specific mechanisms related to SD, such as anxiety sensitivity,[23] interpersonal emotion regulation,[24] difficulties in emotional regulation,[1,10] and cognitive processes like worry and rumination,[10,25] remains limited.

Difficulties in emotion regulation and RNT

Specific transdiagnostic factors have been associated with SD, namely, difficulties in emotional regulation[13] and RNT.[1] Difficulties in emotional regulation, defined as the inability to modulate emotional responses according to situational demands,[14] are recognized as a fundamental component in the etiology and maintenance of a broad spectrum of psychological disorders.[15] Difficulties in emotional regulation may be linked to the use of specific strategies (eg, worry and rumination) aimed at experiential avoidance, which hinder the process of emotional regulation.[16] Worry is typically associated with anxiety disorders, while rumination is linked to depressive disorders, but both processes are present across various conditions.[26] Worry and rumination can act as coping mechanisms in stress-inducing situations, allowing individuals to process and analyze potential threats, develop strategies for resolution, and anticipate future challenges.[17] Additionally, they can provide motivational benefits and serve as an emotional buffer,[18] making RNT a potential coping mechanism for managing emotional arousal. However, it's essential to note that while worry and rumination can be adaptive in specific contexts (eg, a catalyst for health-preventive and protective behaviors[19]), high levels of persistent and excessive engagement in these cognitive processes (RNT) contribute to increased distress and the perpetuation of negative emotional states.[20,21]

Barlow's updated model of sexual dysfunction highlights worry as a maladaptive coping mechanism that maintains sexual dysfunctions[22] but does not mention the role of rumination. However, recent evidence suggests that rumination, particularly its negative form (reflection), also plays a critical role in predicting SD. Guerreiro et al.[23] found that reflection significantly influenced SD, even after controlling for PD, suggesting that emotion regulation strategies alone may not adequately address SD without considering RNT. Building on these findings, Raposo et al.[1] studied a specific theory-based model that unveiled the association between emotion, cognitive processes, and SD using cross-sectional data and showed that there is an association between difficulties in emotional regulation (instead of emotion regulation), SD, and PD, with RNT as a mediator.

Broader implications for clinical and non-clinical populations

Importantly, SD affects not only clinical and subclinical populations but also non-clinical populations, making it essential to study SD beyond diagnosed cases to fully understand its scope and impact.[24] Even in the absence of psychopathology, SD can significantly impair well-being and quality of life. Adopting this broader approach enables us to identify risk factors, and, by recognizing SD's correlates and predictors within a theoretical framework, it becomes possible to implement preventive interventions that promote sexual health for a wider population.

Recent studies demonstrate that transdiagnostic mechanisms, such as difficulties in emotional regulation and RNT, extend beyond clinical cases, affecting mental health and increasing vulnerability to emotional difficulties in the general population.[25,27,28] By addressing shared underlying processes, this perspective enables the identification of key risk factors in the general population, paving the way for targeted preventive and health-promoting interventions. Integrating transdiagnostic approaches in non-clinical samples is therefore essential for advancing our understanding and management of SD, expanding the scope of interventions through preventive strategies such as psychoeducational programs, which aim to enhance emotional regulation and cognitive flexibility,[28] and health promotion initiatives that focus on reducing experiential avoidance[27] and fostering adaptive coping mechanisms.[25]

Research gap and study aim

Recent research with community samples using a transdiagnostic framework has established that PD and SD are related and that different transdiagnostic processes may account for this association.[1] Existing findings are mainly cross-sectional and correlational, requiring further validation with longitudinal data.

Therefore, the current 2-wave longitudinal study aims to expand on these previous findings by clarifying the mediating role of RNT overtime in the relationship between difficulties in emotional regulation and both SD and PD. Mediation occurs when the effect of an independent variable (eg, difficulties in emotional regulation) on an outcome variable (eg, SD or PD) is partially or fully explained by a third variable, known as the mediator (eg, RNT). In this study, mediation was tested

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Table 1 Sociodemographic characteristics of the study sample at T1 (N = 64).

Characteristics	*N*	%
Age ($M \pm SD$)	31.20 ± 6.46	-
Min	18	-
Max	49	-
Gender		
Female	55	85.9
Male	9	14.1
Sexual orientation		
Heterosexual	58	90.6
Bisexual	3	4.7
Lesbian	3	4.7
Education		
High school	15	23.4
Bachelor	16	25.0
Master	30	46.9
PhD	1	1.6
Other	2	3.1
Area of residence		
Urban area	33	51.6
Suburban area	23	35.9
Urbanized center of a rural area	3	4.7
Rural area next to an urban area	3	4.7
Rural area with little population density	2	3.1
Relationship status		
Cohabitation	29	45.3
Committed relationship	24	37.5
Married	11	17.2
Relationship length (in years) ($M \pm SD$)	6.97 ± 6.29	-
Min	0	-
Max	22	-
Sexual activity frequency (number of times in last 30 days) ($M \pm SD$)	5.89 ± 4.68	-
Min	1	-
Max	20	-

Abbreviations: M, mean; SD, standard deviation; Min, minimum; Max, maximum. The hyphen (–) indicates that a percentage is not applicable.

using structural equation modeling (SEM) and bootstrapping techniques, assessing both direct and indirect pathways while controlling for confounding variables (eg, frequency of sexual activity and relationship duration).

Based on empirical evidence, we hypothesize that RNT will mediate the positive association between difficulties in emotional regulation and SD and PD across time, expanding previous cross-sectional findings. Clarifying this mechanism will provide insights into how shared cognitive processes contribute to distress and help inform preventive interventions and clinical treatments.

Method

Participants

The dataset was longitudinal, consisting of 2 waves of data with a 4-month interval between them. A total of 90 participants completed the first wave (time 1), and 64 participants completed the second wave (time 2), yielding a retention rate of 71%. This resulted in a final paired sample consisting of 64 Portuguese adults (55 women; 85.9%). At time 1 (T1), their ages ranged from 18 to 49 ($M = 31.20$, $SD = 6.46$). Among the participants, 58 identified as heterosexual (90.6%), 3 as bisexual (4.7%), and 3 as lesbian (4.7%). The majority resided in urban areas (n = 33; 51.6%) and held a degree (n = 47; 73.5%). Regarding relationship status, 29 participants were cohabiting (45.3%), 24 were single in a committed relationship (37.5%), and 11 were married (17.2%). The average reported relationship duration was 6.97 years ($SD = 6.29$), and, on average, couples engaged in sexual activity 5.89 times ($SD = 4.68$) in the previous 30 days (Table 1).

Measures

Sociodemographic Questionnaire

The authors developed a sociodemographic questionnaire so that the sample's main characteristics and the variables of interest (eg, age, gender identity) could be presented.

Difficulties in Emotion Regulation Scale–Short Form (DERS-SF – European Portuguese version[29])

The DERS-SF is an instrument designed to assess difficulties in emotional regulation and consists of 18 items distributed across 6 subscales: strategies, non-acceptance, impulse, goals, awareness, and clarity. The responses are assessed using a 5-point Likert scale, ranging from 1 ("almost never") to 5 ("almost always"). In the present study, the internal consistency was $\omega = 0.82$ and $\omega = 0.78$ at time 1 and time 2, respectively. The test–retest showed that the intraclass correlation coefficient (ICC) was good [ICC (2,1) = 0.68].

Kessler Psychological Distress Scale

(K6—6 items translated to European Portuguese for the European Portuguese version of the original K10 version where K6 derives from[30])

This scale consists of 6 questions designed to assess the frequency of non-specific PD, utilizing a framework that encompasses behavioral, emotional, cognitive, and psychophysiological manifestations (eg, hopelessness). The answers can range

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from 1 (none of the time) to 5 (all of the time). In the current study, the internal consistency at Time 1 was $\omega = 0.85$ and at Time 2 was $\omega = 0.82$. The test–retest revealed an ICC (2,1) of 0.59, indicating a moderate level of stability.[31]

Persistent and Intrusive Negative Thoughts Scale (PINTS—European Portuguese version[32])

The PINTS is a self-report measure that assesses 3 fundamental characteristics of maladaptive RNT (eg, intrusive) using 5items. It uses a 5-point Likert scale (1 = "never" to 5 = "almost always"). In this study, the internal consistency was $\omega = 0.90$ at time 1 and $\omega = 0.85$ at time 2, indicating good reliability. The test–retest showed that the ICC was good (ICC 2,1 = 0.78), indicating an excellent level of stability over this period.

Sexual Distress Scale–Revised (SDS-R—European Portuguese version[33])

This self-report measure assesses SD with a 5-point Likert scale (0 = "never" to 4 = "always") applied to 13 items (eg, "*How often have you felt frustrated by your sexual problems?*"). In the current study, the internal consistency at both time 1 and time 2 was $\omega = 0.94$, indicating excellent reliability. The test–retest revealed an ICC (2,1) of 0.87, revealing an excellent level of stability.[31]

Procedure

We first obtained permission to use the Portuguese versions of the self-report measures, and the study received positive ethical approval at Ethical and Deontological Committee for Scientific Research of the School of Psychology and Life Sciences (CEDIC) of Lusófona University in Lisbon. The survey was hosted online on a secure platform designed for data collection (Qualtrics) and tested among a group of 7 students to ensure the clarity and adequacy of the information (eg, page length, font size). The study was then disseminated in November 2022 via social networks using a snowball-like methodology, as potential participants were asked to share and advertise the study. The informed consent page outlined the study goals, confidentiality, data anonymization and storage, and the voluntary nature of participation. To link data across the 2 time points, participants generated a unique alphanumeric code (2 letters, 4 digits). Participants who consented to the second phase received reminders via an exclusive email account created solely for this purpose. Emails were deleted after reminders were sent, and the account was terminated. No identifiable information (eg, IP addresses or geolocation) was stored, and the data were kept on a protected computer and will be permanently deleted after 5 years.

The inclusion criteria were: (1) understanding Portuguese, (2) being 18 years or older, and (3) being in an exclusive dyadic relationship for at least 6 months, as relationships beyond this period are considered more stable and committed.[34,35] Psychotropic substance use (legal or illegal) was an exclusion criterion due to its potential interference with RNT, difficulties in emotional regulation, and distress assessment.[36]

Statistical analysis

Firstly, a missing value analysis was performed. No missing values were found for the sociodemographic and relational variables. Regarding the primary measures of this study, the percentage of missing values ranged from 1.6 % (n = 1) at T2 to 3.2% (n = 7) at T1. As the missing data were fewer than 5% for all study variables, no imputation method was applied.

We examined the internal consistency of all scales using McDonald's omega (ω) at both times. ω is a measure of internal consistency, similar to Cronbach's alpha, but it is considered a more robust and accurate estimate, particularly when assumptions of tau-equivalence (equal factor loadings) are not met.[37,38] The temporal stability was examined using the intraclass correlation coefficient (ICC). Both measures were calculated through the R package "psych."[39] Subsequently, we computed descriptive statistics such as means, standard deviations, and Pearson product–moment bivariate correlations among the study variables (difficulties in emotional regulation, RNT, SD, and PD) using the "correlation" package for R.[40] After, we performed correlational analyses to examine possible confounding variables sociodemographic and relational variables) measured at baseline (T1). We applied the Benjamini–Hochberg correction in order to control for false positives when testing multiple correlations.[41]

Finally, we performed an autoregressive SEM analysis using the lavaan package in R to investigate the longitudinal mediating role of RNT in the relationship between difficulties in emotional regulation and both sexual distress and psychological distress across 2 time points (T1 and T2), following MacKinnon's[42] guidelines. The variables were categorized as follows: difficulties in emotional regulation (predictor variable: X), RNT (mediating variable: M), SD (outcome 1: Y1), and PD (outcome 2: Y2) variables. In our model, the effects of primary interest were the longitudinal mediations (indirect effects), which were computed for each outcome variable (SD and PD) according to Jose's[43] recommendations. Longitudinal mediation was established when the effect of the predictor variable (X) at T1 on at least 1 of the 2 outcome variables (Y1 or Y2) at T2 was transmitted through the mediator (M) at T2. This requires that X at T1 significantly predicts M at T2, and M at T2 significantly predicts Y1 or Y2 at T2, forming an indirect effect. Additionally, we controlled for prior levels of Y1 and Y2 at T1 to rule out stability effects, ensuring that changes in Y1 and Y2 are due to mediation rather than persistence over time. Prior to SEM analysis, we checked for outliers and multicollinearity using the "performance" package for R.[39] Following the recommendations of Hoyle,[44] 2 fit indices were used to assess the model fit: (1) the comparative fit index (CFI) with values >0.95, indicating a good model fit, and (2) the standardized root mean square residual (SRMR), with values below 0.06 indicating a good fit. The bootstrapping method with 2000 resamples was applied to assess the longitudinal effect due to our small sample.[45,46] Confidence intervals that did not include zero-support longitudinal mediation. The proportion mediated (P_M) was computed as an effect size measure.[47] The significance level was set to 5% in all analyses. The complete script used in these analyses is shown in the supplementary data (https://osf.io/khnjw).

Results

Descriptive statistics

Means, standard deviations, and intercorrelations between the study variables in both measurement waves are shown in Table 2.

The mean scores of our primary variables from T1 to T2 were as follows: difficulties in emotional regulation (35.59

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Table 2 Means, standard deviations, and Pearson's product–moment correlation between the study variables (N = 64).

	T1 DER	T1 RNT	T1 SD	T1 PD	T2 DER	T2 RNT	T2 SD	T2 PD
T1 DER	-							
T1 RNT	.44**	-						
T1 SD	.37**	.30**	-					
T1 PS	.56**	.50**	.37**	-				
T2 DER	.80**	.37**	.28**	.35**	-			
T2 RNT	.49**	.68**	.31**	.45**	.50**	-		
T2 SD	.42**	.16**	.87**	.28**	.32**	.27**	-	
T2 PD	.55**	.33**	.54**	.61**	.54**	.41**	.55**	-
M	35.59	16.59	13.28	13.44	35.02	16.47	12.70	12.47
SD	10.59	3.48	9.85	4.07	9.12	2.92	10.11	3.54

*$P < .05$; **$P < .01$. T1 = baseline; T2 = month 4. Abbreviations: DER, difficulties in emotional regulation; RNT, repetitive negative thinking; SD, sexual distress; PD, psychological distress; M, mean; SD, standard deviation. The hyphen (–) indicates self-correlation (r = 1.00); values not shown for parsimony. All *P*-values were adjusted using Benjamin–Hochberg correction.

and 35.02); RNT (16.59 and 16.47); SD (9.85 and 10.11); and PD (4.07 and 3.54), respectively. According to Pearson's product–moment correlation analysis, significant positive relationships were found between all variables within and between time measurements.

Control for potential confounding variables

We tried to account for 2 confounding variables referred to in the literature: the frequency of sexual activity and the duration of the relationship. No statistically significant correlations were found between the duration of the relationship and our outcome variables at both moments; therefore, we did not use it as a covariate. However, as the frequency of sexual activity was negative and significantly correlated to SD at T1 (r = -0.25, $P < .05$), it was included as a covariate in the autoregressive SEM model.

The longitudinal mediating role of RNT

Prior to analysis, we checked for both multicollinearity and outliers. Variance inflation factor values were below 10, indicating that the correlation between independent variables was not cause for concern.[48] None of the measures was overly influenced by outliers (all Cook's Ds < 1).[49]

The hypothesized longitudinal mediation model showed a good fit with the data (CFI = 0.959; SRMR = 0.048). All stability coefficients were significant ($P < .001$), with estimates ranging from 0.54 to 0.84. As our SEM model had 2 outcome variables—SD and PD, 2 longitudinal mediational paths (ab_1) and (ab_2) were examined, respectively (see Figure 1). The results showed a positive, significant total effect of difficulties in emotional regulation on SD (T1 DER -> T2 SD; β = 0.16, SE = 0.07, P = .023) but not on PD (T1 DER -> T2 PD; β = 0.25, SE = 0.05, P = .077) while controlling for frequency of sexual activity. According to Loeys et al.,[50] a significant total effect should not be a prerequisite for the test of the indirect effect. Based on this, we further explored the mediating role of RNT between difficulties in emotional regulation and PD.

In regard to the direct effects, we found that the DER positively predicted SD (c'_1 path; β = .20, SE = 0.05, P = .008) after controlling for the mediator and covariate. Conversely, no significant direct effect of DER on PD was revealed after adjusting for the mediator and covariate (c'_2 path; β = .27, SE = 0.05, P = .06). Interestingly, we found a significant negative indirect effect from DER (T1) on SD (T2) via RNT (T2) (ab_1 product; β = -.04, SE = 0.02, 95% bootstrap CI [-.008, -.001], P_M = -.25.00%)], indicating a suppression effect over time. No significant indirect effect from DER (T1) on PD (T2) via RNT (T2) was found (ab_2 product; β = -.02, SE = 0.01, 95% bootstrap CI [-.024, .007], P_M = -7.80%)].

Discussion

In this study, we aimed to investigate the longitudinal associations among the mediating role that RNT may have between difficulties in emotional regulation, SD, and PD in a community sample supporting the transdiagnostic perspective. Our results provide valuable knowledge about the intricate interplay of these variables over time. Even though the preliminary bivariate analysis showed significant associations between all variables within and between measurements, our final SEM-based results indicated that difficulties in emotional regulation are related to SD over time, both directly and indirectly, but not to PD. These findings underscore the importance of using SEM analysis in order to better understand the complexities of longitudinal relationships between these variables. Considering the clinical relevance of SD, the significant positive associations found between PD and SD over time are in line with the literature that takes a dimensional and transdiagnostic look at emotional problems and places SD in the internalizing spectrum.[12,51] This result further sustains that SD can be addressed in intervention research and clinical settings using a transdiagnostic approach such as The Unified Protocol for Transdiagnostic Treatment of Emotional Disorders.[15]

Our results show that, over time, difficulties in emotional regulation have an effect on SD. Previous research focusing on emotional processes had a specific look at regulation and focused on its association with sexual function,[13,52,53] and, in community samples, no meaningful association has been found between emotion regulation and SD.[23] Our study took a different approach by focusing on detrimental emotional processes, namely, difficulties in emotional regulation, and corroborated data from previous studies using a cross-sectional design that showed that difficulties in emotional regulation negatively impact SD. This result is significant at the theoretical level because it solidifies, using longitudinal methods, that emotion dysregulation is important for the understanding of SD, further supporting that approaches aimed at emotional processes may improve distress related to sexuality.

Our findings suggest that the negative association between the frequency of sexual activity and SD may be partially explained by its potential role as a proxy for general

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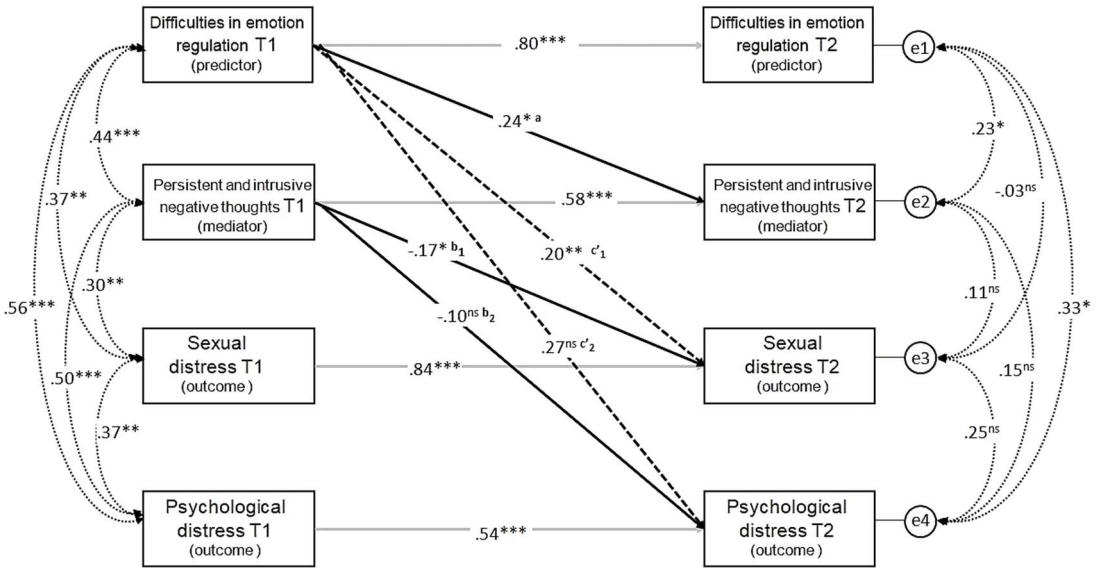


Figure 1 Hypothesized autoregressive mediation model relating DER, RNT, SD, and PD over 4 months note. For the sake of clarity, control variable paths are omitted: (1) bidirectional black dotted paths indicate association (on the left indicate correlations between variables and on the right correlations between errors); (2) gray unidirectional paths represent the autoregressive paths (stability); (3) bold-black unidirectional paths represent paths that were used to calculate the indirect effect (a, b1, and b2); (4) bold-black slashed unidirectional paths indicate paths that were used to calculate the direct effects (c'1 and c'2). Path coefficients are standardized; T1 = baseline; T2 = month 4; $^{*}P < .05$; $^{**}P < .01$; $^{***}P < .001$; ns, non-significant.

relationship or sexual satisfaction. Higher sexual frequency is often associated with better relationship dynamics, such as improved intimacy and communication, which may help mitigate emotional and cognitive factors like RNT and difficulties in emotional regulation.[7,27] The buffering effect observed could be due to sexual activity's role in stress regulation and emotional bonding.[7] Upon incorporating the frequency of sexual activity, the fit statistics of the effect of difficulties in emotional regulation on SD improved but not on PD, highlighting the significance of frequency of sexual activity for a more precise understanding of the relationship between difficulties in emotional regulation and SD over time.

Upon incorporating the frequency of sexual activity, the fit statistics of the effect of difficulties in emotional regulation on SD improved but not on PD, highlighting the significance of frequency of sexual activity for a more precise understanding of the relationship between difficulties in emotional regulation and SD over time. This result is also in line with other literature that argues that SD is a specific and distinct construct from PD, showing that there are differences in the factors associated with SD and PD.

The potential beneficial relationship between low levels of RNT and reduced SD suggests important clinical implications. Although these findings are preliminary, they highlight the need for preventive strategies that address the potential negative impact of maladaptive RNT patterns. Clinical interventions, such as cognitive-behavioral therapy and mindfulness-based approaches, could focus on reducing excessive RNT to prevent the escalation of self-focused attention and performance concerns. These strategies may be relevant in diverse clinical contexts, including situations where SD is associated with sexual dysfunctions, such as erectile dysfunction, as well as in broader therapeutic settings aimed at enhancing sexual and psychological well-being. Emphasizing the potential risks of high RNT within clinical protocols could strengthen early intervention approaches, contributing to a more comprehensive and preventive treatment strategy for managing SD.

Remarkably, our results showed a suppression effect over time on the association of difficulties in emotional regulation on SD, but not on PD, via RNT, further supporting that even though SD and PD are related, they may be explained by different sets of factors. Unlike previous research developed with a cross-sectional design,[1] our results suggest that RNT may have a beneficial impact on the effect of difficulties in emotional regulation on SD over time, which has theoretical and research implications. However, although the results here differ, we controlled for the effect of frequency of sexual activity *in* this study. It is uncertain whether the frequency of sexual activity influenced the findings in the previous study, as previous research indicates that *sexual activity* frequency is associated with SD.[4,5] Repetitive negative thinking is a specific set of negative thinking patterns used as a detrimental strategy to avoid experiencing negative emotions, and research on its detrimental effect has mainly focused on high levels of RNT. However, in the current sample, we observed lower levels of RNT, consistent with the expected range for non-clinical/community samples reported in other studies.[32,54,55] This suggests that, when their levels are low, RNT may be a mechanism that helps to regulate SD over time. This would align with existing theory and research on repetitive thinking—such as rumination and worry—that indicates these may have an adaptive effect.[10,17–19] Our results suggest that low levels of RNT may have an adaptive value but only for the specific experience of SD and over time. Previous results with community samples are in line with this possibility and have shown that co-rumination[10] and reflection, a dimension of rumination,[1,23] may act as a protective factor against the experience of SD. This theoretical possibility needs to be further explored in research that deepens the specificities of RNT in the context of SD, namely, the content of RNT and its putative interpersonal nuances and if its maladaptive role as well as if the impact changes when higher levels of difficulties in emotional regulation and RNT are involved.

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The interplay of transdiagnostic factors as risk or maintenance factors for SD in clinical samples—or those with high levels of SD—needs to be clarified in order to gather the clinical implications of these preliminary findings.

Limitations

The current work has limitations that may impact the interpretation and full understanding of our findings.

Firstly, the absence of a clinical sample restricts the generalizability of our results. Investigating the potential suppression effect in diverse populations, namely, clinical, would contribute to a more nuanced understanding of its mechanisms, enriching the overall comprehension of observed dynamics. Future research should strive to include clinical populations to validate and extend the relevance of our findings in clinical settings.

Secondly, the observed low levels in the variables under investigation, including difficulties in emotional regulation, RNT, and SD, also raise questions about the generalizability of our results. Examining these associations in populations with varying levels of difficulties in emotional regulation, RNT, and SD would enhance the validity of our findings.

In future studies, longitudinal mediation analyses of the variables in this study should be performed with a higher ratio of cases per estimated parameter (at least 5:1) in order to get more robust findings, especially with this kind of model with many parameters and complex paths. Although the results are interesting from an exploratory perspective, they need to be confirmed in future studies to ensure greater reliability and generalizability.

Furthermore, this 2-wave longitudinal mediation model should be examined in the future using partial least squares structural equation modeling (PLS-SEM). This method offers greater flexibility as it does not require assumptions about data distribution and can be applied to interval-scale variables.[56,57] A key advantage of PLS-SEM is its suitability for longitudinal data with relatively small sample sizes, making it a valuable alternative for complex models.[57]

Additionally, relying exclusively on the SDS-R scale for distress assessment presents a limitation. The SDS-R lacks specificity in identifying the specific aspects related to distress, highlighting the need for more detailed measures that explicitly address sexual function in future studies.

To improve the generalizability of our findings, future research should consider a 3-wave design (with a larger sample—accounting for attrition—and variance in the variables of interest) and explore similar patterns in clinical samples. Given that our current sample is almost exclusively women, educated, and urban, it is crucial to recognize the implications this has on the interpretation and generalization of the results. It would be valuable to analyze more diverse samples, allowing us to test, for example, the moderating effects of gender, education, and region of residence. This approach would provide a more nuanced understanding of the findings. Considering our small sample size, moderated analysis in future studies would enhance the robustness of our conclusions.

Conclusion

The current longitudinal study establishes that across time, difficulties in emotional regulation predict levels of SD, 2 interrelated clinically meaningful dimensions. In the current community sample, RNT, a maladaptive coping strategy, buffers this effect across time, which can be indicative that, in the short term, this strategy may prove effective. This effect may be inversed when higher levels of difficulties in emotional regulation or RNT are present, a theoretically based hypothesis to be explored in future research with clinical or subclinical samples. These results highlight the importance of looking at SD with a theoretical frame that also accounts for PD and suggest that SD should be framed theoretically and in clinical practice in dimensional models that account for PD, such as the transdiagnostic approach to psychopathology.

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Author contributions

C.F.R.: Conceptualization, Data curation, Writing—original draft, Writing—review & editing, Validation. P.M.P.: Conceptualization, Formal analysis, Writing—original draft, Writing—review & editing, Validation. P.J.R.: Formal analysis, Writing—original draft, Writing—review & editing. P.J.N.: Validation.

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Conflicts of interest

None declared.

Data availability

The datasets generated and analyzed during this investigation are available from the corresponding author upon reasonable request.

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