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Somatization and Sleep Pathology from a Transdiagnostic Dimensional Perspective: Insights into Detachment Spectrum from a Large Community

Somatizasyon ve Uyku Patolojisi: Transdiagnostik Boyutsal Bir Perspekiften Ayrışma Spektrumu Üzerine Büyük Bir Toplumsal Bakış

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Abstract

Objective: Somatization and sleep problems are psychiatric conditions with high comorbidity that appear to be more influenced by emotional dysfunctions than by other transdiagnostic constructs. The present study aimed to predict dimensional measures of somatization, poor sleep quality, insomnia severity, nightmare severity, and nightmare frequency using the transdiagnostic construct of detachment manifestations.

Materials and Methods: An online survey was conducted to collect cross-sectional data from 1,106 Iranian adults (64% female; mean age =32±9.6 years; age range =17 to 73 years) between August and December 2023. Participants completed the measurement inventory of detachment manifestations, the revised form of the symptom checklist-90, and several validated questionnaires assessing sleep disturbances. Data were analyzed using Pearson correlations and multiple linear regression analyses.

Results: Only the self-focused pattern of detachment manifestations significantly predicted somatization (R^2=0.23, p<0.001), poor sleep quality (R^2=0.15, p<0.001), insomnia severity (R^2=0.20, p<0.001), nightmare frequency (R^2=0.10, p<0.001), and nightmare severity (R^2=0.14, p<0.001). Specifically, both subtypes of the self-focused pattern-dissociative (β=0.16 to 0.45, all p≤0.002) and self-body manifestations (β=0.08 to 0.18, all p<0.05) were meaningful predictors of nearly all criterion variables.

Conclusion: The self-focused pattern of detachment manifestations -especially the dissociative subtype-is a key construct in predicting somatization and sleep problems. A better understanding of the phenomenology and underlying mechanisms underlying somatization and sleep disturbances within transdiagnostic frameworks requires shifting the focus from emotional dysfunction to the detachment spectrum.

Keywords: Detachment, abnormal personality, psychopathology, sleep disturbance, somatization

Öz

Amaç: Somatizasyon ve uyku problemleri, yüksek komorbiditeye sahip, duygusal işlev bozukluklarından daha fazla etkilenen psikiyatrik durumlar olarak görünmektedir. Bu çalışmanın amacı, somatizasyon, kötü uyku kalitesi, insomnia şiddeti, kabus şiddeti ve kabus sıklığı gibi boyutsal ölçümleri, ayrışma belirtilerinin transdiagnostik kavramı ile tahmin etmektir.

Gereç ve Yöntem: 2023 yılı Ağustos ve Aralık ayları arasında 1,106 İranlı yetişkinden (%64 kadın, 32±9,6 yaş, 17 ile 73 arasında) kesitsel verilerin toplandığı çevrimiçi bir anket kullanıldı. Katılımcılar, ayrışma belirtileri ölçüm envanteri, gözden geçirilmiş semptom kontrol listesi-90 ve uyku bozukluklarını ölçmek için birkaç geçerli anket tamamladılar. Veriler, Pearson korelasyonları ve çoklu doğrusal regresyon analizi ile analiz edilmiştir.

Bulgular: Sadece kendine odaklı ayrışma belirtileri modeli, somatizasyonu (R^2=0,23; p<0,001), kötü uyku kalitesini (R^2=0,15; p<0,001), insomnia şiddetini (R^2=0,20; p<0,001), kabus sıklığını (R^2=0,10; p<0,001) ve kabus şiddetini (R^2 =0,14; p<0,001) önemli ölçüde tahmin etmiştir. Özellikle, kendine odaklı modelin her iki alt tipi, dissosiyatif (β=0,16 ile 0,45, tüm p≤0,002) ve kendine-düşkünlük belirtileri (β=0,08 ile 0,18, tüm p<0,05) neredeyse tüm kriter değişkenlerinin anlamlı tahmincileri olmuştur.

Sonuç: Kendine odaklı ayrışma belirtileri modeli -özellikle dissosiyatif alt tipi- somatizasyon ve uyku problemlerini tahmin etmede anahtar bir kavramdır. Somatizasyon ve uyku problemlerinin fenomenolojisi ve temel mekanizmalarının transdiagnostik sistemlerde daha iyi anlaşılması, duygusal işlev bozukluğundan ayrışma spektrumuna bir kaymayı gerektirmektedir.

Anahtar Kelimeler: Ayrışma, anormal kişilik, psikopatoloji, uyku bozukluğu, somatizasyon

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Introduction

Psychiatric comorbidity, which is quite common, refers to the presence of two or more mental disorders or diseases in the same individual simultaneously.[1] Since individuals with comorbid disorders often experience greater symptom severity and a higher risk of functional impairment, comorbidity complicates accurate diagnosis and treatment due to the complex interplay of symptoms.[2] Specifically, somatization and sleep problems are among diagnostic categories with high comorbidity rates-ranging from 20% to 48%-which negatively impact quality of life.[3]

Somatization is a complex psychiatric phenomenon involving the manifestation of psychological distress through physical symptoms that are otherwise unexplained. Diagnosing somatization is challenging because it may be mistaken for physical illnesses, prompting patients to seek multiple medical opinions in search of an accurate diagnosis.[4] Sleep is also a complex process that influences cognitive functioning, emotional regulation, and overall well-being.[5] Sleep problems encompass a wide range of disorders, including insomnia, nightmares, and poor sleep quality.

Despite the high comorbidity between somatization and sleep problems, the categorical assessment approach tends to overestimate comorbidities across psychopathology. Categorical assessment, or symptom-based psychiatric nosology, focuses on diagnosing distinct disorders and can contribute to the perceived increase in comorbidity. This is because the rigid boundaries of diagnostic categories may lead to overlapping symptoms across multiple disorders, increasing the likelihood that individuals meet criteria for more than one diagnosis.[6]

Current approaches to psychopathology aim to address the limitations of comorbidity by adopting dimensional assessment frameworks and transdiagnostic models. Dimensional assessment within a hierarchical structure helps reduce comorbidity by moving beyond rigid diagnostic categories and concentrating on symptom severity and interplay. This approach enables a more nuanced understanding of individual patients, leading to more tailored and effective treatment plans.[7] Transdiagnostic systems seek to identify commonalities across different mental health disorders, rather than focusing solely on specific diagnoses. These systems can help treat comorbidity by targeting underlying mechanisms and shared processes that contribute to multiple disorders.[8]

The research domain criteria and the hierarchical taxonomy of psychopathology (HiTOP) are two prominent transdiagnostic frameworks used to classify mental disorders. For example, HiTOP is designed to improve upon traditional systems by organizing disorders based on shared genetic vulnerabilities, environmental risk factors, and neurobiological abnormalities, rather than relying solely on symptom clusters.[9] In this framework, comorbid symptoms and syndromes are encompassed by transdiagnostic constructs. For instance, distress and fear-related pathologies (e.g., depression, anxiety, phobias, and insomnia) are associated with the internalizing spectrum, while somatic symptoms and illness anxiety fall within the somatoform spectrum. Although initially challenging, further research has supported treating these as two distinct spectra within HiTOP.[10] At its highest level, HiTOP introduces a general factor of psychopathology, which comprises three super-spectra: externalizing (antagonistic and disinhibited behaviors), psychosis (detachment and thought disorder), and emotional dysfunction (internalizing and somatoform).[9]

Parallel to HiTOP, which addresses the challenges of comorbidity between somatization and sleep problems through the emotional dysfunction super-spectrum, the literature also explores the links between emotion dysregulation and these comorbid conditions.[11,12] However, this should not lead to neglecting the connections between the comorbid conditions and other transdiagnostic constructs. In the present study, we aim to investigate the associations between the detachment spectrum within HiTOP and somatization, as well as sleep problems (e.g., insomnia, nightmares, and poor sleep quality).

Detachment can manifest as emotional numbness, social withdrawal, and decreased engagement with one's environment, often observed in conditions like depression and anxiety disorders. Additionally, individuals may employ avoidance strategies as coping mechanisms, distancing themselves from distressing emotions or thoughts. The detachment spectrum specifically captures individual differences in sociability (ranging from high engagement to disinterest), volition (from enthusiastic goal pursuit to apathy), and affective expression (from highly expressive to restricted). It encompasses traits such as introversion and negative schizotypy (e.g., anhedonia, social withdrawal, avolition, anergia, affective flattening, and alogia), as well as negative symptoms of schizophrenia.[13] Detached individuals may experience emotional anhedonia or depression and often tend to avoid social interactions, leading to withdrawal from others, whom they may view with suspicion.[14]

Detachment is considered the opposite pole of extraversion within the five-factor model[15] and is also related to the concept of attachment.[16] Theoretically, the detachment spectrum highlights the interconnectedness of psychiatric conditions, suggesting that detachment may serve as a common vulnerability factor. In transdiagnostic models of psychopathology, detachment is viewed as a core psychological construct that influences various mental health disorders.

Current Study

Research on the association between detachment, somatization, and sleep problems is limited, and the existing findings are contradictory and heterogeneous. Some studies have reported significant associations between the detachment spectrum (e.g., insecure attachment, low extraversion, anhedonia, depressivity, withdrawal, intimacy avoidance, perceptual dysregulation, and schizotypy) and somatization and sleep issues,[17-24] while others have found no significant links between detachment and these psychiatric conditions.[25-27] Additionally, small sample sizes in some studies threaten the validity of the findings. These issues highlight the need for further research.

Furthermore, there is a gap in the literature, as most studies have focused on personality features of the detachment spectrum, whereas the concept of detachment encompasses a broader psychopathological spectrum, including psychotic and dissociative features. Since most scales designed to assess the HiTOP detachment spectrum rely on personality traits such as maladaptive extraversion,[28] we utilized the Measurement Inventory of Detachment Manifestations (MINDs) for a more comprehensive assessment.[14]

Detachment manifestations are a recently conceptualized transdiagnostic construct that includes broader psychopathology, such as personality features and dissociative phenomena. These manifestations involve two main patterns: self-focused and other-focused. The self-focused pattern includes subtypes such as self-body (e.g., avoiding perceiving one's own image or voice, often stemming from discomfort, self-criticism, or dissociation, which hampers self-acceptance and personal identity) and dissociative (interpersonal dysfunction caused by a lack of coherence or continuity among thoughts, memories, surroundings, actions, and identity). The other-focused pattern encompasses manifestations like social (avoiding interpersonal intimacy or social relations), family (avoiding intimacy with family members), physical (avoiding physical contact), verbal (avoiding conversations or using very short sentences), visual-auditory (avoiding seeing or listening to others), ethnic-racial (avoiding relationships with certain ethnic groups or races), collaborative (avoiding cooperation or collaboration), and feeling (avoiding discussing experienced feelings with others).[14]

The detachment manifestations are a recently conceptualized transdiagnostic construct that includes broader psychopathology (e.g., personality features, dissociations, etc.). Detachment manifestations consist of two big constructs, including the self-focused and the other-focused patterns. Self-body (when individuals avoid perceiving their own image or voice, often stemming from discomfort, self-criticism, or dissociation, hindering self-acceptance and personal identity) and dissociative (an interpersonal dysfunction caused by lack of coherence or continuity between thoughts, memories, surroundings, actions, and identity) manifestations are the subtypes of the self-focused pattern, while the other-focused pattern includes social (any avoidance of interpersonal intimacy or social relations with others), family (any avoidance of intimacy with family members), physical (any avoidance of physical contact with others), verbal (any avoidance of conversation with others or use of very short sentences), visual-auditory (any avoidance of seeing others and any avoidance of listening to others), ethnic-racial (any avoidance of relationships with certain ethnic groups and races), collaborative (any avoidance of collaboration and cooperation with others), and feeling (any avoidance of conversation with others about experienced feelings) manifestations.[14]

Finally, recent research on the relationship between detachment and nightmare disorders is scarce. Only one study reported a negative association between detachment and the occurrence of positive dreams.[29]

In the present study, we aimed to address these gaps by applying a comprehensive scale to measure the detachment spectrum in a large sample. We also included nightmares as a criterion variable. Our first aim was to predict somatization and sleep problems-such as poor sleep quality, insomnia severity, nightmare frequency, and nightmare severity-based on the broad types of detachment manifestations, including both other-focused and self-focused patterns. Our second objective was to predict all criterion variables based on specific detachment subtypes-namely, social, family, physical, verbal, visual-auditory, ethnic-racial, collaborative, feeling, self-body, and dissociative manifestations.

Materials and Methods

Design and Sample

Iranian adults were invited to participate in an online survey from August to December 2023 through personal requests, phone calls, and social media apps such as Telegram, WhatsApp, and Instagram. We specifically targeted individuals aged 17 or older who had not used illegal drugs or psychiatric medications in the past four weeks to complete the questionnaires.

We calculated the statistical power and adequacy of the sample size for detecting a small to medium effect size of 0.15, with a power level of 0.99 and an alpha of 0.01 for multiple regression analyses involving ten predictor variables (see https://www.danielsoper.com/statcalc/calculator.aspx?id=1). This analysis indicated a minimum required sample size of 280 participants. However, we increased the sample size nearly fourfold to minimize all types of sampling errors, including alpha and beta errors, as well as the margin of error.[30]

A total of 1,106 adults aged 17 to 73 consented to participate in this cross-sectional study. Among them, 333 (30%) reported previous experiences with counseling, psychotherapy, or medication. Participants completed the Persian versions of the MINDs,[14] the Pittsburgh Sleep Quality Index,[31] the Insomnia Severity Index,[32] the Lucid Dream and Nightmare Frequency Scales (LDNFS),[33] the Disturbing Dream and Nightmare Severity Index,[34] and the somatization subscale of the Revised Symptom Checklist-90 (SCL-90-R).[35,36] The MINDs subscales served as measures of the predictor variables, while the other instruments assessed the criterion variables. All participants provided signed, written informed consent. This study was approved by the Ethics Committee of Kermanshah University of Medical Sciences (approval number: IR.KUMS.REC.1402.125, date: 04.07.2023) and conducted in accordance with the Declaration of Helsinki.

Measures

MINDs: The questionnaire is a 62-item self-report inventory designed to assess detachment manifestations. It evaluates both self-focused and other-focused patterns. The self-focused pattern comprises two subcategories: self-body detachment (7 items: 12, 20, 27, 32, 45, 46, and 59) and dissociative detachment (17 items: 6, 10, 13, 16, 17, 18, 19, 21, 28, 30, 36, 37, 39, 44, 54, 58, and 61). The other-focused pattern includes eight subcategories: social (8 items: 1, 8, 29, 33, 40,

47, 52, and 55), family (6 items: 4, 9, 24, 43, 49, and 53), physical (3 items: 3, 31, and 57), verbal (4 items: 2, 23, 41, and 51), visual-auditory (9 items: 14, 15, 22, 25, 34, 35, 38, 48, and 62), ethnic-racial (3 items: 5, 50, and 56), collaborative (3 items: 7, 11, and 26), and feeling (2 items: 42 and 60). Except for six items-questions 1, 8, 24, 33, 52, and 55 -all items are scored directly, with responses rated on a Likert scale from 0 to 3 (0= completely false, 1= relatively false, 2= relatively true, 3= completely true). The score for each subscale is obtained by summing the item scores and dividing by the number of items, resulting in a subscale score ranging from 0 to 3. The initial validation study, including the Iranian population, reported acceptable reliability and validity for the questionnaire.[14] In the present study, Cronbach's alpha coefficients for the subscales were as follows: self-body (α=0.78), dissociative (α=0.88), social (α=0.82), family (α=0.75), physical (α=0.66), verbal (α=0.75), visual-auditory (α=0.80), ethnic-racial (α=0.75), collaborative (α=0.78), and feeling (α=0.60). The internal consistency for the self-focused pattern was α=0.91, for the other-focused pattern α=0.92, and for the total scale items α=0.95 -all indicating good reliability.

Pittsburgh Sleep Quality Index

This widely used measure assesses 7 subscales and a total sleep quality scale using 18 self-report items. The subscales include (i) the subjective quality of sleep (item 9), (ii) the delay in falling asleep (item 2 and the first part of item 5), (iii) the duration of sleep (question 4), (iv) sleep efficiency (manual calculation of some items), (v) the sleep disorders (the mean of item 5), (vi) using sleeping pills (question 6), and (vii) daily dysfunctions (the mean of items 7 and 8). Each subscale is scored from 0 to 3, with higher scores indicating poorer sleep quality. The initial validation supported good psychometric properties.[31] Although scores above 5 are considered indicative of poor sleep quality in general, evidence in the Iranian population suggests a cut-off of 6.5 or higher.[37] The Persian version's psychometric properties are acceptable, and in our study, Cronbach's alpha was 0.76.

Insomnia Severity Index

The index contains 7 questions, which include questions to assess (i) the sleep onset dysfunction, (ii) sleep continuation due to frequent awakening, (iii) early awakening, (iv) dissatisfaction with sleep pattern, (v) daily performance dysfunctions, (vi) worry due to the sleep problem, and (vii) the negative impact on the quality of life. Items are rated from 0 to 4, with higher scores indicating more severe insomnia. Total scores range from 0 to 28, with a score of 15 or above indicating moderate to severe insomnia.[32] The index has demonstrated acceptable validity and reliability in the Iranian population,[38] with a Cronbach's alpha of 0.88 in this study.

Nightmare and Lucid Dream Frequency Scale

This single-item scale includes seven categories to assess the frequency of nightmares. Grading ranges from "nothing" (score zero) to "several times a week" (score 7). Higher scores indicate a greater frequency of nightmares. The scale's developers have reported retest reliability coefficients ranging from 0.75 to 0.89 across different samples.[33]

Disturbing Dream and Nightmare Severity Index

This questionnaire comprises five items that assess the intensity of nightmares experienced by the individual. Given the variability in scoring across items, responses are scored from zero (no nightmare) to a maximum score of 14, depending on the item. Higher scores indicate greater nightmare severity. The authors of this scale have reported acceptable validity.[34] In this study, Cronbach's alpha for the index was 0.84.

Revised Form of Symptom Checklist-90

The SCL-90-R is a 90-item self-report questionnaire used to assess symptoms of mental disorders. It includes nine clinical subscales: depression (13 items), somatization (12 items), obsessive-compulsive disorder, anxiety, and psychoticism (10 items each), interpersonal sensitivity (9 items), phobic anxiety (7 items), hostility, and paranoid ideation (6 items each). Responses are rated on a Likert scale from 0 (no discomfort) to 4 (very severe discomfort). Initial validation studies have demonstrated acceptable reliability and validity for both the original and revised versions.[35,36] The Persian version of the SCL-90-R has shown acceptable psychometric properties in the Iranian population.[39] In this research, we used only the somatization subscale, and the Cronbach's alpha was 0.90.

Statistical Analysis

No missing data were encountered, as responses to all questions in the online form were mandatory. First, we reported the means and standard deviations for all variables. Before conducting the main analyses, we examined whether the assumptions of parametric tests, such as data normality (Skewness and Kurtosis between -1 and +1 for most variables), were met. Subsequently, Pearson correlation coefficients were calculated to assess the relationships between detachment manifestations (both the two broad types and ten subtypes) and the criterion variables (somatization, sleep quality, insomnia severity, nightmare frequency, and nightmare severity). Multiple linear regression analyses were performed to predict each criterion variable.

In one set of regression models, the broad types of detachment-other-focused and self-focused patterns-served as predictor variables. In the other set, the ten subtypes of detachment-social, family, physical, verbal, visual-auditory, ethnic-racial, collaborative, feeling, self-body, and dissociative-were used as predictors. R^2 was computed to indicate the proportion of variance explained by each model. Standardized beta coefficients were also reported to quantify the associations between each detachment manifestation and the criterion variables. To control for potential confounding effects, additional regression models adjusted for gender and age.

All statistical analyses were conducted using IBM SPSS Statistics version 27.0 (IBM Corp., Chicago, USA, 2020). A significance level of $p \leq 0.05$ (two-tailed) was adopted for all tests.

Results

Supplementary Table 1 presents the demographic data of the full sample. The average age of participants was 32±9.6 years. Most participants were female (n=709, 64%), single (n=562, 51%), university-educated (n=917, 83%), employed (n=650, 59%), and residents of the western regions of the country (66%).

Supplementary Table 2 shows the descriptive statistics of the sample. The mean scores for all detachment subtypes ranged from 0.84 (self-body detachment) to 1.78 (feeling detachment). The mean scores for sleep disturbances ranged from 3.46 (nightmare frequency) to 9.76 (insomnia severity). The mean and standard deviation for somatization were 14.03 and 9.64, respectively.

Table 1 displays the correlation coefficients between all detachment manifestation types and both somatization and sleep disturbances. The broad types of detachment manifestations are significantly correlated with somatization (r from 0.30 to 0.48; all p≤0.001), poor sleep quality (r from 0.29 to 0.39; all p≤0.001), insomnia severity (r from 0.34 to 0.44; all p≤0.001), nightmare frequency (r from 0.25 to 0.31; all p≤0.001), and nightmare severity (r from 0.27 to 0.38; all p≤0.001).

Additionally, the subtypes of detachment manifestations are significantly correlated with somatization (r from 0.10 for feeling detachment to 0.48 for dissociative detachment; all p≤0.001), poor sleep quality (r from 0.10 for feeling detachment to 0.38 for dissociative detachment; all p≤0.001), insomnia severity (r from 0.15 for feeling detachment to 0.42 for dissociative detachment; all p≤0.001), nightmare frequency (r from 0.11 for feeling and verbal types to 0.31 for dissociative detachment; all p≤0.001), and nightmare severity (r from 0.09 for feeling detachment to 0.37 for dissociative detachment; all p≤0.004).

Table 2 presents multiple linear regression models predicting the criterion variables (somatization, poor sleep quality, insomnia severity, nightmare frequency, and nightmare severity) based on the broad types of detachment manifestations, including self-focused and other-focused patterns. The results indicate that these broad types significantly predicted all criterion variables: somatization (R^2=0.23; p<0.001), insomnia severity (R^2=0.20; p<0.001), poor sleep quality (R^2=0.15; p<0.001), nightmare severity (R^2=0.14; p<0.001), and nightmare frequency (R^2=0.10; p<0.001). Specifically, the self-focused pattern of detachment was a significant predictor of all these outcomes: somatization (β=0.53, p<0.001), insomnia severity (β=0.39, p<0.001), poor sleep quality (β=0.37, p<0.001), nightmare severity (β=0.36, p<0.001), and nightmare frequency (β=0.26, p<0.001). Conversely, the other-focused pattern did not significantly predict any of the criterion variables (β from -0.07 to 0.07; all p>0.05). The regression models adjusted for sex and age are presented in Supplementary Table 3.

Table 3 presents multiple linear regression models predicting the criterion variables (somatization, poor sleep quality, insomnia

Table 1. Correlations between the predictors and criterion variables

Predictors	Criterion variables									
	Somatization		Poor sleep quality		Insomnia severity		Nightmare frequency		Nightmare severity	
	r	p	r	p	r	p	r	p	r	p
Other-focused pattern	0.30	<0.001	0.29	<0.001	0.34	<0.001	0.25	<0.001	0.27	<0.001
Social detachment	0.26	<0.001	0.25	<0.001	0.28	<0.001	0.25	<0.001	0.28	<0.001
Family detachment	0.28	<0.001	0.29	<0.001	0.33	<0.001	0.24	<0.001	0.29	<0.001
Physical detachment	0.29	<0.001	0.24	<0.001	0.24	<0.001	0.25	<0.001	0.28	<0.001
Verbal detachment	0.15	<0.001	0.16	<0.001	0.20	<0.001	0.11	<0.001	0.10	<0.001
Visual-auditory detachment	0.26	<0.001	0.23	<0.001	0.28	<0.001	0.20	<0.001	0.22	<0.001
Ethnic-racial detachment	0.19	<0.001	0.21	<0.001	0.24	<0.001	0.14	<0.001	0.17	<0.001
Collaborative detachment	0.16	<0.001	0.15	<0.001	0.21	<0.001	0.15	<0.001	0.16	<0.001
Feeling detachment	0.10	<0.001	0.10	<0.001	0.15	<0.001	0.11	<0.001	0.09	0.004
Self-focused pattern	0.48	<0.001	0.39	<0.001	0.44	<0.001	0.31	<0.001	0.38	<0.001
Self-body detachment	0.42	<0.001	0.35	<0.001	0.39	<0.001	0.27	<0.001	0.32	<0.001
Dissociative detachment	0.48	<0.001	0.38	<0.001	0.42	<0.001	0.31	<0.001	0.37	<0.001

Table 2. Multiple regression models predicting the criterion variables based on the broad types of detachment manifestations

Predictors	Criterion variables									
	Somatization		Poor sleep quality		Insomnia severity		Nightmare frequency		Nightmare severity	
	ß	p	ß	p	ß	p	ß	p	ß	p
Other-focused pattern	–0.07	0.073	0.03	0.402	0.07	0.059	0.07	0.078	0.03	0.768
Self-focused pattern	0.53	<0.001	0.37	<0.001	0.39	<0.001	0.26	<0.001	0.36	<0.001
R^2	0.23	<0.001	0.15	<0.001	0.20	<0.001	0.10	<0.001	0.14	<0.001

Table 3. Multiple regression models predicting the criterion variables based on the subtypes of detachment manifestations										
Predictors	Criterion variables									
	Somatization		Poor sleep quality		Insomnia severity		Nightmare frequency		Nightmare severity	
	ß	p	ß	p	ß	p	ß	p	ß	p
Other-focused pattern										
Social detachment	-0.04	0.272	0.02	0.629	0.03	0.459	0.09	0.021	0.08	0.049
Family detachment	-0.02	0.558	0.08	0.034	0.09	0.016	0.06	0.110	0.08	0.036
Physical detachment	0.02	0.627	-0.01	0.747	-0.08	0.033	0.07	0.065	0.07	0.063
Verbal detachment	-0.08	0.031	-0.05	0.231	-0.04	0.271	-0.12	0.003	-0.15	<0.001
Visual-auditory detachment	0.03	0.433	0.01	0.848	0.03	0.499	0.03	0.446	0.03	0.413
Ethnic-racial detachment	0.00	0.993	0.08	0.017	0.08	0.016	0.01	0.849	0.02	0.536
Collaborative detachment	-0.05	0.184	-0.03	0.357	0.01	0.802	-0.02	0.633	-0.02	0.580
Feeling detachment	-0.04	0.187	-0.03	0.388	-0.01	0.890	0.02	0.557	-0.02	0.579
Self-focused pattern										
Self-body detachment	0.16	<0.001	0.14	<0.001	0.18	<0.001	0.07	0.104	0.08	0.038
Dissociative detachment	0.45	<0.001	0.24	<0.001	0.24	<0.001	0.16	0.002	0.24	<0.001
R^2	0.25	<0.001	0.17	<0.001	0.21	<0.001	0.12	<0.001	0.17	<0.001

severity, nightmare frequency, and nightmare severity) based on the subtypes of detachment manifestations. The results indicate that detachment manifestations significantly predicted all criterion variables: somatization (R^2=0.25; p<0.001), poor sleep quality (R^2=0.17; p<0.001), insomnia severity (R^2=0.21; p<0.001), nightmare frequency (R^2=0.12; p<0.001), and nightmare severity (R^2=0.17; p<0.001). Specifically, dissociative (β=0.45, p<0.001), self-body (β=0.16, p<0.001), and verbal (β=-0.08, p=0.031) manifestations of detachment were significant predictors of somatization. Poor sleep quality was also significantly predicted by dissociative (β=0.24, p<0.001), self-body (β=0.14, p<0.001), ethnic-racial (β=0.08, p=0.017), and family (β=0.08, p=0.034) manifestations. Insomnia severity was significantly predicted by dissociative (β=0.24, p<0.001), self-body (β=0.18, p<0.001), family (β=0.09, p=0.016), ethnic-racial (β=0.08, p=0.016), and physical (β=-0.08, p=0.033) manifestations. Nightmare frequency was significantly associated with dissociative (β=0.16, p=0.002), verbal (β=-0.12, p=0.003), and social (β=0.09, p=0.021) manifestations. Finally, nightmare severity was significantly predicted by dissociative (β=0.24, p<0.001), verbal (β=-0.15, p<0.001), family (β=0.08, p=0.036), self-body (β=0.08, p=0.038), and social (β=0.08, p=0.049) manifestations of detachment.

Discussion

The present study aimed to predict dimensional measures of somatization, poor sleep quality, insomnia severity, nightmare frequency, and nightmare severity based on the transdiagnostic construct of detachment manifestations. The predictive models, which included the two broad types of detachment, explained 23% of the variance in somatization and 10-20% of sleep problems. However, we found that only the self-focused pattern of detachment (dissociative and self-body manifestations) was significantly related to both somatization and sleep problems.

Dissociative detachment is associated with somatization because both involve processing emotional and psychological distress through physical symptoms. Somatoform dissociation can manifest as a lack of integration of somatic experiences, leading to symptoms such as pain or paralysis without an identifiable medical cause. Additionally, individuals with dissociative disorders often exhibit high levels of somatization, with psychological trauma and stress expressed through bodily symptoms. This connection may also relate to underlying trauma-related factors, such as insecure attachment patterns.[19,40] Furthermore, dissociative processes interfere with the integrative mechanisms of consciousness, memory, identity, or perception, contributing to somatic manifestations.[19] Dissociative detachment has also been found to significantly influence sleep disorders; studies suggest that individuals experiencing dissociative symptoms tend to have higher levels of sleep problems.[41,42] These symptoms can cause disturbances in sleep patterns, such as increased sleep intrusions during wakefulness, possibly contributing to depressive moods. Overall, there appears to be a complex relationship between dissociative experiences and sleep disturbances, underscoring their mutual influence.

Dissociative experiences are also linked to higher distress levels in nightmares. Individuals who experience dissociative detachment may report more intense and distressing nightmares compared to those who do not. This association indicates that the psychological mechanisms underlying dissociation can exacerbate the frequency and emotional impact of nightmares.[41] Regarding the relationship between self-body detachment and somatization, negative body image can lead to increased stress, anxiety, and emotional turmoil, which may manifest as physical symptoms. People with difficulties in self-acceptance may also be more attuned to their bodily sensations and thus report more somatic complaints as expressions of their psychological distress. Additionally, it is important to consider the potential

links between somatization and body dysmorphic disorder. The MINDs items related to self-body-such as "If I could, I would change my appearance or voice" and "I tear or delete photos of myself that I don't like"-partially overlap with symptoms of body dysmorphic disorder. Some studies have reported a relationship between somatization and body dysmorphic disorder, as well as comorbidity between these diagnostic categories.[43,44]

Individuals with negative body image may experience cognitive distortions and heightened dissatisfaction with their appearance, resulting in increased anxiety and low self-esteem. This emotional distress can negatively affect sleep quality and duration, leading to symptoms of insomnia.[45] Additionally, unhealthy coping strategies related to body image, such as avoidance or compulsive behaviors, may further disrupt sleep patterns.[46]

We found that social and family types of detachment are predictors of nightmares. Social detachment may lead to nightmares due to the impact of social isolation on the brain's dream processes. Isolated individuals might experience heightened interactions within their dreams, reflecting unmet social needs. In contrast, family detachment refers to the avoidance of ongoing and intimate communication with family members, which may stem from past traumatic experiences. Some studies have reported a relationship between childhood maltreatment and insecure attachment in adulthood.[47,48] This disconnection from a vital support system-namely, the family-may threaten quality of life and sleep. Several studies have highlighted the association between poor family support and sleep problems.[49,50]

We also found that ethnic-racial detachment is a significant predictor of insomnia severity and poor sleep quality. Given that Iran is a multi-ethnic and multicultural country, understanding some subcultures can be challenging for certain groups. Ethnic-racial detachment may contribute to insomnia due to the stressors and challenges faced by minority groups, which can adversely affect both mental and physical health, leading to sleep disturbances.

Finally, our results showed negative regression coefficients between verbal detachment and somatization, nightmare frequency, and nightmare severity. Although the bivariate correlations between these variables are positive, the negative associations in the regression models are likely due to suppressor effects.

The findings of this study have significant theoretical and clinical implications regarding the role of detachment manifestations in somatization and sleep disturbances. The predictive models underscore the importance of differentiating between self-focused and other-focused detachment patterns, with self-body and dissociative detachment being closely linked to somatic symptoms and sleep issues. These insights can inform therapeutic approaches, as targeting self-focused detachment may help alleviate both somatization and insomnia. Clinicians should consider assessing detachment manifestations, particularly in patients presenting with unexplained physical symptoms or sleep disturbances. The observed associations between social and family detachment and nightmares emphasize the importance of addressing interpersonal relationships in treatment planning.

Additionally, recognizing the contribution of ethnic-racial detachment to insomnia can promote culturally sensitive interventions that address the unique stressors faced by minority groups. Overall, these findings support a transdiagnostic perspective, facilitating a more integrated understanding of mental health disorders and enhancing treatment efficacy.

Study Limitations

The present study is a pioneering effort to identify associations between detachment manifestations and two common mental health-threatening conditions across cultures: somatization and sleep problems. We used the MINDs, a recently developed dimensional questionnaire that uniquely covers all forms of detachment,[14] to measure the transdiagnostic construct of detachment manifestations. We included a large sample to reduce sampling error and minimize bias.[30] Although knowledge about psychopathology primarily comes from Western populations,[9] our analysis of data from a non-Western sample enhances the potential for cross-cultural generalizability. However, there are some limitations that future research should address.

The most significant limitation was the absence of a clinical sample with established psychiatric diagnoses. Including such a sample in future studies would increase the validity of the findings. Second, we employed a cross-sectional design and used self-report scales for data collection. A longitudinal design, along with data obtained from clinician-rated scales and clinical interviews, could improve the robustness and validity of the results. Third, self-report measures are susceptible to respondent biases. Future studies should aim to reduce these biases through semi-structured or structured interviews conducted by clinicians. Fourth, the LDNFS, used to measure nightmare frequency, relies on a single item, which may not capture all relevant nuances. Future research could utilize more comprehensive measurement tools to differentiate between trauma-related and idiopathic nightmares. Fifth, we did not examine participants' trauma history or comorbid psychiatric conditions, which could potentially influence the findings. Future research should consider these confounding variables. Sixth, most participants were from the western regions of Iran, which may limit the generalizability of the results to other regions of the country. Finally, while online sampling offers convenience, it is subject to limitations such as online bias, which may affect representativeness. This approach may exclude individuals with limited internet access, further compromising diversity and potentially impacting the validity of the findings.

Conclusion

The current study found that only the self-focused pattern of detachment and its subtypes (dissociative and self-body manifestations) significantly predicted somatization, poor sleep quality, insomnia severity, nightmare frequency, and nightmare severity. Accordingly, detachment patterns related to

relationships with others do not appear to play a significant role in the psychopathology of somatization and sleep problems. We suggest that a deeper understanding of the phenomenology and underlying mechanisms of somatization and sleep disturbances within transdiagnostic frameworks requires a shift from focusing solely on emotional dysfunction to considering the detachment spectrum. However, the limitations discussed should be addressed in future research.

Ethics

Ethics Committee Approval: This study was approved by the Ethics Committee of Kermanshah University of Medical Sciences (approval number: IR.KUMS.REC.1402.125, date: 04.07.2023) and conducted in accordance with the Declaration of Helsinki.
Informed Consent: All participants provided signed, written informed consent.

Footnotes

Authorship Contributions

Concept: S.K., F.R., A.Z., B.F., H.K., Design: S.K., F.R., A.Z., B.F., H.K., Data Collection or Processing: S.K., A.Z., B.F., Analysis or Interpretation: S.K., H.K., Literature Search: S.K., F.R., A.Z., B.F., Writing: S.K., F.R., A.Z., B.F., H.K.
Conflict of Interest: No conflict of interest was declared by the authors.
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Supplementary Table 1. Demographic data of the sample (n=1106)		
Variable	**n**	**%**
Sex		
Female	709	64.1
Male	397	35.9
Age groups		
17-45 years	996	90.1
46-65 years	107	9.7
>65 years	3	0.3
Education		
Under diploma	43	3.9
Diploma	146	13.2
Academic level	917	82.9
Job		
Employed	296	26.8
Self-employed	215	19.4
Housekeeper	139	12.6
College student	280	25.3
Other	176	15.9
Marital status		
Single	498	45.0
Married	608	55.0
Current psychotherapy or pharmacotherapy		
No	897	81.1
Yes	209	18.9
Previous psychotherapy or pharmacotherapy		
No	773	69.9
Yes	333	30.1
Geographical region		
Western	730	66.0
Other	376	34.0

Supplementary Table 2. Descriptive data of the sample								
Variables	**Minimum**	**Maximum**	**Mean**	**SD**	**Skewness**	**Std. error**	**Kurtosis**	**Std. error**
Somatization	0	48	14.03	9.64	0.80	0.07	0.28	0.15
Poor sleep quality	0	21	6.91	3.65	0.88	0.07	0.65	0.15
Insomnia severity	0	28	9.76	6.20	0.46	0.07	-0.44	0.15
Nightmare frequency	0	7	3.46	1.93	0.06	0.07	-0.67	0.15
Nightmare severity	0	34	6.77	6.31	1.27	0.07	1.81	0.15
Detachment manifestations								
Other-focused pattern	0	2.81	1.36	0.50	0.04	0.07	-0.21	0.15
Social detachment	0	3	1.08	0.60	0.15	0.07	-0.49	0.15
Family detachment	0	3	1.25	0.64	0.37	0.07	-0.34	0.15
Physical detachment	0	3	0.89	0.70	0.58	0.07	-0.20	0.15
Verbal detachment	0	3	1.51	0.68	-0.13	0.07	-0.45	0.15
Visual-auditory detachment	0	3	1.58	0.60	-0.12	0.07	-0.25	0.15
Ethnic-racial detachment	0	3	1.21	0.85	0.22	0.07	-0.87	0.15
Collaborative detachment	0	3	1.59	0.82	-0.02	0.07	-0.77	0.15
Feeling detachment	0	3	1.78	0.84	-0.27	0.07	-0.67	0.15
Self-focused pattern	0	2.84	0.85	0.53	0.62	0.07	0.23	0.15
Self-body detachment	0	3	0.84	0.63	0.75	0.07	0.29	0.15
Dissociative detachment	0	2.80	0.86	0.53	0.51	0.07	-0.00	0.15
SD: Standard deviation, Std.: Standard								

Supplementary Table 3. The multiple regression models to predict the criterion variables by the big types of detachment manifestations										
Predictors	**Criterion variables**									
	Somatization		**Poor sleep quality**		**Insomnia severity**		**Nightmare frequency**		**Nightmare severity**	
	ß	**p**	**ß**	**p**	**ß**	**p**	**ß**	**p**	**ß**	**p**
Sex-adjusted model										
Other-focused pattern	-0.05	0.176	0.04	0.240	0.08	0.023	0.10	0.009	0.05	0.171
Self-focused pattern	0.52	<0.001	0.36	<0.001	0.38	<0.001	0.25	<0.001	0.34	<0.001
R^2	0.23	<0.001	0.16	<0.001	0.19	<0.001	0.11	<0.001	0.14	<0.001
Age-adjusted model										
Other-focused pattern	-0.05	0.151	0.04	0.304	0.08	0.027	0.07	0.063	0.05	0.218
Self-focused pattern	0.52	<0.001	0.37	<0.001	0.39	<0.001	0.28	<0.001	0.35	<0.001
R^2	0.24	<0.001	0.16	<0.001	0.21	<0.001	0.11	<0.001	0.15	<0.001