

Alexithymia and Rumination Predict Somatic Symptoms in Elderly Individual

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ABSTRACT

The elderly individuals are often viewed as one of society's most vulnerable groups because of the physical and psychological changes they experience. This research aims to forecast physical symptoms in elderly individuals by analyzing alexithymia and rumination. The current research utilized a descriptive-correlational research design and a cross-sectional approach. The statistical population for this study comprised elderly individuals residing in elderly care facilities in Tehran from July to September 2023. A total of 72 elderly individuals (both male and female) were selected as the sample using a simple random sampling technique. The research instruments utilized were The Toronto Alexithymia Scale-20 (TAS-20), the Rumination Response Scale (RRS), and the Physical Symptom Questionnaire (PSQ). Data analysis was carried out using SPSS version 27 software, which included descriptive statistics, regression analysis, and Pearson correlation tests. The p-value for the study was set at 0.05. Based on the findings, the research showed that the Difficulty identifying feeling aspect had a notable and favorable impact on Physical Symptoms ($p < 0.001$). Likewise, the Difficulty describing feeling aspect also had a noteworthy and beneficial influence on Physical Symptoms ($p < 0.001$). On the other hand, the Externally Oriented Thinking aspect did not show a meaningful influence on Physical Symptoms ($p = 0.173$). Meanwhile, Rumination was found to have a notable and beneficial impact on Physical Symptoms ($p < 0.001$). The findings of this research indicate that the Difficulty Identifying and Describing Feeling component, as well as Ruminating, can lead to a greater presence of physical symptoms in elderly people. These results may offer valuable insights for healthcare providers, particularly doctors, psychologists, and therapists, as they strive to comprehend the connection between mental and physical health concerns in elderly individuals.

Keywords: Somatization, Elderly, Alexithymia, Rumination

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Introduction

Population aging has become one of the most important health and psychosocial challenges of contemporary societies. Older adults experience multiple biological, psychological, cognitive, and social changes that can increase vulnerability to both physical and mental health problems. Aging is commonly accompanied by reduced physiological reserve, chronic disease burden, sensory decline, changes in mobility, reduced social roles, bereavement, loneliness, and increased dependence on healthcare systems. These

changes do not occur only at the biological level; rather, they interact with emotional regulation, cognitive appraisal, coping capacity, lifestyle, and social support. Therefore, the health of elderly individuals cannot be understood solely through medical diagnosis or physical examination, because many physical complaints in later life are closely connected with psychological processes, emotional distress, stress responses, and maladaptive cognitive patterns. In this context, somatic symptoms among the elderly represent an important clinical and research issue because they may reflect both organic disease and psychological distress, and they can lead to frequent healthcare use, reduced quality of life, impaired functioning, and increased caregiver burden (1, 2).

Somatic symptoms refer to bodily complaints such as pain, fatigue, dizziness, palpitations, gastrointestinal discomfort, headache, weakness, and other physical sensations that may or may not be fully explained by identifiable medical pathology. Somatization is generally understood as the experience and communication of psychological distress through bodily symptoms, accompanied in many cases by health-related worry and help-seeking behavior. This concept has long been discussed in psychosomatic medicine, behavioral medicine, and psychodynamic traditions, where the body is considered a possible channel through which unprocessed emotional conflict or psychological strain may be expressed. In later life, somatic symptoms may become especially complex because older adults are more likely to have chronic physical conditions, but they may also experience emotional difficulties that are underrecognized, underreported, or expressed indirectly through bodily complaints. Thus, clinical attention to somatic symptoms in the elderly requires an integrated biopsychosocial perspective rather than a narrow biomedical interpretation (3, 4).

The psychological symptom profile of elderly individuals indicates that depression, anxiety, sleep disturbance, cognitive concerns, loneliness, and somatic complaints frequently coexist. Epidemiological and clinical studies among older adults show that psychological symptoms are common in this population and may be associated with reduced well-being, poorer treatment adherence, higher medical utilization, and diminished functional capacity (2). In physical therapy and rehabilitation settings, older individuals who present with pain and disability may also show elevated depression and somatization symptoms, suggesting that bodily complaints in late adulthood are often embedded within broader psychological and functional difficulties (5). Therefore, when elderly individuals report persistent physical symptoms, it is necessary to consider not only disease-related mechanisms but also emotional expression, cognitive interpretation of symptoms, stress, and coping style.

One of the central psychological constructs related to somatic symptoms is alexithymia. Alexithymia refers to difficulty identifying feelings, difficulty describing feelings, limited emotional awareness, and a tendency toward externally oriented thinking. Individuals with alexithymic characteristics may have trouble distinguishing emotional arousal from bodily sensations, and this difficulty can increase the likelihood that emotional distress is interpreted as physical illness. In psychosomatic conditions, alexithymia has been repeatedly discussed as a vulnerability factor because unrecognized or poorly verbalized emotions may be expressed through bodily channels. In elderly individuals, this issue may be even more pronounced because emotional expression is often influenced by generational norms, physical frailty, illness concerns, cognitive changes, and social expectations about aging. As a result, older adults who cannot identify or describe emotional states may communicate distress through physical complaints, making alexithymia a theoretically important predictor of somatic symptoms (6, 7).

The relationship between alexithymia and somatization has been supported across different clinical and nonclinical contexts. Studies suggest that individuals who have difficulty identifying and describing emotions are more likely to experience somatic symptom distress, particularly when negative affect is not cognitively processed or verbally expressed. In patients with somatization difficulties and tinnitus-related distress, alexithymia has been identified as a relevant psychological factor that may intensify symptom perception and distress (6). Research has also shown that somatization can mediate the relationship between alexithymia and emotional disorders such as anxiety and depression, indicating that bodily symptoms may serve as a pathway through which emotional dysregulation becomes clinically visible (7). In chronic pain populations, alexithymia has similarly been linked to somatization, suggesting that emotional processing deficits may intensify pain-related distress and physical symptom reporting (8).

Alexithymia is not limited to adults with chronic medical problems; it has also been examined in adolescents and individuals with self-harm behaviors, where the body may become a medium for expressing psychological pain when emotional language is insufficient. Research on adolescents has shown that alexithymia and somatization are associated with self-harming behaviors, supporting the idea that difficulty verbalizing inner states may lead individuals to express distress through bodily experiences or bodily action (9). Similarly, studies have connected alexithymia, affective dysregulation, somatization, and self-harm, emphasizing that body-centered psychopathological manifestations often emerge when emotional awareness and regulation are impaired (10). Although adolescents and elderly individuals differ developmentally, these findings are relevant because they show a general psychological mechanism: when emotions cannot be identified, described, and regulated, the body may become the primary site of distress expression.

Another psychological factor strongly associated with somatic symptoms is rumination. Rumination refers to repetitive, passive, and persistent thinking about negative feelings, problems, symptoms, failures, or distressing experiences. Rather than leading to adaptive problem-solving, rumination tends to maintain negative mood, increase physiological arousal, intensify perceived threat, and prolong stress responses. Rumination has been widely linked to internalizing psychopathologies, particularly depression and anxiety, and systematic evidence indicates that it functions as a transdiagnostic cognitive process that contributes to emotional distress across different populations (11). In older adults, rumination may be triggered by experiences such as retirement, bereavement, reduced independence, physical illness, loneliness, financial concerns, family separation, and awareness of mortality. These stressors may create repetitive negative thought cycles that increase bodily vigilance and symptom amplification.

The link between rumination and physical symptoms can be explained through both cognitive and physiological pathways. Cognitively, ruminative thinking increases attention to bodily discomfort, promotes catastrophic interpretation of sensations, and reduces flexible coping. Physiologically, repeated negative thinking may prolong stress-related autonomic activation and reduce recovery after emotional arousal. Research on depressive rumination and heart rate variability has shown that rumination is associated with physiological concomitants of emotional dysregulation, and biofeedback-based work has highlighted the relevance of autonomic regulation in reducing ruminative processes (12). Prospective research also indicates that self-critical rumination interacts with resting heart rate variability in predicting subjective well-being and somatic symptom distress, suggesting that rumination can affect physical symptom experience through

stress-regulation mechanisms (13). Therefore, rumination may not only worsen mental distress but also contribute to the intensity and persistence of physical complaints.

Rumination is particularly relevant in chronic disease contexts, including rheumatic and metabolic conditions. In chronic rheumatic diseases, illness perception can influence negative emotions and fatigue, with rumination functioning as a possible mediator between illness-related beliefs and distress outcomes (14). This finding is important for elderly populations because many older adults live with chronic illnesses and may repeatedly think about disease progression, bodily limitations, pain, fatigue, or dependence on others. Similarly, network analysis of psychosomatic symptoms in individuals with type 2 diabetes suggests that psychosomatic complaints should be understood as interconnected symptom systems rather than isolated physical events (15). Since diabetes and rheumatic diseases are common in later life, these findings support the need to examine cognitive-emotional variables such as rumination and alexithymia as predictors of somatic symptoms among elderly individuals.

In Iranian and regional research contexts, rumination has also been examined as a mediator and predictor in relation to psychological distress. Among older adults, rumination has been identified as a mediating mechanism in the relationship between self-criticism, loneliness, and depression, suggesting that repetitive negative thinking may convert interpersonal and self-evaluative vulnerabilities into emotional distress (16). This is directly relevant to elderly individuals because loneliness and self-criticism may increase after retirement, widowhood, social isolation, or perceived loss of usefulness. In adolescents, rumination has been found to contribute to self-harm prediction alongside impulse control, emotional regulation strategies, distress tolerance, and related psychological factors (17). Although this evidence comes from a different age group, it reinforces the broader role of rumination as a maladaptive cognitive strategy associated with psychological and bodily distress.

Stress and anxiety management frameworks also provide a useful basis for understanding somatic symptoms among elderly individuals. Stress is not only an emotional state but also a physiological process involving autonomic, endocrine, immune, and behavioral responses. When stress is persistent and poorly regulated, it may appear through bodily symptoms such as sleep disturbance, fatigue, headache, muscle tension, gastrointestinal discomfort, and pain. Interventions focused on anxiety and stress management emphasize the importance of relaxation, cognitive restructuring, emotional awareness, and coping skills in reducing the bodily consequences of psychological arousal (18). These principles suggest that somatic symptoms in elderly individuals may be reduced when psychological contributors such as alexithymia and rumination are identified and addressed.

Body awareness and self-compassion are also relevant to the psychological interpretation of physical symptoms. Recent work on body awareness training in patients with rheumatoid arthritis has shown that interventions targeting body awareness, self-compassion, and somatic symptoms may help individuals relate to bodily sensations in a more adaptive and less distressing manner (19). This is important because elderly individuals may frequently experience bodily sensations, but the way they interpret, emotionally process, and respond to these sensations can determine whether symptoms become disabling and distressing. Similarly, research on physical symptoms among women with fibromyalgia indicates that psychological interventions such as clinical hypnosis and cognitive-behavioral hypnotherapy may affect physical

symptoms and related aspects of well-being, supporting the view that somatic complaints are responsive to psychological processes and interventions (20).

Gender, culture, repression, and emotional coping may further shape the expression of somatic symptoms. Research on gender differences in repression, aggression, somatization, and religious coping suggests that social and cultural norms can influence how distress is expressed, regulated, and interpreted (21). In many cultural contexts, especially among older generations, direct verbal expression of emotional suffering may be discouraged, while physical complaints may be more socially acceptable and more likely to receive attention from family members and healthcare professionals. Work-related and social stressors may also contribute to maladaptive coping patterns across adulthood; for example, research on workaholism among high school male teachers highlights how psychological antecedents and outcomes of persistent overinvolvement in work can affect well-being (22). Although such findings are not specific to elderly individuals, they illustrate how long-term coping patterns and stress-related personality tendencies may accumulate across the life course and influence later psychological and physical health.

The methodological study of psychological predictors of somatic symptoms also requires attention to adequate sample size, statistical power, and appropriate analytic design. Correlational and predictive studies must ensure that the sample is sufficient for detecting meaningful associations among variables, particularly when examining multiple psychological predictors. Guidance on sample size determination and power analysis using software such as G*Power emphasizes the importance of planning studies based on effect size, alpha level, statistical power, and the number of predictors (23). In studies involving elderly participants, this issue is especially important because recruitment may be limited by cognitive status, physical ability, institutional access, consent capacity, and incomplete questionnaire responses. Therefore, rigorous sampling and transparent analytic procedures are essential for producing interpretable evidence about alexithymia, rumination, and somatic symptoms in older adults.

Despite the growing literature on somatization, alexithymia, and rumination, several gaps remain. Many studies have examined these constructs in adolescents, chronic pain patients, individuals with tinnitus, patients with rheumatic disease, or general adult populations, but fewer studies have focused specifically on elderly individuals living in elder care facilities. This gap is important because older adults often experience a unique combination of medical vulnerability, emotional restriction, loneliness, cognitive change, dependency, and institutional living conditions. Furthermore, the dimensions of alexithymia may not contribute equally to somatic symptoms. Difficulty identifying feelings and difficulty describing feelings may be more strongly related to bodily complaints than externally oriented thinking, because they directly affect the individual's ability to recognize and communicate emotional distress. Rumination may also independently contribute to somatic symptoms by maintaining negative affect, increasing symptom attention, and prolonging physiological arousal. Examining these variables together can therefore clarify how emotional-processing deficits and repetitive negative thinking contribute to physical symptom experience in elderly individuals.

The present study aimed to predict somatic symptoms in elderly individuals based on alexithymia and rumination.

Methods and Materials

Study Design and Participants

The current research utilized a descriptive-correlational and cross-sectional research approach. In this research, alexithymia and rumination were viewed as separate factors, with physical symptoms being seen as the outcome variable. The statistical population comprised elderly individuals residing in elder care facilities in Tehran from July to September 2023. A total of 72 elderly participants, both male and female, were randomly selected for the study. The sample size adequacy was determined using G*Power software with parameters set at $\alpha=0.05$, effect size=0.15, power test=0.95, and Number of predictors=2. According to the formula, the sample size was calculated to be 74 individuals, but as a precaution against potential dropouts, the researcher opted for a sample size of 100 individuals.

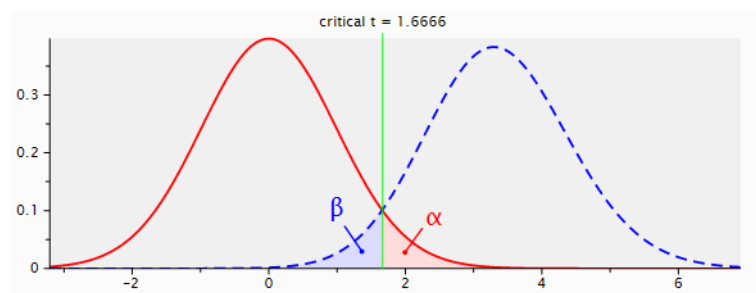


Figure 1. Sample size calculation with G*Power software

In the following phase, the selection of participants for the study was based on specific criteria. The criteria for inclusion required individuals to have an official record at the elderly care centers being studied, provide informed consent, answer questions in the questionnaires adequately (failure to answer more than 8 items would lead to exclusion), and demonstrate sufficient understanding of the research content. On the other hand, exclusion criteria consisted of having any physical or mental condition that hindered participation, incomplete questionnaire responses and elderly individuals who declined to take part in the study were also excluded. The process of conducting the research began by obtaining necessary permits from the researcher's university, followed by the introduction of researchers, along with university professors, to three elderly care centers in Tehran (the names were kept confidential for privacy reasons). These centers were selected due to their convenience and willingness to collaborate in the research. The researchers then visited the centers, coordinated with management, and approached the elderly residents randomly to seek their cooperation. People who wanted to take part in the study were given details about the purpose of the research, ethical issues, and the guarantee that their personal information would be kept private. They were also told that they had the option to withdraw from the study at any point. Following that, they were given questionnaires to fill out. Because most individuals were either incapable of responding individually or were hesitant to read and answer the questions, the researcher and his colleagues took the initiative to read the questions aloud to each participant and document their responses. The researcher essentially captured most of the collected responses. The research project had to let go of 28 elderly participants as they did not respond to more than 8 questions or decided not to participate further. This resulted in a total of 72 participants whose data was ultimately examined. Conducting the study and administering questionnaires in person took two months due to some elderly participants not being cooperative. To follow ethical standards, the participants had to give their consent before participating in the research and were informed

that their participation was voluntary and that they could leave the study at any point. Additionally, it was clarified to them that the tests did not include any personal identification information.

Data Collection

Toronto Alexithymia Scale-20 (TAS-20): The original 26-question version of this self-report questionnaire was created by Bagby in 1985 to assess alexithymia and was later revised by Bagby, Taylor, and Parker in 1994 to become a 20-question version. This questionnaire consists of 20 items and uses a 5-point Likert scale (ranging from 1 for “strongly disagree” to 5 for “strongly agree”). The total score for the emotional alexithymia scale is calculated by adding up the scores from all 20 questions, with questions 4, 10, 18, and 19 being scored in reverse. The minimum and maximum scores possible on this scale are 20 and 100, respectively. The alexithymia scale includes three subscales: difficulty in identifying feelings (7 questions), difficulty in describing emotions (5 questions), and externally oriented thinking (8 questions). In numerous research studies, a score of 60 or 61 is commonly utilized as the threshold for the alexithymia scale. In a research conducted in Iran, the internal consistency of the total alexithymia score and the three subscales was found to be good, with reliability coefficients of 0.85, 0.79, 0.68, and 0.74, respectively. The researcher in this study obtained Cronbach's alpha coefficients of 0.74, 0.72, and 0.70 for the subscales of difficulty in identifying feeling, describing, and oriented thinking.

Ruminative Response Scale (RRS): The questionnaire was created by Nolen-Houseman et al. in 2003. It measures the level of rumination in individuals and consists of 22 questions. Each question is rated on a four-point Likert scale ranging from never (1) to always (4). The questionnaire is divided into three components: reflection (questions 7, 11, 12, 20, and 21), brooding (questions 5, 10, 13, 15, and 16), and depression (questions 1-4, 6, 8-9, 14, 17-19, and 22). The total score ranges from 22 to 88. Scores between 22 to 33 indicate low rumination, 33 to 55 signify moderate, and scores above 55 indicate severe rumination. In Iran, the Cronbach's alpha coefficient for this scale was determined to be 0.78. The researcher in the current study found the Cronbach's alpha coefficient for this scale to be 0.74.

Physical Symptom Questionnaire (PSQ): Powell and Enright developed this survey in 1991. The Physical Symptoms Questionnaire assesses the severity of physical symptoms like headaches, fever, palpitations, and dizziness in individuals. There are 18 questions in this survey, with responses given on a four-point Likert scale ranging from 0 to 3 (from never to most of the time). The scoring system involves adding up the scores, with a total between 0 and 18 indicating low physical symptoms, 18 to 36 indicating moderate, and above 36 indicating severe. The original version of the survey underwent a factor structure analysis by the creators, revealing that all items are related to a main factor with a validity of 66.55%. In Iran, the Cronbach's alpha coefficient for this survey was 0.89. Another study in Iran also reported a Cronbach's alpha coefficient of 0.93 for this survey. The researcher in this study discovered a Cronbach's alpha coefficient of 0.82 for the survey.

Data Analysis

SPSS software version 27 was utilized to conduct descriptive statistical analysis and data examination. Pearson regression and correlation tests were also employed. The normality of the distribution of research

variables was checked using the Kolmogorov-Smirnov test, which confirmed that the variables were normally distributed. A p-value of 0.05 was set for the analysis.

Findings and Results

In this research, 72 elderly individuals were involved and split into two categories based on gender: male (62.5%) and female (37.5%). Additionally, the participants were separated into two age groups: 60 to 65 years old (62.5%) and over 66 years old (37.5%).

Table 1. Descriptive Statistics of the Variables

Variables	Groups	F	%	Total	Md
Gender	Man	45	62.5	72	1
	Female	27	37.5		
Age	60-65	45	62.5	72	1
	+66	27	37.5		

Table 2 displays the mean and standard deviation of the research parameters.

Table 2. Description of the Main Research Variables

Variable	N	M	Std. Deviation	Skewness	Kurtosis	Min	Max
Difficulty Identifying Feeling	72	18.875	5.195	0.195	-1.167	10	28
Difficulty Describing Feeling	72	14.833	2.606	0.026	-1.238	10	19
Oriented Thinking	72	21.292	4.819	0.196	-1.253	14	31
Rumination	72	48.347	4.783	-0.594	-0.829	38	54
Physical Symptom	72	26.583	2.244	0.226	-0.845	23	31

Table 3 displays the relationship between research factors using Pearson's correlation coefficient.

Table 3. Pearson's Correlations

Variable		1	2	3	4	5
1. Difficulty Identifying Feeling	Pearson's r	—				
	P-value	—				
2. Difficulty Describing Feeling	Pearson's r	0.649	***	—		
	P-value	< .001	—			
3. Oriented Thinking	Pearson's r	0.227	0.174	—		
	P-value	0.055	0.143	—		
4. Rumination	Pearson's r	0.659	***	0.584	***	0.240 *
	P-value	< .001	< .001	0.042	—	
5. Physical Symptom	Pearson's r	0.667	***	0.448	***	0.162
	P-value	< .001	< .001	0.173	< .001	—

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

Based on Table 3, it was found that the variables Difficulty Identifying and Describing Feeling components showed a positive and significant correlation with Rumination and Physical Symptoms ($p < 0.001$). Oriented Thinking did not have a notable connection with Physical Symptoms ($r = 0.162$, $p = 0.173$). Before conducting regression analysis, the researcher checked for collinearity using Tolerance and VIF indices. Due to high collinearity among independent variables, simple linear regression was used to analyze the impact of

independent variables. Following the model run, the researcher analyzed the path coefficients and P-value between the variables in Table 4.

Table 4. Regression Analysis for Physical Symptom

	Not Standardized Coefficients		Standardized Coefficients	t	P-value	Model Summary		ANOVA	
	B	Standard error	Beta			R	R ²	F	P-value
1	(Intercept)	21.143	0.752	28.099	< .001	0.667	0.445	56.189	< .001
	Difficulty Identifying Feeling	0.288	0.038	0.667	7.496				
2	(Intercept)	20.859	1.386	15.054	< .001	0.448	0.201	17.585	< .001
	Difficulty Describing Feeling	0.386	0.092	0.448	4.193				
3	(Intercept)	24.972	1.198	20.838	< .001	0.162	0.026	1.898	0.173
	Oriented Thinking	0.076	0.055	0.162	1.378				
4	(Intercept)	14.873	2.333	6.375	< .001	0.516	0.267	25.438	< .001
	Rumination	0.242	0.048	0.516	5.044				

Table 4 displays the outcomes of the regression analysis. It is evident from the results that the Difficulty Identifying Feeling component had a significant positive impact on Physical Symptoms ($p < 0.001$). The F value obtained for assessing the regression model was 56.189, indicating statistical significance at a p-value below 0.001. This value suggests that the Difficulty Identifying Feeling component could effectively account for the variations in Physical Symptoms and validates the suitability of the regression model. The R-square value was 0.445, indicating that this component explains 44.5 percent of the variability in Physical Symptoms. In addition, the Difficult Describing Feeling component also had a significant positive influence on Physical Symptoms ($p < 0.001$). The significance of the regression model was confirmed with an F-value of 17.585, which was p-value below 0.001. This finding indicates that it is challenging to explain how the changes in physical symptoms are related and validates the usefulness of the regression model. The R-squared value, 0.201, shows that 20.1 percent of the variation in Physical Symptoms can be attributed to this factor. "Oriented thinking showed no notable effect on Physical Symptoms, as indicated by a p-value of 0.173." On the other hand, Rumination had a clear and positive impact on Physical Symptoms ($p < 0.001$). The F-value for the regression model was 25.438, indicating a p-value below 0.001. This suggests that Rumination effectively explains changes in Physical Symptoms and validates the regression model. The R-squared value of 0.267 suggested that 26.7 percent of the variation in Physical Symptoms could be attributed to this factor.

Discussion and Conclusion

The present study aimed to predict somatic symptoms in elderly individuals based on alexithymia and rumination. The findings showed that two components of alexithymia, namely difficulty identifying feelings and difficulty describing feelings, had significant positive relationships with somatic symptoms. In contrast, externally oriented thinking did not significantly predict somatic symptoms. The results also indicated that rumination had a significant positive effect on somatic symptoms. More specifically, difficulty identifying

feelings was the strongest predictor of somatic symptoms and explained a considerable proportion of the variance in physical complaints. Difficulty describing feelings also significantly predicted somatic symptoms, although its explanatory power was lower than that of difficulty identifying feelings. Rumination also explained a meaningful proportion of the variance in somatic symptoms, confirming that repetitive negative thinking is an important cognitive-emotional correlate of bodily distress in elderly individuals. These findings suggest that somatic complaints in older adults are not merely the result of physiological aging or medical disease, but are also associated with deficits in emotional awareness, limitations in emotional expression, and maladaptive repetitive cognition.

The significant effect of difficulty identifying feelings on somatic symptoms is consistent with the theoretical and empirical literature on alexithymia and somatization. Somatization refers to the expression of psychological distress through bodily symptoms, and it is often intensified when individuals are unable to recognize the emotional origin of their internal arousal (3, 4). In elderly individuals, the distinction between physical illness and emotionally generated bodily discomfort may become more complicated because aging is accompanied by chronic disease, pain, fatigue, sensory decline, and greater attention to bodily functioning (1, 2). When older adults have difficulty identifying their feelings, they may misinterpret emotional arousal as evidence of physical illness. For example, anxiety may be experienced as palpitations, sadness as fatigue, anger as muscular tension, and loneliness as diffuse pain or bodily weakness. Therefore, the strong predictive role of difficulty identifying feelings in the present study can be explained by the fact that individuals who cannot accurately label emotional states are more likely to experience and report distress through somatic pathways.

This finding aligns with studies showing that alexithymia is closely associated with somatization and psychosomatic distress. Farhoumandi et al. found that somatization mediated the structural relationship between alexithymia and anxiety and depression, indicating that emotional processing deficits may be converted into bodily complaints (7). Similarly, a systematic review of patients with somatization difficulties and tinnitus-related distress emphasized alexithymia as a relevant psychological factor in symptom perception and distress maintenance (6). In chronic pain patients, alexithymia has also been shown to contribute to somatization through psychological and emotional mechanisms, suggesting that difficulty processing emotions may increase bodily distress in clinical populations (8). The present findings extend this body of evidence to elderly individuals and indicate that difficulty identifying feelings is a particularly important vulnerability factor for physical symptom reporting in later life.

The significant effect of difficulty describing feelings on somatic symptoms also supports previous findings on emotional expression and body-centered distress. When individuals are unable to communicate emotional experiences verbally, psychological tension may remain unresolved and may instead be expressed through bodily complaints. Raffagnato et al. argued that when individuals do not have sufficient words for feelings, the body may become a medium for communicating distress (9). Gatta et al. similarly showed that alexithymia and psychopathological manifestations centered on the body, including somatization and self-harm, are closely connected, emphasizing the role of impaired emotional symbolization in bodily expression of psychological suffering (10). Although these studies focused largely on younger populations and self-harm-related contexts, their findings are conceptually relevant to elderly individuals because older adults may also have difficulty verbalizing emotional pain due to cultural norms, generational attitudes, cognitive

decline, shame, or limited psychological literacy. The present study suggests that when elderly individuals cannot describe feelings effectively, they may communicate distress indirectly through somatic complaints.

The weaker and nonsignificant role of externally oriented thinking is also meaningful. Externally oriented thinking refers to a cognitive style characterized by focus on external facts and practical details rather than inner emotional experience. Although this dimension is part of alexithymia, it may not have the same clinical relevance for somatic symptoms as difficulty identifying and describing feelings. The present findings suggest that somatic symptoms in elderly individuals are more strongly related to deficits in emotional recognition and emotional communication than to a general externally focused cognitive orientation. This result is compatible with the idea that the core mechanism of somatization is not simply a practical or concrete thinking style, but rather the inability to identify, interpret, and verbalize emotional states. In this regard, the present study refines the role of alexithymia by showing that its affective-awareness components may be more predictive of bodily complaints than its cognitive-style component.

The significant predictive role of rumination in somatic symptoms is also consistent with prior research. Rumination is a repetitive and passive cognitive process in which individuals continuously focus on negative feelings, problems, failures, or symptoms without effective problem-solving. Systematic evidence indicates that cognitive rumination is closely associated with internalizing psychopathologies, particularly anxiety and depression (11). These conditions often overlap with somatic symptoms, especially among elderly individuals who may experience chronic stress, loneliness, bereavement, illness-related worries, and concerns about dependency. In the present study, higher rumination predicted greater somatic symptoms, suggesting that repetitive negative thinking may intensify bodily distress by increasing attention to physical sensations, amplifying negative interpretation of symptoms, and prolonging emotional and physiological arousal.

This result is supported by studies linking rumination to physiological dysregulation and somatic symptom distress. Kocsel et al. found that self-critical rumination and resting heart rate variability interact in relation to subjective well-being and somatic symptom distress, suggesting that rumination may influence physical symptoms through autonomic regulation pathways (13). Schumann et al. also examined depressive rumination and heart rate variability and highlighted the physiological concomitants of rumination, showing that repetitive negative thought is not only a cognitive phenomenon but also a process connected with bodily regulation (12). From this perspective, rumination may maintain activation of stress-response systems, interfere with physiological recovery, and increase vulnerability to symptoms such as fatigue, headache, pain, palpitations, and gastrointestinal discomfort. Therefore, the present finding that rumination predicts somatic symptoms among elderly individuals is theoretically and empirically justified.

Rumination may also operate through illness perception and chronic disease-related distress. Lu et al. showed that in chronic rheumatic diseases, rumination may mediate the effects of illness perception on negative emotions and fatigue (14). This finding is especially relevant to older adults because they often live with chronic medical conditions and may repeatedly think about pain, disability, treatment burden, dependence, and future health decline. Similarly, network analysis of psychosomatic symptoms in patients with type 2 diabetes indicates that psychosomatic symptoms should be understood as interconnected psychological and physical symptom systems rather than isolated complaints (15). The present study supports this integrated view by showing that rumination is associated with somatic complaints in elderly

individuals. Repetitive thinking about bodily sensations may strengthen symptom salience, increase health anxiety, and reduce engagement in adaptive coping behaviors.

The present findings also correspond with research showing that rumination is associated with depression, loneliness, and self-critical processes in older adults. Moghanloo and Dadfar found that rumination mediated the relationship of self-criticism and loneliness with depression in older adults (16). This is important because loneliness, perceived abandonment, reduced social roles, and self-critical evaluation are common psychosocial challenges in later life. These factors may increase ruminative thinking, which in turn may increase both emotional distress and somatic symptoms. Rumination has also been shown to play a role in maladaptive outcomes among adolescents, including self-harm behaviors, in interaction with impulse control, emotion regulation, distress tolerance, and cognitive strategies (17). Although the age group differs, the broader implication is that rumination is a maladaptive transdiagnostic process that can intensify psychological and bodily distress across developmental stages.

The findings may also be interpreted in light of stress and anxiety management models. Persistent emotional distress, if not recognized or regulated, activates physiological stress systems and may produce physical complaints such as muscle tension, dizziness, palpitations, gastrointestinal discomfort, fatigue, and pain. Stress management approaches emphasize that bodily symptoms can be reduced by improving emotional awareness, cognitive restructuring, relaxation, and adaptive coping (18). In this regard, the significant roles of alexithymia and rumination in the present study suggest that elderly individuals with somatic symptoms may benefit from psychological interventions that target emotional identification, emotional expression, and repetitive negative thinking. Evidence from body awareness training in patients with rheumatoid arthritis also supports the relevance of interventions focused on body awareness, self-compassion, and somatic symptoms (19). Likewise, findings from women with fibromyalgia indicate that psychological interventions such as clinical hypnosis and cognitive-behavioral hypnotherapy can influence physical symptoms and related outcomes (20).

Cultural and social factors may further explain the relationship between emotional processing and somatic symptoms. In some cultural settings, especially among older generations, direct expression of sadness, fear, anger, or loneliness may be discouraged or perceived as weakness. In such contexts, bodily complaints may become a more acceptable language for communicating distress. Research on repression, aggression, somatization, and religious coping shows that gender and cultural factors can shape how psychological distress is regulated and expressed (21). Therefore, the present findings may partly reflect the cultural and generational tendency of some elderly individuals to express psychological suffering through physical symptoms rather than direct emotional disclosure. Long-standing maladaptive coping patterns across adulthood may also influence later-life health, as studies on workaholism and psychological outcomes show that persistent stress-related behavioral styles can affect well-being (22). These considerations highlight the need to interpret somatic symptoms among older adults within social, cultural, emotional, and lifespan contexts.

Overall, the present study contributes to psychosomatic and gerontological psychology by showing that alexithymia and rumination are important predictors of somatic symptoms in elderly individuals. The findings indicate that the emotional-awareness components of alexithymia, particularly difficulty identifying feelings and difficulty describing feelings, are more important than externally oriented thinking in predicting

physical complaints. The study also confirms that rumination is a significant cognitive predictor of somatic symptoms. These results are consistent with previous research on somatization, alexithymia, rumination, chronic illness, pain, stress physiology, and psychosomatic symptom networks (5, 8, 13, 15). Therefore, assessment of somatic symptoms in elderly individuals should include attention to emotional processing and repetitive negative thinking, because physical complaints may reflect not only bodily disease but also unresolved emotional distress and maladaptive cognitive processing.

The present study had several limitations that should be considered when interpreting the findings. First, the study used a cross-sectional correlational design, which means that causal relationships among alexithymia, rumination, and somatic symptoms cannot be definitively established. Second, the sample was limited to elderly individuals residing in elderly care facilities in Tehran, which may restrict the generalizability of the results to community-dwelling older adults, elderly individuals in other cities, or those living with their families. Third, the study relied on self-report questionnaires, and responses may have been influenced by memory problems, fatigue, social desirability, limited insight, or difficulty understanding some items. Fourth, some medical variables such as chronic disease severity, medication use, pain diagnosis, sleep problems, cognitive status, and functional disability were not fully controlled. Finally, because somatic symptoms are common in old age, it may be difficult to distinguish symptoms caused by medical illness from those associated with psychological distress.

Future studies should use longitudinal designs to clarify the causal direction between alexithymia, rumination, and somatic symptoms in elderly individuals. Researchers should also examine larger and more diverse samples, including elderly individuals living in the community, older adults from different cultural and socioeconomic backgrounds, and patients with specific chronic diseases. Future research may benefit from combining self-report questionnaires with clinical interviews, physician evaluations, cognitive screening, and objective medical information to improve diagnostic accuracy. It is also recommended that future studies examine possible mediating and moderating variables, such as depression, anxiety, loneliness, perceived social support, pain intensity, illness perception, self-compassion, sleep quality, and emotion regulation strategies. Intervention studies are also needed to determine whether reducing alexithymia and rumination can decrease somatic symptoms in elderly populations.

The findings suggest that healthcare providers should assess emotional awareness and rumination when working with elderly individuals who report persistent or unexplained physical symptoms. Physicians, psychologists, nurses, counselors, and rehabilitation specialists should avoid interpreting somatic complaints only through a biomedical lens and should consider the possibility that emotional distress may be expressed through the body. Psychological interventions for elderly individuals may include emotional awareness training, body awareness exercises, cognitive restructuring, mindfulness-based strategies, stress management, relaxation training, and supportive counseling. Caregivers and staff in elderly care facilities should also be trained to recognize signs of emotional distress that may appear as physical complaints. By improving emotional expression and reducing repetitive negative thinking, clinical and care teams may help elderly individuals experience fewer somatic symptoms and better overall quality of life.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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