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The Psychosomatic Cycle of Generalized Anxiety Disorder and Chronic Illness: A Clinical Review

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ABSTRACT: Generalized Anxiety Disorder (GAD) frequently coexists with chronic medical illnesses, creating a complex interaction that may intensify psychological distress and the perception of physical symptoms. This case report describes a 62-year-old male with GAD and multiple chronic comorbidities, including atherosclerotic heart disease, hypertension, type 2 diabetes mellitus with nephropathy, and benign prostatic hyperplasia. The patient presented with persistent health-related worry, sleep disturbance, and heightened preoccupation with bodily sensations, accompanied by moderate impairment in quality of life. Clinical assessment and psychological screening indicated significant anxiety symptoms without prominent depressive features. Based on clinical observations and integration with the biopsychosocial framework, somatosensory amplification, body hypervigilance, and difficulties in emotional expression were hypothesized to contribute to a psychosomatic interaction pattern. These processes may contribute to a reinforcing psychosomatic cycle in which anxiety intensifies the perception of physical symptoms, while chronic illness functions as a persistent internal stressor that maintains health-related worry. These mechanisms were not directly measured using standardized instruments but were inferred from behavioral patterns, illness narratives, and longitudinal clinical documentation. This case highlights how psychological and medical factors may mutually reinforce each other in elderly patients with multimorbidity. An integrative management approach combining pharmacological treatment, psychoeducation, and supportive psychotherapy may help interrupt this reciprocal cycle and improve functional outcomes and quality of life.

Keywords: Psychosomatic Cycle, Generalized Anxiety Disorder (GAD), Chronic Illness, Somatosensory Amplification and Hypervigilance.

INTRODUCTION

Generalized Anxiety Disorder (GAD) is one of the anxiety disorders characterized by excessive and persistent worry that interferes with daily functioning. Anxiety disorders represent a broad diagnostic category, within which GAD constitutes a specific subtype distinguished by chronic and pervasive anxiety symptoms (1,2). The development and maintenance of GAD have been

associated with genetic vulnerability, psychological predisposition, and environmental stressors, including life events characterized by uncertainty (3,4). These contributing factors do not operate in isolation; rather, they interact dynamically over time, potentially increasing an individual's susceptibility to persistent worry and difficulty in regulating emotional responses to everyday stressors.

Individuals with GAD frequently experience both psychological and somatic symptoms, such as restlessness, fatigue, irritability, and sleep disturbances, which may impair social and occupational functioning (2,5). These symptoms often occur in a fluctuating yet chronic pattern, contributing to long-term functional impairment. Cognitive features, including persistent excessive worry and maladaptive coping strategies, have also been reported to contribute to symptom persistence (1). In particular, maladaptive coping responses such as avoidance, reassurance-seeking, and excessive health monitoring may unintentionally reinforce anxiety by preventing adaptive emotional processing, thereby maintaining a cycle of ongoing distress.

Previous studies have demonstrated that anxiety disorders are commonly associated with chronic medical conditions, including cardiovascular disease, diabetes mellitus, and benign prostatic hyperplasia (BPH) (6–10). This comorbidity is especially relevant in clinical practice, where patients often present with overlapping physical and psychological complaints that may complicate diagnostic clarity. Excessive anxiety has been consistently associated with poorer clinical outcomes and increased symptom burden in patients with chronic diseases. Psychological stress may intensify the subjective perception of physical symptoms, potentially through heightened attentional focus and cognitive bias toward bodily sensations. At the same time, persistent somatic complaints may reinforce anxiety by increasing concern about potential health deterioration. This bidirectional relationship has been reported primarily in observational and clinical studies, suggesting complex and multifactorial pathways rather than direct causality.

In this context, somatosensory amplification and body hypervigilance have been proposed as psychological mechanisms that may mediate the interaction between anxiety and physical symptoms. Somatosensory amplification refers to heightened sensitivity to bodily sensations, whereas body hypervigilance involves excessive monitoring of perceived physical threats. These mechanisms may lead individuals to interpret relatively mild or ambiguous bodily sensations as signs of serious illness, thereby increasing health-related anxiety. Such processes are particularly relevant in patients with chronic medical conditions, where ongoing physical symptoms may serve as continuous internal triggers for anxiety. These mechanisms have been associated with alexithymia and psychosocial stress in patients with chronic illness (11,12). In clinical settings, such mechanisms are often inferred from patient narratives and behavioral patterns rather than systematically measured using standardized instruments, which may limit objective quantification but still provide meaningful insight into patient experiences.

Although previous research has explored the relationship between anxiety and chronic illness in older adults, most studies have focused on isolated clinical or psychological factors. As a result, the interaction between multiple mechanisms is often underexplored. Limited attention has been given to the combined role of somatosensory amplification, hypervigilance, and emotional regulation difficulties in shaping symptom persistence among elderly patients with multiple comorbidities. Understanding this interaction is important, as these mechanisms may not only

coexist but also reinforce one another, contributing to a persistent cycle of psychological and somatic distress.

This case report aims to provide a detailed clinical illustration of how these mechanisms may interact over time, offering an integrative and hypothesis-generating perspective for future longitudinal and interventional research. By emphasizing the dynamic interplay between psychological processes and physical health conditions, this report seeks to contribute to a more comprehensive understanding of psychosomatic interactions in patients with generalized anxiety disorder and chronic illness.

METHOD

This study employed a descriptive clinical case report design integrated with a narrative literature review to explore the interaction between generalized anxiety disorder (GAD) and multiple chronic medical comorbidities in an elderly patient.

The patient was diagnosed with Generalized Anxiety Disorder (GAD) accompanied by multiple medical comorbidities, including chronic cardiovascular and metabolic conditions. Psychiatric diagnosis was established according to the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)* criteria for Generalized Anxiety Disorder. The diagnostic classification corresponds to ICD-10 code F41.1.

The diagnostic process was conducted by a consultant psychiatrist through a comprehensive clinical evaluation, including structured psychiatric interviews, mental status examination, and systematic review of medical records.

Psychological distress and symptom severity were assessed using the Depression Anxiety Stress Scale-21 (DASS-21), a validated instrument measuring depression, anxiety, and stress symptoms. Scores were interpreted according to standard DASS-21 severity classifications.

Functional status was evaluated using the Global Assessment of Functioning (GAF) scale as a general indicator of psychosocial functioning, while quality of life was assessed using the WHOQOL-BREF instrument. Somatic symptom perception and anxiety-related behavioral patterns were explored through semi-structured clinical interviews.

Clinical data were collected through direct patient interviews, behavioral observation, physical examination, and review of longitudinal medical documentation. Information regarding symptom progression, treatment history, psychosocial stressors, and functional impairment was obtained from both patient reports and clinical records.

A narrative literature review was conducted using electronic databases, including PubMed, Scopus, and Google Scholar. The search covered publications from January 2014 to December 2024.

Search terms included: *"generalized anxiety disorder," "chronic illness," "elderly," "somatosensory amplification," "body hypervigilance," "psychosomatic symptoms," "biopsychosocial model," and "comorbidity."* Boolean operators (AND**,** OR) were applied to combine keywords.

Articles were included if they:

1. Were published in peer-reviewed journals
2. Were written in English
3. Involved adult or elderly populations
4. Examined psychological–somatic interactions in chronic illness
5. Addressed anxiety disorders or related psychosomatic mechanisms

Articles were excluded if they:

1. Were conference abstracts without full text
2. Were non-peer-reviewed publications
3. Had insufficient methodological detail
4. Focused on pediatric populations

Titles and abstracts were initially screened for relevance. Eligible articles underwent full-text review. Selected studies were analyzed qualitatively and synthesized narratively to identify key themes related to symptom perception, emotional regulation, and biopsychosocial interactions.

Due to methodological heterogeneity among the included studies, no quantitative meta-analysis was conducted.

Written informed consent was obtained from the patient prior to participation and publication. The study was conducted in accordance with the Declaration of Helsinki. Patient anonymity and confidentiality were strictly maintained.

RESULT AND DISCUSSION

Case Presentation

A 62-year-old male presented with persistent excessive worry and sleep disturbances that had been present since 2018. His anxiety was primarily focused on health-related concerns and was exacerbated by family conflicts and perceived work-related failures. He lived alone, managed daily activities independently, and reported limited social support.

The patient had a long-standing history of multiple chronic medical conditions, including atherosclerotic heart disease, hypertension, type 2 diabetes mellitus complicated by diabetic nephropathy, and benign prostatic hyperplasia (BPH). He frequently reported chest discomfort, palpitations, and metabolic-related symptoms, which were associated with increased anxiety and health-related preoccupation.

These physical symptoms often triggered heightened worry about possible deterioration of his medical conditions. During periods of increased anxiety, the patient reported intensified monitoring of bodily sensations and increased concern about minor physical changes. Conversely, episodes of heightened anxiety were frequently accompanied by a subjective worsening of physical

symptoms. This pattern suggests a recurrent interaction between psychological distress and physical symptom perception, consistent with a psychosomatic cycle.

Regarding medical treatment, the patient had been receiving insulin therapy (Novomix), vildagliptin (Galvus), prorenal supplements, allopurinol, and other adjunctive medications for diabetes and renal impairment since 2018. He had undergone coronary catheterization procedures nine times since 2012 and was treated with clopidogrel, nitroglycerin, atorvastatin, candesartan, and bisoprolol for cardiovascular disease and hypertension. In 2024, he was diagnosed with BPH and treated with tamsulosin (Harnal Ocas) and herbal supplements (Urinter). He also experienced chronic low back pain secondary to lumbar spondylosis and received analgesics and tizanidine.

Mental status examination revealed that the patient was well-groomed and cooperative, with fluent and coherent speech. His speech was occasionally circumstantial and difficult to redirect. Mood was hypotymic with congruent affect. Thought content was predominantly focused on physical health and financial concerns. No hallucinations, delusions, or formal thought disorder were observed. Insight and judgment were preserved.

Psychological assessment using the Depression Anxiety Stress Scale-21 (DASS-21) indicated clinically significant anxiety symptoms, without marked depressive or stress symptoms. Quality of life assessment using the WHOQOL-BREF showed moderate impairment across physical, psychological, social, and environmental domains.

Physical examination revealed relatively controlled blood pressure. Laboratory investigations demonstrated metabolic abnormalities and reduced renal function, consistent with diabetic nephropathy.

Clinical observations also suggested several psychological mechanisms described in psychosomatic literature. The patient frequently interpreted relatively mild bodily sensations, such as transient palpitations or minor chest discomfort, as indications of serious medical problems, which is consistent with somatosensory amplification. He also demonstrated persistent monitoring of bodily sensations and heightened concern about potential physical deterioration, suggesting body hypervigilance. In addition, emotional expression during clinical interviews appeared limited, with difficulty identifying and describing internal emotional states, suggesting features consistent with alexithymia. These psychological characteristics were clinically inferred from interview findings rather than measured using standardized psychometric instruments.

Based on comprehensive psychiatric evaluation and medical record review, the patient was diagnosed with Generalized Anxiety Disorder (F41.1) with multiple medical comorbidities according to DSM-5 criteria. For clinical documentation purposes, a multiaxial-style summary was recorded as follows: Axis I: Generalized Anxiety Disorder (F41.1); Axis II: Emotional personality traits; Axis III: Atherosclerotic heart disease (I25.1), hypertensive heart disease (I11), type 2 diabetes mellitus with diabetic nephropathy (E11.22), and BPH (N40); Axis IV: Problems related to primary support group, social environment, and occupational stressors; Axis V: Global Assessment of Functioning (GAF) score of 61–70 at evaluation, with a highest score of 81–90 in the previous year.

The Psychosomatic Concept in Generalized Anxiety Disorder

Anxiety disorders represent a broad diagnostic category, within which Generalized Anxiety Disorder (GAD) constitutes a specific subtype characterized by persistent and excessive worry that leads to distress and impairment in daily functioning. Anxiety disorders collectively include several related conditions, such as panic disorder, social anxiety disorder, and generalized anxiety disorder, with an estimated prevalence of approximately 10–14% in the general population (13). Clinical manifestations include both psychological symptoms, such as excessive worry, and somatic symptoms, including increased heart rate and muscle tension (14).

The relationship between anxiety disorders and psychosomatic symptoms often complicates clinical diagnosis and management. Previous research suggests that anxiety is significantly associated with the emergence of psychosomatic symptoms (15). Psychological distress may be accompanied by physiological dysregulation, which has been associated with persistent physical complaints (16). In addition, poorly expressed emotions may be linked with physiological responses such as elevated blood pressure and muscle tension, which may exacerbate somatic symptoms (16). These processes are closely related to mechanisms such as somatosensory amplification and body hypervigilance, which are discussed further below.

Anxiety, Chronic Disease, and Quality of Life

The co-occurrence of anxiety disorders and chronic medical conditions has been consistently associated with impaired quality of life (QOL). Cardiovascular disease, diabetes mellitus (DM), and benign prostatic hyperplasia (BPH) may function as persistent internal stressors that are associated with increased psychological distress. Physical illness not only affects bodily functioning but may also contribute to emotional vulnerability, potentially reinforcing anxiety symptoms.

In patients with cardiovascular disease, anxiety disorders are relatively common, with approximately 20% experiencing clinically significant anxiety (17). Previous studies suggest that physiological mechanisms, including autonomic dysregulation and inflammatory processes, have been associated with anxiety and poorer cardiovascular outcomes (6). Moreover, excessive focus on cardiac symptoms may negatively influence health-related behaviors, such as avoidance of physical activity (18).

Diabetes mellitus has also been associated with increased psychological distress, particularly in relation to disease chronicity and complications. Difficulties in disease management and fear of complications may contribute to feelings of helplessness and excessive health-related worry. Similarly, BPH-related symptoms, including nocturia and urinary urgency, have been associated with social withdrawal and reduced self-esteem (7,9). Although often underestimated, the psychological burden of BPH may play an important role in overall well-being.

In the present case, the coexistence of multiple chronic illnesses may have functioned as persistent internal stressors that reinforced health-related anxiety and heightened attention to bodily sensations. These medical conditions may interact and contribute to a cycle of physical and psychological stress that is associated with the persistence of anxiety symptoms.

In line with previous findings, individuals with GAD consistently report lower QOL compared with non-anxious populations, with anxiety severity negatively correlated with QOL scores (19,20). The presence of chronic medical illness may further amplify this relationship (20,21).

In addition to clinical factors, cognitive appraisal plays an important role in determining psychological adaptation. Effective stress appraisal and coping strategies have been positively associated with perceived QOL in patients with GAD (Nadeem et al., 2016). This finding highlights the relevance of cognitive-emotional regulation in moderating the impact of anxiety on daily functioning.

Somatosensory Amplification and Body Hypervigilance

Somatosensory amplification and body hypervigilance have been widely associated with psychosomatic and anxiety-related conditions. Somatosensory amplification refers to heightened perception of bodily sensations, whereas body hypervigilance involves excessive monitoring of perceived physical threats. Previous studies have demonstrated that somatosensory amplification is significantly associated with psychosocial stress and alexithymia in elderly patients with chronic diseases (12).

In the present case, the patient reported fatigue and insomnia and demonstrated heightened concern regarding bodily sensations, which is consistent with previous observations. In patients with GAD, somatosensory amplification has been positively correlated with health-related anxiety and alexithymia (11). These findings suggest that increased bodily awareness may contribute to symptom persistence rather than reflecting objective disease severity.

Experimental studies further support this relationship. Induced hypervigilance has been shown to intensify sensory perception and discomfort, supporting the generalized hypervigilance hypothesis (22). Hypervigilance may therefore influence both perceptual and emotional responses to physical sensations, potentially reinforcing maladaptive illness-related beliefs.

Autonomic Regulation and Psychosomatic Processes

The autonomic nervous system plays an important role in somatosensory amplification and psychosomatic symptom expression. Dysregulation of autonomic function has been associated with increased somatic perception in patients with anxiety disorders (23). Chronic stress has also been linked with sustained autonomic activation, which may contribute to symptoms such as muscle tension and pain.

Neuroplastic changes and cognitive-affective processes have also been implicated in heightened bodily awareness (24). In addition, alexithymia and health-related anxiety may further contribute to symptom reporting in GAD (11,12). In this case, the patient demonstrated difficulty in emotional expression and limited verbalization of feelings, which may have influenced symptom perception. However, it is important to acknowledge individual variability, as not all patients with GAD exhibit increased somatic symptoms.

Biopsychosocial Aspects and Therapeutic Implications

The biopsychosocial model provides a comprehensive framework for understanding psychosomatic phenomena by integrating biological, psychological, and social determinants of health. Psychosomatic symptoms arise from complex interactions among these domains rather than from isolated physical pathology (25,26). Psychological factors such as chronic stress and personality traits, together with social influences, have been shown to affect symptom expression (27).

In the present case, multiple chronic medical conditions, limited social support, and long-standing health-related worries may have interacted to maintain the patient's anxiety symptoms. This perspective supports the importance of integrated clinical management.

This model supports the implementation of holistic and personalized treatment approaches that integrate psychological and medical care (26–28). Combined pharmacotherapy and psychotherapy may address both biological vulnerability and maladaptive cognitive-emotional processes (29). Sequential treatment strategies have been associated with reduced relapse rates in affective disorders (30), potentially through neuroplastic mechanisms that facilitate therapeutic learning (29).

Long-term combination therapy has been reported to enhance psychological stability (31), although some patients may respond adequately to monotherapy (32). These findings highlight the importance of individualized treatment planning based on clinical characteristics and patient preferences.

Limitations and Future Directions

Several limitations should be considered. As a single-case report, the findings cannot be generalized to broader populations. Objective measures of somatosensory amplification and hypervigilance were not applied, limiting mechanistic interpretation. In addition, long-term follow-up data were limited.

Future studies using longitudinal and controlled designs are needed to clarify the causal pathways between anxiety, chronic illness, and psychosomatic processes. The use of standardized psychometric instruments and larger samples may help refine targeted interventions and improve clinical outcomes.

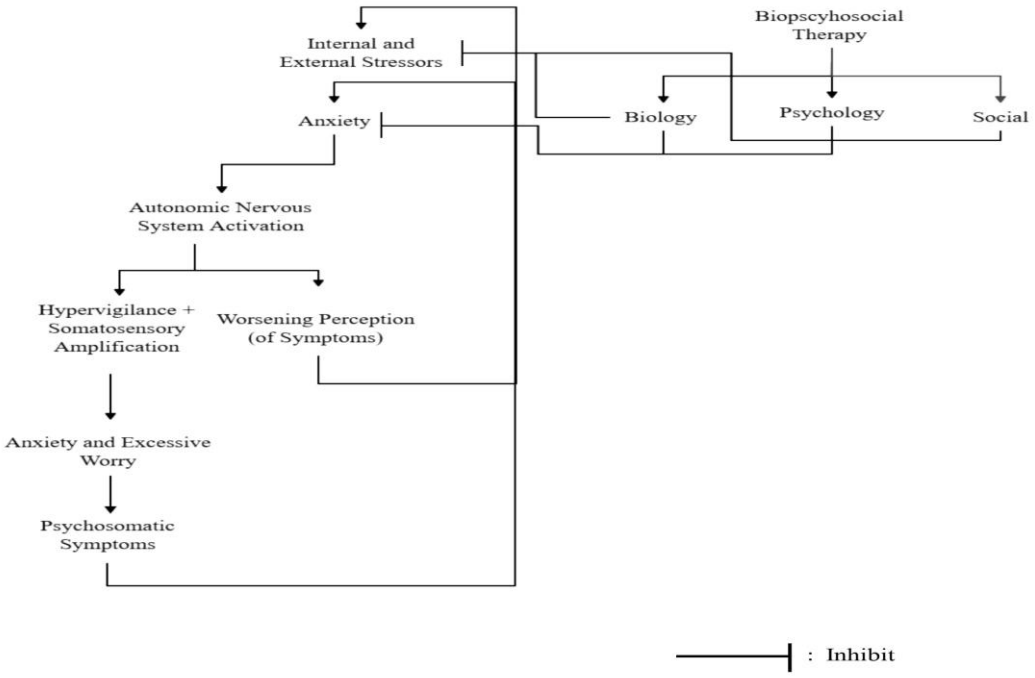

Figure 1. Conceptual psychosomatic interaction cycle in generalized anxiety disorder with chronic medical comorbidity.

The diagram illustrates the reciprocal interaction between anxiety symptoms, bodily symptom perception, and chronic medical illness within a biopsychosocial framework. Psychological distress may increase attention to bodily sensations, while perceived physical symptoms may further intensify anxiety, forming a reinforcing psychosomatic cycle. Adapted from the biopsychosocial framework described by (26) and (25).

CONCLUSION

This case report highlights the complex interaction between generalized anxiety disorder and multiple chronic medical comorbidities in an elderly patient. The findings suggest that psychological distress, somatic symptom perception, and impaired emotional regulation may interact to maintain anxiety symptoms in the context of chronic illness, potentially forming a reinforcing psychosomatic interaction pattern. This case emphasizes the relevance of somatosensory amplification and body hypervigilance as potential mechanisms underlying persistent psychosomatic complaints.

From a clinical perspective, the present case underscores the importance of adopting an integrative biopsychosocial approach that combines medical management with psychological and social interventions. Comprehensive assessment and individualized treatment planning may help optimize functional outcomes and improve quality of life in similar patient populations.

Although limited by its single-case design, this report provides a detailed clinical illustration that may inform future longitudinal and interventional research. Further studies using standardized measures and larger samples are warranted to clarify underlying mechanisms and develop targeted therapeutic strategies.

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