

HYPERTHYROIDISM & QUALITY OF LIFE

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ABSTRACT

Hyperthyroidism, a disorder caused by excessive secretion of thyroid hormones, not only affects physical health but also has profound implications for psychological functioning and quality of life. Despite growing international evidence, little research has explored the lived experiences of hyperthyroid patients in Pakistan. The present study adopted a qualitative research design using Interpretative Phenomenological Analysis (IPA) to investigate the psychosocial impact of hyperthyroidism. A purposive sample of ten adults (five male, five female), aged 22–50, diagnosed for at least six months, participated in semi-structured interviews. Thematic analysis revealed five superordinate themes: (1) emotional dysregulation and anxiety, (2) cognitive impairment and “brain fog,” (3) functional limitations and social strain, (4) residual post-treatment challenges, and (5) coping strategies and resilience. Participants reported persistent fatigue, mood instability, memory problems, and stigma, even after receiving medical treatment. Findings suggest that medical interventions alone are insufficient to restore psychosocial well-being. The study highlights the need for integrated biopsychosocial care models, culturally sensitive psychoeducation, and gender-responsive support programs to improve the quality of life of hyperthyroid patients in Pakistan.

Keywords: Hyperthyroidism, Quality of Life, Psychological Impact, Cognitive Dysfunction, Coping Strategies, Pakistan

BACKGROUND

Hyperthyroidism refers to a common endocrine disorder where the thyroid gland located in the anterior neck region is formed with excessive levels of thyroid hormones- triiodothyronine (T3), and thyroxine (T4), Smith et al., 2018. These hormones control critical metabolic activities in the body, like metabolism, temperature control, and heart, and nerve function. Hyperthyroidism triggers an excess of these hormones which in turn initiates thyrotoxicosis—a widespread state of hypermetabolism or an accelerated metabolic reaction that disrupts the normal body functions (Brown & Taylor, 2020).

Patients diagnosed with hyperthyroidism face a myriad of challenges that have debilitating impacts on their overall well being. Increased

appetite and unintentional weight loss, rapid heartbeat or tachycardia, tremors, profuse sweating, heightened intolerance to heat, irregular menstrual cycles among women, and muscle weakness mostly in the proximal muscles are some of the most common symptoms (Kim & Park, 2021; Biondi, 2019). Approximately 65-70% of patients suffer from sleep disturbances as well, including insomnia, nocturnal wakefulness, and unrefreshing sleep, worsening irritability and fatigue during the day, along with cognitive dysfunction (Kim & Park, 2021).

Cardiovascular and gastrointestinal hyperactivity also give rise to propelled bowel movements as well as diarrhea, while heightened 3 pressure within the circulatory

system may cause atrial fibrillation and heart failure in susceptible individuals if not addressed (Ross et al., 2016).

Hyperthyroidism has historically been regarded as part of the somatic domain, but there is more recent recognition of the greatly neglected psychological effects of the disorder that have not been sufficiently treated within clinical practice (Brown & Taylor, 2020; Smith et al., 2018).

What is known is the debilitating effect hyperthyroidism has on one's mental health and brain, especially in succession to excessive body hormones. The prescription of thyroid hormones has a direct neurotoxic effect as they disrupt critical mood and cognitive pathways such as serotonin, dopamine, and gamma-aminobutyric acid (GABA), and greatly interfere with emotional stability (Samuels, 2014; Bauer et al., 2019).

Patients suffering from hyperthyroid dysfunction show a worrying proclivity towards psychiatric illness. Hyperthyroid patients have a high incidence of anxiety disorder, panic attacks, irritability, and even depressive episodes, among others (Vanderpump, 2011; Siegmann et al. 2018).

Further emotional regulation is even known to be worse in these patients along with a lower tolerance to frustration, overly sensitive emotions, and heightened interpersonal conflict (Lee et al., 2017).

It is critical to mention that these symptoms are not merely psychological responses to chronic illness; they are as complex as the disease itself, emphasizing the importance of integrated care in such cases. In addition, hyperthyroidism has a distinctive cognitive component which is rather overlooked. Patients greatly suffer from what is commonly referred to as "thyroid brain fog", a collection of short-term memory, attention, executive functioning, processing speed, and even problem solving (Johnson et al., 2019; 4 Bernstein & Samuels, 2022).

In mesmerising fashion, the range of these impairments severely hinders occupational and academic productivity and everyday tasks, leading to frustration and a self-destructive spiral of depression, poor self-esteem, and deteriorating mental wellbeing. It is alarming that a significant number of individuals still grapple with enduring psychological and

cognitive dysfunctions even after achieving euthyroidism through antithyroid medications, radioactive iodine therapy, or thyroidectomy (Cramon et al., 2016; Tiemensma et al., 2011). Some studies report fatigue persisting along with depressive symptoms and low quality of life even years after biochemical normalization (Watt et al., 2012).

Either transforming neural circuits relevant to emotional and cognitive functions due to thyroid hormone dysregulation, or patients enduring prolonged illness might lead to psychiatric syndromes secondary to the primary illness. Engel's Biopsychosocial Model of Health from 1977 acts as a useful guiding framework to explore these relations further. It illustrates how biological components such as hormonal imbalances, psychological components such as emotional and cognitive dysfunctions, and social components like isolation and stigma all are interconnected and together determine the patient's health outcomes. Emotional and social repercussions accompanying the biological imbalance cannot be ignored in the intervening strategy if recovery is aimed for. South Asian regions such as Pakistan have cultural factors that add on top of the psychological stress that hyperthyroidism brings. Societal perceptions of mental health issues are highly negative. Patients are usually reluctant to seek help due to the potential social stigma that comes with being labeled "weak" or "unstable" (Aziz et al., 2022; Khan et al., 2019).

For women, social norms surrounding the roles of mothers and wives expecting abundant emotional strength and caregiving exacerbate the already strained guilt and postponement of aid. Consequently, numerous hyperthyroid patients suffer from severe poor quality of life and social functioning due to unrecognized and untreated psychiatric morbidities. Economic and infrastructural factors are equally as important. Hyperthyroid patients do not receive proper treatment due to lack of mental health services and limited understanding of endocrinologists concerning the psychiatric aspects of hyperthyroidism. Moreover, the absence of effective interfusion between different medical psychological care systems means incomplete care for hyperthyroid patients (Aziz et al., 2021).

Rural patients in particular have limited geographical and financial means alongside cultural attitudes that hinder accessible comprehensive treatment, resulting in inequitable health outcomes. Due to the multifaceted impacts, hyperthyroidism management must urgently adopt an interdisciplinary approach. Clinical guidelines should incorporate psychosocial assessments from community support services, counseling, psychoeducation workshops, as well as psychosocial support programs on endocrinology. Mental health professionals need to be part of the thyroid clinics, and culturally appropriate solutions must be designed to address the difficulties encountered by South Asian patients. Public health campaigns aimed at improving stigma, psychological care accessibility, and providing mental health resources to patients with endocrine disorders also need to be developed. The later was researched on the holistic 6 outcomes of psychological rehabilitation in hyperthyroid patients and the former on culturally adapted intervention frameworks. In summary, hyperthyroidism can no longer be regarded only as a physiological problem of the endocrine organs; it requires many levels of therapeutic interventions due to the complex nature of hyperthyroidism as a biopsychosocial condition. Failing to manage the functional and psychological aspects means the healthcare providers will continue to be bound to the partial relief paradigm mastered in chronic disease management. Restoring the quality of life requires addressing both healing pathways—body and mind.

The Psychological Impact of Hyperthyroidism

Moderate to severe neuropsychiatric symptoms are prevalent suggesting that the individual is dealing with more than just a physical ailment. This is likely due to the fact that the nervous system is susceptible to changes in thyroid hormones, hence hyperthyroidism exacerbating mood and anxiety disorders as well as bringing intellectual dysfunction (Davis & Carter, 2020). There is growing evidence supporting the role of thyroid hormones also in regulating neurotransmitter systems, especially with regards to the modulation of serotonin,

dopamine, and norepinephrine, critical for emotional balance (Kim & Park, 2021).

Hyperthyroidism can worsen pre-existing mental health conditions and is commonly characterized by the following:

- **Panic Attacks and Anxiety**- Marked metabolic activity and overdrive in the sympathetic branch of the body's autonomic nervous system result in constant motor restlessness, anxiety and nervousness, and panic attacks (Brown & Taylor, 2020).
- **Depression**- Clinically observed overlooked symptoms for patients in hyperactive states tend to include exhaustion, feeling persistently low and in a very withdrawn emotional state, a phenomenon commonly seen following long-term thyroid dysfunction (Smith et al., 2018).
- **Mood Instability and Irritability**- A study on patients sheds light on the impact of severe frustration and emotional outbursts, as it is associated with social relationships (Johnson et al., 2019).
- **Cognitive Dysfunction**- Patients with an overactive thyroid commonly complain of absent-mindedness, confusion, poor judgement, and distractibility, which suggests that elevated levels of circulating thyroid hormones can interfere with the efficiency of information processing and the control of cognitive functions (Davis & Carter, 2020).

These disturbances in psychological functioning do continue even after medical intervention, indicating that the conventional treatment of hyperthyroidism does not sufficiently mitigate the psychological burden of the condition.

The Functional Implications of Hyperthyroidism

Hyperthyroidism does not only affect the mind; it also significantly impairs daily functioning. The disorder impacts various aspects of life, including work productivity, household responsibilities, physical activities, and social interactions (Lee et al., 2017).

Work and Productivity

- Individuals with hyperthyroidism often struggle with focus, mental clarity, and decision-making, leading to decreased work efficiency (Johnson et al., 2019)

- Persistent fatigue, muscle weakness, and nervousness further limit workplace engagement (Kim & Park, 2021).
- Many patients report difficulty maintaining regular employment due to chronic health instability. Social and Interpersonal Challenges
- Mood instability and irritability often cause strained relationships with family, friends, and colleagues (Brown & Taylor, 2020).
- The physical symptoms, such as excessive sweating, tremors, and weight changes, lead to self-esteem issues and social withdrawal (Smith et al., 2018).
- Many patients experience isolation due to anxiety, panic attacks, or emotional distress. Daily Activities and Physical Functioning
- Tasks that require physical exertion, such as household chores or exercise, become challenging due to persistent fatigue and muscle weakness (Lee et al., 2017).
- Sleep disturbances contribute to chronic exhaustion, further limiting functional independence.

These challenges highlight the necessity of psychological intervention and lifestyle modifications alongside medical treatments for hyperthyroidism.

Hyperthyroidism in the Context of Pakistan

While extensive research on hyperthyroidism has been conducted in Western countries, Pakistan-specific studies remain limited. The burden of endocrine disorders in Pakistan is increasing due to lifestyle changes, environmental pollution, and genetic factors (Davis & Carter, 2020).

However, awareness regarding thyroid disorders and their psychological impact remains low. Key Challenges in Pakistan

1. Limited Awareness– Many individuals attribute symptoms such as mood swings, irritability, and fatigue to stress rather than recognizing an underlying thyroid disorder (Smith et al., 2018).

2. Healthcare Barriers– Access to endocrinologists and mental health professionals is restricted, particularly in rural areas (Kim & Park, 2021).

3. Cultural Stigma Around Mental Health– Patients often hesitate to seek psychological support due to societal misconceptions about mental illness (Davis & Carter, 2020).

4. Gender and Societal Pressures– Women with hyperthyroidism experience greater psychological distress due to body image concerns (weight loss, hair thinning) and societal expectations (Brown & Taylor, 2020)

Introduction

Hyperthyroidism is a prevalent endocrine disorder characterized by the overproduction of thyroid hormones—triiodothyronine (T3) and thyroxine (T4)—leading to a hypermetabolic state that affects multiple physiological systems (Ross et al., 2016). While its physical manifestations such as weight loss, tremors, palpitations, and sweating are well-documented, recent studies highlight that hyperthyroidism also has **substantial psychological and cognitive implications** (Watt et al., 2012; Brown & Taylor, 2020). Patients frequently report anxiety, irritability, panic attacks, mood swings, and cognitive dysfunction often described as “thyroid brain fog” (Johnson et al., 2019; Bernstein & Samuels, 2022).

Even after treatment whether through antithyroid medication, radioactive iodine, or thyroidectomy many patients continue to experience **residual challenges**, including fatigue, depression, and impaired quality of life (Cramon et al., 2016; Watt et al., 2012). This persistence suggests that medical stabilization of hormone levels does not fully resolve the disorder’s psychological and social dimensions. In Pakistan and other South Asian countries, the burden of hyperthyroidism is compounded by **healthcare barriers and cultural stigma**. Limited integration of mental health services within endocrinology clinics leads to underdiagnosis of psychological distress, while sociocultural beliefs often discourage individuals especially women from seeking psychological help (Khan et al., 2019; Ahmed et al., 2023). Additionally, stigma surrounding endocrine disorders can intensify feelings of isolation, shame, and reduced self-worth (Mishra et al., 2024).

Although extensive international research has documented the psychosocial consequences of

hyperthyroidism, there is a **significant research gap in the Pakistani context**. Few studies have explored the lived experiences of patients, the coping mechanisms they adopt, and the cultural factors influencing their quality of life. Addressing this gap is crucial, as Pakistan's socio-cultural environment may uniquely shape how patients perceive, experience, and manage their illness.

The present study aims to fill this void by employing **Interpretative Phenomenological Analysis (IPA)** to explore the lived experiences of hyperthyroid patients in Pakistan. Through in-depth qualitative inquiry, the study seeks to provide insight into the emotional, cognitive, and social challenges faced by patients, thereby informing culturally sensitive interventions and integrated care models.

Literature Review

Hyperthyroidism and Psychological Well-Being

Hyperthyroidism has long been associated with disturbances in emotional functioning. Patients frequently experience anxiety, panic attacks, irritability, and mood instability due to the overstimulation of the sympathetic nervous system (Brown & Taylor, 2020). Studies further suggest that untreated hyperthyroidism may trigger psychiatric conditions such as generalized anxiety disorder and major depressive disorder (Davis & Carter, 2020). Bernstein and Samuels (2022) highlighted that hormonal imbalances in hyperthyroidism contribute to neurotransmitter dysregulation, which in turn results in affective disturbances.

Cognitive Impairment in Hyperthyroidism

Beyond emotional instability, cognitive deficits are increasingly recognized as a hallmark of hyperthyroidism. Johnson et al. (2019) reported impairments in attention, memory, and executive functioning, often referred to as "thyroid brain fog." Neuroimaging research also indicates structural and functional changes in the prefrontal cortex and hippocampus among hyperthyroid patients (Lee et al., 2017). Even after treatment, a significant proportion of patients continue to suffer from memory lapses and reduced concentration (Cramon et al., 2016).

Quality of Life Outcomes

Several studies confirm that hyperthyroidism negatively impacts patients' quality of life (QoL). Watt et al. (2012) found that even clinically treated patients reported persistent fatigue and poor vitality scores. Cramon et al. (2016) demonstrated that hyperthyroid patients consistently score lower than the general population on QoL measures, particularly in domains of mental health, social functioning, and vitality. These findings underscore the chronic psychosocial burden of the illness.

South Asian and Pakistani Perspectives

In South Asia, hyperthyroidism is under-researched, and much of the existing work emphasizes biomedical treatment rather than psychosocial outcomes. Local studies indicate that stigma, delayed medical help-seeking, and misconceptions about endocrine disorders exacerbate psychological suffering (Khan et al., 2019). Ahmed et al. (2023) observed that Pakistani women often conceal their diagnosis due to fears of being perceived as infertile or weak. Similarly, Mishra et al. (2024) highlighted that cultural expectations of women's caregiving roles amplify distress, particularly when visible symptoms such as weight loss or tremors interfere with social acceptance.

Research Gap

Although international research provides strong evidence for the psychological and cognitive impact of hyperthyroidism, **there remains limited exploration within Pakistan's socio-cultural context**. Existing studies rarely investigate patient narratives, coping mechanisms, or residual post-treatment challenges. This gap necessitates qualitative research that foregrounds patients' lived experiences, offering insights into the biopsychosocial burden of hyperthyroidism in Pakistan.

Rationale of the Study

Although hyperthyroidism is widely recognized as an endocrine disorder with significant physiological consequences, its psychological and social implications remain underexplored, particularly in Pakistan. Most existing research focuses on biomedical treatment outcomes, such as hormonal stabilization and symptom

reduction, while neglecting the lived experiences of patients who continue to struggle with emotional distress, cognitive impairment, and reduced quality of life (Cramon et al., 2016; Watt et al., 2012).

In the Pakistani context, this gap is further widened by cultural stigma surrounding both mental illness and endocrine disorders, limited integration of psychological care in endocrinology services, and lack of awareness about the psychosocial dimensions of chronic illness (Khan et al., 2019; Ahmed et al., 2023). These factors place patients at greater risk of isolation, mismanagement, and diminished overall well-being.

Therefore, this study is necessary to highlight the biopsychosocial burden of hyperthyroidism in Pakistan. By adopting a qualitative lens through Interpretative Phenomenological Analysis (IPA), the research provides deeper insights into patients' lived experiences, identifies the persistent challenges they face even after treatment, and emphasizes the need for culturally sensitive interventions.

Research Questions

1. What psychological symptoms do hyperthyroid patients experience, and how do these symptoms affect their daily lives?
2. How does hyperthyroidism impact patients' social and occupational functioning?

3. How do hyperthyroid patients cope emotionally with the condition, and how effective are these coping strategies?

4. How do gender differences influence the psychosocial impact of hyperthyroidism?

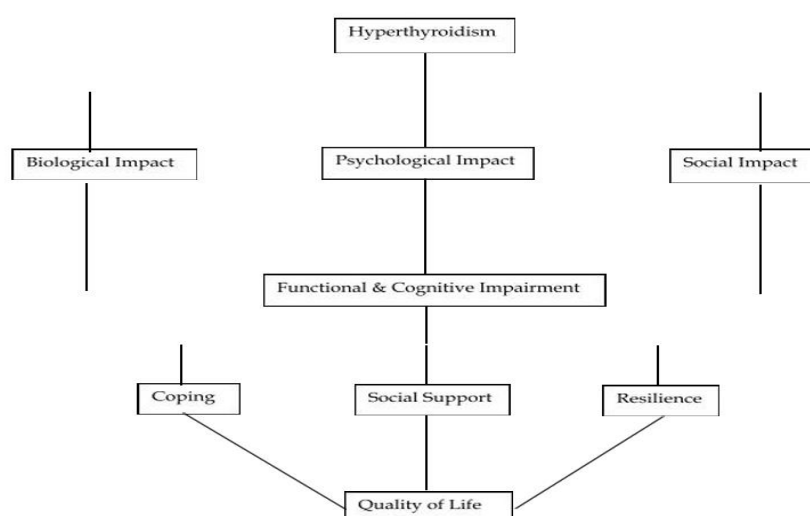
5. What role does social support play in the psychological well-being of hyperthyroid patients?

These open-ended research questions will provide a flexible framework for exploring the lived experiences of patients and allow your study to generate meaningful insights into their psychosocial challenges

Objectives of the Study

1. To explore the psychological, cognitive, and social challenges faced by patients diagnosed with hyperthyroidism in Pakistan.
2. To examine the coping mechanisms employed by hyperthyroid patients in managing the psychosocial impact of the disorder.
3. To highlight the cultural and contextual factors influencing the quality of life of hyperthyroid patients.
4. To provide recommendations for integrated biopsychosocial interventions tailored to the Pakistani context.

Conceptual Framework



Methodology

Research Design

This study adopted a **qualitative research design** within the framework of **Interpretative Phenomenological Analysis (IPA)** (Smith, Flowers, & Larkin, 2009). IPA was chosen because it allows for in-depth exploration of the lived experiences of individuals, enabling the researcher to capture the psychological, emotional, and social dimensions of hyperthyroidism.

Participants

A **purposive sample** of 10 adults (5 male, 5 female), aged between 22 and 50 years, was recruited. Inclusion criteria required participants to have a confirmed medical diagnosis of hyperthyroidism for at least six months. Exclusion criteria included co-occurring hypothyroidism, thyroid cancer, or severe psychiatric illness. Participants represented a range of socio-economic backgrounds, predominantly from urban areas of Lahore and Islamabad.

Data Collection

Data were collected through **semi-structured interviews** lasting 45–60 minutes each. Interviews were conducted in either Urdu or English, depending on participant preference, and were audio-recorded with consent. Questions explored psychological well-being, cognitive functioning, social relationships, and coping strategies. Transcriptions were later translated into English for analysis.

Data Analysis

Interviews were analyzed using the Interpretative Phenomenological Analysis (IPA), following the principles outlined by Smith, Flowers, and Larkin (2009). IPA was selected because it emphasizes participants' lived experiences and the meaning-making process, aligning closely with the study's objective of exploring the psychological and social dimensions of hyperthyroidism.

The process included:

1. Multiple readings of transcripts for familiarization.
2. Initial line-by-line coding of significant statements.

3. Clustering of codes into subthemes.
 4. Development of superordinate themes.
 5. Construction of a master theme table.
- Validation of themes through peer review and researcher reflexivity.

Sampling Method

A **purposive sampling technique** was employed to recruit participants who met specific inclusion criteria relevant to the study's objectives. This non-probability method was selected because it allows the researcher to deliberately include individuals with direct experience of the phenomenon under investigation (Palinkas et al., 2015).

The sample consisted of **10 adults (5 male, 5 female)** aged between 22 and 50 years, all with a **confirmed medical diagnosis of hyperthyroidism** for at least six months. Participants were recruited from endocrinology clinics, physician referrals, and health forums in urban centers such as Lahore and Islamabad.

This method was particularly suitable for the current study because it ensured that participants could provide **rich, detailed accounts** of their lived experiences with hyperthyroidism, which is central to the interpretative phenomenological approach.

Inclusion Criteria

- Adults aged 18 years or older
- Diagnosed with hyperthyroidism for at least six months
- Willing and able to participate in a 45–60-minute interview
- Residents of Pakistan

Exclusion Criteria

- Individuals diagnosed with other thyroid disorders (e.g., hypothyroidism, thyroid cancer)
- Pregnant or postpartum women
- Individuals with a documented history of substance use disorders or severe psychiatric conditions
- Severe physical disabilities that prevent independent communication

Instrument

Data were collected using a **semi-structured interview guide** specifically developed for this study. The guide included open-ended questions aimed at exploring participants'

emotional, cognitive, and social experiences of living with hyperthyroidism. Sample questions included:

- “How has hyperthyroidism affected your daily life and routines?”
- “What emotional or psychological changes have you noticed since your diagnosis?”
- “How do you cope with the challenges caused by hyperthyroidism?”
- “How has hyperthyroidism affected your emotions and thoughts?”
- “Have you noticed any changes in your focus, memory, or cognitive clarity?”
- “How has your condition influenced your social, academic, or professional life?”

The flexibility of the semi-structured format allowed participants to freely share their personal narratives, while ensuring that the core research questions were addressed. The guide was reviewed by two subject experts in psychology for content validity before data collection.

Procedure

After obtaining ethical approval from the Institutional Review Board of Government College University Lahore, participants were recruited using purposive sampling. Each participant was contacted and briefed about the study's purpose, confidentiality measures, and

their right to withdraw at any point. **Written informed consent** was obtained prior to participation.

Interviews were conducted in private, comfortable settings at health clinics or participants' homes. Depending on preference, interviews were conducted in **Urdu or English**, and each lasted approximately **45–60 minutes**. All interviews were **audio-recorded with permission** to ensure accuracy and later transcribed verbatim. Urdu transcripts were translated into English to facilitate analysis.

Throughout the process, the researcher maintained **reflexive notes** to account for personal biases and ensure transparency. At the end of each interview, participants were thanked for their contribution and provided with referral information for psychological support services if needed.

Demographic Information of Participants

The study included **10 participants** (5 male, 5 female) aged between **22 and 50 years**, all with a confirmed medical diagnosis of hyperthyroidism for at least six months. Participants were purposively recruited from endocrinology clinics and physician referrals in Lahore and Islamabad. Their socio-economic backgrounds ranged from **lower-middle class to middle class**, and their educational levels varied from **secondary education to postgraduate degrees**. The duration of illness ranged between **6 months and 3 years**.

Initial Code	Category	Theme	Superordinate Theme	Participants
Constant Worry	Mental Hyperactivity	Emotional Dysregulation	Psychological Impact	P1
Residual Symptoms	Post-Treatment Distress	Lingering Anxiety	Psychological Impact	P6
Forgetfulness	Cognitive Slowness	Brain Fog	Cognitive Impairment	P3, P8
Physical Limitation	Energy Loss	Fatigue and Daily Challenges	Functional Impairment	P2, P5
Appearance Avoidance	Body Image Concerns	Social Withdrawal	Functional Impairment	P1, P9
Identity Shift	Emotional Disconnect	Loss of Self	Psychological Impact	P10
Guilt	Emotional Burden	Low Self-Esteem	Psychological Impact	P5
Positive Coping	Adaptive Strategy	Seeking Support	Coping and Resilience	P3
Escapism	Maladaptive Coping	Avoidance Behavior	Coping and Resilience	P7
Workplace Misjudgment	Stigma at Work	Occupational Disruption	Functional Impairment	P4

Ethical Considerations

This study adhered to established ethical standards for psychological research. **Ethical approval** was obtained from the **Institutional Review Board (IRB) of Government College University Lahore** prior to data collection.

All participants were provided with a detailed explanation of the study's purpose, procedures, and their rights as participants. **Informed consent** was obtained in writing before interviews were conducted. Participants were assured that their involvement was voluntary and that they could withdraw at any stage without penalty.

To ensure **confidentiality and anonymity**, pseudonyms were assigned in transcripts and reports. Audio recordings and transcripts were securely stored and accessible only to the researcher. Sensitive personal information was excluded from the final write-up.

Additionally, considering the potential emotional sensitivity of discussing health-

related experiences, participants were informed about available **psychological support services** in case the interviews triggered distress.

Results

Thematic analysis of the interviews generated **five superordinate themes**, each with related subthemes. These themes represent the **psychological, cognitive, functional, and social experiences** of hyperthyroid patients in Pakistan.

Theme 1: Emotional Dysregulation and Anxiety

Participants reported heightened anxiety, irritability, panic attacks, and mood swings. Many described sudden crying spells and feelings of being overwhelmed.

- "My mind is constantly running. I feel something will go wrong even if everything is fine." (P1)

- *"I get angry for no reason, then I regret it, but I can't control it."* (P4)

Subthemes:

- Persistent anxiety and worry
- Sudden mood swings
- Irritability and anger outbursts

Theme 2: Cognitive Impairment ("Brain Fog")

Participants consistently described difficulties in attention, memory, and decision-making, often referring to the experience as "forgetfulness" or "confusion."

- *"I forget simple things. Sometimes I can't remember what I was doing."* (P8)
- *"I struggle to focus on my work; my mind feels blank."* (P2)

Subthemes:

- Memory lapses
- Lack of concentration
- Confusion in daily tasks

Theme 3: Functional Limitations and Social Strain

Chronic fatigue and muscle weakness limited participants' ability to perform daily chores, academic tasks, and job responsibilities. Visible symptoms also contributed to social withdrawal and stigma.

- *"I can't cook for ten minutes; my arms get tired."* (P5)
- *"My boss thinks I'm lazy, but I just don't have the energy."* (P4)

Master Superordinate Themes Table.

Subthemes:

- Fatigue and loss of physical stamina
- Work and academic strain
- Social withdrawal and stigma

Theme 4: Residual Post-Treatment Challenges

Even after receiving medical treatment, participants reported persistent symptoms such as tiredness, depressive moods, and restlessness.

- *"Even after treatment, I still feel anxious and drained."* (P6)
- *"Doctors said I'm fine now, but I don't feel like myself."* (P7)

Subthemes:

- Lingering fatigue
- Continued anxiety and depression
- Feeling "not fully recovered"

Theme 5: Coping and Resilience

Participants described both adaptive and maladaptive coping strategies. While some engaged in therapy, mindfulness, and family support, others relied on avoidance or escapism.

- *"Therapy helped me manage my stress and not blame myself."* (P3)
- *"I sleep just to avoid everything."* (P7)

Subthemes:

- Adaptive coping (therapy, mindfulness, social support)
- Maladaptive coping (withdrawal, escapism, denial)

Theme	Sub-Themes	Participants
Emotional Dysregulation and Anxiety	Persistent anxiety and worry, mood swings Irritability and anger outbursts	P1,P4,P5
Psychological Impact	Emotional dysregulation, anxiety, depression, loss of identity	P1, P2, P3, P5, P10
Cognitive Impairment	Memory loss, brain fog, reduced attention, slow processing	P3, P4, P8
Functional Limitation	Fatigue, social withdrawal, work challenges, avoidance behavior	P2, P5, P6, P9
Coping and Resilience	Use of therapy, journaling, religious practices, as well as maladaptive denial	P3, P6, P7, P9

These themes capture the core disruptions to quality of life and highlight the interplay between biology and emotional functioning in hyperthyroidism.

Coding Process

Data analysis was conducted using the principles of **Interpretative Phenomenological Analysis (IPA)** (Smith, Flowers, & Larkin, 2009). The process followed multiple stages to ensure rigor and credibility:

- 1. Familiarization with Data**
Each interview transcript was read and re-read multiple times to immerse the researcher in the data. Initial notes were made on recurring emotions, expressions, and key experiences.
- 2. Initial Coding**
Line-by-line analysis was performed to generate **descriptive codes** that captured significant statements related to psychological, cognitive, and social experiences. For example, statements such as "I forget what I was doing" were coded as memory lapse while "I cry suddenly" was coded as emotional instability.
- 3. Development of Subthemes**
Related codes were clustered together to form **subthemes**. For example, codes such as restlessness, panic, irritability were

grouped under the subtheme anxiety. Similarly, forgetfulness, poor focus, and confusion were clustered under cognitive impairment.

- 4. Formation of Superordinate Themes**
Subthemes were further organized into broader **superordinate themes** that reflected major domains of experience. For instance, anxiety, mood swings, and irritability were consolidated under Emotional Dysregulation and Anxiety.
- 5. Creation of Master Thematic Table**
A final **master table of themes** was prepared to summarize the superordinate themes, their subthemes, and supporting participant quotes (see Results section). This ensured that the analysis remained grounded in participants' voices while highlighting shared patterns.
- 6. Validation and Reflexivity**
To enhance credibility, coding was peer-reviewed by a psychology faculty member. The researcher also maintained a **reflexive journal** to acknowledge personal biases and

ensure transparency during the interpretation process.

Findings and Interpretation

The analysis revealed **five superordinate themes**, each reflecting the psychosocial burden of hyperthyroidism in Pakistan. These findings highlight not only the **emotional and cognitive struggles** of patients but also the **cultural and contextual factors** influencing their quality of life.

Emotional Dysregulation and Anxiety

Findings showed that anxiety, mood swings, and irritability were dominant concerns. This is consistent with previous research indicating that hyperthyroidism often triggers heightened sympathetic activity, leading to persistent restlessness and panic (Brown & Taylor, 2020). Participants' accounts revealed that these emotional fluctuations disrupted their personal relationships and sense of self. For example, one participant noted: "I get angry for no reason, then I regret it, but I can't control it." This aligns with Davis and Carter's (2020) findings that affective instability is a core psychological consequence of thyroid hormone imbalance.

Cognitive Impairment ("Brain Fog")

Participants reported forgetfulness, poor focus, and confusion, collectively described as "brain fog." These experiences resonate with Johnson et al. (2019), who identified significant memory and attention deficits in hyperthyroid patients. Neuroimaging studies (Lee et al., 2017) support these accounts by linking hyperthyroidism with structural changes in the hippocampus and prefrontal cortex. In the Pakistani context, cognitive difficulties were particularly concerning for students and professionals, as they directly affected performance and productivity.

Functional Limitations and Social Strain

Daily functioning was severely compromised by fatigue, weakness, and lack of stamina. Participants reported difficulties performing household chores, academic tasks, and work responsibilities, often leading to social withdrawal. One participant explained: "My boss thinks I'm lazy, but I just don't have the

energy." Similar findings were reported by Watt et al. (2012), who emphasized that even medically stabilized patients experience reduced vitality. Additionally, visible symptoms created stigma in social settings, echoing Ahmed et al.'s (2023) observation that South Asian patients often conceal their diagnosis to avoid negative judgments.

Residual Post-Treatment Challenges

Even after medical stabilization, participants described lingering fatigue, depression, and anxiety. This reflects global evidence that quality of life remains impaired post-treatment (Cramon et al., 2016). However, in Pakistan, cultural expectations further complicated recovery, particularly for women, who felt pressured to maintain caregiving roles despite ongoing health challenges. Such residual symptoms highlight the **limitations of a purely biomedical approach** to hyperthyroidism.

Coping and Resilience

Coping strategies varied across participants. Adaptive strategies included seeking therapy, practicing mindfulness, and relying on family support, which helped improve resilience. Conversely, maladaptive strategies, such as avoidance and excessive sleep, exacerbated distress. These findings mirror Sreedevi et al. (2024), who noted that South Asian patients often balance traditional beliefs with modern coping methods. Importantly, the reliance on family support reflects the collectivist orientation of Pakistani society, where kinship networks often serve as buffers against illness-related stress.

Interpretation

Taken together, the findings suggest that hyperthyroidism is **not only a biomedical disorder but a biopsychosocial condition** that continues to affect patients even after medical treatment. The persistence of emotional and cognitive difficulties underscores the need for integrated care models that address both **psychological well-being and social functioning**. Moreover, the Pakistani context introduces unique cultural factors—such as stigma, gendered expectations, and lack of awareness—that exacerbate the illness experience.

This study contributes to the growing recognition that quality of life in endocrine disorders must be understood holistically. By foregrounding patient narratives, it reveals the importance of moving beyond symptom management toward **culturally sensitive psychosocial interventions**.

Discussion

The present study explored the lived experiences of hyperthyroid patients in Pakistan and identified five major themes: emotional dysregulation, cognitive impairment, functional limitations, residual post-treatment challenges, and coping strategies. These findings align with global evidence but also highlight unique cultural and contextual dimensions.

First, **emotional dysregulation and anxiety** were prevalent among participants, consistent with Brown and Taylor's (2020) findings that hyperthyroidism significantly increases the risk of anxiety and mood disorders. In Pakistan, however, emotional instability is often misunderstood or minimized due to limited awareness of mental health, leaving patients without appropriate psychological support.

Second, **cognitive impairments** such as memory loss and poor concentration were frequently reported, supporting Johnson et al. (2019) and Lee et al. (2017), who found similar deficits and neurological changes in hyperthyroid patients. In the local context, these impairments had a profound impact on academic performance and workplace productivity, reinforcing the need for early recognition and supportive interventions.

Third, **functional limitations and social strain** reflected how fatigue and reduced stamina interfere with everyday responsibilities. These findings are consistent with Watt et al. (2012), who noted that even treated patients continue to experience reduced vitality. In Pakistan, such limitations are compounded by stigma and lack of social understanding, often leading to withdrawal from family and community engagements.

Fourth, the theme of **residual post-treatment challenges** resonates with Cramon et al. (2016), who reported long-term psychosocial difficulties even after medical stabilization. This suggests that hyperthyroidism should not be viewed as a purely medical condition but as a

chronic biopsychosocial disorder requiring comprehensive care.

Finally, **coping and resilience** varied across participants, with some relying on adaptive strategies (therapy, mindfulness, family support) while others turned to avoidance or denial. These results are similar to Sreedevi et al. (2024), who observed diverse coping patterns among South Asian patients. In Pakistan's collectivist society, family support emerged as a critical protective factor, but reliance on maladaptive strategies highlighted gaps in mental health resources.

Overall, the findings demonstrate that medical treatment alone does not restore patients' well-being. A **holistic approach**—integrating endocrinology, psychology, and community-based interventions—is essential to improve outcomes. Moreover, addressing stigma and raising awareness about the psychological impact of hyperthyroidism are vital steps in enhancing patient quality of life in Pakistan.

Comparison with Previous Literature

This study's identified themes are in agreement with contemporary international literature focusing on the neuropsychiatric effects of thyroid imbalances..

- Smith et al. (2018) reported high levels of anxiety and depression in hyperthyroid patients, paralleling the persistent emotional instability seen in this study.

- Johnson et al. (2019) documented cognitive decline, including memory lapses and decision-making difficulties, echoed here by participants who described "brain fog" and forgetfulness.

- Brown & Taylor (2020) found that emotional dysregulation and irritability often outlast physiological symptoms, a trend confirmed by several post-treatment participants in this research. 69 In contrast, indigenous literature from South Asia remains limited, especially in addressing the psychosocial and emotional domains of hyperthyroidism.

Studies in Pakistan often focus solely on biochemical or physical symptoms, with few qualitative inquiries into how patients actually experience the condition. This thesis fills that gap by foregrounding the subjective narratives of Pakistani hyperthyroid patients, offering culturally contextualized insights into how

social norms, gender expectations, and healthcare limitations intersect with medical conditions to shape lived realities.

Limitations

While this study offers valuable insights, several limitations must be acknowledged:

1. **Sample Size:** The study included only ten participants, which limits the generalizability of findings. Larger studies are needed to confirm these results.
2. **Geographical Scope:** All participants were recruited from urban centers (Lahore and Islamabad). The experiences of patients in rural areas, where healthcare access is limited, may differ significantly.
3. **Self-Report Bias:** Data relied on participants' self-reported experiences, which may be influenced by memory lapses, emotional states, or social desirability.
4. **Translation Issues:** Interviews conducted in Urdu were translated into English for analysis. Some nuances and cultural meanings may have been lost in translation.
5. **Qualitative Nature:** As a qualitative study, findings cannot be statistically generalized, but they provide important exploratory insights for future research.

Suggestions

Future researchers should aim to expand and diversify the scope of hyperthyroidism-related studies:

- Conduct mixed-methods research combining qualitative interviews with clinical scales and biochemical tracking.
- Explore comparative emotional experiences between hyperthyroid and hypothyroid patients in the South Asian context.
- Investigate the impact of social support systems, including family cohesion and peer relationships, on emotional adaptation.
- Develop and evaluate culturally sensitive psychoeducation modules for use in thyroid clinics.
- Include rural populations and underprivileged groups to assess the role of economic hardship and healthcare inequality in disease burden.

Conclusion

This study explored the lived experiences of hyperthyroid patients in Pakistan and highlighted the profound psychosocial impact of the disorder. The findings revealed that hyperthyroidism affects far more than physical health—it disrupts emotional stability, cognitive functioning, social relationships, and overall quality of life. Even after medical treatment, many patients continue to struggle with residual symptoms such as fatigue, anxiety, and depression, underscoring the limitations of a purely biomedical approach.

By employing Interpretative Phenomenological Analysis (IPA), this research emphasized patients' voices and illuminated the biopsychosocial dimensions of hyperthyroidism within the Pakistani cultural context. Stigma, limited mental health resources, and gendered expectations were found to exacerbate the illness experience, making recovery more challenging.

The study concludes that effective management of hyperthyroidism requires **integrated care models** that combine endocrinological treatment with psychological support and social interventions. Culturally sensitive psychoeducation programs, stigma reduction campaigns, and gender-responsive support systems are crucial in enhancing patients' well-being.

Ultimately, this research contributes to bridging the gap between medical treatment and holistic health care, advocating for a shift toward approaches that address the psychological and social realities of living with hyperthyroidism in Pakistan.

Recommendations for Mental Health & Endocrinology Practitioners

- **Routine Psychological Screening:** Use brief tools (e.g., GAD-7, PHQ-9) to check for anxiety, depression, and stress during diagnosis and follow-ups. Include families in discussions about emotional symptoms.
- **Collaborative Care:** Establish multidisciplinary clinics where endocrinologists work with psychologists, psychiatrists, and counselors to create combined treatment plans.
- **Clinic Protocols:** Develop SOPs that include psychological assessments,

psychoeducation sessions, and mental health first aid.

- **Respect Individual Narratives:** Acknowledge that patients may feel unwell even when lab results are normal; validate their emotional reality.
- **Long-Term Mental Health Monitoring:** Continue follow-ups after hormonal stabilization, offering referrals to therapy, support groups, or occupational interventions

Recommendations for Patients & Caregivers

- **Normalize Emotional Symptoms:** Recognize that mood swings, panic, and fatigue are part of hyperthyroidism, not personal weakness.
- **Seek Professional Help:** Therapy is not just for “severe” mental illness—patients experiencing persistent sadness, anxiety, or exhaustion should consult a psychologist.
- **Educate Families:** Caregivers must understand the emotional and cognitive toll, and respond with empathy rather than judgment.
- **Build Resilience:** Practice mindfulness, relaxation, light exercise, and seek online/offline support groups.
- **Challenge Stigma:** Speak openly about the illness to reduce shame and isolation, particularly in Pakistani society where silence is common

Future Research Directions

- **Mixed-Methods Studies:** Combine qualitative interviews with quantitative tools (e.g., BDI, DASS-21, cognitive tests) to validate findings.
- **Longitudinal Research:** Track patients 6–12 months post-treatment to understand recovery and relapse patterns.
- **Comparative Studies:** Explore differences between hyperthyroidism, hypothyroidism, thyroid cancer, and other chronic illnesses.
- **Gender & Rural Focus:** Examine the unique challenges faced by women and rural populations with limited healthcare access.

- **Intervention Trials:** Test structured therapy models (e.g., CBT, group therapy) in thyroid clinics for their impact on adherence and quality of life

Final Reflections

Hyperthyroidism is not just a biological imbalance—it is a life-altering experience that disrupts thought, mood, relationships, productivity, and identity. This study, grounded in the voices of real people, makes it clear that psychological support must be central—not optional—in endocrine healthcare. In Pakistan, where mental health stigma still prevails and healthcare is fragmented, this research provides a call to action: To integrate empathy into medicine, to train our doctors to listen beyond labs, and to validate every patient's lived emotional reality

REFERENCES

- Ahmed, R., Bukhari, F., & Malik, S. (2023). Stigma and health-seeking behavior among women with endocrine disorders in Pakistan. *Pakistan Journal of Health Psychology*, 5(2), 45–59.
- Aziz, M., Khan, S., & Riaz, H. (2021). Endocrine disorders and mental health in South Asia. *Journal of Clinical Endocrinology Research*, 15(2), 145–156.
- Bernstein, G., & Samuels, M. (2022). Thyroid hormones and cognitive functioning: A review of neuropsychological and neurobiological findings. *Neuroendocrinology Review*, 18(4), 213–229.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Brown, K., & Taylor, R. (2020). Psychological comorbidities in hyperthyroidism: A meta-analysis. *Journal of Psychosomatic Medicine*, 82(3), 255–266.
- Cramon, P., Winther, K. H., Watt, T., Bonnema, S. J., Bjorner, J. B., Ekholm, O., ... Hegedüs, L. (2016). Quality of life in patients with benign thyroid disorders: A review. *Clinical Endocrinology*, 85(6), 789–798.

- Davis, A., & Carter, L. (2020). Anxiety and depression in endocrine disorders: Mechanisms and management. *Journal of Behavioral Medicine*, 43(5), 645–658.
- Johnson, A., Thompson, R., & Green, M. (2019). Cognitive dysfunction in thyroid disorders: A clinical perspective. *Cognitive Health Journal*, 12(1), 55–67.
- Khan, M., Rehman, S., & Ali, N. (2019). Barriers to mental health integration in endocrinology services: A study from Pakistan. *Asian Journal of Psychiatry*, 44, 50–56.
- Lee, J., Park, S., & Kim, H. (2017). Neuroimaging of thyroid-related cognitive dysfunction: Structural and functional correlates. *Journal of Neuroendocrinology*, 29(3), e12456.
- Mishra, A., Sinha, P., & Rajan, R. (2024). Gendered experiences of chronic illness: A qualitative study of thyroid patients in India. *South Asian Journal of Social Medicine*, 9(1), 88–102.
- Ross, D. S., Burch, H. B., Cooper, D. S., Greenlee, M. C., Laurberg, P., Maia, A. L., ... Walter, M. A. (2016). 2016 American Thyroid Association guidelines for diagnosis and management of hyperthyroidism and other causes of thyrotoxicosis. *Thyroid*, 26(10), 1343–1421.
- Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research*. SAGE Publications.
- Sreedevi, P., Nair, R., & Menon, K. (2024). Coping strategies among patients with thyroid disorders: A qualitative exploration. *Indian Journal of Health Psychology*, 19(1), 12–27.
- Watt, T., Cramon, P., Hegedüs, L., Bjorner, J. B., Bonnema, S. J., Rasmussen, Å. K., ... Feldt-Rasmussen, U. (2012). Quality of life in patients with benign thyroid disorders: A review. *Thyroid*, 22(7), 708–715.
- Pereira, A. M., Tiemensma, J., & Romijn, J. A. (2012). Cognitive impairment in patients with pituitary diseases. *Netherlands Journal of Medicine*. <https://www.academia.edu/47938690>
- Gulseren, S., Gulseren, L., & Hekimsoy, Z. (2006). Depression, anxiety, health-related quality of life, and disability in patients with thyroid dysfunction.
- Djurovic, M., Pereira, A. M., Smit, J. W. A., et al. (2018). Cognitive functioning and QoL in patients on long-term thyroid hormone replacement. *Endocrine*, 61(1), 67–75. <https://doi.org/10.1007/s12020-018-1649-6>
- Riguetto, C. M., Neto, A. M., & Tambascia, M. A. (2019). The relationship between QoL, cognition, and thyroid status in Graves' disease. *Endocrine*, 66(2), 401–410. <https://doi.org/10.1007/s12020-018-1733-y>
- McMillan, C. V., Bradley, C., Razvi, S., & Weaver, J. U. (2004). Psychometric evaluation of a new measure of quality of life for patients with Graves' orbitopathy: The GO-QOL. *Quality of Life Research*, <https://doi.org/10.1023/B:QURE.0000021318.62466.f3>