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Thyroid Dysfunction as a Physiological Problem of the Aged: Challenges and the Roles of Social Workers

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ABSTRACT

Thyroid dysfunction is a common physiological issue among older adults, with significant implications for their health and quality of life. As aging affects the endocrine system, changes in thyroid function occur, which often leads to conditions like hypothyroidism and hyperthyroidism. These changes are often challenging to diagnose due to overlapping symptoms with other age-related ailments. This paper explores the pervasiveness, pathophysiology, diagnosis, and management of thyroid dysfunction in the aged.

***Keywords*:** Thyroid Dysfunction, Elderly Population, Hypothyroidism Management, Social Work in Healthcare, Geriatric Endocrinology

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1. INTRODUCTION

The thyroid gland is the largest gland located in the neck at about the level of the larynx and upper part of the trachea, consisting of two lobes connected by a narrow bridge (isthmus) across the ventral surface of the trachea. It is shaped like a butterfly, smaller in the middle with two wide wings that extend around the side of your throat. The thyroid makes hormones that help control many vital functions of the body.

Thyroid dysfunction is one of the more prevalent endocrine disorders affecting older adults, with increased risks from age-related physiological changes. The thyroid gland, which regulates metabolism through hormone production, often undergoes functional changes with age, contributing to both overt and subclinical thyroid diseases. Recent studies have focused on how aging impacts thyroid function and how these alterations correlate with other age-related health challenges (Biondi et al., 2018; Pearce, 2019).

When the thyroid doesn't work properly, it can impact the entire body. If the body makes too much thyroid hormone, one can develop a condition called *hyperthyroidism*, and if the body makes too little, it's referred to as *hypothyroidism*, with both needing urgent medical attention (Bahn, 2010).

The major functions of thyroid hormones are for regulating the rate at which the body uses calories; slow down or speeding up heart rate; raising or lowering the body temperature; influencing the speed at which food moves through the digestive tract.

2. PATHOPHYSIOLOGY OF THYROID DYSFUNCTION IN THE AGED

Generally, aging is associated with physiological modifications that affect thyroid function, including reduced hormone secretion and feedback mechanisms altercations within the hypothalamic-pituitary-thyroid (HPT) axis. These changes can contribute to a decline in thyroid hormone production or an imbalance in thyroid-stimulating hormone (TSH) levels, even in the absence of overt thyroid disease (Mammen et al., 2017).

Research opine that structural alterations in the thyroid gland, such as atrophy and fibrosis, may contribute to hypothyroidism in the elderly, while changes in immune responses could increase susceptibility to autoimmune thyroid diseases (Pasqualetti et al., 2019).

Hypothyroidism

Hypothyroidism, marked by a *deficiency in thyroid hormones*, is more common among older adults and is visible with symptoms that overlay normal aging or other chronic illnesses, such as fatigue, weight gain, and cognitive decline. The prevalence of subclinical hypothyroidism increases with age and is associated with a higher risk of cardiovascular disease, depression, and cognitive impairment (Mariotti et al., 2020). This makes the differentiation of hypothyroidism from other aging processes challenging but critical for appropriate treatment.

Hyperthyroidism

Hyperthyroidism, though less common, also poses risks for the elderly, especially due to its relationship with cardiovascular complications like atrial fibrillation and heart failure (Figueroa et al., 2018). In aged populations, hyperthyroidism can occur with symptoms such as anorexia, weight loss, or muscle weakness. Subclinical hyperthyroidism has been linked to increased risk of osteoporosis and fracture, making its management in older adults particularly important (Gencer et al., 2020).

2.1. The Aging Process and Thyroid Dysfunction

As people age, they experience biological, psychological, and social changes. These changes are normal, but there are a lot of things that can be done to help older adults adjust to and compensate for these changes. External changes are some of the most obvious changes with aging. These include changes to one's hair, nails, and skin. As people age, their hair loses its pigment and turns gray or white. As people get older, their hair thins. Many men become bald or have a "receding hairline," but even women notice that their hair becomes less thick (Hom, 2019).

As people get older, skin loses elasticity. It becomes thin and fragile. The blood flow and oil production in the skin decrease, and the skin tends to become dry and wrinkled. "Liver spots" often appear on the hands and face. The skin may look pale and translucent. Sweat glands decrease, and there is an increased risk for heat stroke. Wounds take a longer time to heal in older persons.

When these changes happen, older adults are at risk of getting decubitus ulcers (sores that are hard to heal). We reach our maximum height at age 25. After that, height declines an average of 3 inches over the life span, due to loss of bone. With age, the width of the shoulders declines. There is bone loss, weakened muscles, and loss of elasticity in ligaments. Cartilage between joints wears thin, and lubricating fluid decreases, causing stiffness in the joints. Joint stiffness limits physical activity and mobility. This affects gait and posture. With declines in physical activity, strength and stamina will also be affected. With age, there is a decrease in the contraction of muscles in the esophagus, so it takes more time for food to get to the stomach.

This explains why many older adults have the sensation of being full before finishing a full meal. This can result in inadequate nutrient intake. With age, kidneys decrease in size and volume, this affects renal function. This makes the need to urinate more frequent, the bladder may not empty completely after voiding. Weak muscles of the bladder can lead to incontinence that is the inability to control bladder function (Hom, 2019).

There is also the Organ System Changes: These include changes to the heart and cardiovascular system, the lungs and respiratory system, the gastrointestinal system, the urinary tract system, and the musculoskeletal system. With age, the heart pumps with less force, and there is a decrease in cardiac output. More time is required for the heart to return to normal after exertion. Deep breathing may become difficult because the skeletal muscles become more rigid.

The cough mechanism becomes less effective due to anatomic and muscle changes. Breathing moves to the upper part of the chest. The lungs become less elastic and decrease in size. Aging also involves the loss of cells over time. With biological aging, tissues and organs are less likely to function efficiently, the body's ability to repair itself slows down, and the immune functions decline, making the body more prone to infection. Biological aging is sometimes referred to as physical aging. A person who keeps fit and gets regular check-ups can appear biologically younger than someone who is the same age but does not keep fit. (Hom, 2019).

2.2. Causes and Risk Factors of Thyroid Dysfunction in Elderly

Thyroid dysfunction can result from various conditions that interfere with the thyroid gland's ability to produce hormones. Autoimmune diseases are a primary cause, where the immune system mistakenly targets healthy tissues, sometimes impacting the thyroid gland and disrupting hormone production. Surgical removal of the thyroid, whether partial or complete, can also lead to reduced or absent hormone synthesis. Similarly, radiation therapy for cancers in the head and neck area can impair thyroid function, while thyroiditis—an inflammation of the gland that may be caused by infection or autoimmune reactions—can also lead to thyroid problems. Certain medications are known to induce thyroid dysfunction as well. Less frequently, congenital issues present at birth, pituitary disorders, pregnancy, and iodine deficiency may contribute to thyroid dysfunction.

In the elderly, several factors increase the risk of thyroid dysfunction. Gender plays a significant role, with women at a higher likelihood of developing thyroid issues compared to men. A family history of thyroid disease further predisposes individuals to thyroid dysfunction, as does the presence of other autoimmune diseases, such as type 1 diabetes or celiac disease. Prior exposure to radiation or thyroid surgery also heightens the risk, underscoring the need for careful monitoring of thyroid function in older adults with these risk factors.

2.3. Impact of Thyroid Dysfunction on the Elderly

Thyroid dysfunction also has various consequences on the elderly, which includes fatigue. They become weary, tired, and lack energy to go about their daily activities like they used to. They cannot go to where they used to go; neither can they do what they want to do. Although fatigue could be a sign of old age, thyroid dysfunction makes it worse than it should be. Other physical impact includes anorexia, which could lead to severe weight loss, bulging eyes. Excessive thyroid hormone production may lead to restlessness, nervousness, irritability, increased sweating, shaking, and trouble sleeping and so on. A thyroid disorder can also cause changes in appearance - for example, changes due to thyroid eye disease, weight loss or gain, or loss of hair - which can contribute to feelings of low self-esteem or mood. Sometimes psychological symptoms are a side-effect of the treatment. Steroids, for example, can aggravate depression. Beta blockers prescribed to slow down your heart rate and to reduce anxiety if you are hyperthyroid can make some people feel tired, depressed, and mentally less alert.

Untreated hyperthyroidism can cause some serious health problems, including an irregular heartbeat that can lead to blood clots, stroke, heart failure, and other heart problems, an eye disease called *Graves' Ophthalmophathy* (also called thyroid eye disease).

It can cause double vision, eye sensitivity can eye pain. In rare cases, it can lead to vision loss. Hyperthyroidism can also cause bone thinning and osteoporosis -weakening of the bones to the point that they can break easily. Thyroid dysfunction can also cause depression, confusion, anxiety, constipation, diarrhea, fine tremor, weak nails and thinning hair, sensitive skin and skin discoloration, dry and itchy skin, muscle pain and soreness, joint pain, stiffness and swelling, nervousness and ²anxiousness, palpitations.

3. TREATMENT OF THYROID DYSFUNCTION

Thyroid dysfunction can be treated by medications or, in some cases, surgery. Treatment will depend on the particular disease of the thyroid. Medication can be given to replace the missing thyroid hormone in hypothyroidism. Synthetic thyroid hormone is given in pill form by mouth. When hyperthyroidism is present, medications can be used to decrease the production of thyroid hormone or prevent its release from the gland. Other medications can be given to help manage the symptoms of hyperthyroidism, such as increased heart rate. If hyperthyroidism is not controlled with medications, radioactive ablation can be performed. Ablation involves giving doses of iodine labeled with radioactivity that selectively destroys the thyroid tissue.

Surgery can be used to remove a large goiter or a hyper functioning nodule within the gland. Surgery is necessary when there is possibility of thyroid cancer. If the thyroid gland is removed entirely, the individual will need to take synthetic thyroid hormone for life. Thyroid surgery can also be used in Graves' diseases (subtotal thyroidectomy) and was the treatment of choice prior to RAI therapy and anti-thyroid medications and it is not used much.

3.1. Social Work Management of Thyroid Dysfunction in the Elderly

Elderly patients with thyroid disease need multidisciplinary approach to manage. That includes nurses, dieticians, physiotherapists, social workers, and, of course, family members. Aging itself takes a toll on the elderly, and it is not unusual for the elderly to have an emotional reaction before, during, or after treatment. Therefore, the aim of managing the elderly with thyroid dysfunction is to attain comfort and attain highest level of quality life, relief symptoms as much as possible, and minimize side effects of drugs and occurrence of complication. Hence, it is much more required to achieve the symptomatic wellbeing of an elderly than to achieve fix target thyroid hormone level (Kalra & Sharma, 2018).

In managing thyroid dysfunction among older adults, social workers play a key role to ensure that medical care aligns with the specific needs, risks, and lifestyle factors of their clients. Social workers can support clients with thyroid dysfunction by advocating for individualized care plans, offering psychosocial support, coordinating multidisciplinary services, and educating clients and their families. This section outlines the ways social workers can contribute to better management and improved outcomes for elderly individuals dealing with thyroid dysfunction.

a) Assessment and Advocacy: Social workers are positioned to perform comprehensive assessments that identify both the physiological and social needs of elderly clients with thyroid dysfunction. This may involve coordinating with healthcare providers to ensure that lower dosing and individualized treatment protocols are considered, as recent studies have shown that older adults benefit from conservative treatment approaches, especially in hypothyroidism cases (Stott et al., 2017). Social workers can advocate for careful monitoring of subclinical hypothyroidism, supporting the decision to initiate treatment only if TSH levels reach clinically significant thresholds (Ochs et al., 2020).

b) Facilitating Multidisciplinary Collaboration: Thyroid dysfunction often requires management by endocrinologists, geriatric specialists, and primary care providers. Social workers can facilitate communication among these professionals, ensuring that care strategies are coordinated and that all practitioners involved are aware of the unique risks associated with treating older adults. In cases of hyperthyroidism, for instance, social workers can ensure that the client's sensitivity to medications, such as beta-blockers or anti-thyroid drugs, is consistently monitored to prevent adverse effects (Diez et al., 2019).

c) Psychosocial Support and Counselling: Living with thyroid dysfunction can impact an older adult's mental health, emotional well-being, and social engagement, often leading to symptoms such as depression, fatigue, and social withdrawal. Social workers can provide crucial psychosocial support by offering counselling services, educating clients about their condition, and encouraging positive coping mechanisms. This role is especially important given that symptoms of thyroid dysfunction often overlap with normal aging and other health conditions, which can create confusion and anxiety for elderly clients and their families.

d) Education and Health Literacy: Education is key to empowering elderly clients to manage their health effectively. Social workers can provide education on the symptoms, potential side effects of medications, and lifestyle modifications that may alleviate thyroid-related challenges. By helping clients and their families understand the effects of thyroid dysfunction, social workers enable them to recognize symptoms early and seek appropriate medical care. This educational role extends to clarifying the complexities of treatment, such as the reasons behind lower dosing in older adults and the importance of regular monitoring for side effects.

e) Connecting Clients with Community Resources: Elderly individuals with thyroid dysfunction may face barriers to accessing healthcare, such as limited mobility, financial constraints, or lack of family support. Social workers can connect clients to community resources that offer transportation, home healthcare, or support groups, thereby reducing isolation and enhancing overall well-being. Community resources can be particularly beneficial for clients undergoing radioactive iodine treatment for hyperthyroidism, as these treatments may require extended rest and temporary isolation.

f) Monitoring and Adjusting Care Plans: Due to age-related changes in metabolism and increased sensitivity to medication, older adults with thyroid dysfunction require close monitoring. Social workers can assist by regularly reviewing clients' care plans, ensuring they are receiving appropriate follow-up care, and helping them communicate any new or worsening symptoms to healthcare providers. This continuous monitoring enables social workers to advocate for adjustments in treatment, such as modifying dosages or switching medications, based on the client's evolving needs.

Finally, during treatment, a social worker takes on the role of a mentor. They manage the diagnosis and assessment of the client. They are also instrumental in assisting the client in creating goals for treatment. They do not control the entire process, but they are in a position to direct the client to correct, thorough knowledge of their problem. They are also responsible for assisting the client in creating attainable, reasonable goals. Social workers frame the problems expressed by the client in a way that enables clients to brainstorm possible solutions and coping abilities. (Barbesino, 2019).

The social worker also needs to explain to people with thyroid disease and their family members that thyroid disease is treatable and that the goal of the treatment is to alleviate symptoms and align thyroid function test within or close to the reference age. The social worker also tells the elderly client the risk of over and under treatment of thyroid dysfunction and the need to adhere strictly to their doctor's advice.

4. CONCLUSION

Aging in itself is stressful for older adults. The changes in their body due to old age, decreased immunity, which makes them prone to all types of sicknesses and the fact that they are not as strong as they used to be can be a bother to them. They begin to feel like a burden to their family and friends and hate being dependent on people. They would rather hide their pain and sicknesses rather than speaking out because they do not want to be a burden. Therefore it is necessary for family and friends of the aged to check up on them every now and then, to make out time for them and encourage them to speak up when they observe any change in their body.

Family and friends also should not make them feel like they are a burden and should make sure that they listen to their slightest complains. They should also have access to adequate regular medical check-up.

Thyroid dysfunction is a common condition in aged people, and social workers, with the help of other professionals, can play a crucial role in supporting affected individuals by raising awareness, facilitating proper diagnosis and treatment, providing emotional support, and connecting older adults with necessary resources. Social workers contribute to the overall well-being and quality of life of this population.

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