



THYROID DISEASES IN ADULT AND THEIR RELATIONSHIP TO THEIR QUALITY OF LIFE

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ABSTRACT

The study aimed to identify Thyroid Diseases in Adult and Their Relationship to Their Quality of Life, the health Interview and Examination Survey for Adult' (Al-Sareeh Comprehensive Health Center) was conducted by the researcher in year 2024 to provide information on the health status of Adult. Details on the study design, the sampling strategy, and the study protocol have been described in detail. Briefly, a two-stage random, clustered, and representative sample of Al-Sareeh Comprehensive Health Center Adult was selected. The final sample included (51) Adult (34 females, 21 male). Parents and Adult aged 20-65 years and older completed self-administered, standardized questionnaires, thyroid ultrasonography, and phlebotomy for laboratory assessment. relationship was confirmed to be linear between the two variables through the analysis of variance test. If the value (p -value < 0.05) is then the relationship is linear. The results showed that there is a decline in the quality of life in adults with thyroid disease, and that the quality of life is positively associated with the appearance of symptoms in adults with thyroid disease.

KEYWORD: Thyroid Diseases; Adult; Quality of Life.

INTRODUCTION

Up to 30 percent of adult patients affected by thyroid dysfunction have been reported to suffer from psychological impairments despite proper medical treatment (and up to 20 percent are affected by depression (Siegmann & Grömer, 2019). Whether Adult with thyroid disease are likewise affected by impaired healthrelated quality of life (HRQoL) or mental health has not yet been rigorously investigated, despite thyroid disorders being a common endocrine disease in this age group. Aberrant laboratory findings of the hypothalamus-pituitary-thyroid axis are detected in about 3.5% of Adult on occasional testing (Salerno, et al, 2016), and thyroid disorders are among the top 5 reasons for referral to pediatric endocrinology (Jonklaas, 2017). Subclinical hypothyroidism (HYPOSC), defined by an elevated thyrotropin (TSH) level above the age-specific reference range despite a normal free T4 (fT4), is a common finding in Adult with an estimated prevalence of 1.7 to 2.9% (Faggiano, et al, 2011). Studies investigating HRQoL and mental health in Adult HYPOSC are rare, and findings are ambiguous. While (Monaco, 2012) found significantly higher TSH levels in Adult affected by impaired mental health, neither (Leso, et al, 2020) could relate HYPOSC to affective and behavioral dysregulation. However, Adult sample sizes so far have been small. Considering only subtle effects of HYPOSC

on clinical and metabolic outcomes, a larger sample size might be necessary to disclose effects of HYPOSC on HRQoL and mental health in Adult.

In overt hypothyroidism (HYPOOVERT), there is a significantly elevated TSH accompanied by a fT4 level below the age-specific reference range. The most common cause of HYPOOVERT is Hashimoto's thyroiditis (HT) (Saravanan, et al, 2002), a condition that is the most common autoimmune disease in Adult (Lazar, 2009). In adults, several studies found an impaired HRQoL in HT, even in patients treated with levothyroxine (Bianchi, et al, 2004). Notably, most of the studies reported a significant linear and inverse relationship between TPO-AB levels and HRQoL (Watt, et al, 2006). Data regarding the relationship between HT and HRQoL or mental health in Adult are rare. A single study focusing on adolescent patients with type 1 diabetes showed an impaired HRQoL in those patients with levothyroxine treated HT (Watt, et al, 2012). However, no research investigating the relationship between mental health and HT has been conducted even though HT and hypothyroidism have been related to depression and anxiety disorders in adults by a recent large-scale meta-analysis (Watt, et al, 2016).

In recent years, improved TPO-AB assays and the resampling of reference populations for assay calibration have resulted in lower cut-off levels for TPO-AB positivity. Also, there is a growing awareness of an increase in TPO-AB positivity with the onset of puberty, especially in girls (Thomsett, 2010). However, the clinical phenotype, including HRQoL and mental health, of Adult who only evidence increased TPO-AB levels but no signs of thyroid dysfunction normal thyroid hormone levels, unremarkable ultrasonography of the thyroid gland; subsequently (TPOonly) is not well-characterized and, thus, information on the relevance of this condition is lacking (Hedman, et al, 2017).

Subclinical hyperthyroidism (HYPERSC), defined in the literature by a TSH level below the age-specific reference range and a normal fT4, is observed in 2.3% of Adult aged 13–16 years. In adults, there is ambiguous evidence regarding the relationship between HYPERSC and HRQoL as well as mental health. While Biondi et al. (30) found an impaired HRQoL in HYPERSC and (Kollerits, Zsila & Matuszka, 2023) could show a slightly increased risk of subclinical depression, mood and cognition were not affected by HYPERSC in population-based studies. No study has been conducted in children and Adult so far (Leso, et al, 2020).

MATERIALS AND METHODS

The health Interview and Examination Survey for Adult (Al-Sareeh Comprehensive Health Center) was conducted by the researcher in year 2024 to provide information on the health status of Adult. Details on the study design, the sampling strategy, and the study protocol have been described in detail. Briefly, a two-stage random, clustered, and representative sample of Al-Sareeh Comprehensive Health Center Adult was selected. The final sample included (51) Adult (34 females, 21 male). Parents and Adult aged 20-65 years and older completed self-administered, standardized questionnaires, thyroid ultrasonography, and phlebotomy for laboratory assessment.

The study was approved by the Observing the ethics of scientific research in the medical field and that the research is used for scientific research purposes and the information will be treated with complete confidentiality. Written informed consent was obtained from adult aged 20-65 years and older. Only Adult with information on

thyroid function, thyroid autoimmunity, the intake of thyroid medication, and pre-existing thyroid disease as well as HRQoL and mental health were included for analyses. Thus, in total, the sample comprised 55 Adult (34 Female, 21 Male; 20-30 years: 9, 31-40 years: 10, 41-50 years: 11, 51-65 years: 25).

HRQoL was measured using the is a widely used either self-reported questionnaire with good psychometric properties and consists of 25 items assessing 6 dimensions of HRQoL (physical well-being, emotional wellbeing, self-esteem, family, friends, everyday functioning) scored on a five-point Likert scale (1–5). A total score can be calculated and transformed to values between 0 and 100. Higher scores indicate a better quality of life.

The researcher adopted the quality of life questionnaire he SDQ is a well-established, multi-informant questionnaire approved in the study (Singer, 2012; Gerenova & Petrov, 2015; Sawicka-Gutaj, et al, 2018; Uslar, et al, 2022) with verified reliability and validity conceptualized to screen for mental health symptoms as well as positive attitudes in Adult assessing 6 dimensions (physical well-being, emotional wellbeing, self-esteem, family, friends, everyday functioning) by 25 items on a 5-point Likert scale (1-5). By summing the sub scores from each dimension, a total difficulties score (is a widely used either self-reported questionnaire with good psychometric properties and consists of 25 items assessing 6 dimensions of HRQoL (physical well-being, emotional wellbeing, self-esteem, family, friends, everyday functioning) scored on a five-point Likert scale (1–5). A total score can be calculated and transformed to values between 0 and 100. Higher scores indicate a better quality of life. we referred to the scores of the self-report form of the questionnaires for analyses.

To extract the construct validity indications of the questionnaire, the correlation coefficients of each paragraph and the total score were extracted, and between each paragraph and its correlation with the field to which it belongs, and between the fields with each other and the total score, in a survey sample from outside the study sample consisting of (30) adults. The correlation coefficients of the paragraphs with the tool as a whole ranged between (0.55-0.89), and with the field (0.55-0.95), and the following table shows that.

Table 1: Correlation coefficients between the paragraph.

Correlation Coefficients Total	Correlation Coefficients Between Item	Item	Correlation Coefficients Total	correlation coefficients between Item	Item
0.73**	0.83**	14	0.82**	0.84**	1
0.75**	0.87**	15	0.87**	0.91**	2
0.67**	0.78**	16	0.85**	0.87**	3
0.71**	0.79**	17	0.77**	0.88**	4
0.68**	0.86**	18	0.83**	0.90**	5
0.74**	0.67**	19	0.80**	0.86**	6
0.81**	0.67**	20	0.60**	0.78**	7

0.55*	0.59**	21	0.89**	0.82**	8
0.77**	0.84**	22	0.86**	0.86**	9
0.73**	0.82**	23	0.74**	0.78**	10
0.68**	0.64**	24	0.75**	0.79**	11
0.65**	0.74**	25	0.79**	0.83**	12
			0.75**	0.79**	13

Table 1: That all correlation coefficients were acceptable and statistically significant, and therefore none of these paragraphs were deleted.

The reliability was confirmed through the application process, and it was re-applied two weeks later to a group outside the study sample consisting of (30) adults, and then the Pearson correlation coefficient was calculated between their estimates in the two times. The reliability coefficient was also extracted using the internal consistency method according to the Cronbach Alpha equation, and Table (2) shows this.

Table 2: Cronbach's Alpha Internal Consistency Coefficient and Retest Reliability for the Field.

Field	Internal Consistency Coefficient	Retest Reliability
Physical well-being	0.82	0.79
Emotional Wellbeing	0.84	0.85
Self-Esteem	0.81	0.83
Family	0.87	0.89
Friends	0.97	0.87
Everyday Functioning	0.88	0.81
Total Questionnaire	0.85	0.83

Table 2 Show That The reliability of the questionnaire was calculated and it was found to be acceptable and statistically significant, indicating an appropriate degree

Table 3: Linear Regression Test.

Form	F-Value	p-value
Regression thyroid patients and (Physical well-being)	113.100	0.000
Regression thyroid patients and (Emotional Wellbeing)	56.425	0.000
Regression thyroid patients and (Self-esteem)	53.125	0.000
Regression thyroid patients and (Family)	41.825	0.000
Regression thyroid patients and (Friends)	86.999	0.000
Regression thyroid patients and (Everyday Functioning)	57.681	0.000
Regression thyroid patients and their Quality of Life	71.257	0.000

Table 3: Show That The relationship was confirmed to be linear between the two variables through the analysis of variance test. If the value (p-value < 0.05) is then the relationship is linear. The results showed that there is a decline in the quality of life in adults with thyroid disease, and that the quality of life is positively associated with the appearance of symptoms in adults with thyroid disease.

DISCUSSION

Our study shows that benign thyroid disease affects the perceived health status, thyroid function. As patients

of reliability of the questionnaire and that it is valid for application purposes.

All analyses, data processing, and statistical analyses were performed using SPSS software (IBM Corp.). Effect size calculations were performed using SPSS software, and Ranks, means and correlations between thyroid patients and their quality of life were calculated using Pearson's correlation coefficient and Linear Regression Test.

Analysis

Verifying the main hypothesis which states: "There is a statistically significant correlation at the significance level ($\alpha \geq 0.05$) between Thyroid Diseases in Adult and Their Relationship to Their Quality of Life (physical well-being, emotional wellbeing, self-esteem, family, friends, everyday functioning).

To test this hypothesis, the linear regression test was used to study this hypothesis in order to reveal a statistically significant correlation at the significance level ($\alpha \geq 0.05$) between thyroid patients and their quality of life (physical well-being, emotional wellbeing, self-esteem, family, friends, everyday functioning). The following is a presentation of the analysis results, and the table below illustrates this:

reported poor HRQL, in agreement with previous studies (DJAWA & HANAMI, 2024). This kind of representation has two additional advantages. First, it standardizes data for sex and age, and further corrections for these two relevant factors are no longer needed. Secondly, it gives an immediate picture as to how much and how significantly a specific disease affects quality life in comparison to the standard quality life of the general population.

Apparently, thyroid diseases have a large impact on domains related to both the physical and the mental

dimensions of health status. Consequently, the larger impact is observed on a domain that shares both dimensions, namely general health. This last scale is dependent on both severe and minor symptoms, irrespective of their association with clinical disability (Molewijk, et al, 2024). A relatively pure scale of physical dimension, such as physical functioning (Li, et al, 2024), or a pure scale of mental dimension as mental health, was less affected. where the Energy domain, a pure physical dimension, was not significantly compromised.

The most relevant result of the present study is that a poor Quality life was not limited to subjects with overtly symptomatic thyroid disease, either poor hyperthyroidism, the poor Quality life in thyroid disease is more difficult to explain. It gives rise to the question as to whether these patients are really asymptomatic. Poor Quality Life might be solely due to awareness of a disease state, as demonstrated in other disease states (Tabakoglu & Celik, 2024). Alternatively, undetectable symptoms which are not diagnosed by the physicians but are perceived better by patients may be present, generating the distress measured by Quality Life.

CONCLUSIONS

According to the available literature, the impairment of health-related quality of life in patients with benign thyroid disorders is common, both in the untreated phase and in the long term. A wide range of problems was reported, covering both general and specific aspects of quality life. However, many studies are small and use invalid measures. Most of them do not include complete clinical descriptions of patients and include patients with a wide range of phenotypes and etiological differences. The available questionnaire does not have the potential to cover all aspects relevant to patients in longitudinal studies, where individual patients may switch from one thyroid condition to another due to natural history or treatment. The available questionnaires do not sufficiently cover the relevant questions of health-related quality of life and all lack complete validation. Through this review, we identified potentially relevant questions reported in the literature. These data are valuable as a basis for the development of health quality of life questionnaires with content validity. The next step towards valid measures of the quality of life of the disease in patients with thyroid disorders would be to test the importance of the questions presented here among samples of experts, as well as patients with thyroid disorders appropriately characterized.

Data Availability Statement

The datasets for this article are not publicly available as the results reported are based on a secondary analysis of data provided by the researcher.

Ethics Statement

The was reviewed and approved by ethics committee as well as the of Data. Written informed consent to participate in this study was provided by the participant's patient.

Conflict of Interest

There is no Conflict of Interest.

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