



SOCIODEMOGRAPHIC PROFILE AND DEPRESSION AMONG PATIENTS REFERRED FOR IRATHERAPY AFTER A TOTAL THYROIDECTOMY OF DIFFERENTIATED THYROID CANCER: ABOUT 36 PATIENTS

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ABSTRACT

Introduction: Differentiated Thyroid Cancer (DTC) is the most common malignant tumor of the endocrine system. Its prognosis is most often favorable and its management is generally based on the tripod total thyroidectomy, Iratherapy and lifetime hormone suppressive therapy of TSH. This condition can alter the patient's quality of life from the beginning of treatment and be the cause of depression.

Aim of the study: The aim of this study is to determine the sociodemographic profile and to assess the level of depression among patients referred for iratherapy in the nuclear medicine department after a total thyroidectomy for differentiated thyroid cancer.

Material and Method: We carried out an observational cross-sectional study lasting 06 months during a period from January to June 2020 in the nuclear medicine department of CHU Hassan II in Fez. The study included all new patients referred for iratherapy after total thyroidectomy with histological proof of differentiated thyroid cancer and consenting to the study. Patients were assessed using Beck's Depression Inventory (BDI) on a scale adapted to the Moroccan context. Data analysis was carried out by SPSS 16 software.

Results: The study involved 36 patients with an average age of 44.41 years with extremes ranging from 22 to 86 years. The rate of depression was significantly higher in men than in women ($p = 0.054$). The presence of depression was not correlated with age range. In our sample 61.1% of the population were from a high social class and patients with a higher education level had a statistically significant tendency to depression noted on the Beck Depression Score ($p = 0.018$). 80% ($n = 29$) of patients had a moderate depression while 13.88% ($n = 5$) had a mild mood disturbance. Intermittent depression and normal examination were found in 2.7% ($n = 1$) patients.

Conclusion: Depression in patients newly diagnosed with DTC after total thyroidectomy remains quite common in our context with a clear predominance in males. According to our study most of the patients suffering for depression were of higher education level and high social class. It is most often a moderate depression as confirmed by the literature. It therefore appears necessary for medical and nursing staff to pay particular attention to patients who are candidates for iratherapy for DTC and to detect cases of depression early for more optimal specialized multidisciplinary management.

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INTRODUCTION

Differentiated Thyroid Cancers (DTC) account for almost 90% of all thyroid cancers. This is a group of epithelial malignancies of follicular origin. The management of DTC is most often based on the tripod total thyroidectomy, radioactive iodine or iratherapy, and hormone suppressive therapy of TSH for life. DTCs are considered to have a good prognosis with an overall 10-year survival ranging between 80 and 95% even in the event of metastasis or recurrence if adequate treatment is

instituted. The occurrence of depression can affect the patient's quality of life during initial management or patient follow-up. Several factors have been implicated in the deterioration in the quality of life of patients followed for DTC, including initial classification of the disease, surgical treatment, radioactive iodine treatment, hormone replacement therapy and lifelong follow-up. The aim of this study is to determine the socio-demographic profile and to assess the level of depression in patients referred for iratherapy in the nuclear medicine

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department after a total thyroidectomy of a differentiated thyroid cancer proven by histological examination.

PATIENTS AND METHOD

This is an observational cross-sectional study lasting 06 months carried out during a period from January to June 2020 in the nuclear medicine department of CHU Hassan II in Fez. The study included all new patients referred for iratherapy after total thyroidectomy with histological examination in favor of differentiated thyroid cancer (DTC) and consenting to the study. Patients who refused to participate in the study, patients with another type of cancer and patients who were not candidates for iratherapy were excluded from the study. All the patients were seen less than 03 months after the final diagnosis of DTC. The variables studied were gender, age, and level of education, social level and quality of life.

Quality of life was assessed using the Beck Depression Inventory (BDI) on a scale of 21 items, a translation of which was validated into Arabic and adapted to the Moroccan context. These items can be broken down into 06 phases corresponding to 6 degrees of increasing intensity of a symptom on a scale of 0 to 3. The total score corresponds to the sum of the different items. A score between 1-10 corresponds to a normal state of health, a score between 11-16 to a mild mood disturbance, a score between 17-20 to a state of intermittent depression, a score between 21-30 to a moderate depression, a score between 31-40 for severe depression, a score greater than 40 for extreme depression (Appendices 1 and 2). The free and informed consent of the patients was obtained before their inclusion in the study. In addition, we have ensured that the anonymity and confidentiality of data are respected. Data analysis was done by SPSS 16 software. Statistical analysis consisted of a bivariate descriptive analysis. The materiality threshold was set at 5%.

RESULTS

36 patients were selected for the study with a mean age of 44.41 years with extremes ranging from 22 to 86 years and a sex ratio (M / F) of 1. The most represented age group was that of 40 -60 years with a number of 18 patients, or 50% of patients (Figure 1). The rate of depression was significantly higher in men than in women (Table 1). The presence of depression was not correlated with age range (Table 2).

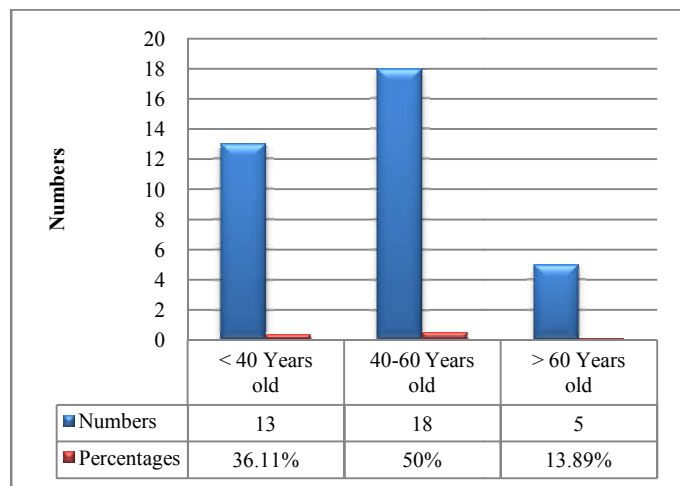


Fig 1 Distribution of patients by age groups

Table 1 Distribution of (t) test results for 2 independent samples according to the sex.

Level of Depression	Sex	Number	Average Total	Standard Deviation	T-Value	P-Value	Result
Level of Depression	Male	18	24.56	3.869	2.020	0.054	Statistically significant
	Female	18	20.44	7.717	2.020	0.054	Statistically significant

Table 2 Distribution of the results of variance’s analysis test according to the age groups

Age	Average Total	Standard deviation	F-Value	P-Value	Result
< 40 Years old	24.00	5.788	1.221	0.308	Statistically Non significant
40 to 60 Years Old	22.44	6.862	1.221	0.308	Statistically Non significant
>60 Years Old	18.80	5.450	1.221	0.308	Statistically Non significant

In addition, the majority of the population (61.10%) was of high social class (Figure 2) and higher education level estimated at 36.11% (Figure 3). These two groups of patients had a statistically significant tendency towards depression noted on the Beck Depression Score (Table 3).



Fig 2 Distribution of patients by the social level

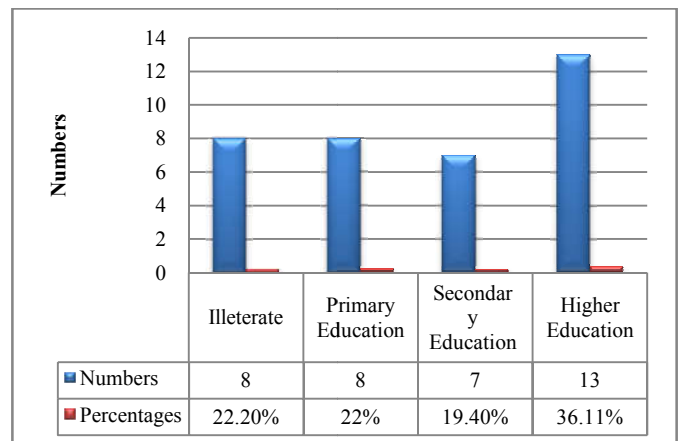


Fig 3 Distribution of patients by the level of education

Table 3 Distribution of the results of the analysis of variance test according to the level of education.

Level of Education	Average Total	Standard Deviation	F-Value	P-Value	Result
Illiterate	16.75	9.618	3.851	0.018	Statistically significant
Primary Education	22.50	60.071	3.851	0.018	Statistically significant
Secondary Education	24.13	2.357	3.851	0.018	Statistically significant
Higher Education	25.25	2.989	3.851	0.018	Statistically significant

80% (n = 29) of patients had moderate depression while 13.88% (n = 5) had a mild mood disturbance. Intermittent depression and normal examination were found in 2.7% (n = 1) of our patients (Fig 4).

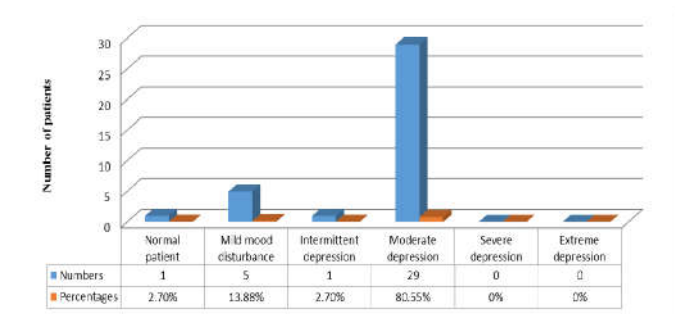


Figure 4 Distribution of patients according to the level of depression and numbers.

DISCUSSION

According to the World Health Organization (WHO), depression is a common mental disorder recognized as a major public health problem characterized by sadness, loss of interest or pleasure, feelings of guilt or self-worth, disturbed sleep or appetite, fatigue and problems concentrating. According to the WHO report, mental illness is prevalent in all social classes [1] and depression can also be associated with somatic symptoms. These symptoms can persist or become recurrent and considerably hamper the patient's quality of life [2]. According to WHO estimation in 2012, depression affects more than 350 million people each year and is the leading cause of disability worldwide [1,2]. Depression, anxiety and stress are the main psychiatric conditions in people with disabilities. At its peak, depression can lead to suicide with a total number of deaths estimated at more than one million per year worldwide [2, 3].

Depression in cancer patients is often unrecognized, overlooked or under diagnosed by medical staff and caregivers on the one hand because feelings of sadness and discouragement are often considered normal and appropriate in the face of awareness of a diagnosis as serious as cancer, and on the other hand because many signs are common to cancer disease and depression such as weight loss, fatigue or sleep disturbances [4].

Differentiated thyroid cancer, although it is a cancer with a good prognosis, most often affects the quality of life of patients and can be a source of anxiety or depression. This has been confirmed by several studies [4, 5, and 6]. In the case of DTC, after initial surgical management, in particular by a total thyroidectomy in one or two stages, radioactive iodine therapy is often necessary in order to sterilize the tumor site and destroy any thyroid remnants. According to Dagan *et al.* [6] the surgical procedure that in itself can be completed by a lymph node dissection thus leaving a cervical scar can

sometimes be quite traumatic for the patient both physically and mentally, by a relative body image modification of the patient thus favoring the onset of mental depression which can considerably alter the patient's quality of life [7].

Psychological reactions are important to know because it is common for clinicians to underestimate and / or overestimate certain psychological variables. DTC can indeed be at the origin of a series of reactions which can be cognitive, emotional and behavioral. These reactions differ from one phase to another during the management and progression of the cancerous disease. Adaptation in this context is also, of course, very variable from one individual to another [7, 8].

The influence of gender has been the subject of several studies, yielding conflicting results [8, 9, 10]. In our study, we included the same number of men and women. So we selected a number of 18 patients of both sex. Statistical analysis revealed a predominance of depression in males and this significantly.

Regarding age, the majority of patients were relatively young with an average age of 44.41 years. Indeed Akechi *et al* [11] report that young age is a factor significantly associated with depression. This was explained by the occurrence of a violent emotional trauma in the youngest, while the oldest consider this disease as serious but readily integrate it into the aging process, thus achieving more easily than the young people in reconciliation with their disease. On the contrary, Yun *et al* [12] found that depression increases with age. Furthermore, our study did not reveal a significant difference in the incidence of depression according to the different age groups selected. These results remain comparable to those obtained by Kai-Hoi Sze *et al* [13] and Ciaramella *et al* [14] who did not demonstrate the influence of age on depression.

In our study, patients with a higher education (36.11%) were significantly more depressed than those with no schooling and those with primary or secondary education. These results corroborate those of Akechi *et al* [11] who demonstrated that long education (≥ 9 years) is a significant factor associated with depression.

At the inclusion of the study, all of our patients were seen in the nuclear medicine department after total thyroidectomy and within 03 months of the confirmation diagnosis of DTC. Statistical analyzes revealed an overall rate of depression in 83.33% (n = 30) of the patients, of which 80.55% (n = 29) were cases of moderate depression. As the literature shows, patients diagnosed with cancer between 1 and 3 months, and those who discovered their cancer more than 49 months ago are the most depressed [15].

In our study, all the patients had social coverage through local mutuals. After initial surgical management, all patients were candidates for high-dose iratherapy with or without hospitalization in a protected area. The cost and expense of medico-surgical management of DTC often places a heavy burden on the patient and their family, which could increase the risk of developing depression. As Akechi *et al* [11] demonstrated in their study, financial worries are a significant factor in depression.

Conversely, our study shows that the majority of depressed patients, 61.1% (n = 22), were from a high social class, this could be explained on the one hand by the fact that they in most cases do not hesitate to seek a second or third medical opinion before accepting the diagnosis of disease, on the other

hand by the lack of information about internal radiotherapy vectorized by Iodine 131 or iratherapy (administered only in the nuclear medicine department) despite self-taught research carried out on the computer web.

The Beck Depression Inventory (BDI) is an instrument that measures the depth of depression. It was first developed in 1961 by American psychiatrist Aaron Temkin Beck, considered as the father of cognitive therapy and cognitive behavioral therapy. This is a measure of depressive cognitions intended to assess the subjective aspects of depression [16]. It complements the Hamilton Depression Scale or MADRS which are primarily scales for assessing the somatic components of depression. It is recommended to respect a time interval of at least eight days between two runs of this inventory. There are several versions, the original version includes 21 items, an extended version of 25 items was proposed by P. Pichot in 1985 [17]. The version we used for this study is the Arabic translation of the initial form developed by Beck in 1961 and adapted to the Moroccan context by Alaoui *et al.* [18] because this version allows a more precise assessment of patients in our context.

The treatment of depression in adults is based on the prescription of antidepressant drugs and/or psychotherapy and / or social therapy [19]. Treatment varies depending on the severity of the symptoms and the origins of the depressive symptoms. When depression is mild, patients can be treated with first-line antidepressant drugs. But when it is moderate to severe, it can be combined with psychotherapy or social therapy conducted by a competent professional [20]. Psychotherapy being the management of psychic, somatic and / or psychosomatic disorders by psychic processes (psychoanalysis and derived practices). In general, depression can be reliably diagnosed and treated by primary health care. However, specialized health care may be necessary for a minority of cases of moderate to severe or extreme depressions who do not respond effectively to first-line treatments [21].

CONCLUSION

Depression in patients newly diagnosed with DTC after total thyroidectomy is quite common in our context with a clear predominance in the socio-demographic profile in males. Most people affected are of higher education level and from a high social class. Most of the time, it's a moderate depression as it has been demonstrated in our study and in the literature. It's becoming more and more important for the medical and nursing staff to become aware of the degree of psychological distress of these patients, and of the paramount importance of detecting the depressive disorders associated with DTC and of treating them early, as part of a global and multidisciplinary management for a better quality of life of the patient. However, other studies on a larger population scale are necessary for well-selected categories of patients, to better understand the different factors involved in the genesis of these depressive disorders, as well as for the evaluation of other psychological parameters, including anxiety disorders, other aspects of depressive disorders and quality of life in patients with DTC. It therefore appears necessary for all the healthcare provider staff to pay particular attention to patients with DTC who are candidates of iratherapy and to detect cases of depression early for more optimal specialized care if needed.

AUTHORS' CONTRIBUTIONS

All the authors cited have made a contribution to the achievement of this work, in particular Mr. EL Marjany in the collection and analysis of data, Dr. FOKOUE in the drafting of the manuscript, Prof. ISMAIL ALAOUI and Prof. ISMAIL ALAOUI for supervision of this work. All authors have read and approved this work.

Declaration of Patient Consent

The authors certify that they have obtained the appropriate patient consent.

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Conflicts of Interest

The authors declare no conflict of interest.

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