



ISSN: 3059-9733

DOI: 10.3126/jobh.v2i1.93245



Anxiety and Depression among Women with Hypothyroidism and Without Hypothyroidism at Tertiary Hospital, Chitwan: A Comparative Study

Nita Sharma¹,¹Sarmila Regmi¹,¹Shanta Bhandari¹,¹Tulasi Chaudhary¹,
¹Pratima Adhikari¹,¹ Pabitra Sharma¹,¹Neelu Aryal¹

¹Department of Nursing, Bharatpur Hospital Nursing Campus, Bharatpur, Chitwan, Nepal.

ABSTRACT

Background

Worldwide, approximately 1 in 10 women may have some form of hypothyroidism (most commonly subclinical hypothyroidism), with prevalence increasing substantially after middle age and in older women. Women with hypothyroidism experience substantially higher rates of depression, anxiety, fatigue, cognitive complaints, sleep problems, and reduced quality of life than women without thyroid disease. The objective of study to find out the anxiety and depression among women with hypothyroidism and without hypothyroidism.

Methods

An analytical cross-sectional study was conducted from May 26 to September 23, 2025. A total of 416 sample including 208 hypothyroidism cases, were selected from the endocrinology OPD using enumerative sampling, along with 208 non-hypothyroid patients from medicine OPD were selected as a comparison group. Data collection was done using Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI) through self-reported tool by face-to-face interview technique.

Results

The study found the mean age of participants was 42.31 ± 12.59 years, with 47% aged between 41-64 years. Majority were from nuclear families (68.3%), literate 90.9%, homemakers 41.3%, Hindu 82.7%, and 43.0% belonged to the Brahmin/Chhetri ethnicity. Among hypothyroid cases, 50.0% had anxiety and 14.9% had depression, compared to 3.8% anxiety and no depression in the non-hypothyroid group. Anxiety was significantly associated ($p=0.001$) with occupation (homemakers and students), while depression was significantly associated ($p=0.049$) with types of family and ethnicity, being more common in joint families than nuclear families (21.0% vs. 11.0%).

Conclusions

The prevalence of anxiety and depression was significantly more among women with hypothyroidism compared to those without. Management of anxiety and depression should be integral to the treatment of hypothyroidism; regular psychiatric assessment of the groups with higher prevalence is recommended.

Keywords: Anxiety; Comparative study; Depression; Hypothyroidism; Tertiary hospital; Women.

Correspondence: Ms. Nita Sharma, Department of Nursing, Bharatpur Hospital Nursing, Campus, Bharatpur, Chitwan, Nepal. Email: nita.sharma0621@gmail.com, Phone no. 9779845085034, Article received: 2026-01-17. **Article accepted:** 2026-05-12. **Article published:** 2026-06-30.

INTRODUCTION

At least one autoimmune illness affects 4% of the world's population. According to the study, women account for roughly 80% of all autoimmune disease sufferers.¹ The thyroid gland is one of the most important organs in the human body. Thyroid disorder has been shown to have substantial mental health consequences.² Thyroid disorder was diagnosed in 18.57 % of females, with 13.7 % having hypothyroidism. Thyroid problems were diagnosed in 13.08 % of males, with hypothyroidism in 9.34 % of those.³ Hypothyroidism can induce behavioral issues, depressive symptoms, and anxiety. Males (56.63 %) and females (64.29 %) both indicated some level of depression. A total of 63 % (males 56.66 %, females 65.72%) reported feeling anxious. Gender-specific somatic symptoms were the most prevalent depressed symptom among women (68.54 %). Anxious mood was a common anxiety symptom in women (92.85 %).⁴ Prevalence of subclinical hypothyroidism was 11.8% and female depressed inpatients is approximately 14.6% that of male inpatients 7.4 %. High BMI were associated with hypothyroid in female inpatients.⁵ Hypothyroidism is the most common thyroid dysfunction in the population. Its prevalence is usually around 1%–2% of the population, although this rate increases with age. Different studies indicate prevalence ranging from 1.36% to 3.95%.⁶ Patients with thyroid disorders, 69.8% are hypothyroid, and 79.1% are female. Overall, 42.6% of people had depression, and 50.4% of people had anxiety.⁷ Thyroid diseases affect 4.32% of Nepal's general population. Females were more likely than males to have thyroid problems (2:1). Among total of respondents 41.37% had family history of thyroid disorders.⁸ Study conducted in teaching hospital chitwan among 259 major depressive patient 18.40% were found to have thyroid dysfunction, sub-clinical hypothyroidism was seen in 14.1% followed by 3.1% with overt hypothyroidism.⁹ The prevalence of thyroid disorders, is 1.3% worldwide, with an annual incidence rate of 51 cases per 100,000 people.¹⁴ Psychological complications such as anxiety and depression may be minimized

through early screening of individuals with hypothyroidism. Furthermore, no previous studies have specifically investigated the prevalence of anxiety and depression among women with normal thyroid function test results. Hence, the researcher is motivated to conduct this study.

METHODS

Study Design

An analytical comparative cross-sectional study was conducted to compare the prevalence of anxiety and depression among women with hypothyroidism and women without hypothyroidism attending a tertiary care hospital in Chitwan, Nepal. The study was carried out over a four-month period from May 26 to September 23, 2025.

Study Area

The study was conducted at the Endocrinology Outpatient Department (OPD) and Medicine Outpatient Department (OPD) of Bharatpur Hospital, Chitwan, Nepal. Bharatpur Hospital is a tertiary-level referral hospital that provides specialized endocrine and general medical services to patients from Chitwan and neighboring districts.

Study Population

The study population comprised women aged 20 years and above attending the outpatient departments during the study period. The case group consisted of women who attended the Endocrinology OPD and had been clinically diagnosed with hypothyroidism. The comparison group included women attending the Medicine OPD who underwent thyroid function testing and had normal thyroid function test results, defined as serum thyroid-stimulating hormone (TSH) levels ranging from 0.35 to 5.50 IU/mL, triiodothyronine (T3) levels of 2.30–4.20 pg/mL, and thyroxine (T4) levels of 0.89–1.76 ng/dL.

Sample Size

A total of 416 women participated in the study. The sample included 208 women with hypothyroidism and 208 women without hypothyroidism, maintaining an equal allocation between the case and comparison groups to facilitate comparison of anxiety and depression.

Sampling Technique

An enumerative (consecutive) sampling technique was employed to recruit eligible women with hypothyroidism attending the Endocrinology OPD until the required sample size of 208 cases was achieved. Subsequently, an equal number of eligible women without hypothyroidism were consecutively selected from the Medicine OPD based on normal thyroid function test results, resulting in a 1:1 ratio between the two groups.

Data Collection Tools and Technique

Data were collected through face-to-face interviews using a semi-structured interview schedule. Anxiety and depression were assessed using the Beck Anxiety Inventory (BAI) and the Beck Depression Inventory (BDI), respectively. These standardized instruments are valid and highly reliable, with a reported reliability coefficient of 0.98. Anxiety and depression were classified based on the total scores obtained from the respective scales, and a cut-off score of 10 or higher was used to identify the presence of anxiety or depression, consistent with previous studies.

Variables/Measurements

The primary independent variable was hypothyroidism status, categorized as women with hypothyroidism and women without hypothyroidism. The dependent variables were the presence of anxiety and presence of depression, measured using the Beck Anxiety Inventory and Beck Depression Inventory, respectively. In addition, socio-demographic characteristics such as age, marital status, educational level, occupation, family type, and monthly family income were collected to describe the study participants and examine their distribution across the study groups.

Statistical Analysis Used

The collected data were coded, checked for completeness, and entered into IBM SPSS Statistics version 22.0 for analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the characteristics of the participants. Inferential statistics were applied to compare anxiety and depression between women with and without hypothyroidism. Fisher's Exact Test was used to

determine the association between categorical variables, and a p-value of less than 0.05 was considered statistically significant.

Ethical Consideration

Ethical approval for the study was obtained from the Institutional Review Committee of Bharatpur Hospital (Reference No. 081/82-057). Written informed consent was obtained from each participant before data collection. Privacy and confidentiality were ensured by conducting interviews in separate rooms within the Endocrinology and Medicine OPDs. All collected information was coded to maintain anonymity, securely stored, and used solely for research purposes. Participation was entirely voluntary, and participants were informed of their right to decline or withdraw from the study at any stage without any consequences.

RESULTS

The mean age of the participants was 42.31 ± 12.59 years, with nearly half (47%) of both cases and controls belonging to the 41–64-year age group. A relatively higher proportion of participants was observed among cases compared to controls. Most participants (68.3%) were from nuclear families and overall (90.9%) participants were literate, and secondary-level education was the most attained level (42.6%). Homemakers constituted the largest occupational group (41.3%). Most participants (82.7%) followed Hinduism and belonged to the Brahmin/Chhetri ethnic group (43.0%). The study found that a significantly higher proportion of cases (96.6%) were married compared to controls (79.8%). More than three-fifths of households reported having sufficient income for more than one year, and approximately half of the participants in both groups had health insurance coverage (Table 1).

Table 1. Socio-demographic Characteristics of Respondents (n=416).

Variables	Hypothyroid n (%)	Non-hypothyroid n (%)
Age Group		
20-40 years	81 (38.9)	115 (55.3)
41-64 years	121 (58.2)	82 (39.4)

≥ 65 years	6 (2.9)	11 (5.3)
Mean age = 42.31±12.59, minimum=20, Maximum=78		
Types of family		
Nuclear	127 (61.1)	157 (75.5)
Joint	81 (38.9)	51 (24.5)
Residence		
Urban	156 (75.0)	153 (73.6)
Rural	52 (25.0)	55 (26.4)
Educational status		
Literate	198 (95.2)	180 (86.5)
Illiterate	10 (4.8)	28 (13.5)
Level of education		
Basic	74 (37.4)	42 (23.3)
Secondary	85 (42.9)	76 (42.2)
Bachelor	30 (15.2)	49 (27.2)
Master and above	9 (4.5)	13 (7.2)
Occupation		
Home maker	104 (50.0)	68 (32.7)
Agriculture	18 (8.7)	32 (15.4)
Services	43 (20.7)	47 (22.6)
Business	24 (11.5)	12 (5.8)
Daily wage labor	11 (5.3)	14 (6.7)
Students	8 (3.8)	35 (16.8)
Religion		
Hinduism	170 (81.7)	174 (83.7)
Buddhist	21 (10.1)	23 (11.1)
Christianity	10 (4.8)	5 (2.4)
Islam	7 (3.4)	6 (2.9)
Ethnicity		
Brahmin/Chhetri	96 (46.2)	83 (39.9)
Janajati	74 (35.6)	87 (41.8)
Dalit/Muslim/Madheshi	38 (18.3)	38 (18.3)
Marital status		
Married	201 (96.6)	166 (79.8)
Unmarried	7 (3.4)	42 (20.2)
Family yearly income		
Enough for < 6 months	18 (8.7)	22 (10.6)
Enough for < 1 year	37 (17.8)	46 (22.1)
Enough for > 1 year	153 (73.6)	140 (67.3)
Health insurance		
Yes	155 (74.5)	149 (71.6)
No	53 (25.5)	59 (28.4)

Data reveal that 44.2% of the hypothyroidism cases had been diagnosed with hypothyroidism for 1-3 years. A family history of depression was uncommon (8.7%), whereas one-third (33.7%) of cases reported a family history of hypothyroidism. In addition to hypothyroidism, one-third of cases had comorbid conditions, with 44.3% hypertension. A high proportion of participants were anemic (80.3%), with a mean hemoglobin level of 10.42±10.42g/dl. Regarding nutritional status, almost two-thirds had a normal body mass index, while 32.7% were overweight or obese. Similarly, low prevalence of smoking (4.3%) and 89.9% had not consumed alcohol (Table 2).

Table 2. Disease-Related Characteristics and Personal Habits of Respondents (n=208).

Variables	Frequency (%)
Duration of Hypothyroidism (in years)	
< 1	3 (1.4)
1 to 3	92 (44.2)
3 to 5	54 (26.0)
> 5	59 (28.4)
Family History of Hypothyroidism	
Yes	70 (33.7)
No	138 (66.3)
Family History of Depression	
Yes	18 (8.7)
No	190 (91.3)
Having other diseases besides Hypothyroidism	
Yes	70 (33.7)
No	138 (66.3)
If yes, types of disease(n=70)	
Anemia	19 (27.1)
HTN	31 (44.3)
Diabetes	14 (20.0)
Others *	6 (8.6)
Hemoglobin level	
Anemia	167 (80.3)
Normal hemoglobin	41 (19.7)
Mean Hb 10.42±1.30gm/dl	
Body Mass Index	
Normal	140 (67.3)
Overweight/Obese	68 (32.7)
Smoking Habit	
Smoker nowadays	9 (4.3)
Ex-smoker	7 (3.4)
Non-smoker	192 (92.3)

Alcohol consumption habit	
Never	187 (89.9)
Social (festival)	11 (5.3)
Occasional	7 (3.4)
Daily	3 (1.4)

* Heart disease, asthma, osteoarthritis

Among cases of hypothyroidism, half of them experienced anxiety (50.0%), and 14.9% had depression. Meanwhile, only 3.8% of non-hypothyroid group had anxiety, and none had depression. Fisher's exact test found a statistically significant association ($p=0.001$) between hypothyroidism and both anxiety and depression. Therefore, the prevalence of anxiety and depression were significantly more among women with hypothyroidism compared to those without (Table 3).

Table 3. Prevalence of Anxiety and depression among Hypothyroid cases and non-Hypothyroid (n=416).		
Hypothyroidism status	Anxiety n (%)	Depression n (%)
Hypothyroidism (n=208)	104 (50.0)	31 (14.9)
Non-Hypothyroidism (n=208)	8 (3.8)	0 (0.0)

Regarding the level of anxiety, the hypothyroidism case had a considerably higher level of moderate anxiety compared to the non-hypothyroid group (93.5% vs 6.5%). In contrast, low anxiety was more common among the non-hypothyroid group than among the hypothyroid cases (59.4% vs 40.6%). Similarly, most hypothyroid cases had normal mood status (85.1%), and 6.7% had moderate depression. Whether all (100%) of the non-hypothyroid group had normal mood status. Association between hypothyroidism status and both level of anxiety and depression was strongly statistically significant ($p=0.001$) found (Table 4).

Regarding the association between socio-demographic variables and anxiety and depression among hypothyroid cases, a statistically significant ($p=0.001$) association found between anxiety and house maker and students' group. Similarly, types of family and ethnicity showed statistically significant associations ($p=0.049$) with depression, indicating depression was more prevalent among cases from joint families compared to nuclear families (21.0% vs. 11.0%). Also, a lower proportion of depression ($p=0.049$) was found among the Janajati group as compared to the Brahmin and Dalit/Muslim/Madhese groups (Table 5).

Table 4. Association of anxiety and depression levels with case and control groups (n=416).					
Hypothyroidism status	Level of anxiety				p-value
	Low anxiety n(%)	Moderate anxiety n(%)		Potentially concerning level of anxiety n(%)	
Hypothyroidism (case)	141 (40.6)	29 (93.5)		38 (100.0)	0.001*
Non-Hypothyroidism (control)	206 (59.4)	2 (6.5)		0 (0.0)	
Level of depression					
	Normal	Mild mood disturbance	Borderline clinical depression	Moderate depression	p-value
Hypothyroidism (case)	177 (85.1)	9 (4.3)	8 (3.8)	14 (6.7)	0.001*
Non-Hypothyroidism (control)	208 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	

*p-value (<0.05) is significant in Fisher's Exact Test

Table 5. Association between socio-demographic variables and Anxiety and Depression status in hypothyroidism cases (n=208)						
Variable	Anxiety		P-value	Depression		P-value
	Yes	No		Yes	No	
Age Group						
20-40years	44 (54.3)	37 (45.7)	0.408#	11 (13.6)	70 (86.4)	0.935#
41-64	56 (46.3)	65 (53.7)		19 (15.7)	102 (84.3)	
≥ 65 years	4 (66.7)	2 (33.3)		1 (16.7)	5 (83.3)	
Religion						
Hindu	90 (52.9)	80 (47.1)	0.067#	29 (17.1)	141 (82.9)	0.088#
Buddhist	10 (47.6)	11 (52.4)		0(0.0)	21 (100.0)	
Islam/Christian	4 (23.5)	13 (76.5)		2 (88.2)	2 (11.8)	
Residence						
Urban	77 (49.4)	79 (50.6)	0.749	20 (12.8)	136 (87.2)	0.144
Rural	27 (51.9)	25 (48.1)		11 (21.2)	41 (78.8)	
Educational status						
Literate	96 (48.5)	102 (51.5)	0.101#	29 (14.6)	169 (85.4)	0.647#
Illiterate	8 (80.0)	2 (20.0)		2 (20.0)	8 (80.0)	
Marital Status						
Married	99 (49.3)	102 (50.7)	0.445#	31 (15.4)	170 (84.6)	0.597#
Unmarried	5 (71.4)	2 (28.6)		0 (0.0)	7 (100.0)	
Yearly family income						
Enough for < 6 months	8 (44.4)	10 (55.6)	0.62	3 (16.7)	15 (83.3)	0.949
Enough for < 1 year	21 (56.8)	16 (43.2)		6(16.2)	31 (83.8)	
Enough for > 1 year	75 (49.0)	78 (51.0)		22 (14.4)	131 (85.6)	
Types of family						
Nuclear	63 (49.6)	64 (50.4)	0.887	14 (11.0)	113 (89.0)	0.049*
Joint	41 (50.6)	40 (49.4)		17 (21.0)	64 (79.0)	
Health insurance						
Yes	82 (52.9)	73 (47.1)	0.152	20 (12.9)	135 (87.1)	0.166
No	22 (41.5)	31 (58.5)		11 (20.8)	42 (79.2)	
Ethnicity						
Brahmin	48 (50.0)	48 (50.0)	0.057	19 (19.8)	77 (80.2)	0.049*
Janajati	43 (58.1)	31 (41.9)		5 (6.8)	69 (93.2)	
Dalit/Muslim/Madheshi	13 (34.2)	25 (65.8)		7 (18.4)	31 (81.6)	

#Fisher's Exact Test

DISCUSSION

Based on the findings of similar studies done in different settings and populations discussion has made. Concerning sociodemographic characteristics of the participants, the mean age of the participants was 42.31 ± 12.59 years, with nearly half (47%) of both cases and controls belonging to the 41–64-year age group. These findings align with previous studies where mean age was 38.09 ± 12.68 years.⁷ Most participants (68.3%) were from

nuclear families and overall (90.9%) participants were literate, and secondary-level education was the most attained level (42.6%). Homemakers constituted the largest occupational group (41.3%). As shown in other studies, (40.7%) of participants had completed their secondary level of schooling. Majority of the cases (42.2%) were homemakers.¹⁶ Most participants (82.7%) followed Hinduism and belonged to the Brahmin/Chhetri ethnic group (43.0%). The study found that a significantly higher proportion of cases (96.6%) were married compared to controls (79.8%). Similar finding was compared

with the study conducted in Chitwan which showed (72.2%) were married and followed Hindu religion, (95.8%).⁹ More than three-fifths of households reported having sufficient income for more than one year, and approximately half of the participants in both groups had health insurance coverage.

Other major findings of our study that the clinical and lifestyle characteristics of hypothyroidism reveal that 44.2% of the hypothyroidism cases had been diagnosed with hypothyroidism for 1-3 years. The family history of depression was relatively uncommon (8.7%), whereas one-third (33.7%) of cases reported a family history of hypothyroidism. In addition to hypothyroidism, one-third of cases had comorbid conditions, with 44.3% hypertension. A high proportion of participants were anemic (80.3%), with a mean hemoglobin level of 10.42 ± 10.42 g/dl. Regarding nutritional status, almost two-thirds had a normal body mass index, while 32.7% were overweight or obese. Similarly, low prevalence of smoking (4.3%) and 89.9% had not consumed alcohol. A study conducted in Nepal showed that medical co-morbidity was found in 10%, evaluation of the family history of thyroid disorder revealed that most of the participants (93.3%) had no family history, (6.7%) of cases, there was a positive history of hypothyroidism.¹⁷

In our current study, among cases of hypothyroidism, half of them experienced anxiety (50.0%), and 14.9% had depression. Meanwhile, only 3.8% of the non-hypothyroid group had anxiety, and none had depression. Fisher's exact test found a statistically significant association ($p=0.001$) between hypothyroidism and both anxiety and depression. However, the earlier findings that have been reported by researchers have stated the prevalence of anxiety and depression symptoms in hypothyroid female 65% and 64.29%, respectively.⁴

In our study regarding the level of anxiety, the hypothyroidism case had a considerably higher level of moderate anxiety compared to the non-hypothyroid group (93.5% vs 6.5%). In contrast, low anxiety was more common among the non-hypothyroid group than among the hypothyroid cases (59.4% vs 40.6%). Association between

hypothyroidism status and both levels of anxiety and depression was strongly significant ($p=0.001$). The results of our most recent study were corroborated by additional research that revealed anxiety in levothyroxine-treated hypothyroid women was higher than in women without hypothyroidism (29.4% vs. 16.7%, χ^2 $p < 0.001$). Depression in the case group was higher than in the control group (13.1% vs. 4.6%, χ^2 $p < 0.001$). Levothyroxine-treated hypothyroid women were more likely to have anxiety and depression.⁶

In this study we determined that association between socio-demographic variables and anxiety and depression among hypothyroid cases, a statistically significant ($p=0.001$) association found between anxiety and house maker and students' group. Similarly, types of family and ethnicity showed statistically significant associations ($p=0.049$) with depression, indicating depression was more prevalent among cases from joint families compared to nuclear families (21.0% vs. 11.0%). Also, a lower proportion of depression ($p=0.049$) was found among the Janajati group as compared to the Brahmin and Dalit/Muslim/Madhese groups. Our findings differed with findings from other study which showed anxiety was more prevalent in low economic status (73.9% vs 35.5% in higher status, $p=0.019$), Depression was more prevalent in Janajati ethnic group (54.8% vs 31.1% in Brahmin-Chhetri, $p=0.002$), lower economic status (69.6% vs 35.5% in higher status, $p=0.016$). Associations with occupation, marital status, family type, religion, and duration of illness were not significant.⁷ The findings of this study suggest that hypothyroidism is significantly associated with increased levels of anxiety and depression among women. The substantially higher prevalence of moderate anxiety and the occurrence of depressive symptoms among hypothyroid cases highlight the importance of routine psychological assessment in patients with hypothyroidism. Early identification and management of mental health problems in this population may improve overall well-being, treatment outcomes, and quality of life. These results also emphasize the need for healthcare providers to adopt a multidisciplinary approach that

incorporates both endocrine and mental health care when managing women with hypothyroidism.

LIMITATIONS

Generalization of findings is limited as the sample was restricted to selected hospital of Chitwan. Structured anxiety and depression scale were used for data collection, there was extensive categorizing of anxiety and depression levels, which constrained the ability to measure associations between selected variables.

CONCLUSIONS

Despite being treatment of hypothyroidism, the prevalences of anxiety and depression in women with diagnosed hypothyroidism were higher than in women without hypothyroidism. Association between hypothyroidism status and both levels of anxiety and depression was strongly statistically significant found. Therefore, one of the main areas of concern is the relationship between psychiatric disorders and thyroid condition. Psychiatric comorbidities including anxiety and depression, as well as memory and learning problems, can also result from thyroid dysfunction. Psychiatrists and endocrinologists should work together to monitor and treat patients who exhibit these signs and symptoms to maximize their management. In addition, a timely diagnosis of an endocrine disorder will reduce mental illness and enhance overall health.

RECOMMENDATIONS

Women should be educated about psychological morbidities, such as anxiety and depression, through mass media campaigns and structured health education programs. The awareness and knowledge of healthcare workers regarding women's mental health should be assessed and strengthened, as they play a crucial role in identifying and managing psychological problems among women with hypothyroidism. Awareness programs focusing on anxiety and depression can be implemented in collaboration with psychiatrists and mental health professionals. Further large-scale studies involving newly diagnosed hypothyroid patients and healthy women are recommended to enhance

the generalizability of findings and to better quantify the prevalence, severity, and determinants of psychological morbidities. Additionally, specialized counseling services should be integrated into outpatient clinics for hypothyroid patients, with counseling provided not only to affected women but also to their family members to promote comprehensive support and effective disease management.

Acknowledgement: We are grateful to all participants for their cooperation.

Conflicts of Interest: The authors declare that there is no any conflict of interest.

Source of funding: This study did not receive any external funding.

Ethical and Publication Integrity: The authors declare that this study was conducted in accordance with ethical principles and approved by the institutional review committee of Bharatpur Hospital (Ref:081/82-057). Informed consent was obtained from all participants prior to their inclusion in the study. The authors affirm that the manuscript is original, has not been published previously, and is not under consideration for publication elsewhere. All authors have made substantial contributions to the study, have reviewed and approved the final manuscript, and agree to be accountable for all aspects of the work. The authors further declare that the data presented is accurate and that no form of plagiarism, data fabrication, data falsification, or unethical publication practice has occurred.

Availability of data and materials: Adequate data and materials required for the study were available and accessible throughout the research period. Relevant information was obtained from study participants through structured data collection tools, and all necessary resources for conducting the study were available at the study site. The availability of these data and materials facilitated the successful completion of the research.

Authors' Contributions

Conceptualization: Nita Sharma, Sarmila Regmi, Shanta Bhandari, Tulasi Chaudhary, Pratima

Pabitra Sharma, Neelu Aryal

Data collection: Nita Sharma, Sarmila Regmi, Pratima Adhikari

Investigation: Nita Sharma, Sarmila Regmi, Shanta Bhandari, Tulasi Chaudhary, Pratima Adhikari, Pabitra Sharma, Neelu Aryal

Formal analysis: Nita Sharma, Sarmila Regmi, Shanta Bhandari

Supervision: Nita Sharma, Sarmila Regmi, Shanta

Bhandari, Tulasi Chaudhary, Pratima Adhikari, Pabitra Sharma, Neelu Aryal

Writing-original draft: Nita Sharma, Sarmila Regmi, Shanta Bhandari, Tulasi Chaudhary, Pratima Adhikari, Pabitra Sharma, Neelu Aryal

Writing-review and editing: Nita Sharma, Sarmila Regmi, Shanta Bhandari, Tulasi Chaudhary, Pratima Adhikari, Pabitra Sharma, Neelu Aryal

REFERENCES

1. Why autoimmunity is most common in women. [Link]
2. Pn T, D A, A S, G GB, Jh L, Cm D, et al. Global epidemiology of hyperthyroidism and hypothyroidism. *Nature reviews Endocrinology*. 2018 May;14(5). [DOI]
3. Sulejmanovic M, Cickusic AJ, Salkic S, Bousbija FM. Annual Incidence of Thyroid Disease in Patients Who First Time Visit Department for Thyroid Diseases in Tuzla Canton. *Mater Sociomed*. 2019 Jun;31(2):130-4. [DOI]
4. Bathla M, Singh M, Relan P. Prevalence of anxiety and depressive symptoms among patients with hypothyroidism. *Indian J Endocrinol Metab*. 2016;20(4):468-74. [DOI]
5. Zhao S, Chen Z, Wang X, Yao Z, Lu Q. Increased prevalence of subclinical hypothyroidism in female hospitalized patients with depression. *Endocrine*. 2021 May;72(2):479-85. [DOI]
6. Romero-Gómez B, Guerrero-Alonso P, Carmona-Torres JM, Notario-Pacheco B, Cobo-Cuenca AI. Mood Disorders in Levothyroxine-Treated Hypothyroid Women. *Int J Environ Res Public Health*. 2019 Nov 28;16(23):4776. [DOI]
7. Gorkhali B, Sharma S, Amatya M, Acharya D, Sharma M. Anxiety and Depression among Patients with Thyroid Function Disorders. *J Nepal Health Res Counc*. 2020 Nov 13;18(3):373-8. [DOI]
8. Joshi A, Yonzon P. Community based study of thyroid disorder prevalence in Nepal. In: *Endocrine Abstracts*. Bioscientifica; 2019. [Link]
9. Thapa A, Karki M, Thapa A. Prevalence of Thyroid Dysfunction and its Relationship with Severity of Depression among Patients of Depression attending Tertiary Hospital. *Journal of College of Medical Sciences-Nepal*. 2020 Sep 30;16(3):3. [DOI]
10. Beck AT, Ward CH, Mendelson M, Mock JE, Erbaugh JK. Reliability of psychiatric diagnosis. 2. A study of consistency of clinical judgments and ratings. *Am J Psychiatry*. 1962 Oct;119:351-7 [DOI]
11. Beck AT, Epstein N, Brown G, Steer RA. An inventory for measuring clinical anxiety: psychometric properties. *J Consult Clin Psychol*. 1988 Dec;56(6):893-7. [DOI]
12. Gunes NA. Evaluation of anxiety and depression in patients with thyroid function disorder. *Rev Assoc Med Bras*. 2020;66:979-85. [DOI]
13. Acharya M, Karki D, Shah SP. Prevalence of Depression and Anxiety Symptoms among Patients with Hypothyroidism in a Tertiary Care Centre. *Journal of Nobel Medical College*. 2023 Dec 31;12(2):24-9. [DOI]
14. Fan T, Luo X, Li X, Shen Y, Zhou J. The Association between Depression, Anxiety, and Thyroid Disease: A UK Biobank Prospective Cohort Study. *Depression and Anxiety*. 2024;2024(1):8000359. [DOI]
15. Rzeszutek M, Pięta M, Hoy AV, Zawistowska M, Grymowicz M, Pięta W, et al. Coping profiles, depression, and body image anxiety during the Covid-19 pandemic: Comparative analysis of females with thyroid diseases and a non-clinical sample. *PLOS ONE*. 2023 Mar 1;18(3):e0282302. [DOI]
16. Kafle B, Khadka B, Tiwari ML. Prevalence

of Thyroid Dysfunction Among Depression Patients in a Tertiary Care Centre. JNMA J Nepal Med Assoc. 2020 Sep;58(229):654-8. [DOI]

17. Thapa DK, Upadhyaya TL, Lamichhane N, Subedi S. The study of Psychiatric Disorders in patients with Thyroid Disorder at the tertiary care centre in Western Region of Nepal.

Journal of Psychiatrists' Association of Nepal. 2013;2(2):2. [DOI]

18. Srinivasan M, Reddy MM, Sarkar S, Menon V. Depression, Anxiety, and Stress among Rural South Indian Women-Prevalence and Correlates: A Community-Based Study. J Neurosci Rural Pract. 2020 Jan;11(1):78-83. [DOI]

Citation: Sharma N, Regmi S, Bhandari S, Chaudhary T, Adhikari P, Sharma P, Aryal N. Anxiety and Depression among Women with Hypothyroidism and Without Hypothyroidism at Tertiary Hospital, Chitwan: A Comparative Study. JoBH, Nepal. 2026; 2(1): 87-96.