

**ESTABLISHING A RELATIONSHIP BETWEEN UTERINE MYOMA AND  
THYROID NODULES USING MEDICAL ULTRASONOGRAPHIC PATTERN  
APPROACH**

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## DECLARATION

I Mr. SETH KORTEY CLOTTEY do hereby declare that this thesis which is being submitted in fulfillment of the requirements for the degree of Msc Medical Ultrasonography is the result of my own research performed under supervision, and that except where otherwise other sources are acknowledged and duly referenced, this work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree

I hereby give permission for the Department of Radiography to seek dissemination/publication of the dissertation in any appropriate format. Authorship in such circumstances to be jointly held between myself as first author and the project supervisors as subsequent authors.

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## DEDICATION

The study is dedicated to God who granted me knowledge, strength, understanding and wisdom to do this work for purposes of preserving the world till He who died and rose on the third day will manifest to receive His own.

Consequently dedication of this work is extended to the Community of Christ Power Point Chapel, Agona Swedru for waiting till their Apostle return to serve them in the power of JAHOVAH.

To Dr Anim sampong I dedicate this work as a coach to me.



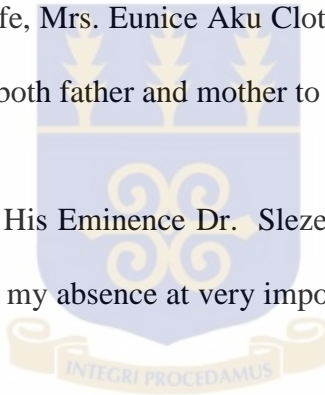
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## ABSTRACT

**Background:** Every cell in the body depends on the thyroid hormones for regulation of their metabolism. About 5-10% of thyroid nodules are suggested to be malignant. Many philosophies explain myoma growth through different pathways and most make mention of estrogen as a contributor. Estrogen is known to have influence on thyroid function, and suspected to have a role in formation of thyroid nodules. Estrogen receptors have been found in normal and neoplastic thyroid tissue and have increased numbers in uterine myoma compared to the normal myometrium. Does estrogen implication imply both thyroid nodule and uterine myoma simultaneously exist in women?

**Aim:** The aim of this research work was to test for relationship between uterine myoma and thyroid nodule among women using medical ultrasonographic approach.

**Methods:** Adult females ( $n=326$ ) were ultrasonographically screened for the presence of thyroid nodules and uterine myoma using a cross sectional study and a convenient sampling method. The sonographic imaging was done using Toshiba Nemio XG ultrasound equipment with linear probe (7.0-11.0) MHz and convex probe (3.5-5.0 MHz). Blood groups (A, B, O and Rh) were tested after 5mls of blood was drawn from each participant, using blood grouping antigen screening serum.

**Results:** The relationship between uterine myoma and thyroid nodule was significant ( $p=0.0005$ ) at 95% confidence interval among the participants using Chi-square. The ratio of participants with myoma and thyroid nodule (myo+/thy+) to myoma without (myo+/thy-) was approximately 2:1 (23.31% to 11.65 %). Comparatively, blood group A (44%) and B (57%), were more prone to present with myoma and thyroid nodule respectively among the study population.

**Conclusion:** The strength of the established relationship between uterine myoma and thyroid nodule was stronger below 51years as compared to the entire study population. The highest prevalence of myoma (36.8%;  $n=42$ ) and thyroid nodules (30.0%;  $n=50$ ) was between the 31-40 year group. Increase average parity ( $2.30\pm 2.20$ ) decreased the risk to developing uterine myoma (myo-/thy-) significantly ( $0.01 > p > 0.001$ ) at 95% CI compared to developing myoma (myo+/thy-) ( $1.32\text{births}\pm 1.44$ ) in the absence of thyroid nodule. Blood group A- is more prone (66.0%) to developing myoma and most prone (100%) to present with thyroid nodule if Rhesus factor is considered.

**Keywords:** thyroid nodule, myoma, estrogen, estrogen receptors

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## LIST OF ABBREVIATIONS

CI	Confidence interval
COD	Coefficient of determination
df	degree of freedom
FNAC	fine needle aspiration cytology
Myo	myoma
Thy	thyroid
Myo/thy	myoma thyroid nodule combination
Myo+/thy-	myoma present thyroid nodule absent
Myo+/thy+	myoma present thyroid nodule present
Myo-/thy+	myoma absent thyroid nodule present
Myo-/thy-	myoma absent thyroid nodule absent
SMH	Swedru Municipal Hospital.
TRMRA	Time resolved magnetic resonance angiography
US	Ultrasonography
18FDG	18-Flurodeoxyglucose

