ASSESSMENT OF HYPOTHYROIDISM AND IODINE DEFICIENCY AMONG PREGNANCY WOMEN AT HARGEISA GROUP HOSPITAL HARGEISA, SOMALILAND.

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A Thesis

Presented to the School of Health Science

New Generation University College

Hargeisa, Somaliland

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By:

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IDNO: 4258

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In Partial Fulfillment of the Requirements for the Bachelor Degree

In Public Health Department Health Officer.

MAY, 2016
Declaration

I hereby declare that this research is my creative effort and original work and has not been presented for its kind for any researcher to any other academic award in any University or Institution in this study area and it doesn’t contain any material previously available by any person except otherwise acknowledged.

Name and Signature of Candidate.......  

Date ......
Approval

This dissertation entitled" hypothyroidism and iodine deficiency among pregnancy women at Hargeisa group hospital prepared and submitted by khalid Abdi Jama in partial fulfillment of the requirements for the degree of health science department of clinical officer has been examined and approved by the panel on oral examination with a grade of ________.

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Name and Sig. of Chairman

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Name and Sig of Supervisor     Name and Sig. of Panelist

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Name and Sig. of Panelist     Name and Sig. of Panelist

Date of Comprehensive Examination: _________________

Grade: ______________________

___________________________
Name and Sign of Director of Department

___________________________
Name and Sig of ASAO
Dedicated

This work is dedicated to my beloved parents for their endurance, continuous support, and encouragement during my study. May Allah rest their souls in heaven and be merciful to them as they were to me in childhood (Amen), besides I dedicated to head of Hargeisa group hospital.
Acknowledgement

In the name of Allah, the Most Gracious and the Most Merciful, Alhamdulillah, all praises to Allah for the strengths and His blessing in completing this research. And again praise is to Allah who give me the ability and power to complete this Achievement smoothly and successfully.

Second, I send my deepest gratitude to my beloved parents for their long encouragement, motivation and support to me. Indeed I can’t conclude their praise worthy in phrases.

I’m so thankful to my dean of public health and my supervisor Osman Mohamed Osman to his great effort and encouragement since he allowed me to write and practice this course.

Sincere thanks to Health workers and Team Leaders in Hargeisa group hospital for their kindness and greet support during my study. Not forgotten to my friends for their kindness and moral support during my study. Thanks for the friendship and memories.

Last but not least, my appreciation goes to my best friend eng Abdi Omar, who really played a vital role during writing in my research book.
**Acronyms**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>LBW</td>
<td>low-birth weight</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>HGH</td>
<td>Hargeisa group hospital</td>
</tr>
<tr>
<td>OPD</td>
<td>Outpatient department</td>
</tr>
<tr>
<td>ICU</td>
<td>Intensive care unit</td>
</tr>
<tr>
<td>OT</td>
<td>Occupational therapy</td>
</tr>
<tr>
<td>RH</td>
<td>Reproductive health</td>
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<tr>
<td>IM</td>
<td>Internal medicine</td>
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<tr>
<td>MH</td>
<td>Mental health.</td>
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<tr>
<td>MCH</td>
<td>Maternal and child health</td>
</tr>
<tr>
<td>IO</td>
<td>Iodine deficiency</td>
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<tr>
<td>MOH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>HW</td>
<td>Health workers</td>
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<tr>
<td>HC</td>
<td>Health center</td>
</tr>
<tr>
<td>TBA</td>
<td>Traditional birth attendance</td>
</tr>
<tr>
<td>QN</td>
<td>Qualified nursing</td>
</tr>
<tr>
<td>T4</td>
<td>Thyroxin</td>
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<tr>
<td>T3</td>
<td>Triiodothyronine</td>
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</table>
TSH  Thyroid-stimulating hormone
TRH  Thyrotropin-releasing hormone
UNCEF  United Nations children’s emergence fund
DHS  Demographic and Health Surveys
MICS  Multiple Indicator Cluster Surveys
USI  Universal salt iodization
IDDS  Iodine deficiency disorder
ICCIDD  International Council for Control of Iodine Deficiency Disorders Global Network

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**Abstraction**

**Background:** Hypothyroidism is a disorder that occurs when the thyroid gland does not make enough thyroid hormone to meet the body’s needs.

Iodine deficiency A lack of sufficient iodine in the diet, which can lead to inadequate production of thyroid hormone (hypothyroidism).

**Objectives:** Assessment of hypothyroidism and iodine deficiency among pregnancy women at Hargeisa group hospital.

**Sampling procedure:** simple random sampling from Hargeisa health facilities. All pregnant women who attended the Hospital during the days of data collection and consented were part of the study to assess hypothyroidism and iodine deficiency among pregnant women.

**Conclusion:** The study revealed that the majority of the respondents in Hargeisa group hospital in Hargeisa, Somaliland were within age 15-25. Furthermore, the majority of the respondents were Ibrahim koodbuur at Hargeisa group hospital. Followed by, the majority of respondent were up to secondary level. Also, the majority of the respondents were married.

**Recommendation:** in my recommendation The ordering clinician should include evidence in the patient’s clinical record that an evaluation of history and physical findings preceded the ordering of thyroid function, proper evaluation of the use of appropriate tests in order to confirm a suspected clinical diagnosis before and after administration patient. To encourage pregnancy women to have a close link to the hospital or Maternal and child health. To have health education about nutrition of pregnancy women.

**Key words:** hypothyroidism, health worker.
CHAPTER ONE INTRODUCTION

1.0 Background

Hypothyroidism is a disorder that occurs when the thyroid gland does not make enough thyroid hormone to meet the body’s needs.

**Iodine deficiency:** A lack of sufficient iodine in the diet, which can lead to inadequate production of thyroid hormone (hypothyroidism).

Worldwide about one billion people are estimated to be iodine deficient. However, it is unknown how often this results in hypothyroidism. In large population-based studies in Western countries with sufficient dietary iodine 0.3–0.4% of the population have overt hypothyroidism. A larger proportion 4.3–8.5%, have subclinical hypothyroidism Women are more likely to develop hypothyroidism than men.

In population-based studies, women were seven times more likely than men to have TSH levels above 10 mU/l. Though the UK has long been considered to be iodine sufficient, there is increasing concern that this is no longer the case, particularly in women of childbearing age and pregnant women.

There is considerably more focus and interest in iodine in the UK than in the past 50 years or so but iodine remains a nutrient that many health professionals are unaware of and is often overlooked.
Thyroid gland disease is most common endocrine disease in Bangladesh especially pregnancy women and also thyroid disorders constitute one of the most common endocrine disorders seen in pregnancy.

Women with hypothyroidism have relatively increased infertility miscarriage rates and carry an increased risk for obstetric and fetal complications. The main obstetric complications are anemia, preeclampsia, placental abruption and postpartum hemorrhage. Fetal complications include prematurity, low-birth weight (LBW), fetal distress in labor, fetal death and perinatal deaths.

The number of countries with iodine deficiency as a national public problem has decreased from 110 in 1993 to 47 in 2007. Still one-third of households lack access to adequately iodized salt. Iodine deficiency remains a major threat to the health and development of populations around the world, particularly in children and pregnant women in low-income countries.

Data on iodine status are available from 130 countries and approximately one-third of the global population is estimated to have a low iodine intake based on urinary iodine (UI) concentrations. Insufficient control of iodine fortification levels has led to excessive iodine intakes in 34 countries.

In 2005 a World Health Organization (WHO) Technical Consultant group made recommendations for the interpretation of MUIC in pregnancy with levels considered to be inadequate <150μg/L adequate 150 - 249μg/L more than adequate 250-499μg/L and excessive >500μg/L. These recommendations have now been accepted by the Public Health
Committee of the American Thyroid Association and the International Council for the Control of Iodine Deficiency Disorders.

Published studies of the iodine status of pregnant women in Australia over the last 10 years are limited to south eastern Australia. All the studies of iodine status of pregnant women in Australia consistently suggest iodine intake is inadequate.

About 1.5 billion people, nearly one-third of the earth's population, live in areas of iodine deficiency. The African continent has not been immune. At least 40 countries have identified iodine deficiency as a public health problem, from Namibia, Zimbabwe and Mozambique in the south to Morocco, Libya and Egypt in the north:

In Africa nearly two billion (28%) of the world's population, of whom more than 321 million (39%) are Africans are at risk of insufficient iodine intake.

Based on the global data of iodine nutrition, Ethiopia is categorized among moderately iodine deficient countries.

Similarly, Ethiopia is one of the African countries with the highest prevalence of IDD and with the weakest program to prevent IDD. From 34.5% to 37% of the childbearing women in the country have hypothyroidism.

In Somaliland! The cause of Hypothyroidism is under research.

Hypothyroidism is caused by any structural and functional derangement that interferes with the production of adequate level of thyroid hormones.
There are primary and secondary forms depending on whether the disease arises from intrinsic abnormality in the thyroid gland or results from pituitary or hypothalamus diseases.

1.1 Statement problem

Hypothyroidism is a disorder that occurs when the thyroid gland does not make enough thyroid hormone to meet the body’s needs. (The pregnant women feels these symptoms are Fatigue, Cold, Poor memory and concentration, Constipation and dyspepsia.)

Iodine deficiency: A lack of sufficient iodine in the diet, which can lead to inadequate production of thyroid hormone (A lack of sufficient iodine in the diet, which can lead to inadequate production of thyroid hormone).

In Somaliland pregnancy happens every single day most of pregnancy are malnourished especially iodine which contribute large number both maternal and poor neonatal outcome although there is no national data about micronutrient survey but a report that WHO presents confirm that in the 2006 MICS, UNICEF identified that only 1.2% of household were using iodized salt nationally.

Therefore, this study assessed hypothyroidism and Iodine deficiency among pregnant women at Hargeisa group hospital.

The result gained from this study can be used in the design of interventions aimed at improving the maternal health services in Hargeisa group hospitals.
1.2 Purpose of the study

This is an important study for both community especially pregnant women and health workers to get specific study about hypothyroidism and iodine deficiency among pregnancy women.

1.3 Research objectives

1.3.1 General objective
I. Assessment of hypothyroidism and iodine deficiency among pregnancy women at Hargeisa group hospital.

1.3.2 Specific objective
I. To know the sociodemographic of respondents
   ✓ Name
   ✓ Age
   ✓ Address
   ✓ Marital status
II. To identify the level of hypothyroidism among pregnancy women at Hargeisa group hospital (HGH)
III. To determine level of iodine deficiency among pregnancy women at Hargeisa group hospital (HGH)
IV. To understand relationship between hypothyroidism in pregnant women and iodine deficiency at Hargeisa group hospital (HGH).

1.3.3 Research questions
I. What is the socioeconomic respondent of Hargeisa group hospital?
II. What is the level of hypothyroidism among pregnancy women at Hargeisa group hospital?

III. What is the level of iodine deficiency among pregnancy women at Hargeisa group hospital?

IV. What is the relationship between hypothyroidism in pregnant women and iodine deficiency at Hargeisa group hospital?

1.4 Scope of the study

1.4.1 Geographical scope:
Hargeisa is the largest city of Somaliland located North West region. Hargeisa Capital city of Somaliland the population of Hargeisa estimate 1.4 million. This studies will conduct at Hargeisa Group Hospital, Hargeisa group hospital (HGH) established in 1953 and it is the largest public hospital at Somaliland. It is national referrals from the rest of the country.

The hospital is complex and consists of several buildings each containing a single ward which houses 15-20 beds, with an overall capacity of approximately 300 beds (including mental health and payment wards) and provides the following services: OPD, ICU Department, reproductive health including complicated deliveries and caesarean section, pediatric (including stabilization center) surgery, orthopedics (including OT), internal medicine and mental health.

1.4.2 Content scope:
This study was contained correlation between hypothyroidism and iodine deficiency among pregnancy women.
1.5 **Significance of the study**

This study is more important and was help maternal and child health because the effect of hypothyroidism and iodine deficiency during pregnancy have significant effect to pregnant women and as well as her fetus. The results of this study was form baseline of prevent the prevalence of hypothyroidism and iodine deficiency.

1.6 **Key operation**

I. **Hypothyroidism**: (unreactive thyroid gland) is a disorder that occurs when the thyroid gland does not make enough thyroid hormone to meet the body’s needs

II. **Iodine deficiency**: is a lack of the trace element iodine.

III. **Pregnancy women**: also known as gravidity or gestation, is the time during which one or more offspring develops inside a woman

IV. **Nutrition**: is the science that interprets the interaction of nutrients and other substances in food the or process of providing or obtaining the food necessary for health and growth

V. **Diet**: the kinds of food that a person, animal, or community habitually eats

VI. **Health workers**: a person who works in hospital or health center.
VII. **Maternal and child health:** service which focuses on the improvement of public health delivery systems for women, children and their families through advocacy, education, and research.

VIII. **Health center,** providing health care for the local community and usually housing a group practice, nursing staff, a child-health clinic, etc.

IX. **Screening** the process of identifying or selecting members of a population based on one or more selection criteria

X. **TBA:** a person who assists the mother during childbirth and who initially acquired her skills by delivering babies herself or by working with other TBAs

XI. **Qualified nursing:** a person who, having been regularly admitted to a midwifery educational program that is duly recognized in the country in which it is located, and has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery.

XII. **Fetus:** an unborn human begins nine-week end until birth
CHAPTER TWO LITERATURE REVIEW

2.0 LITERATURE REVIEW

Hypothyroidism is a disorder that occurs when the thyroid gland does not make enough thyroid hormone to meet the body's needs. (1)

Anatomy of thyroid gland

The gross anatomy of thyroid is a butterfly-shaped endocrine gland usually located in the front lower part of the neck below the larynx (the voice box). Hormones released by the gland travel through your bloodstream and affect nearly every part of your body from your heart and brain to your muscles and skin. (2)

The main hormone made by thyroid is thyroxin also called T4 because it contains four iodine molecules. Small amount of another and more potent thyroid hormone containing three iodine molecules, triiodothyronine (T3) are also made by the thyroid gland. However, most of the T3 in the blood is made from T4 in other body tissues. (2)
The thyroid controls how your body's cells use energy from food, process called metabolism. Among other things, the metabolism affects the body's temperature, the heartbeat, and how well body burn calories. The deficiency of thyroid hormone of body processes slow down. That means your body makes less energy and your metabolism becomes sluggish. (2)

Pathophysiology

Thyroid hormone is required for the normal functioning of numerous tissues in the body. In health, the thyroid gland predominantly secretes thyroxine (T₄), which is converted into triiodothyronine (T₃) in other organs by the selenium-dependent enzyme iodothyronine deiodinase, Triiodothyronine binds to the thyroid hormone receptor in the nucleus of cells, where it stimulates the turning on of particular genes and the production of specific proteins.(12)
The thyroid gland is the only source of thyroid hormone in the body; the process requires iodine and the amino acid tyrosine. Iodine in the bloodstream is taken up by the gland and incorporated into thyroglobulin molecules. The process is controlled by the thyroid-stimulating hormone (TSH, thyrotropin), which is secreted by the pituitary. Not enough iodine, or not enough TSH, can result in decreased production of thyroid hormones. (13)

The hypothalamic–pituitary–thyroid axis plays a key role in maintaining thyroid hormone levels within normal limits. Production of TSH by the anterior pituitary gland is stimulated in turn by thyrotropin-releasing hormone (TRH), released from the hypothalamus. Production of TSH and TRH is decreased by thyroxine by a negative feedback process. Not enough TRH, which is uncommon, can lead to not enough TSH and thereby to not enough thyroid hormone production. (12,13)

Pregnancy leads to marked changes in thyroid hormone physiology. The gland is increased in size by 10%, thyroxine production is increased by 50%, and iodine requirements are increased. Many women have normal thyroid function but have immunological evidence of thyroid autoimmunity (as evidenced by autoantibodies) or are iodine deficient, and develop evidence of hypothyroidism before or after giving birth (13)

### 2.1 Hypothyroidism

A common disorder of the endocrine system in which the thyroid gland does not produce enough thyroid hormone. It can cause a number of symptoms,
such as poor ability to tolerate cold, a feeling of tiredness, constipation, depression, and weight gain. (5)

While Hypothyroidism is the most common pregnancy-related thyroid disorder, affecting 3–5% of all pregnant women hypothyroidism is common in pregnancy with an estimated prevalence of 2-3% and 0.3-0.5% for subclinical and overt hypothyroidism respectively. (6)

Endemic iodine deficiency accounts for most hypothyroidism in pregnant women worldwide while chronic autoimmune thyroiditis is the most common cause of hypothyroidism in iodine sufficient parts of the world. The presentation of hypothyroidism in pregnancy is not always classical and may sometimes be difficult to distinguish from the symptoms of normal pregnancy. (6,7)
A high index of suspicion is therefore required especially in women at risk of thyroid disease e.g. women with a personal or family history of thyroid disease, goiter, or co-existing primary autoimmune disorder like diabetes. Worldwide Subclinical hypothyroidism is estimated to be 2-5% (Canaris GH, 2000) In Macau, around 2-3% (rough estimation) Hypothyroidism in pregnancy TSH can be elevated with or without suppressed levels of free T4. (6,7)

**HYPOTHYROIDISM OF PREGNANCY**

While Hypothyroidism is the most common pregnancy-related thyroid disorder, affecting 3–5% of all pregnant women hypothyroidism is common in pregnancy with an estimated prevalence of 2-3% and 0.3-0.5% for subclinical and overt hypothyroidism respectively. (8)

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**Primary hypothyroidism** is caused by a problem with the thyroid gland itself.

**Secondary hypothyroidism** occurs when another problem interferes with the thyroid's ability to produce hormones. For example, the pituitary gland and hypothalamus produce hormones that trigger the release of thyroid
hormone. A problem with one of these glands can make your thyroid underactive.

Sometimes, an underactive thyroid that results from a problem with the hypothalamus is called tertiary hypothyroidism. (9)

**Causes of hypothyroidism**

Hypothyroidism is caused by inadequate function of the gland itself (primary hypothyroidism) or by not enough stimulation by thyroid-stimulating hormone. Primary hypothyroidism is about a thousandfold more common than secondary hypothyroidism (10)

Iodine deficiency is the most common cause of primary hypothyroidism in worldwide. In areas of the world with sufficient dietary iodine, hypothyroidism is most commonly caused by the autoimmune disease Hashimoto's thyroiditis (chronic autoimmune thyroiditis). Hashimoto's may be associated with a goiter. It is characterized by infiltration of the thyroid gland with T lymphocytes and autoantibodies against specific thyroid antigens such as thyroid peroxidase, thyroglobulin and the TSH receptor. (11)

**Epidemiology**

Hypothyroidism and iodine deficiency of pregnancy is a global health problem that arises mostly during pregnancy international agencies like WHO and UNCEF as well as national health ministries connected a studies about the effect of hypothyroidism and iodine deficiency of pregnancy as I
will present the ongoing scripts but still there is a gape of detecting the problem, since globally Hypothyroidism occurs in about 0.2-0.4% of all pregnancies.(3)

Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) by UNICEF in 2007-2012 estimates globally more than half of all pregnant women diagnosis hypothyroidism and iodine deficiency. Universal salt iodization (USI) and iodine supplementation are highly effective strategies for preventing and controlling iodine deficiency. USI is now implemented in nearly all countries worldwide, and two-thirds of the world's population is covered by iodized salt. (4)

**Who Is at Risk for Hypothyroidism?**

Women, particularly older women, are more likely to develop hypothyroidism than men. You are also more likely to develop hypothyroidism if you have a close family member with an autoimmune disease. Other risk factors include:

- Race (being white or Asian)
- Age (growing older)
- Prematurely graying hair
- Autoimmune disorders such as type 1 diabetes, multiple sclerosis, rheumatoid arthritis, celiac disease, Addison's disease, pernicious anemia, or vitiligo
- Bipolar disorder
- Down syndrome
- Turner syndrome (9)
Clinical features.

The clinical picture is different whether the hypothyroidism develops in early childhood or in adults and older children.

Cretinism is hypothyroidism that develops in the infancy or early childhood, it is common in the mountainous areas of Africa, India and China where dietary iodine deficiency is endemic. It is less frequent in the present days due to widespread supplementation of foods with iodine, In rare occasions cretinism may result from inborn errors in the metabolism e.g. enzyme deficiency that interferes with the biosynthesis of the normal level of the hormones. (14)

The clinical manifestations of the cretinism are: impaired development of the skeletal system and CNS with mental retardation, short stature, coarse facial features, a protruding tongue and umbical hernia. The severity of the disease depends on the age of onset. (14)

Normally, the maternal T4 and T3 cross the placenta and are critical to the fetal brain development. If the maternal hypothyroidism begins before the development of the fetal thyroid gland, mental retardation is severe. But if the maternal hypothyroidism develops late in the pregnancy after the fetal thyroid is well formed normal fetal brain development occurs. (14)

NB

- Children may not show classic clinical features of hypothyroidism. There is often slow growth rate, poor school performance and arrest of pubertal development.
- Young women may not show obvious signs of hypothyroidism and should be excluded in all the patients with oligo-amenorrhea, menorrhagia, infertility or hyperprolactinemia.

- In elderly patients, the signs of the hypothyroidism may be indistinguishable from the signs of the normal aging. (14)

**Symptoms of Hypothyroidism**

Symptoms of hypothyroidism may be vague and can often mimic other conditions. They may include:

- Changes in the menstrual cycle
- Constipation
- Depression
- Dry hair and hair loss
- Dry skin
- Fatigue
- Greater sensitivity to cold
- Slow heart rate
- Swelling of the thyroid gland (goiter)
- Unexplained weight gain or difficulty losing weight
- Carpal tunnel syndrome (9)
How is hypothyroidism in pregnancy diagnosed?

Like hyperthyroidism, hypothyroidism is diagnosed through a careful review of symptoms and measurement of:

- Thyroid-stimulating hormone (TSH)
- T4 (thyroxine)

Symptoms of hypothyroidism in pregnancy include extreme fatigue, cold intolerance, muscle cramps, constipation, and problems with memory or concentration. (9,15)

High levels of TSH and low levels of free T4 generally indicate hypothyroidism. Because of normal pregnancy-related changes in thyroid
function, test results must be interpreted with caution. The TSH test can also identify subclinical hypothyroidism—a mild form of hypothyroidism that has no apparent symptoms. Subclinical hypothyroidism occurs in 2 to 3 percent of pregnancies. (16)

Test results will show high levels of TSH and normal free T₄. Experts differ in their opinions as to whether asymptomatic pregnant women should be routinely screened for hypothyroidism. But if subclinical hypothyroidism is discovered during pregnancy, treatment is recommended to help ensure a healthy pregnancy. (15)

**How is hypothyroidism treated during pregnancy?**

Hypothyroidism is treated with synthetic thyroid hormone called thyroxin—a medication which is identical to the T₄ made by the thyroid. Women with preexisting hypothyroidism will need to increase their pregnancy dose of thyroxin to maintain normal thyroid function. Thyroid function should be checked every 6 to 8 weeks during pregnancy. Synthetic thyroxin is safe and necessary for the well-being of the fetus if the mother has hypothyroidism. (17)

**Levothyroxine**

Adding liothyronine (synthetic T₃) to levothyroxine has been suggested as a measure to provide better symptom control, but this has not been confirmed by studies. In 2007, the British Thyroid Association stated that combined T₄ and T₃ therapy carried a higher rate of side effects and no benefit over T₄ alone. Similarly, American guidelines discourage
combination therapy due to a lack of evidence, although they acknowledge that some people feel better when receiving combination treatment. Treatment with liothyronine alone has not received enough study to make a recommendation as to its use due to its shorter half-life it needs to be taken more often. (18)

Eating, Diet and Nutrition

During pregnancy the body requires higher amounts of some nutrients to support the health of the mother and growing baby. Experts recommend pregnant women maintain a balanced diet and take a prenatal multivitamin and mineral supplement containing iodine to receive most nutrients necessary for thyroid health. More information about diet and nutrition during pregnancy is provided by the National Agricultural Library available. (19)

Dietary Supplements

Because the thyroid uses iodine to make thyroid hormone, iodine is an important mineral for a mother during pregnancy. During pregnancy, the baby gets iodine from the mother’s diet. Women need more iodine when they are pregnant—about 250 micrograms a day. (19)

In the United States, about 7 percent of pregnant women may not get enough iodine in their diet or through prenatal vitamins. Choosing iodized salt—salt supplemented with iodine—over plain salt and prenatal vitamins containing iodine will ensure this need is met. However, people with autoimmune thyroid disease may be sensitive to harmful side effects from iodine. Taking iodine drops or eating foods containing large amounts of
iodine—such as seaweed, dulse, or kelp—may cause or worsen hyperthyroidism and hypothyroidism. More information about iodine is provided by the National Library of Medicine in the fact sheet, Iodine in diet External NIH Link. (19)

**Complication of hypothyroidism?**

Some of the same problems caused by hyperthyroidism can occur with hypothyroidism. Uncontrolled hypothyroidism during pregnancy can lead to

- preeclampsia
- anemia—too few red blood cells in the body, which prevents the body from getting enough oxygen
- miscarriage
- low birth weight
- stillbirth
- congestive heart failure, rarely

Because thyroid hormones are crucial to fetal brain and nervous system development, uncontrolled hypothyroidism—especially during the first trimester—can affect the baby’s growth and brain development. (20)

**Prognosis**

In adults, treatment with thyroid hormones usually relieves symptoms of hypothyroidism within weeks, although it can take months. However, in some elderly patients, dosages may need to be increased very slowly over
six to eight weeks to prevent strain on the heart. In infants and children with hypothyroidism, immediate and consistent treatment with thyroid hormones usually can prevent problems with growth or intellectual development.

**Iodine deficiency** is a widespread problem in western, southern and eastern parts of China, as their iodized salt intake level is much lower than the average national level.

Iodine deficiency is a range of disorders that affect many different populations. It is estimated that iodine deficiency disorder (IDDs) affect between 800 million and 2 billion people worldwide while most of them are pregnant women and young children. Countries have spent millions of dollars in implementing iodized salt as a means to counteract the iodine deficiencies prevalent today. With China accounting for "40% of the total population "it bears a large portion of those who are iodine deficient. (21)

Iodine is a micronutrient the body needs to properly produce thyroid hormones. The human body is not able to produce it, and iodine is an essential nutrient. Iodine is not readily available in many foods, thus making it difficult for many people to obtain it. (21,22)

One particular source, found in great supply, is ocean water although it is not an effective dietary source. Iodine deficiency diseases (IDDs) are able to develop before birth, so it is crucial for all populations to have sufficient levels of the micronutrient and prevent such diseases from developing early on. (22)
Sources of dietary iodine

- In areas where iodine is not added to the water supply or food products meant for humans or domesticated animals, the primary sources dairy products, such as cheese, cow's milk, ice cream, yogurt, and frozen yogurt
- soy milk and soy sauce
- saltwater products, including seafood and seaweed
- The upper limit of safe daily iodine intake is 1100 mcg/day for adults; it is lower for children. (23) Causes Iodine Deficiency? Iodine deficiency occurs when you don't get enough iodine in your diet. (23)

Risk factors of iodine deficiency

The median urine iodine level was in the normal range (10.5 microg/dl). In 46.2 per cent of the pregnancy the iodine levels were below 10 microg/dl and 13.9 per cent of the pregnancy. Poor family, crowded conditions and iodine deficiency more common females then the males. (23)

Signs and symptoms

- Mental imbalances such as depression and anxiety
- Mental retardation (in extreme cases, and particular in children of mothers who have had an iodine deficiency)
- Fetal hypothyroidism (improper functioning of the thyroid in unborn children leading to brain damage. (24)

Diagnosis of iodine deficiency

The diagnostic workup of a suspected iodine deficiency includes signs and symptoms as well as possible risk factors. A 24-hour urine iodine collection
is a useful medical test, as approximately 90% of ingested iodine is excreted in the urine. For the standardized 24-hour test, a 50 mg iodine load is given first, and 90% of this load is expected to be recovered in the urine of the following 24 hours. Recovery of less than 90% is taken to mean high retention, that is, iodine deficiency. The recovery may however be well less than 90% during pregnancy, and an intake of goitrogens can alter the test results. (25)

Treatment

Iodine deficiency is treated by ingestion of iodine salts, such as found in food supplements. Mild cases may be treated by using iodized salt in daily food consumption, or drinking more milk or eating egg yolks and saltwater fish. For a salt and/or animal product restricted diet sea vegetables (kelp, dulse, nori (found in sushi)) may be incorporated regularly into a diet as a good source of iodine.

The recommended daily intake of iodine for adult women is 150–300 µg for maintenance of normal thyroid function; for men it is somewhat less at 150 µg.

However, too high iodine intake, for example due to over dosage of iodine supplements, can have toxic side effects.(25)

Prevention

At a population level, iodine deficiency disorder (IDD) can be prevented by the iodization of food products or the water supply. In practice, this is usually achieved by iodization of salt. An alternative in some developing countries has been the periodic injection of iodized oil supplements. (26)
Conceptual framework:

- Iodine deficiency
- Hypothyroidism

Socio demographic factor:
- Crowding condition
- Lack of food
- Poor family
- Females
- Gender

Complication:
- Preeclampsia
- Anemia
- miscarriage
- Low birth weight
- Still birth
- Congestive heart failure

Related study

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Introduction

This chapter provides a global overview of the disorders caused by iodine deficiency. Special emphasis will be put on recent developments such as the role of iodine deficiency in the development of brain damage and mental retardation, assessment of the iodine status of a population and current worldwide epidemiological data, strategies for control and monitoring of the iodine deficiency disorders (IDD), as well as potential side effects of excessive iodine intake. Up to date information on IDD can be obtained by visiting the website of the International Council for Control of Iodine Deficiency Disorders Global Network (ICCIDD) (27)

Etiology

Iodine (atomic weight 126.9 g/atom) is an essential component of the hormones produced by the thyroid gland. Thyroid hormones and therefore iodine are essential for mammalian life. Iodine (as iodide) is widely but unevenly distributed in the earth’s environment. Most iodide is found in the oceans (≈50 μg/L), and iodide ions in seawater are oxidized to elemental iodine which volatilizes into the atmosphere and is returned to the soil by rain completing the cycle.
However, iodine cycling in many regions is slow and incomplete and soils and ground water become deficient in iodine. Crops grown in these soils will be low in iodine and humans and animals consuming food grown in these soils become iodine deficient (28).

In plant foods grown in deficient soils iodine concentration may be as low as 10 μg/kg dry weight compared to ≈1 mg/kg in plants from iodine-sufficient soils. Iodine deficient soils are most common in inland regions mountainous areas and areas of frequent flooding but can also occur in island states and coastal regions (28).

This arises from the distant past through by the leaching effects of snow water and heavy rainfall which removes iodine from the soil. The mountainous regions of Europe the Northern Indian Subcontinent the extensive mountain ranges of China the Andean region in South America and the lesser ranges of Africa are all iodine deficient. Also in Northern China are also areas of endemic iodine deficiency. Iodine deficiency in populations residing in these areas will persist until iodine enters the food chain through addition of iodine to foods (e.g. iodization of salt).
CHAPTER THREE RESEARCH METHODOLOGY

3.0 Research design

Correlation Descriptive study design was conducted to assess hypothyroidism and iodine deficiency among pregnancy women at Hargeisa Group Hospital. The study was conducted 5th of January to 20 May.

3.1 Research Population

The Study population was all health care seekers at Hargeisa group hospital and the study was conducted one health center in Hargeisa.

The Target population is 60 representatives of patients attending Hargeisa group hospital maternity ward.

**Inclusion criteria** was all pregnant women who diagnosed hypothyroidism and iodine deficiency during data collection period and can give consent at Hargeisa group hospital.

**The exclusion criteria** was all pregnant women who was not diagnosed hypothyroidism and iodine deficiency at HGH and those who is seriously sick and unable to respond to the questions, pregnant women who could not give consent (age is < 18 years, mentally impaired).

3.2 Sample size

The sample size was 52 respondents those are pregnant women attending the hospital during data collection period at Hargeisa group
hospital. hypothyroidism and iodine deficiency women was include as sample size. Using convenient sampling technique was calculated to find sample size.

**Solvent formula**

\[ n = \frac{N}{1 + N(E)^2} \]

\[ n = \frac{60}{1 + 60(0.05)^2} \]

\[ n = \frac{60}{1 + 60(0.0025)} \]

\[ n = \frac{60}{1 + 0.15} \]

\[ n = \frac{60}{1.15} \]

\[ n = 52 \]
3.3 Sampling procedure

To assess the hypothyroidism and iodine deficiency among pregnancy, a total of 52 respondents were conveniently sampled from pregnant women who attending at the hospital during data collection.

One health center selected in simple random sampling from Hargeisa health facilities. All pregnant women who attended the Hospital during the days of data collection and consented were part of the study to assess hypothyroidism and iodine deficiency among pregnant women.

3.4 Research Instruments

During data collection questionnaire was used to get the appropriate information to my study the questionnaire was give all pregnant women to respond the questionnaire by giving consent.

3.5 Validity and Reliability of the instrument

Validity is arguably the most important criteria for the quality of a test. The term validity refers to whether or not the test measures what it claims to measure. On a test with high validity the items will be closely linked to the test's intended focus

\[ V = \frac{RQ}{TQ} \times 100 \]

\[ \frac{23}{27} \times 100 = 85\% \]

RQ=Relevant questionnaire
TQ= total population
V= validity
Reliability is the degree to which an assessment tool produces stable and consistent results. Types of Reliability. Test-retest reliability is a measure of reliability obtained by administering the same test twice over a period of time to a group of individuals.

\[ R = \frac{TD}{TQ} \times 100 = \]
\[
\frac{12}{23} \times 100 = 52\%
\]
TD= total difference
TQ=total questionnaire
R= reliability

3.6 Data Gathering Procedures

During the administration of the questionnaires

The respondents was requested to answer completely and not to leave any part of the questionnaires unanswered.
The researcher and assistants was emphasized retrieval of the questionnaires within five days from the date of distribution.
On retrieval, all returned questionnaires will be checked if all are answered.

After the administration of the questionnaires

The data gathered was collated, encoded into the computer and statistically treated using the Statistical Package for Social Sciences (SPSS).
3.7 Data analysis

Quantitative data entry was entered in SPSS (IBM v20); data was cleaned by running frequencies of all the variables to check for incorrectly coded data. Incorrectly coded data was double checked with the raw data in the questionnaire and corrected.

Statistical methods were used to analyze the data collected such as Descriptive statistics, for example numerical summations, graphs and tables. The analysis software was performed using the data are Statistical Package for Social Sciences (SPSS) and Microsoft Excel (2016) statistical software packages.

3.8 Ethical consideration

The researcher was undertaken to observe all relevant ethical and legal considerations that are applicable to scientific research. The researcher was obtained authorization from the relevant department of health research and consultancy center in New Generation University College to conduct the study.
3.9 Limitation of study.

In the planning and execution of the study a number of limitations was encountered. The following are the most notable:
There was challenges in obtaining information in respect of the actual population. There was short time during the study.
Furthermore, there may be misconception and misunderstanding from the respondents because it was not conduct previous researches on a population. The target population are not reliable any time.
The study area is full of busy as seen Questionnaire is written by foreign language the health providers those are part the study are not available any time.
CHAPTER FOUR PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter dealt with data presentation, analysis and interpretation and discussion. It gives the sociodemographic characteristics of the respondent and variable used.

Table 4.1 Age of the respondent.

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-25</td>
<td>18</td>
<td>38.3</td>
<td>38.3</td>
<td>38.3</td>
</tr>
<tr>
<td>26-35</td>
<td>16</td>
<td>34.0</td>
<td>34.0</td>
<td>72.0</td>
</tr>
<tr>
<td>36-40</td>
<td>7</td>
<td>14.9</td>
<td>14.9</td>
<td>87.2</td>
</tr>
<tr>
<td>Above 40</td>
<td>6</td>
<td>12.8</td>
<td>12.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Above table revealed that majority, 38% of the respondents were within the age group of 15-25 years, followed by 34% who were within the age group of 26-35 years. In addition to that, respondents within the age group of 36-40 years and above 40 years were represented by 15% and 13% respectively.

Source: primary data 2016
Table 4. 2 District of the respondent.

<table>
<thead>
<tr>
<th>District</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibrahim koodbuur</td>
<td>14</td>
<td>29.8</td>
<td>29.8</td>
<td>29.8</td>
</tr>
<tr>
<td>Mohamoud mooge</td>
<td>9</td>
<td>19.1</td>
<td>19.1</td>
<td>48.9</td>
</tr>
<tr>
<td>26 June</td>
<td>11</td>
<td>23.4</td>
<td>23.4</td>
<td>72.3</td>
</tr>
<tr>
<td>Gacan libaax</td>
<td>6</td>
<td>12.8</td>
<td>12.8</td>
<td>85.1</td>
</tr>
<tr>
<td>Ahmed dagax</td>
<td>5</td>
<td>10.6</td>
<td>10.6</td>
<td>95.7</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>4.3</td>
<td>4.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Most of the respondent’s resided Ibrahim koodbuur were 30% and the respondents residing mohamoud mooge were 19% and those residing 26 June were 23% while the respondents living gacanlibaax were 13% and the percentage of respondents residing axmed dhagax were 11% while other respondents were the least with the percentage of 4%

Source: primary data 2016
Table 4. 3 Marital status of the respondent.

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>11</td>
<td>23.4</td>
<td>23.4</td>
<td>23.4</td>
</tr>
<tr>
<td>Married</td>
<td>31</td>
<td>66.0</td>
<td>66.0</td>
<td>89.4</td>
</tr>
<tr>
<td>Window</td>
<td>3</td>
<td>6.4</td>
<td>6.4</td>
<td>95.7</td>
</tr>
<tr>
<td>Divorced</td>
<td>2</td>
<td>4.3</td>
<td>4.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The above table the most respondent of marital status were married 60% although the most respondent were about married 66% and those window were 6%. While the least respondent were divorcee 4%.

Source: primary data 2016

Table 4. 4 educational level of the respondent

<table>
<thead>
<tr>
<th>Educational level</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>7</td>
<td>14.9</td>
<td>14.9</td>
<td>14.9</td>
</tr>
<tr>
<td>Secondary</td>
<td>20</td>
<td>42.6</td>
<td>42.6</td>
<td>57.4</td>
</tr>
<tr>
<td>Tertiary</td>
<td>13</td>
<td>27.7</td>
<td>27.7</td>
<td>85.1</td>
</tr>
<tr>
<td>None</td>
<td>7</td>
<td>14.9</td>
<td>14.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
According to above table revealed that majority, 42% of the respondents were educated up to secondary level, followed by 28% who were tertiary level and 15% who were educated up to primary level. Similarly, respondents with non-educated were represented by 15%. The dominance of respondents who were educated up to primary level shows the gap in the education system of Somaliland.

Source primary data 2016

Table 4. 5 occupation of the respondent

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>House wife</td>
<td>10</td>
<td>21.3</td>
<td>21.3</td>
<td>21.3</td>
</tr>
<tr>
<td>Self-worker</td>
<td>7</td>
<td>14.9</td>
<td>14.9</td>
<td>36.2</td>
</tr>
<tr>
<td>Civil servant</td>
<td>21</td>
<td>44.7</td>
<td>44.7</td>
<td>80.9</td>
</tr>
<tr>
<td>None</td>
<td>9</td>
<td>19.1</td>
<td>19.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

In occupational status of the respondents were house wife’s 21% and those who are self-workers were 15% and most respondent are civil servant were 45% while the least occupational status were none workers were 19%.

Source: primary data 2016
Figure 4.1 Chart Presentation of have you ever heard hypothyroidism.

As the above figure shows 37 (79%) of the respondent answered yes and 10 (21%) percent answered no.

As the study result revealed majority of people know hypothyroidism and it can show that it exists in the community.

Source: primary data 2016
The most respondent answered yes heard from health worker with the percentage of 20 (43%) and those heard social media were 9 (19%). And other 9 (19%) missed while those heard in the community were 6 (13%) and others were 3 (6%).

This figure show most people heard in hypothyroidism from health worker that it shows most of clients link to the hospital.

Source: primary data 2016
According to above graph most of respondent were answered the cause of hypothyroidism is low iodine deficiency with the percentage of 35 (75%) and those answered the cause of hypothyroidism is genetic were 6 (13%) and respondent answered the cause hypothyroidism is infection were 3 (6%) while other of the respondent answered the cause of hypothyroidisms is autoimmune were 3 (6%).

As mentioned to my literature review Iodine deficiency is the most common cause of primary hypothyroidism in worldwide and the above graph revealed that the most common cause of hypothyroidism is iodine deficiency in pregnancy women.

Source: primary data 2016
Figure 4. 4 Graphic presentation of sing and symptoms

The most respondent answered we had cold intolerance were 15 (32%) and those answered we had fatigue were 8 (17%) and those answered we had recent weight gain were 8 to 17% and those answered we had dry skin were 7 (15%) and those answered we had others were 5 to 10% and also those answered we had poor memory were 4 to 10%.

As mentioned the above graph shows the most symptoms is cold intolerance.

Source: primary data 2016
Figure 4. 5 Graphic presentation of level of the hypothyroidism in Hargeisa group hospital

Most of the respondents answered the level of the hypothyroidism is high with the percentage of 20 (39%) in Hargeisa group hospital and those answered the level of hypothyroidism is medium were 19 (36%) and those answered level of hypothyroidism is low were 9 (17%) and others answered the level of hypothyroidism is none were 4 (7%).

The above result shows the level of hypothyroidism in Hargeisa group hospital is medium.

Source: primary data 2016
Most personnel agreed the number of individuals who shows hypothyroidism increasing recent years by 21 (40%) and those disagreed the number of individuals who shows hypothyroidism increasing recent years were 17 to 33% and other strong agreed the number of individuals who shows hypothyroidism increasing recent years were 13 (25%) and those strong dis agree the number of individuals who shows hypothyroidism increasing recent years were 1 (2%).

In above graphic shows the number of individual shows hypothyroidism increasing recently years and effects many people especially pregnancy women.

Source: primary data 2016
Figure 4. 7 Graphic presentation of diagnosis of hypothyroidism.

The most respondent who answered the diagnosis of the hypothyroidism is blood test were 20 (42%) and those answered the diagnosis of the hypothyroidism is history taking and physical examination were 14 (30%) and those answered the diagnosis of the hypothyroidism is thyroid ultrasound were 13 (28%).

According to my literature review, hypothyroidism is diagnosed through a careful review of symptoms and measurement of was order blood tests. And the result of my study showed the diagnoses of hypothyroidism is blood test (T3, T4).

Source: primary data 2016
Figure 4. 8 Graphic presentation of better treatment hypothyroidism.

The most personnel who answered the best treatment of hypothyroidism is medical were 35 (74%) and those answered the best treatment of hypothyroidism is traditional herbal were 7 (15%) and those the best treatment of hypothyroidism is surgical were 5 (11%).

The study revealed the treatment of hypothyroidism in medical, as similarly in my literature review shows hypothyroidism is treated in medical.

Source: primary data 2016
Figure 4.9 Graphic presentation of susceptible of hypothyroidism.

The respondent answered pregnancy women are susceptible in hypothyroidism with the percentage of the 28 (53%) and those answered old age are susceptible in hypothyroidism were 10 (19%) and that answered children are susceptible in hypothyroidism were 9 (18%) and while least answered malnourished are susceptible in hypothyroidism were 5 (10%).

While Hypothyroidism is the most common pregnancy-related thyroid disorder, affecting 3–5% of all pregnant women hypothyroidism is common in pregnancy.

Source: primary data 2016
Most of the respondents answered the level of the iodine deficiency is medium with the percentage of 30 (64%) in Hargeisa group hospital and those answered the level of iodine deficiency is high were 10 (21%) and those answered level of hypothyroidism is low were 7 (15%).

The above result shows the level of iodine deficiency in Hargeisa group hospital is medium.

Source: primary data 2016
Figure 4. 11 Graphic presentation of richest of iodine are.

The personnel who answered the richest foods of iodine are sea foods the percentage of the 17 (36%) and those who answered the richest foods of iodine are green vegetable were 16 (34%) and those who answered the richest foods of iodine are milk, yogurt, cheese were 9 (20%) and others answered the richest foods of iodine are others with the percentage of 5 (10%).

According to my literature review and as the Above figure indicated the most foods found in iodine is sea foods that shows similarities for both previous studies and my study.

Source: primary data 2016
Most personnel answered iodine deficiency is a disease with the percentage of 17 (36%) and those answered iodine deficiency is a condition were 15 (32%) and those answered iodine deficiency is abnormal were 12 (26%) and others answered iodine deficiency is normal were 3 (6%).

According the review of the above graph most of the respondent answered iodine deficiency is disease and it occurs the community.

Source: primary data 2016
Figure 4. 13 Chart presentation of iodine deficiency caused by.

Most of the respondent answered the iodine deficiency caused by low diet intake iodine deficiency with percentage of 38 (81%) and those who answered the iodine deficiency caused by bacteria were 8 (17%) and other respondent answered iodine deficiency is caused by virus were 1 (2%).

According to my literature review and as the Above figure indicated the most iodine deficiency is caused low diet intake of iodine that shows similarities for both previous studies and my study.

Source: primary data 2016
Figure 4. 14 Chart presentation of diagnosis of iodine deficiency.

According this figure shows personnel 26 (55%) of the respondent answered yes and 21 (45%) of respondent answered no.

The above figure shows that most respondent were diagnosed iodine deficiency with percentage of 55%, so the result indicated most people especially pregnancy women experience one’s life time.

Source: primary data 2016
Figure 4. 15 Graphic presentation of relationship between hypothyroidism and iodine deficiency.

Most of the respondent who answered yes there is relationship between hypothyroidism and iodine deficiency with the percentage of the 33 (70%) and those who answered no there is no relationship between hypothyroidism and iodine deficiency were 14 (30%).

As revealed the above figure relationship between hypothyroidism and iodine deficiency is strong in the community.

Source: primary data 2016
The respondent answered yes the degree of the relationship between hypothyroidism and iodine deficiency is strong were 19 (36%) and those answered yes degree of the relationship between hypothyroidism and iodine deficiency is moderate were 17 (33%) and those missed the questionnaire were 13 (26%) and others answered yes the degree of the relationship between hypothyroidism and iodine deficiency is weak were 2 (4%).

The above graph shows there is positive relationship between hypothyroidism and iodine deficiency in Hargeisa group hospital similarly my literature review shows there is significance effect both of them.

Source: primary data 2016
Figure 4. Graphic presentation of iodine deficiency can cause hypothyroidism.

The most personnel who answered yes iodine deficiency can cause hypothyroidism with the percentage of the 23 (49%) and those answered may be iodine deficiency can cause hypothyroidism were 10 (21%) and those answered I don’t know iodine deficiency can cause hypothyroidism were 8 (17%) and other answered no iodine deficiency can cause hypothyroidism were 6 (13%).

According the figure, it shows most cause of hypothyroidism is iodine deficiency.

Source: primary data 2016
CHAPTER FIVE FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter includes findings, conclusions and recommendation. Correlation Descriptive study design was conducted to assess the hypothyroidism and iodine deficiency among pregnancy women attending Hargeisa group hospital. To basic on four specific objectives including

I. To know the sociodemographic of respondents
II. To identify the level of hypothyroidism among pregnancy women at Hargeisa group hospital (HGH)
III. To determine level of iodine deficiency among pregnancy women at Hargeisa group hospital (HGH)
IV. To understand relationship between hypothyroidism in pregnant women and iodine deficiency at Hargeisa group hospital (HGH).

5.2 Findings.

The study revealed that the majority of the respondents in Hargeisa group hospital in Hargeisa Somaliland were within the age group of 15-25. Furthermore, the majority of the respondents were Ibrahim koodbuur at Hargeisa group hospital. Last but not least, as the result of this study reveals that, the majority of the respondents were married.
The study revealed that level of hypothyroidism at Hargeisa group hospital is high with the percentage of 39% and the reasons is most people they have no idea or information about hypothyroidism.

The study revealed that, the level of iodine deficiency at Hargeisa group hospital is medium with the percentage of 64% and I agree because of most pregnancy women is malnourished and don’t take enough iodine rich foods or iodinated salt.

This study revealed that, there was a significant and positive relationship between hypothyroidism and iodine deficiency in Hargeisa group hospital in Hargeisa Somaliland.

5.3 Conclusion

The study revealed that the majority of the respondents in Hargeisa group hospital in Hargeisa, Somaliland with the age of 15-25. Furthermore, the majority of the respondents were resided Ibrahim koodbuur at Hargeisa group hospital. Followed by, the educational level of the respondent were up to secondary level. Also, most of the respondents were married. Last but not least, this study reveals that, the majority of the respondents were civil servant. Most of respondent heard hypothyroidism and they heard from health worker.

The study revealed that level of hypothyroidism and iodine deficiency at Hargeisa group hospital is medium. Especially pregnancy women are susceptible because of increased demand of iodine so there is high risk of developing hypothyroidism.
The study revealed that, the level of iodine deficiency at Hargeisa group hospital is medium. because of most of pregnancy women don’t consume iodinated salt and the foods that known to be rich iodine.
This study revealed that, there was a significant and positive relationship The Relationship between hypothyroidism and iodine deficiency in Hargeisa group hospital in Hargeisa Somaliland.

5.4 Recommendation

1. I would Recommend to conducted Further research
2. in my recommendation The ordering clinician should include evidence in the patient’s clinical record that an evaluation of history and physical findings preceded the ordering of thyroid function
3. Proper evaluation of the use of appropriate tests in order to confirm a suspected clinical diagnosis before and after administration patient
4. Evaluation of the use of appropriate tests by clinicians within the public and private sector. This eliminates the use of a database, which may restrict the researcher with regard to the analysis of the data.
5. Proper follow up for the pregnancy women.
6. To encourage pregnancy women to have a close link to the hospital or Maternal and child health.
7. To have health education about nutrition of pregnancy women.
8. As my study indicated the prevalence of hypothyroidism increasing so I recommend to educated, treat and prevent the accidence of hypothyroidism among pregnant women.