

## Hypothyroidism and its Impact on General Mental Health, Body Image Satisfaction and Aggression in Males and Females: A Comparative Study

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Accepted 10 June 2016, Available online 14 June 2016, Vol.4 (May/June 2016 issue)

### Abstract

**Background:** Hypothyroidism is an insidious condition with a significant morbidity and often subtle and non specific symptoms and clinical signs. From over a decade, various research studies have shown a link between disturbed thyroid levels and mental illness. Thyroid related illnesses are more common in females as compared to males.

**Aim:** The aim of the study was to see whether hypothyroidism has any relation with general mental health, body image satisfaction and aggression in males and females.

**Method:** Participants were 60 patients (30 males and 30 females) from Rajasthan, India, in the age range of 35 -70 years, with no medical illness other than hypothyroidism. They gave their consent to participate in the study. General mental health was assessed using the general health questionnaire (by Goldberg & Williams, 1988), body image satisfaction through Body Areas Satisfaction Scale (BASS by Cash, 2000; Brown, Cash & Mikulka,1990) and aggression through aggression questionnaire by (Buss & Warren, 2000). Sample was purposive and the data were collected in individual situations.

**Results:** There was difference between male and female patients with regard to general mental health, body image satisfaction and aggression, however the results were significant on the dimension of body image satisfaction and aggression, where female patients had significantly more body image dissatisfaction than that of male patients ( $t = 4.34, p = .01$ ) and male patients had more aggression compared to female patients ( $t = 2.28, p = .01$ ). With regard to correlation between hypothyroidism, general mental health, body image satisfaction and aggression, there was significant inverse correlation between hypothyroidism and general mental health ( $r = -.78$ ) and body image satisfaction ( $r = -.54$ ) and significant positive correlation between hypothyroidism and aggression ( $r = .14$ ).

**Conclusion:** It can be concluded that hypothyroidism has an impact on the mental health of individuals, therefore doctors should provide adequate care to the individuals showing signs of disturbed mood, irritability and anger and also psychiatrists should not neglect the dissatisfaction displayed by patients towards their bodies while undergoing psychiatric treatment and both the professionals should try to find the underlying reasons for the various issues raised by their patients and should provide them the much needed support and adequate guidance. However, due to the small sample size the result findings cannot be generalized.

**Keywords:** Hypothyroidism, Mental health, Body image satisfaction and Aggression

### Introduction

The burden created by thyroid disease in the general population is massive. Thyroid disorders are the most common among all the endocrine diseases in India. There is not sufficient data regarding the prevalence of hypothyroidism in India (Kochupillai, 2000).

**Hypothyroidism:** It is a disorder that occurs when the thyroid gland produces less thyroid hormone as compared to the body's needs. This hormone helps in regulating metabolism and the way the body uses energy and has an affect nearly on every organ in the body. Without enough thyroid hormone, many of the body's

functions slow down (Golden, 2009). It is much more common in women who are older than 60 years of age, though even younger individuals also have an increased likelihood of having it. The symptoms of this are varied such as fatigue, sluggishness, intolerance to cold, weight gain, constipation, muscle or joint pain, thin and brittle hair or fingernails, reduced sexual drive, high blood pressure, high cholesterol, and slowed heart rate.

**Hypothyroidism and Mental health:** It is not new that hypothyroidism has an impact on the mental health of individuals and slowly the rising interest in this domain is due to the association between thyroid deficiency and its impact on cognitive and emotional disturbances, and

various research studies have shown that thyroid hormones may be useful in the treatment of depression (Begin et. al, 2008). That is the reason before prescribing anti depressants psychiatrists suggests the patients to get the thyroid levels assessed, so that instead to starting them on anti-depressant doses their mood disturbances can be simply managed with the help of drugs stimulating the level of thyroxin.

**Hypothyroidism and Body image satisfaction:** Body image refers to perceptions, feelings and thoughts related to one’s physical appearance. It involves a self perception which is comprised of both subjective evaluations and perceptive experiences which is based partly on the reactions of others.

Women suffering from PCOD have high levels of TSH and subclinical underlying hypothyroidism. (Janssen, 2004). And medical professionals believe that thyroid health has an intense impact on the pathology of PCOS, affecting all aspects of the disorder, also increased weight gain in females which over all impacts their sense of perfect body images.

**Hypothyroidism and behavioral problems:** Researches over a period of time in have shown a link between low levels of thyroid hormone and behavioral problems manifested through aggression, irritability and hostility.

**Methods**

**Aim:** The aim of the study was to see whether hypothyroidism has any relation with general mental health, body image satisfaction and aggression in males and females.

**Hypotheses**

**H1:** There would be a significant difference between male and female hypothyroidism patients on general mental health, body image satisfaction and aggression.

**H2:** Hypothyroidism would have an inverse correlation with general mental health and body image satisfaction.

**H3:** Hypothyroidism would have significant correlation with aggression.

**Research design and variables:** Two groups research design was used for the study. Independent variable of the study was Hypothyroidism and the dependent variables of the study were general mental health, body image satisfaction and aggression.

**Sample and sampling:** Purposive sample consisted of 60 patients (30 males and 30 females) who filled the informed consent form to participate in the study. Their age range was 35-70 years. The participants had no history of any psychiatric and medical illness other than hypothyroidism. Participants who were not fluent in English or Hindi were excluded from the study. The data was collected from Rajasthan, India.

**Tools used in the study**

**Personal data sheet:** To record relevant personal information on of the participants. Informed Consent: To get willingness to participate in the study.

**General health questionnaire:** (GHQ by Goldberg & Williams, 1988). The General Health Questionnaire (GHQ) is a self- administered screening questionnaire, designed for use in consulting settings aimed at detecting individuals with a diagnosable psychiatric disorder (Goldberg & Hillier, 1979). It consists of 12 items, each one assessing the severity of a mental problem over the past few weeks using a 4-point Likert-type scale (from 0 to 3). The score is used to generate a total score ranging from 0 to 36. The positive items are corrected from 0 (*always*) to 3 (*never*) and the negative ones from 3 (*always*) to 0 (*never*). High scores indicate worse health.

**Body image satisfaction:** (BASS by Cash, 2000; Brown, Cash & Mikulka, 1990). The 9-item Body Areas Satisfaction Scale (BASS) uses 5-point scale ratings of one’s usual dissatisfaction–satisfaction with aspects of one’s body. The test retest reliability of the scale ( $r = .86$ ); the convergent and discrimination validity of the scale ( $r = .34$ ).

**Aggression:** It was assessed using the aggression questionnaire (Buss & Warren, 2000) the 34-item AQ measures a respondent's self-perceived levels of aggression and anger, it is a revised version of the Buss-Durkee Hostility Inventory (BDHI; Buss & Durkee, 1957). The reliability (coefficient alpha) is  $r = .94$ .

**Results and Discussion**

As the hypotheses were guiding force for analysis of the data, results are displayed and discussed according to them.

**H1:** Difference between male and female hypothyroidism patients on general mental health, body image satisfaction and aggression.

**Table No.1:** Difference (t- Test) between male and female hypothyroidism patients for General mental health, body image satisfaction and aggression (N= 60)

	Groups	Mean	S.d.	T- test
General Mental health	Male	11.13	3.71	.029
	Female	11.16	5.07	
Body image satisfaction	Male	45.10	9.93	4.34**
	Female	55.03	7.64	
Aggression	Male	86.23	24.83	2.28**
	Female	71.40	25.48	

Analysis revealed that female patients had slightly higher impact on their mental health ( $11.16 \pm 5.07$ ) than that of male patients ( $11.13 \pm 3.71$ ), difference between these

two groups was not significant ( $t = .029$ ); female patients had more body image dissatisfaction ( $55.03 \pm 7.64$ ) than that of male patients ( $45.10 \pm 9.93$ ), difference between these two groups was significant ( $t = 4.34, p = .01$ ); female patients had scored low on aggression ( $71.40 \pm 25.48$ ) than their male counterpart ( $86.23 \pm 24.83$ ), difference between these two groups was also significant ( $t = 2.28, p = .01$ ) as shown in table no.1.

**H2:** Hypothyroidism would have an inverse correlation with general mental health and body image satisfaction. After seeing the table number 2 we can clearly state that our hypothesis stating inverse correlation between hypothyroidism and mental health and body image satisfaction has been proved, there is a significant inverse correlation between low thyroid and general mental health ( $r = -.78$ ) and body image satisfaction ( $r = -.54$ ). Various studies have shown a link between low thyroid levels and poor mental health manifested through low mood, mood swings, irritability and anxiety (Placidi et al, 1998). Researchers have indicated that women who suffer from Polycystic Ovarian Syndrome (who tend to be more obese due to an increase of different hormones such as TSH, throughout their bodies due to the syndrome) also show lower body dissatisfaction and higher depression (Himelein & Thatcher, 2006), hence providing support to our findings which indicate higher body image dissatisfaction in females as compared to males because due to various underlying illnesses caused by hypothyroidism brings greater changes in the body's of females, thus creating greater dissatisfaction in them.

**Table 2:** Correlation of Hypothyroidism with General mental health, Body image satisfaction and Aggression in Males and Females (N=60)

Hypothyroidism	General Mental health	Body image satisfaction	Aggression
	<b>-.78**</b>	<b>-.54**</b>	<b>.14**</b>

**H3:** Hypothyroidism would have significant correlation with aggression.

So far various researches that have been conducted regarding the role of hypothyroidism and its impact on aggression has been for animals where researchers have shown hypothyroid disease related aggression in dogs (Beaver and Haug, 2003 & Fatjo, 2003) and scarce researches linking hypothyroidism to aggression in humans, hence even in the present study we can see that the findings clearly indicate positive relation between hypothyroidism and aggression for males and females ( $r = .14$ ) as can be seen from table no. 2, though this is very low relation, indicating this aggressive behavior caused due to low thyroid levels may not be applicable to humans specifically.

**Conclusion**

1. In this study female patients had significantly more body image dissatisfaction than that of male patients.
2. Results indicated that hypothyroidism was inversely correlated with general mental health and body image satisfaction.
3. Thus, this study can lend support to the growing body of work indicating that we should perhaps take seriously the relation between hormone imbalance disorders and its impact on the mental health of individuals. Further, it can provide a starting point for identifying specific underlying behaviors associated with one or the other medical or psychiatric illness. Hence keeping in mind these few crucial findings we can create individuals with better mental and physical healths.

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