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BODY-DISSATISFACTION AS A MEDIATOR BETWEEN FRUSTRATION TOLERANCE LEVEL AND RELATIONSHIP QUALITY AMONG WOMEN WITH THYROID DISEASE

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Article Info

Abstract

This study aimed to explore the mediating role of body-dissatisfaction between frustration tolerance and relationship quality among women suffering from thyroid disease. The data involved the sample of 130 married women diagnosed with thyroid disease, collected from private hospitals through purposive sampling. Data collection was carried out by using three measuring tools i.e., Level of Frustration Tolerance Scale (Rahman & Dawood, 2009), The body Image Psychological Inflexibility Scale (Callaghan et al., 2014) and Urdu adapted Dyadic Adjustment Scale (Naeem et al., 2021). Correlational cross-sectional research design was employed. The findings revealed moderately significant and negative correlation ($r = -0.26$, $p = 0.01$) between frustration tolerance and body-dissatisfaction, and between body-dissatisfaction and relationship quality ($r = -0.24$, $p = 0.01$). Hierarchical analysis indicated that body dissatisfaction contributes 7% variance to relationship quality. Body dissatisfaction is a significant predictor, indicating higher body dissatisfaction associated with lower relationship quality. This study will help to create greater focus on body image concerns in women struggling with thyroid disease. While employing multidimensional approach, healthcare providers can incorporate strategies to address body image concerns into treatment plan of thyroid disorders, while involving clinical psychologists and couple/marital counselors.

Keywords:

Body dissatisfaction, frustration tolerance, healthcare, relationship quality, thyroid disease.

Introduction

Health psychologists believe that health is the result of psychological (thinking and believing), behavioral (habits), and social (socioeconomic) processes in addition to biological ones (virus, tumor, autoimmune disorders etc.) (Ogden, 2012). Health psychology also deals with how physical illnesses contribute to psychological illnesses, what can be the consequences of illness and how different domains like social, mental can get affected through it. The long-term prevalence of any physical illness can cause stress, anxiety, anger or can affect any other mental condition. It can also affect mood and can alter the tolerance level due to constant stress. Frustration can be one of the most common things to happen due to any illness. Health-related quality of life (HRQL) focuses on the impact of health on a person's ability to live a fulfilling life. HRQL represents a broad concept of physical, psychological with social functioning and well-being that includes both positive and negative aspects. Different auto-immune diseases cause different impacts on psychological factors. Mental health might suffer greatly from having an autoimmune disease. Feelings of frustration, helplessness, and sadness might result from the pain, excessive exhaustion, and possible limitations that are linked to these illnesses. Coping with erratic, frequently chronic symptoms and the difficulties of day-to-day living can be quite challenging. Over half of those who have an autoimmune disease also experience anxiety and sadness (Sloan et al., 2023).

The most common organ-specific autoimmune disease (AD) is autoimmune thyroid disease (AITD), which affects 2–5% of people (Simmonds & Gough, 2004) and varies greatly by gender (men 1–5% and women 5–15%, respectively) (Simmonds & Gough, 2004). Hashimoto Thyroiditis (HT) and Graves' Disease (GD) are two examples of AITD, yet the primary causes of hypothyroidism and hyperthyroidism. They both exhibit loss of immunological tolerance and a humoral and cell immune response to thyroid gland antigens, including reactive T and B cell infiltration, autoantibody production, and the subsequent emergence of clinical symptoms (Tomer & Davies, 2003).

As discussed above that health psychology deals with psychological effects of physical illness, taking in account the thyroid disease, it was seen that emotional distress is frequently caused by the chronic nature of thyroid illness. The psychological effects of thyroid like increased anxiety about one's health, fear of gaining or losing weight, and worries about the social interactions are all common among women and are major contributing causes to depression. Social isolation in extreme cases can also be the cause of thyroid disorder as people having it may avoid social situations or gatherings because of the stigma attached to obvious symptoms (e.g., weight fluctuations, facial hair growth), which contributes to depressive and lonely feelings (Rzeszutek et al., 2023).

Thyroid disease and other autoimmune diseases can significantly impact HRQL through a number of mechanisms. Physical signs and symptoms, symptoms of thyroid issues may include muscle weakness, weight fluctuations, and exhaustion. These physical symptoms can make it difficult to carry out everyday tasks, which lowers physical functioning overall hence lowering HRQL (Yin et al., 2016). Autoimmune disorders' chronic nature may exacerbate psychological suffering. Concerns about body image and varying health state can cause anxiety or sadness in patients, especially in disorders like hypothyroidism or hyperthyroidism where weight fluctuations are common. By affecting social interactions and mental health, this emotional load might further lower HRQL (Kilpela et al., 2023).

Interpersonal connections also get affected by autoimmune illnesses because of the unpredictable nature of symptoms. There can be impairment in ability to focus and decision making, commonly termed as brain fog due to cognitive disturbance experienced by some people. This cognitive impairment can further lead to a lower quality of life by influencing interpersonal/partner interactions and the occupational performance both significantly (Kilpela et al., 2023).

Thyroid is a small, and an important gland in the neck region that allows the human body to maintain the digestion and heart rate. Thyroid organ releases the hormones that can control metabolisms such as body temperature and the heart rate. It produces the two important hormones, T4 (thyroxine) and T3 (triiodothyronine). When your thyroid makes either too much (hyperthyroidism) or too little (hypothyroidism) of these important hormones, it's called a thyroid disease (Armstrong et al., 2023). Hypothyroidism is characterized by several body changes e.g. weight gain, fatigue, cold-intolerance, dry skin and hair, swelling and muscle weaknesses. According to a study hypothyroidism was more common in older women than in younger women and was 10 times more common in women than men. In general, hypothyroidism can affect 4% to 10% of women, increasing with age. Women are more likely than men to experience it. Although it can happen at any age, persons over 60 are more likely to experience it (Hage & Azar, 2012). Similarly, in hyperthyroidism results in weight loss despite increased appetite, increased heart rate, menstrual irregularities, heat intolerance. According to research, thyroid disease affects the serotonin and noradrenaline level in the body that can affect the mental health altering cognitions resulting in depression and anxiety. However, studies also indicate that up to 69% of individuals with hyperthyroidism may also suffer from depression (Hage & Azar, 2012).

According to American Thyroid Association (ATA, 2022), One in eighth women develop thyroid problems lifetime. One of the reasons for women having high ratio of this disease is that there is interplay between thyroid hormone and hormones that fluctuates during menstrual cycle. Most of the women develop thyroid disease after the menopause. This type of hormonal imbalance can produce certain psychological effects. One of the main psychological effects that can be produced by thyroid dysfunction can be body-dissatisfaction. Weight loss and weight gain and certain other symptoms of hypo and hyperthyroidism can lead a woman to body dissatisfaction (Wilson, 2021; Ross et al., 2016).

Body dissatisfaction is usually referred as holding of the negative thoughts or feelings about one's body image. People who were dissatisfied with their body typically express discrepancy between real and ideal body image. Body dissatisfaction and negative body image can be common psychological aspects that women can face due to thyroid dysfunction, later affecting the relationship quality (Heider et al., 2018). The Body image difficulties lie on a range from body image dissatisfaction (e.g., one being dissatisfied with one's weight) to the body image disturbance (e.g., being unable to leave the house due to the distress experienced over the shape of one's nose) (Cash & Smolak, 2011). Studies support that an individual's weight positively correlate with the relationship satisfaction in men, but negatively correlated with satisfaction in women (Sheets & Ajmere, 2005).

Frustration tolerance can be defined as the form of behavioral control and is related to, but is distinct from, regulating frustration as in frustration tolerance you handle frustration without getting upset on it while in frustration regulation you find ways to make feeling frustration less intense. In other words, frustration tolerance entails the withstanding of frustration, no matter how much frustration is being experienced

while frustration regulation involves reducing the experience of frustration (Meindl et al. 2019). Frustration involves threat to the personality, lowers the self-esteem, making one feel frustrated and unsafe (Maslow & Mittleman, 1946).

Relationship quality involves assessment of various aspects of a relationship to determine its overall health, satisfaction, and functioning. It can be subjective or depends on one's own perspective and may vary based on individual's preferences and perceptions. Level of communication is also one of the factors to measure in relationship quality that is to what extent person feels comfortable sharing thoughts with other or communicating about different things (Crane et al., 2000). Interpersonal relations can get influence due to power of emotions. As it can create a ripple effect on both partners' emotional experiences and behaviors. As person's reaction of emotions can be due to his partner's emotional experience, this creates a reciprocal cycle of emotional interaction that can either heighten or regulate the emotional climate between partners (Feeney & Fitzgerald, 2019).

The biopsychosocial model contends that psychological and social aspects should be taken in account in addition to biological ones while attempting to comprehend the person's medical state. Biological factors include pathology of body, psychological includes thoughts, feelings and behavior, beliefs, psychological discomfort and coping mechanisms. While social factors include socioeconomical, socioenvironmental and cultural elements (family system, peer pressure, cultural norms). All these factors are interconnected and impacts each other in various ways (Engel, 1977). In the present study, the psychological, social and biological factors of thyroid disease are measured as how they interplay their roles in a woman's life. Hence, the hypotheses revolve to measure the positive and mediating role of body-dissatisfaction between the level of frustration tolerance and relationship quality of women with thyroid disease.

Methods

Correlational cross-sectional research design was used to investigate the relationship among the study variables with purposive sampling technique. The sample consists of 130 (N=130) married (at least for 1 year) women with minimum qualification level of matric and diagnosed with thyroid disease for more than five years. Along with the demographic sheet for basic socio-demographic information, The Body Image Psychological Inflexibility Scale (Callaghan et al., 2014) was used that consists of 16 items with 4 points Likert scale with (α¼=0.93), a single factor solution, convergent validity, and test re-test reliability (r¼=0.90). This scale was developed in 2014 and was translated in Urdu to be used in the present study with all due protocols.

Level of Frustration Tolerance Scale was originally translated and adapted by Rahman and Dawood in 2009 and it is part of symptom checklist revised, comprised of 24 items with 5 points Likert Scale. This scale has promising reliability (α = 0.81) and validity index (r= 0.68).

Dyadic Adjustment Scale (Naeem et al., 2021) includes only 14 items, with 5 or 6 points Likert scale. The cut-off score for the RDAS is 48 such that scores of 48 and above indicate non-distress and scores of 47 and below indicate marital/relationship distress. The RDAS has been found to have a Cronbach's alpha (reliability) of .90. correlation between the RDAS and the original Dyadic Adjustment Scale (DAS) was .97 ($p < .01$).

Procedure

All the ethical consideration had been followed throughout the study conduction. Permission from the concerned scale developers were obtained and The Body Image Psychological Inflexibility Scale was translated and back translated as per rules in order to synchronize all the scales in one language and to get fair data from the study participants. Due to ongoing strict policy of government hospitals' ban on data collection, only private hospitals and consultant endocrinologists and gynecologists could be contacted to recruit willing participants for the research. One hundred and thirty women with thyroid disease were selected for data collection through purposive sampling technique, with debriefing and assurance of the confidentiality. All the responses were entered and analyzed through SPSS 24 version.

Results

The socio-demographics in table 1 describes a group of married women with an average age of 42 years and 50% of them are graduated. On average, they have 3 children and 60% of them live in nuclear family. In terms of thyroid condition 54% have hypothyroidism and 46% have hyperthyroidism. On average they have been diagnosed for 5 to 15 years.

Table 1: Sociodemographics of the study participants (N=130)

Variables		f(%)	M(SD)
Age			42(10.4)
Education			
	Matric	53(40.8%)	
	Bachelors	65(50%)	
	Masters	12(9%)	
Years of Marriage			17.3(10.7)
	1-10	47(36%)	
	11-20	29(22.4%)	
	21-30	41(31.5)	
	31-40	9(6.9%)	
	41-50	4(3.2%)	
Number of children			3.05(1.56)
	0-5	124(95.4%)	
	6-10	6(4.6%)	
Family System			
	Nuclear	78(60%)	
	Joint	52(40%)	
Type of thyroid			
	Hyper-thyroidism	60(46.2%)	
	Hypo-thyroidism	70(53.8%)	
Years of diagnosis			11(5.59)
	5-15	102(78.6%)	
	16-25	25(19.1%)	

26-35	3(2.3%)	

The following table 2 shows all the reliability indexes of the study measures above the satisfactory cutoff i.e., 0.70.

Table 2. Reliability Indexes of the study scales

Constructs	k	α
LFT	24	0.70
BIPIS	16	0.82
DAS	14	0.75

Note. k= no. of items; α= Cronbach Alpha; LFT = Level of Frustration Tolerance; BIPIS = Body Image Psychological; Inflexibility Scale; DAS = Dyadic Adjustment Relation Quality Scale

Results in table 3 shows that there is significant negative correlation between frustration tolerance and body-dissatisfaction and there is significant negative correlation between body-dissatisfaction and relationship quality which means if one variable increases, the other tend to decrease. However, the relationship between frustration tolerance and relationship quality is non-significant.

Table 3. Correlation between the study variables

Variables	M	SD	1	2	3
LFT	54.61	10.80	_		
BIPIS	57.53	17.49	-.26**	_	
DAS	44.40	9.40	-.04	-.24**	-

Note. M= Mean, SD= Standard Deviation; ** Correlation is significant at the 0.01 level (2-tailed); LFT = Level of Frustration Tolerance; BIPIS = Body Image Psychological Inflexibility Scale; DAS = Dyadic Adjustment Relation Quality Scale

Table 4. Direct Effect for Frustration Tolerance, Body Dissatisfaction and Relationship Quality for Women with Thyroid Disease (N=130)

Predictor	Mediator		Outcome Variable	
	Body Dissatisfaction		Relationship Quality	
	β	SE	β	SE
Frustration Tolerance	-0.42*	0.14	-0.098	0.08
Body Dissatisfaction			-0.15	0.05
Covariates				
Total R^2	.069***		.070***	

**p<0.05, **p<0.01, ***p<0.001*

Table 5 : Indirect Effect for Frustration Tolerance, Body Dissatisfaction and Relationship Quality for Women with Thyroid Disease (N=130)

Predictor	Relationship Quality	
Frustration Tolerance	β	SE
	.062	.031

**p<0.05, **p<0.01, ***p<0.001*

The mediation analysis revealed that frustration tolerance predicts the body dissatisfaction significantly (β= -0.42, $p < 0.05$), indicating higher frustration tolerance associated with lower body dissatisfaction. However, the effect of frustration tolerance and relationship quality is not statistically significant (β = -0.09, $p > 0.05$). Body dissatisfaction have significant effect on relationship quality (β = -0.15, $p < 0.05$) suggesting greater body dissatisfaction is linked to poor relationship quality. Furthermore, the indirect effect of Frustration tolerance on relationship through body dissatisfaction is significant (β = 0.06, $p < 0.05$) indicating the frustration tolerance indirectly influences relationship quality by affecting body dissatisfaction. The total R^2 for the models of both body dissatisfaction and relationship quality were significant (0.069 & 0.070, $p < 0.001$), explaining a modest amount of variance in these outcomes.

Discussion

The objective of the study was to evaluate the complex association of frustration tolerance with body dissatisfaction and relationship quality in women suffering from thyroid disease. Taking into consideration the psychological effects among this particular group, a hypothesis was proposed that body dissatisfaction may mediate between frustration tolerance and the relationship quality of women patients.

To validate the measures that were used, each scale underwent a reliability analysis. The Level of Frustration Tolerance Scale contains 24 items and it had an acceptable reliability coefficient by Cronbach's alpha which is at 0.70. This shows that the scale is quite reliable to be able to measure the frustration tolerance among the participants consistently. The BIPIS is a 16item measure, with high reliability, as measured by Cronbach's alpha, at 0.82. The RDAS, consisting of 14 items, had moderate reliability, with an alpha of 0.75.

The study ends with further significant discoveries. Out of these discoveries, most are negative correlations between the critical variables of interest. The analysis of Pearson correlation, however, revealed a highly negative significant correlation between frustration tolerance and body dissatisfaction ($r = -0.26$, $p < 0.01$), signifying that the person's level of body dissatisfaction decreases as the level of tolerance toward frustration increases. A similar significant negative correlation was found between body dissatisfaction and relationship quality, where higher levels of body dissatisfaction correlate with lower relationship quality, $r = -0.24$, $p < 0.01$. These findings suggest that the enhancement of frustration tolerance leads to better perceptions of body image, which may in turn have positive effects on relationship satisfaction.

Hierarchical regression showed the impact of frustration tolerance and body dissatisfaction on relationship quality. The Step 1 examined the relationship between frustration tolerance and relationship quality, resulting in R^2 of 0.002, which means that frustration tolerance alone explains only 0.2% variance in

relationship quality. The coefficient for frustration tolerance is (0.037) which is not statistically significant. As the confidence interval (-1.89, 0.115) includes zero, it indicates the weak nonsignificant association. In Step 2, body dissatisfaction was added to model, increasing the R^2 to 0.070 with a ΔR^2 of 0.068 and it indicated that body dissatisfaction contributes in addition of 7% variance. The coefficient for body dissatisfaction (-1.45) is significant and confidence interval (-0.24, -0.05) not includes zero, suggesting the negative significant relation with relationship quality (outcome variable). Body dissatisfaction resulted as a significant predictor, indicating the higher body dissatisfaction is associated with lower relationship quality. Hence all of these findings support our hypothesis that body dissatisfaction has mediating role between frustration tolerance and relationship quality and there exists a negative correlation between both body-dissatisfaction and frustration tolerance, body dissatisfaction and relationship quality.

This means that indirectly, frustration tolerance affects the quality of relationships through its effect on body dissatisfaction. These findings highlight how psychological and relational domains are intertwined, especially in people dealing with long-term health conditions. The mediation hypothesis itself was further supported by findings of regression analysis in support of the predicted roles of both body dissatisfaction and frustration tolerance for relationship quality. The quality of a relationship was significantly predicted by body dissatisfaction, and frustration tolerance was a significant predictor of body dissatisfaction. However, the direct impact of frustration tolerance on relationship quality diminished when the two predictors were used within the model so as to validate the mediation function of body dissatisfaction. Such discoveries hold very good clinical implications. They suggest that interventions aimed at reducing body dissatisfaction and enhancing frustration tolerance may significantly enhance the quality of relationships among women with thyroid disease.

Women suffering from thyroid disease, whose physiological changes often lead to a change in body image, are especially vulnerable to body dissatisfaction. The results of this study are in line with previous research that stresses the negative effects of body dissatisfaction on relationships and mental health. Weight fluctuations, exhaustion, and other bodily changes are common in women suffering from thyroid problems, and they can make feelings of inadequacy about their looks worse. High body dissatisfaction levels have been found to be related to lower self-esteem and increased emotional discomfort, both of which may negatively affect relationship functioning and satisfaction. At the same time, due to cross-sectional design, causality will be more challenging to establish in the study. Future work should be longitudinal and study those relationships over time to consider the efficacy of focused treatments.

Conclusion

Research on body dissatisfaction as a mediator between relationship quality and frustration tolerance in women with thyroid disease yields important results that advance our knowledge of the psychological and relational dynamics of this population. The study found a strong link between relationship quality, frustration tolerance, and body dissatisfaction. In particular, it was discovered that higher levels of body dissatisfaction are linked to poorer frustration tolerance, which consequently has a detrimental effect on the quality of relationships. Future research should further explore these relationships across diverse populations to validate these findings and expand on effective therapeutic strategies.

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