Original Article

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Effect of a Nurse Led Multi-intervention Program on Quality of Life, Subjective Well-being and Level of Thyroid Hormones among Patients with Hypothyroidism- A Quasi-experimental Double arm Study

Nursing Section

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ABSTRACT

Introduction: Hypothyroidism is a leading public health concern, affecting one in ten Indians. Along with conventional treatment with supplemental Thyroid Hormones (TH), problems associated with hypothyroidism can be managed with complimentary nursing interventions.

Aim: To assess the effect of a nurse-led multi-interventional program on Quality of Life (QoL), Subjective Well-Being (SWB) and level of TH among patients with hypothyroidism.

Materials and Methods: A quasi-experimental double arm study was conducted from August to October 2021, at selected endocrinology clinics on patients with hypothyroidism were divided into interventional (n=39) and control group (n=38) non randomly. Information related to socio-demography, QoL, SWB and TH levels were collected and followed by the implementation of a nurse-led multi-intervention program for the intervention group. The intervention was done individually, which consisted of a demonstration of yoga asana, yoga mudra and neck exercises. Two-way repeated measures Analysis of Variance (ANOVA) was performed, to check if there is any significant difference in the average QoL/SWB/level of TH across different time points as well as between the experimental and control group.

Results: A total of 77 participants, 64 (83.1%) males and 13 (16.9%) females were included in the study with maximum participants belonged to the age group of 18-28 years. It was observed that after the implementation of multi-intervention program QoL was significantly improved among the experimental group (F=31.53, <0.001), and SWB also significantly improved (F=36.615, <0.001). Thyroid Stimulating Hormones (TSH) were significantly reduced among the experimental group (F=3.39, p=0.022) and Thyroxine (T4) levels were statistically significant among the experimental group (F=3.151, p=0.030).

Conclusion: Patients with hypothyroidism require holistic care. Patients with hypothyroidism could be intervened with programs like yoga, neck exercise, pranayama and yoga mudras.

Keywords: Pranayama, Thyroid stimulating hormone, Yoga

INTRODUCTION

Hypothyroidism is a chronic disease, where there is insufficient production of Thyroid Hormones (TH) namely Thyroxine (T4) and Triiodothyronine (T3). Iodine deficiency was regarded as the leading cause of hypothyroidism worldwide. In areas, where iodine deficiency is sufficient, autoimmunity is the cause of hypothyroidism with a further estimated 5% being undiagnosed [1]. Over 99% of affected patients suffer from primary hypothyroidism. Worldwide, environmental iodine deficiency is the most common cause of all thyroid disorders, including hypothyroidism, but in areas of iodine sufficiency, Hashimoto's disease (chronic autoimmune thyroiditis).

Nearly one-third of the world population lives in iodine-deficient areas [2]. Hypothyroidism is more common among older women and 10 times more among them when compared to their counterparts [2]. It is estimated that in India nearly 42 million people suffer from thyroid diseases [3]. Patients with primary hypothyroidism, who were treated with levothyroxine still complain of a reduced Quality of Life (QoL), despite serum TH levels being within the normal range [4,5].

While caring for patients with chronic illness, the holistic aspects of health have to be given due significance. For a disease like hypothyroidism where the QoL is significantly impaired, nurses and other healthcare workers have to seek alternative therapies along with traditional treatment. It includes measures like yoga, meditation, and different breathing exercises (for e.g., pranayama). QoL and holism are related. The concept of holistic health includes both modern and alternate treatment methods. Holistic health utilises the potential benefits of alternative and complementary treatment and it benefits both patient and practitioner [6].

The present study explored the effect of a multi-intervention program based on different alternative treatment strategies on QoL, Subjective Well-Being (SWB) and TH levels among patients with hypothyroidism.

MATERIALS AND METHODS

A quasi-experimental double arm study was conducted at selected two endocrinology clinics namely Delmon Clinic, Thalassery and Leo Polyclinic Kannur, India) from August to October 2021. The study was registered in Clinical Trials Registry-India (CTRI) (CTRI/2021/07/034732). All the participants consent was obtained.

Inclusion criteria: Participants were adults above the age of 18 years who were diagnosed to have hypothyroidism and were on treatment from selected endocrinology clinics, willing for follow-up at prescheduled time period and participants on stable dose of eltroxin. (the dose of eltroxin varies from patient to patient. But those patient with a stable dose, for example if they are taking eltroxine 50 micro gram for the last one year, it is a stable dose).

Exclusion criteria: Pregnant women or participants who can not comprehend regional language were excluded.

Sample size calculation: Sample size was done using the formula:

$$N=\frac{Z^2P(1-P)}{d^2}$$

Where, Z- level of confidence, P Prevalence (previous study), d - Precision, Here Z=1.96, P=11% [7], d=0.08, hence minimum recommended N came out to be 58, a total sample of 80 participants were recruited initially.

Non random allocation had been used in the present study, as contamination among two groups could not be controlled, since the participants are from general population. The participants were recruited by convenience sampling technique.

Study Procedure

A total of 40 participants were recruited initially in the control group. Attrition of two participants occurred as the study progressed. So, a total of 38 participants were included in the control group. The medical records were scrutinised and baseline information of the participants was noted down by the investigators and then QoL and SWB was assessed. The similar process was implemented in experimental group also. A total of 40 participants were recruited initially and one participant could not be followed-up. Hence, experimental group constituted 39 participants. The nurse led intervention was carried out after the initial observation for experimental group.

The outcome variables included in the study were socio-demographic variables, contributing factors of hypothyroidism, QoL, SWB and level of TH Levels. All the outcome variables were measured at baseline and after one, two and three months.

Biochemical variables: Thyroid hormones namely TSH and T4 was assessed from participants' medical record. Baseline biochemical variables were noted from the medical record and then, they were assessed after one month, two months and three months, respectively.

Quality of Life (QoL): The QoL was assessed using Thyroid-specific Patient-Reported Outcome (ThyPRO)-39 questionnaire. The questionnaire, ThyPRO 39 was developed by Torquil Watt, Copenhagen University, Denmark in 2011 [8]. The permission was obtained to translate and use the tool in regional language. The reliability of translated tool was calculated after administering the tool to 30 clients with hypothyroidism and was found to be 0.85. The scoring of ThyPRO questionnaire was done as a summary of all 13 items and transformed to range of 0-100. The increasing scores indicate decreasing QoL. Baseline QoL score was obtained from each participant. Then they were assessed after one month, two months and three months respectively.

Subjective well-being: The SWB was assessed by Subjective well-being Inventory (SUBI) questionnaire developed by World Health Organisation (WHO) South East region. SUBI questionnaire consists of 11 items [9]. The permission was obtained to use the tool and was translated to regional language. The scoring of SUBI is done by attributing the values 3, 2, and 1 to response categories of the positive items, and 1, 2 and 3 to the negative items. The total scores can be interpreted summarily in the light of three broad score ranges: 40-60, 61-80 and 81-120 to have an overall picture of the well-being status. The increasing scores indicate decreasing SWB. The baseline SWB score was obtained from each participant. Then they were assessed after one month, two months and three months respectively.

Contributing factors: A thorough review of literature was conducted to identify the contributing factors of hypothyroidism. The review identified too much or too little iodine, use of plastics, injudicious use of pesticides, goitrogens, autoimmunity, contaminated drinking water, gender as some of the contributing factors of hypothyroidism [10]. Contributing factors of hypothyroidism was obtained using a rating scale which was prepared by the investigators. It consists of items related to iodine intake, use of plastics, exposure to pesticides, exposure to contaminated water and goitrogens. The data was collected from each participant.

Intervention: The intervention provided was nurse led multi-intervention programme. The intervention was given to experimental group on individual basis. For the control group the routine care, namely, thyroid supplementation was carried out. Nurse led multi-intervention programmes activities are depicted in [Table/Fig-1].

Practices	Description
Asanas	Sarvaangasana (Shoulder stand pose), Bhujangasana (Cobra pose), Sethubhandhasana (Bridge pose). These asanas were taught to the participants and were instructed to practice daily once for three months.
Surya namaskara	Consists of series of asanas and breathing control practices and was demonstrated to each participant. Participants were instructed to practice daily once for three months.
Yoga mudra	Suryamudra was demonstrated and was instructed to practice 15 minutes daily for three months.
Pranayama	Ujjayi pranayama was taught and was instructed to practice for 15 minutes daily once for three months.
Neck exercise	Flexion, hyperextension, inversion and eversion and rotation of neck was demonstrated and instructed to practice at bed time daily for three months.
Information booklet	It is a booklet contains basic information regarding hypothyroidism, its contributing factors and treatment strategies.

[Table/Fig-1]: Nurse led multi-intervention programme.

STATISTICAL ANALYSIS

All the categorical variables are summarised using frequency and percentage. Continuous variables were summarised using mean and Standard Deviation (SD), if data follows normality assumption else, using median and IQR (Q1, Q3). Kolmogorov-Smirnov test and Shapiro test were used to check the normality of the data. Two-way repeated measures Analysis of Variance (ANOVA) was performed, to check if there is any significant difference in the average QoL/SWB/level of TH across different time points as well as between experimental and control group. Bonferroni correction was done to adjust the type-I error for multiple comparisons. Correlation between QoL/SWB/level of TH was studied using Spearman's correlation coefficient as the variables violate the normality assumption. Mann-Whitney U test and Kruskal Wallis test were performed to check if there is any significant association existed between demographic variables and QoL/SWB/level of TH. The p-value <0.05 is considered as statistically significant and the entire analysis is performed using Statistical Package for Social Sciences (SPSS) and EZR software.

RESULTS

There were a total of 77 participants for the study. It was observed that 83.1% were females and 16.9 were males. A total of 35.1% belongs to the age group of 18-28 years [Table/Fig-2].

In the present study, 89.6% reported to have either too little or too much iodine. A 26% of participants reported to the exposure to contaminated water and 32.5% of participants were consuming food items which are considered as goitrogens [Table/Fig-3].

Quality of Life (QoL): It was observed from the repeated measures ANOVA that there was a significant decrement in the QoL score across different time points in the experimental group ($p<0.001$). There was a significant difference in the QoL score between experimental group and control group ($p<0.001$) [Table/Fig-4].

Data presented in [Table/Fig-5] showed the post-hoc analysis of QoL along different time points using Bonferroni adjusted p-value among experimental and control groups.The p-value in all the time points was statistically significant among both the groups. The reason behind the significance in control group might be due to repeated testing. It can be considered as a threat to internal validity.

Socio-demographic characteristics		Frequency	Percentage (%)
Gender	Male	13	16.9
	Female	64	83.1
Age (in years)	18-28	27	35.1
	29-38	22	28.6
	39-48	13	16.9
	49-58	9	11.7
	>59	6	7.8
Duration of diagnosis of hypothyroidism (in years)	0-1	26	33.8
	1-2	37	48.1
	>2-3	10	13
	>3-4	4	5.2
Education status	No formal education	2	2.6
	Primary education	13	16.9
	Secondary education	13	16.9
	Higher secondary education	24	31.2
	Degree and above	25	32.5
Habit of smoking	Yes	73	94.8
	No	4	5.2
Taking drugs other than eltroxin (Lithium, interleukin)	Yes	2	2.6
	No	75	97.4

[Table/Fig-2]: Frequency and percentage distribution of participants by socio-demographics characteristics (N=77).

Factors		Frequency (f)	Percentage (%)
Too much or too little iodine	Absent	8	10.4
	Present	69	89.6
Use of plastics	Absent	55	71.4
	Present	22	28.6
Use of pesticides	Absent	47	61.0
	Present	30	39.0
Contaminated water	Absent	57	74.0
	Present	20	26.0
Goitrogens	Absent	52	67.5
	Present	25	32.5

[Table/Fig-3]: Frequency and percentage distribution of contributing factors (N=77).

Groups	QoL:Mean (SD)				Within group comparison: F value (p-value)	Between group comparison: F value (p-value)
	Pretest	Post 1	Post 2	Post 3		
Control group (n=38)	60.66 (19.93)	65.74 (20.17)	65.39 (0.13)	65.89 (19.03)	6.42 **(0.001*)**	31.53 **(<0.001*)**
Experimental group (n=39)	74.38 (13.24)	64.69 (10.23)	62.23 (8.18)	61.26 (9.69)	30.05 **(<0.001*)**	

[Table/Fig-4]: Effectiveness of nurse led multi-intervention programme on Quality of Life (QoL) (N=77).
*significant (p<0.05)

Pairwise comparison	Bonferroni adjusted p-value	
	Experimental group	Control group
Baseline and post 1	**<0.001***	**<0.001***
Baseline and post 2	**<0.001***	**0.014***
Baseline and post 3	**<0.001***	**0.033***

[Table/Fig-5]: Group wise comparison of Quality of Life (QoL) (N=77).

Subjective well-being: There was a significant decrement in the SWB score across different time points in the experimental group (p<0.001). There was a significant difference in the SWB score between experimental group and control group (p<0.001) [Table/Fig-6]. The pairwise comparison details are given below in the [Table/Fig-7]. There was a significant decrement in the TSH across different time points in the experimental group (p=0.022). There was no significant difference in the TSH between experimental group and control group (p=0.201) [Table/Fig-8].

Groups	Subjective well-being: Mean (SD)				Within group comparison: F value (p-value)	Between group comparison: F value (p-value)
	Pretest	Post 1	Post 2	Post 3		
Control group (n=38)	81.39 (9.39)	83.61 (8.61)	84.26 (9.61)	82.79 (9.05)	2.06 (0.114)	36.615 **(<0.001*)**
Experimental group (n=39)	82.18 (9.50)	69.15 (9.01)	68.44 (10.84)	65.00 (9.08)	52.07 **(<0.001*)**	

[Table/Fig-6]: Effectiveness of nurse led multi-intervention programme on Subjective Well-Being (SWB) (N=77).
*significant (p<0.05)

Pairwise comparison	Bonferroni adjusted p-value	
	Experimental group	Control group
Baseline and post 1	**<0.001***	0.427
Baseline and post 2	**<0.001***	0.407
Baseline and post 3	**<0.001***	1.000

[Table/Fig-7]: Groupwise comparison of Subjective Well-Being (SWB) (N=77).
*significant (p<0.05)

Groups	Thyroid stimulating hormone: Mean (SD)				Within group comparison: F value (p-value)	Between group comparison: F value (p-value)
	Pretest	Post 1	Post 2	Post 3		
Control group (n=38)	8.46 (17.92)	7.62 (15.39)	7.57 (13.57)	7.44 (12.73)	1.34 (0.270)	1.67 (0.201)
Experimental group (n=39)	6.73 (5.45)	5.49 (3.93)	4.71 (2.53)	4.09 (1.89)	3.39 **(0.022*)**	

[Table/Fig-8]: Effectiveness of nurse led multi-intervention programme on level of Thyroid Stimulating Hormones (TSH) (N=77).
*significant (p<0.05)

There was a significant decrement in the thyroxin hormone across different time points in the experimental group (p=0.030). There was no significant difference in the thyroxin hormone between experimental group and control group (p=0.334) [Table/Fig-9].

Groups	Thyroxin hormone: Mean (SD)				Within group comparison: F value (p-value)	Between group comparison: F value (p-value)
	Pretest	Post 1	Post 2	Post 3		
Control group (n=38)	13.134 (19.74)	11.137 (12.49)	10.117 (8.73)	10.16 (8.52)	0.779 (0.510)	1.01 (0.334)
Experimental group (n=39)	21.362 (30.08)	16.560 (22.69)	15.885 (21.95)	14.45 (18.18)	3.151 **(0.030*)**	

[Table/Fig-9]: Effectiveness of nurse led multi-intervention programme on level of Thyroxin hormone (T4) (N=77).
*significant (p<0.05)

It was observed that demographic variables such as education (p=0.048), duration of diagnosis of hypothyroidism (p=0.0398) and smoking status (0.044) significantly associated with QoL [Table/Fig-10]. It was observed that none of the demographic variables were significantly associated with SWB (p>0.05) [Table/Fig-11]. It was observed that duration of diagnosis of hypothyroidism was significantly associated with level of TH (p<0.05) [Table/Fig-12].

It was observed that none of the demographic variables were significantly associated with thyroxine hormones (p>0.05) [Table/Fig-13]. There was a moderate positive (r=0.370) relationship exist between QoL and SWB, which is found to be significant (p=0.001). There was a weak positive (r=0.287) relationship exist between QoL and TSH, which was found to be significant (p=0.011) [Table/Fig-14].

Variables		QoL score			Mann Whitney U statistic/ Kruskal Wallis statistic	p-value
		Median	Q1	Q3		
Gender	Female	72	60	80	321	0.193
	Male	78	70	82		
Age	18-28	72	61	82	3.444	0.328
	29-38	73	52.25	80		
	39-48	76	72	80		
	>48	68	59	73		
Duration (in years)	0-1	74	61.5	82	2.962	**0.0398***
	1-2	72	50	80		
	2-3	72	68.5	73.75		
	3-4	76.5	72.75	82.5		
Education	No formal and primary	70	63.5	73	7.895	**0.048***
	Secondary	78	72	82		
	Higher secondary	77	71.5	82		
	Degree and above	66	45	78		
Smoking status	No	72	60	80	59.000	**0.044***
	Yes	81	80	82		

[Table/Fig-10]: Association between Quality of Life (QoL) and selected demographic variables (N=77).

Variables		SWB score			Mann Whitney U statistic/ Kruskal Wallis statistic	p-value
		Median	Q1	Q3		
Gender	F	80	74.25	89	321	0.297
	M	89	79	90		
Age (years)	18-28	80	76.5	89	3.444	0.515
	29-38	82	79.25	89		
	39-48	82	71	88		
	48	89	79.5	93		
Duration	0-1	80	72.75	89.75	2.962	0.790
	1-2	81	79	89		
	2-3	86.5	73	89.5		
	3-4	85.5	81.5	89.75		
Education	No formal and primary	81	79.5	90	7.895	0.092
	Secondary	86	71	91		
	Higher secondary	85.5	80	90.25		
	Degree and above	79	71	88		
Smoking	No	81	75	89	59.000	0.698
	Yes	84.5	79	90.25		

[Table/Fig-11]: Association between Subjective Well-Being (SWB) and selected demographic variables (N=77).

DISCUSSION

The present study revealed that apart from the conventional treatment for the hypothyroidism (with thyroxine supplements), non pharmacological measures can significantly affect QoL and SWB of patients. In the present study, it was observed that the QoL score (ThyPRO score) is decreasing in experimental group along different time points. So, it was concluded that QoL was improved.

In a study conducted by Shivaprasad C et al., the patients with hypothyroidism had significantly lower scores for Health-Related

Variables		Thyroid stimulating hormone			Mann Whitney U statistic/ Kruskal Wallis statistic	p-value
		Median	Q1	Q3		
Gender	Female	5.16	2.29	7.4	333	0.259
	Male	3.95	2.02	5.5		
Age	18-28	5.8	1.42	7.11	0.590	0.899
	29-38	5.01	2.77	7.4		
	39-48	4.3	2.91	5.6		
	48	4.29	2.21	5.65		
Duration	0-1	5.55	2.92	6.8	9.638	**0.022***
	1-2	4.29	1.76	7		
	2-3	2.49	1.11	5.93		
	3-4	15.9	12.65	18.48		
Education	No formal and primary	4.29	1.89	5.65	0.787	0.853
	Secondary	3.95	2.66	9.32		
	Higher secondary	5.2	2.23	7.4		
	Degree and above	5.1	1.42	7.02		
Smoking	No	4.7	2.02	7.2	139	0.868
	Yes	4.7	2.23	7		

[Table/Fig-12]: Association between Thyroid Stimulating Hormone (TSH) and selected demographic variables (N=77).

Variables		Thyroxin hormone			Mann Whitney U statistic/Kruskal Wallis statistic	p-value
		Median	Q1	Q3		
Gender	Female	8.64	6.88	10.12	354	0.339
	Male	9.85	7.15	50		
Age (years)	18-28	8.8	7	11.77	0.222	0.974
	29- 38	8.20	7.19	10.56		
	39-48	9.85	5.2	10.07		
	48	8.77	7.54	10.07		
Duration	0-1	7.92	7	10.55	3.832	0.280
	1-2	8.35	5.2	10.07		
	2-3	10.03	9.02	12.3		
	3-4	7.7	7.03	21.1		
Education	No formal and primary	9.85	7.54	10.07	3.291	0.349
	Secondary	9.92	7.39	13		
	Higher secondary	7.7	4.95	10.02		
	Degree and above	8.77	7	10.2		
Smoking	No	8.64	6.52	10.2	67.500	0.071
	Yes	42.07	9.63	74.3		

[Table/Fig-13]: Association between thyroxine hormone and selected demographic variables (N=77).

Variables	Spearman's correlation (r)	p-value
QoL and SWB	0.370	**0.001***
QoL and thyroid stimulating hormone	0.287	**0.011***
Qol and thyroxin hormone	0.154	0.182
SWB and thyroid stimulating hormone	0.166	0.148
SWB and thyroxin hormone	-0.181	0.114
Thyroid stimulating hormone and thyroxin hormone	-0.004	0.974

[Table/Fig-14]: Correlation among Quality of Life (QoL), Subjective Well-Being (SWB) and Thyroid Hormone (TH) levels.

Quality of Life (HRQoL) scales compared to healthy control group. No significant intergroup differences were observed for the "role emotional" and "social functioning" dimensions. Thyroid-Stimulating Hormone (TSH) levels were not significantly associated QoL scores [11].

The present study revealed an improvement in QoL of patients with hypothyroidism after practice of multi-intervention comprising yoga, pranayama and related asanas. The findings correlated with a study conducted by Singh P et al., who reported vital improvement in their perception of the standard of life, post yoga intervention [12]. Similar result was shown from a study conducted by Akhter J, which shows profound improvement in physical and psychological domains of QoL of hypothyroid patients, post-yoga [13].

Subjective well-being according to previous studies refers to how people experience and evaluate their lives including specific domains and activities [14,15]. Evidence suggest that age has an effect on the SWB in hypothyroidism, suggesting that younger subjects are subjectively more impaired by hypothyroidism than elderly ones [16]. Bauer M et al., showed that the decreased well-being of hypothyroid patients can be related to regional changes in the glucose metabolism of the anterior cingulate cortex [17]. Present study concludes that multi-intervention programme was effective in decreasing the SWB score of participants, hence concludes that the programme was effective in improving the well-being status of the patients.

Researchers have studied the various outcomes of SWB and it was found that people who are happy are healthier and expect to live longer, and to have better social relationships, and to be more productive in work. So, people with more SWB are tend to be healthier and function more effectively when compared to people who are chronically angry, depressed or stressed. Thus, happiness is not just being feel good, but it is being good for people around them [18].

Present study concluded that TSH level in the experimental group was decreased significantly (p=0.022). A similar type of approach was incorporated in study where combination therapy of levothyroxine and triiodothyronine has been readdressed recently and it showed that pharmacological management could not improve TSH significantly. Despite levothyroxine therapy, more than a third of patients remain symptomatic, with elevated TSH levels. Sometimes TSH levels are controlled on levothyroxine therapy, but nearly 5-10% of treated hypothyroid patients have persistent symptoms. It may be due to various reasons, like existence of other autoimmune disorders, differences in individual set-points and failure in the conversion of T4 to T3 with a low T3/T4 ratio, on levothyroxine monotherapy with a further estimated 5% being undiagnosed [1]. Over 99% of affected patients suffer from primary hypothyroidism. Worldwide, environmental iodine deficiency is the most common cause of all thyroid disorders, including hypothyroidism, but in areas of iodine sufficiency, Hashimoto's disease (chronic autoimmune thyroiditis) is the suspected cause.

Contrary to the findings of the present study, regarding the effect of multi-intervention programme on TSH, a quasi-experimental study found out that, effect of yoga programme increased TSH [19]. The difference could be due to the age specific group and the above said study used only yoga as an intervention, contrary to the present study, which had used multi-intervention.

The present study identified an association between QoL and smoking status (p=0.044). A study was done to find the association between HRQoL with respect to smoking status among Chinese individual aged 40 years and above. The study concluded that there is negative association between smoking and higher QoL score [20]. The strength of the study mainly concerned with participant selection. All the participants were homogenous in terms of stable drug and were under the consultation of one endocrinologist. So, that way homogeneity could be maintained. Apart from the assessment of TSH and T4, other clinical variables like, urinary iodine, anti thyroid peroxidase antibody can be studied in future.

Limitation(s)

The present study used a non randomised design. Two outcome variables were measured based on subjective reports of the participants. The multi-intervention programme was demonstrated to the participants and adherence to the programme was assessed through telephonic conversations.

CONCLUSION(S)

Hypothyroidism is a condition which demands a holistic approach for management. Apart from the conventional treatment with levothyroxine, non pharmacological measures like, yoga, meditation or exercise programme can be considered for effective management of hypothyroidism. The intervention could improve QoL and SWB of participants. QoL of patients with hypothyroidism must be taken care with due significance. Many a times, the treatment narrows only to the correction of TH. Health professional are in a key position to render a holistic care to patients with hypothyroidism.

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