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LIFE QUALITY IN THYROIDAL PATIENTS OF SEMEY CITY, KAZAKHSTAN

To evaluate QoL of thyroidal patients with hormonal dysfunctions, we analyzed 132 participants with thyroid disorders (69 hypothyroidism and 63 hyperthyroidism), who have been treated in out-patient clinics more than 5 years. Subjects were asked to complete the Medical Outcomes Study Short Form (SF-36). Subscales that reflect "Physical functioning (p= 0,272)", "Role-physical (p=0.706)", "Bodily pain (p=0.475)", "General Health (p=0.568)", "Vitality (p=0.980)", "Social Functioning (p=0.876)", "Role-Emotional (p=0.816)", "Mental Health (p=0.784)" showed no significant difference between hypo- and hyper- thyroidism. On the other hand, we sought to investigate contentment and dissatisfaction of health in patients with hormonal disorders based their own subjective health assessment. Every participant was questioned by "Are you satisfied with your health?". By answers "yes (52)" or "no (80)" all subjects were divided into two groups and then we compared life quality in these groups. In the following subscales "Physical Functioning (p= 0,103)", "Bodily pain (p=0.422)", "Social Functioning (p=0.092)", "Mental Health (p=0.065)" and "Mental component of health (p=0.48)" we found no significant differences, but in subscales that reflect "Role-physical (p=0.017)", "General Health (p<0.001)", "Vitality (p=0.017)", "Role-Emotional (p=0,05)" and "Physical component of health (p=0,009)" showed significant differences between satisfied and unsatisfied answers. Our results showed that patients with hypo- and hyper- thyroidism has significantly similar declining of life quality. And estimation of patients' life quality by themselves demonstrates the adequate assessment of own health.

Keywords: *Thyroid disorders; Medical Outcomes Study Short Form (SF-36); Quality of Life (QoL); Hypothyroidism; Hyperthyroidism.*

Abbreviations: QoL - quality of life, SF-36 - Medical Outcomes Study Short Form,

Introduction

Life quality is one of the important and common issues in any countries. Kazakhstan is developing country with a rapidly growing economy and one of the main strategies is to improve the life quality of people. The implementations of social, economical and political strategies, improvement of peoples' health, according to the disease profiles of patients should be carefully taken into account, in order to optimize the care system in developing countries including Kazakhstan. Furthermore, rehabilitation of the sick people is also very important, to provide support for patients who wish to be full member of society. In our study we sought to estimate life quality of patients according thyroid hormonal disorders and their own assessment of health.

On the other hand, thyroid disorders cause profound physical, mental, and social changes for patients. For example, physical problems, such as cardiac feature, tachycardia, muscle dystonia, general fatigue, decreased performance and sleepiness occur even during the remission of diseases. These problems, in combination with emotional reactions to illness, limit a patient's activities and lower quality of life (QoL). Using "Medical Outcomes Study Short Form (SF-36), several studies showed declining QoL scores in the "Physical health" and "Mental health" scales in thyroid disorders, and it decreases with age. In addition, physical and emotional changes during illness progression can reportedly alter the ability to undertake the normal activities of daily life. These findings suggest that, given the changes in QoL, careful support of thyroid patients is essential, particularly from the society.

Furthermore, hypothyroidal and hyperthyroidal disorders experience different health problems during illness. It has been reported that hypothyroidism, compared with hyperthyroidism, has different problems, such as constant lethargy, overpowering sleepiness, significant impairment of memory and attention, inability to engage in thinking activity, obesity. On the contrary, in case of hyperthyroidism develops irritability, anxiety, restlessness, palpitations, sweating, thirst, trembling of the limbs, muscle weakness. However, the effect of thyroidal complications on patients' QoL has received less attention. In order to recover the QoL in case of thyroid disorders should be considered to improve their health rehabilitation.

With these considerations, in this study we evaluated level of life quality in case of hypo- and hyper- thyroidism, difference in QoL between hormone deficiency and thyrotoxicosis, QoL of patients in groups with satisfied and unsatisfied opinion based on own their estimation.

Methods

Study Participants

Before the study, ethical approval was obtained from the local special ethic committee of Semey State Medical University.

The study was conducted from September 2011 to March 2012. Subjects included 132 participants with thyroid hormonal disorders (69 hypothyroidism and 63 hyperthyroidism), who are treated in out-patient clinics of Semey city (Kazakhstan), clinics in Semey city and who were recruited to participate in the study. At initial examination, details of the study were explained to each participant. Informed consent was obtained from all participants before enrollment in the study. A total of 7 members who declined to participate, who did not answer all the questions and 12 participants did not return the questionnaire were excluded from the analysis. Three participants who did not report the number of deliveries were also excluded from analysis. In total, 132 patients with thyroid disorders were included for final analysis.

Questionnaire Administration

Each participant of study was asked to complete a self-administered questionnaire. In addition to duration of suffering, social factors were also elicited including age, occupational status, individual income, and whether he was satisfied by current health condition.

Every participant study were asked to complete the Medical Outcomes Study Short-Form 36 (Kazakh and Russian edition of SF-36). The questionnaire consists of 36-items generating 8 dimensions of functioning: "Physical functioning" (10 items); "Rolephysical" (4 items); "Bodily pain" (2 items), "General health" (5 items), "Vitality" (4 items), "Social functioning" (2 items); "Roleemotional" (3 items) and "Mental health" (5 items) (Table 1, (16)). These 8 subscales are separately scored from 0 (lowest) to 100 (highest).

Statistical Analysis

To evaluate the difference between hypothyroidism and hyperthyroidism, we used a general linear model in each subscale. According patients' satisfaction with own heath was compared the difference in the groups by using chi-square test. Values of $p < 0.05$ was considered statistically significant. Statistical analysis was performed using SPSS version 20.0 software (SPSS Semey State Medical University, Kazakhstan).

Table 1 - Dimensions in the Medical Outcomes Study Short Form 36 Questionnaire

Subscales	Item number	Definition
Physical functioning	10	Extent to which health interferes with a variety of activities in life
Role-physical	4	Problems with work or other daily activities as a result of physical health in the last week

Bodily pain	2	Extent of bodily pain in the last week
General health	5	Personal evaluation of general health
Vitality	4	Perception of degree of fatigue or energy in the last week
Social functioning	2	Extent to which health interferes with normal social activities in the last week
Role-emotional	3	Problems with work or other activities as a result of emotional problems in the last week
Mental health	5	General mood or affect, psychological well-being in the last week

Results

Subject attributes

Table 2 shows subject attributes. A total 132 study participants were 30 (22.72%) males and 102 (77.28%) females. Age distribution was ranged from 15 to 82 years old at beginning of the study, and its mean was 47.81 ± 12.4. While 69 patients had hypothyroidism (52.27%), 63 patients had hyperthyroidism (47.73%).

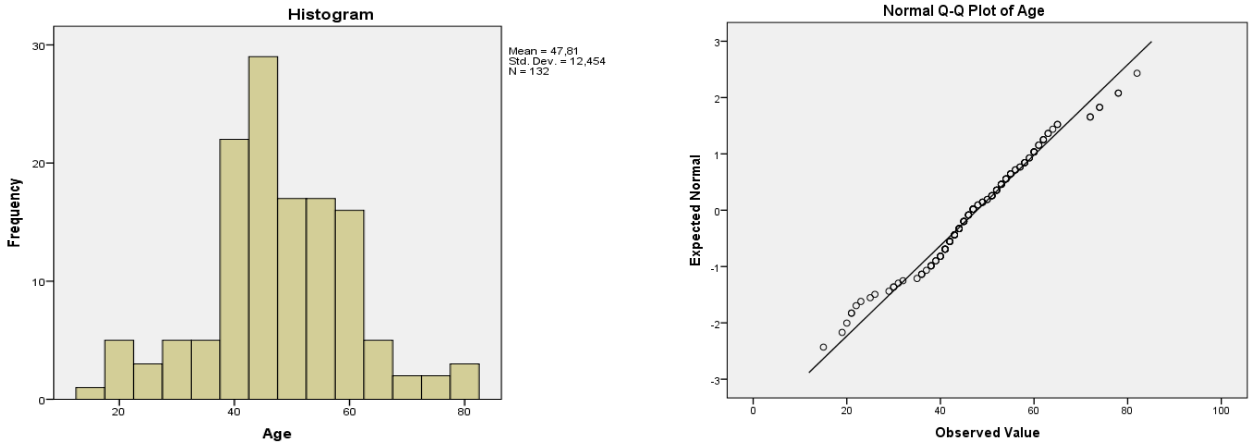

Figure 1 - Distribution of patients by ages

In the present study, 80 participants (60.6%) were unsatisfied and 52 participants (39.4%) were satisfied with own health. As to other attributes, according the nationality 87 (65.9%) patients were Kazakh, 37 (28.0%) Russian and 8 (6.06%) were with other nationalities.

Table 2 - Background of 132 subjects who completed the SF-36

Background	Number (%)
Gender	
Male	30 (22.72%)
Female	102 (77.28%)
Thyroid disorders	
Hypothyroidism	69 (52.27%)
Hyperthyroidism	63 (47.73%)
Age (years)	
Hypothyroidism	49,78 ± 12,29
Hyperthyroidism	45,65 ± 12,36
Health estimation	
Satisfied	52 (39.4%)
Unsatisfied	80 (60.6%)
Nationality	
Kazakh	87 (65.9%)
Russian	37 (28.0%)
Other	8 (6.06%)

Subscales of QoL and hormone status

Subscales that reflect "Physical functioning (p= 0,272)", "Role-physical (p=0.706)", "Bodily pain (p=0.475)", "General Health (p=0.568)", "Vitality (p=0.980)", "Social Functioning (p=0.876)", "Role-Emotional (p=0.816)", "Mental Health (p=0.784)" showed no significant difference between hypo- and hyper- thyroidism (Table 3).

Table 3 - T-test of QoL in groups with hypothyroidism and hyperthyroidism.

	Hypothyroidism (n=69)	Hyperthyroidism (n=63)	
	Mean ± Std. Deviation	Mean ± Std. Deviation	Sign.
Physical Functioning (PF)	58,99 ± 25,417	63,65 ± 22,899	0,272
Role-Physical (RP)	46,38 ± 34,640	44,05 ± 36,121	0,706
Bodily Pain (BP)	63,39 ± 22,566	60,68 ± 20,658	0,475
General Health (GH)	40,71 ± 14,687	42,32 ± 17,530	0,568
Vitality (VT)	58,48 ± 14,202	58,41 ± 16,010	0,980
Social Functioning (SF)	65,22 ± 19,632	64,68 ± 19,513	0,876
Role-Emotional (RE)	48,31 ± 34,10	49,72 ± 36,354	0,816
Mental Health (MH)	62,20 ± 13,729	62,86 ± 13,658	0,784
PcH	39,62 ± 7,817	39,91 ± 7,773	0,829
McH	44,34 ± 8,004	44,35 ± 7,736	0,995

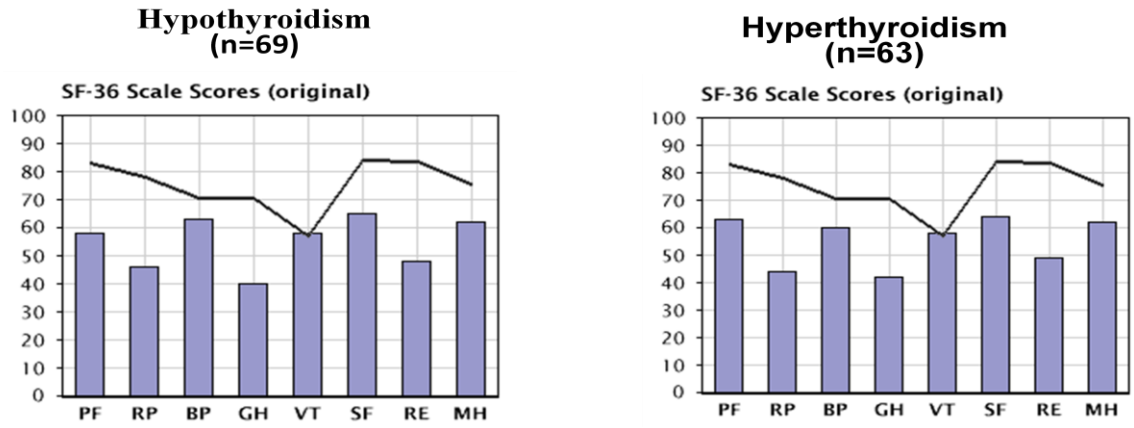

Figure 2 - Life Quality in groups with hypothyroidism and hyperthyroidism.

Subscales of QoL and health status

We sought to investigate contentment and dissatisfaction of health in patients with hormonal disorders based their own subjective health assessment. Every participant was questioned by “Are you satisfied with your health?” By answers “yes (52)” or “no (80)” all subjects were divided into two groups and then we compared life quality in these groups (Table 4).

Table 4 - Distribution of subjects with thyroid hormonal disorders in groups with "satisfied" and "unsatisfied" health conditions

	Hypothyroidism	Hyperthyroidism	Sig. (2-sided)
Satisfied	27 (39.13%)	25 (39.68%)	0,948
Unsatisfied	42 (60.86%)	38 (60.31%)	
Total	69	63	

In the following subscales “Physical Functioning (p= 0,103)”, "Bodily pain (p=0.422)", "Social Functioning (p=0.092)", "Mental Health (p=0.065)" and "Mental component of health (p=0.48)" we found no significant differences, but in subscales that reflect "Role-physical (p=0.017)", "General Health (p<0.001)", "Vitality (p=0.017)", "Role-Emotional (p=0,05)" and "Physical component of health (p=0,009)" showed significant differences between satisfied and unsatisfied answers (Table 5).

Table 5 - T-test of QoL in groups with satisfied and not satisfied health conditions

	Satisfied (n=52)	Unsatisfied (n=80)	
	Mean ± Std. Deviation	Mean ± Std. Deviation	Sign.
Physical Functioning (PF)	65,48 ± 22,908	58,44 ± 24,862	0,103
Role-Physical (RP)	54,33 ± 33,840	39,38 ± 35,080	0,017
Bodily Pain (BP)	63,98 ± 20,398	60,88 ± 22,447	0,422
General Health (GH)	48,94 ± 15,741	36,63 ± 14,403	0,000
Vitality (VT)	62,31 ± 12,226	55,94 ± 16,189	0,017
Social Functioning (SF)	68,51 ± 17,059	62,66 ± 20,716	0,092
Role-Emotional (RE)	56,41 ± 30,634	44,17 ± 37,040	0,050
Mental Health (MH)	65,23 ± 11,763	60,75 ± 14,542	0,065
PcH	41,94 ± 6,944	38,33 ± 7,984	0,009
McH	46,01 ± 6,625	43,25 ± 8,410	0,48

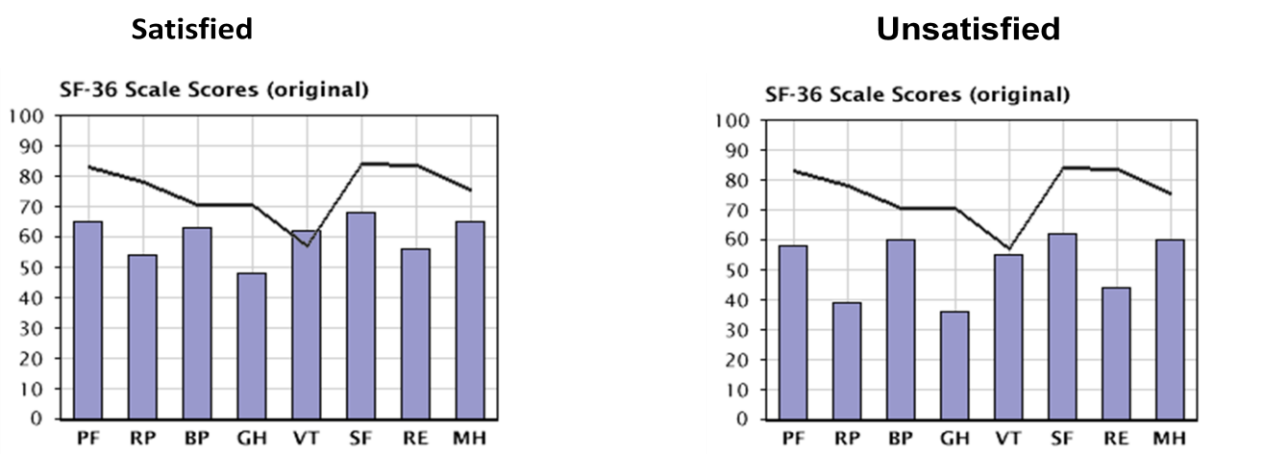

Figure 3 - Life Quality in groups with satisfied and unsatisfied health.

Discussion

In the current study, we showed that subscales that reflect "Physical functioning", "Role-physical", "Bodily pain", "General Health", "Vitality", "Social Functioning", "Role-Emotional", "Mental Health", means significant decline among patients with thyroid hormonal disorders in comparison with normal level (USA, Canada, Sweden and Norway models), and subscales that reflect "Physical functioning", "Role-physical", "Bodily pain", "General Health", "Vitality", "Social Functioning", "Role-Emotional", "Mental Health" between patients with hypothyroidism and hyperthyroidism indicated statistical similar QoL declining. We have considered the life of our people is according the emotional and physical upheaval, and our current results show that the hormonal disorders of the thyroid gland causing a predictable effect on physical function, but they have a more limited impact on the emotional state of health, and that the SF-36 is a useful tool, especially for the evaluation of the functional condition of the patients and healthy population.

Patients' satisfaction with their health is one of the important factors in assessing the commitment of patients. Therefore, we tried to compare QoL in group who have good health with group where patients are not satisfied with own health by their estimation. Thus, we evaluated the adequacy of the response of participants.

The results of this comparison showed that subscales that reflect "Physical functioning," "Bodily pain," "Social functioning," "Mental health," "Mental component of health" showed no significant differences between "satisfied" and "unsatisfied" groups. Although subscales that reflect "Role physical," "General health," "Vitality," "Role emotional," "Physical component of health" showed significant differences between "satisfied" and "unsatisfied" groups. These scales showed difference in the physical components of health between two groups in routine daily activities, such as walking, moderate exercise, active life, not to mention the fact that there are jogging, sport and physical labor. Conversely, the reductions of the mental health components' are not a significantly different in both groups.

In Kazakhstan, the demographic policy is one of the main priorities. Its main components are population size, life duration, quality of life and active longevity, etc. Quality of life is very important not only for healthy population but also for people with various physical and mental disorders. Much more attention of scientists focused on this issue in many countries around the world. The Social Rehabilitation Program helps people recovering from severe and prolonged illnesses with the following social/personal adjustment. That is why we need to develop and implement these kinds of programs. Unfortunately, now we cannot affirm that in our area of rehabilitation program works successfully.

Our study has several limitations. The number of participants was relatively small. Other socio-economical factors, which may affect the changes of QoL, were not considered. Further studies will be essentially needed.

In conclusion, we clarified the changes of QoL for patients with thyroid hormonal disorders, and suggest that they need support, regardless of the type of disorders. Appropriate supports to thyroid patients will be available to improve the rehabilitation in Semey city and Kazakhstan.

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ҚАЗАҚСТАН,СЕМЕЙ ҚАЛАСЫНДАҒЫ ҚАЛҚАНША БЕЗІНІҢ ПАТОЛОГИЯСЫ БАР НАУҚАСТАРДЫҢ ӨМІР СҮРУ САПАСЫ

Түйін: Қалқанша безінің гормоналды дисфункциясы бар науқастардың өмір сүру сапасын бағалау үшін біз соңғы 5 жылда амбулаторлы клиникада ем алып жатқан қалқанша безінің аурулары бар 132 қатысушылардың(69 гипотиреоз, гипертиреоз және 63) ойын сараптадық. Қатысушыларға Short Form(SF-36) сұрақтарын толтыруды сұрады. «Физикалық қызмет(p=0272)», «Физикалық қызмет рөлі(p=0,706)», «Физикалық ауырсыну(p=0,457), «Жалпы денсаулық(p=0,568)», «Өміршеңділік (p=0,980)», «Әлеуметтік қызмет(p=0,876)», «Эмоционалды қызмет рөлі(p=0,816)», «Психикалық денсаулық(p=0,784)» көрсеткіштері гипотиреоз бен гипертиреоз топтарының арасында айтарлықтай қомақты айырмашылық көрсеткен жоқ. Екінші жағынан біз науқастардың өзіндік субъективті бағалары арқылы өз денсаулықтарына қанағат бар ма екенін анықтамақшы болдық. Әр қатысушыға «Сіз өз денсаулығыңызға қанағаттансыз ба?» деген сауал қойылды. «Иә (52)» және «жоқ (80)» деген жауаптар бойынша барлық қатысушылар 2 топқа бөлінді, содан кейін осы топтардағы науқастардың өмір сүру сапасын салыстырдық. Келесі шкалалар бойынша «Физикалық қызмет(p=0103)», «Физикалық ауырсыну(p=0,422), «Әлеуметтік қызмет(p=0,092)», «Психикалық денсаулық(p=0,065)» және « Денсаулықтың психикалық компонеттері(p=0,48) топтар арасында статистикалық айырмашылық анықтаған жоқпыз. Бірақ «Физикалық қызмет рөлі(p=0,017)», «Жалпы денсаулық(p=0,001)», «Өміршеңділік (p=0,017)», «Эмоционалды қызмет рөлі(p=0,05)», « Денсаулықтың психикалық компонеттері(p=0,009) көрсеткіштерінен топтар арасында айтарлықтай айырмашылық бар екенін көрсетті. Біздің нәтижелер гипотиреоз бен гипертиреозы бар науқастардың өмір сүру сапасында айқын айырмашылық бар екенін көрсетті. Ал денсаулығына қанағаттанған және қанағаттанбаған науқастар топтарының өмір сүру сапасының бағасын өз денсаулықтарының адекватты бағасы көрсетті.

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КАЧЕСТВО ЖИЗНИ БОЛЬНЫХ С ПАТОЛОГИЕЙ ЩИТОВИДНОЙ ЖЕЛЕЗЫВ ГОРОДЕ СЕМЕЙ, КАЗАХСТАН

Резюме: Для оценки качества жизни пациентов с гормональными дисфункциями щитовидной железы, мы проанализировали мнение 132 участников с заболеваниями щитовидной железы (69 гипотиреоз, гипертиреоз и 63), которые получают лечение в амбулаторных клиниках в течение последних 5 лет. Участников попросили заполнить вопросник Short Form (SF-36). Шкалы, которые отражают «Физическое функционирование (p = 0272)», "Роль физического функционирования (p = 0,706)», «Физическая боль (p = 0,475)», «Общее здоровье (p = 0,568)», «Жизнеспособность (p = 0,980)», «Социальное функционирование (p = 0,876)», «Роль эмоционального функционирования (p = 0,816)», «Психическое здоровье (p = 0,784)» не показал существенной разницы между группами гипотиреоза и гипертиреоза. С другой стороны, мы попытались определить удовлетворенность пациентов собственным здоровьем на основе собственной субъективной оценки. Каждому участнику был задан вопрос "Удовлетворены ли вы вашим здоровьем?». По ответам «да (52)» или «нет (80)» все участники были разделены на две группы, а затем мы сравнивали качество жизни в этих группах. По следующих шкалам «физическое функционирование (p = 0103)», «Физическая боль (p = 0,422)», «Социальное функционирование (p = 0,092)», «Психическое здоровье (p = 0,065)» и "Психические компоненты здоровья (p = 0,48)» мы не обнаружили статистически значимых различий в группах, но в шкалах, которые отражают «Роль физического функционирования (p = 0,017)», «Общее здоровье (p <0,001)», «Жизнеспособность (p = 0,017)», «Роль эмоционального функционирования (p = 0,05)» и «Физические компоненты здоровья (p = 0,009)» показали существенные различия между группами. Наши результаты показали, что у пациентов с гипотиреозом и гипертиреозом имеется значительное снижение качества жизни. А оценка качества жизни пациентов в группах с удовлетворенным и не удовлетворенным состоянием здоровья демонстрируют адекватную оценку собственного здоровья.