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Development and validation of knowledge, attitude, practice questionnaire for hypothyroidism

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ABSTRACT

The objective of the study is to develop and validate the knowledge, Attitude, Practice questionnaire of Hypothyroidism, carried out in The Oxford Medical College and Research Centre, Attibele, Bangalore. The questionnaire comprised of development and validation phases. The development phase encompasses a literature review, expert panel review and evaluation. The validation phase consisted of verifying the appropriateness of questionnaire by assessing the parameters such as clarity, simplicity, ambiguity, relevance based on scorings provided by the expert panel members, lay personnel and patients. Cronbach's alpha was calculated to measure consistency between responses to the individual questions and the questionnaire as a whole. The overall standardized alpha value for the questionnaire was 0.85 , which isan acceptable Cronbach score and indicates excellent homogeneity. The self-structured questionnaire consists of 27 yes, no or don't know questions, based on the patient's knowledge, attitude and practice towards hypothyroidism. It emphasizes on knowledge about diseases, attitude of the patients towards medication taking habits.Also about the practice to improve the health related quality of life and the scoring is done based on theanswers.

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INTRODUCTION

Hypothyroidism is a clinical entity resulting from deficiency of thyroid hormones or, from their impaired activity at tissue level, with a prevalence of 1.9 per cent in women and prevalence increasing with age. Hypothyroidism may be acquired, primary or secondary, chronic or transient [1].

In India, a large number of populations are still unaware of the disease. Thyroid disorders are amongst the most prevalent of medical disease conditions. Their manifestations vary significantly from places to places and are determined predominantly by the availability of iodine in the diet. In general, the females have insufficient knowledge and many misapprehensions regarding thyroid disorders. Many females are showing symptoms of the thyroid disorders but still are unaware of the disease [2].

A knowledge, attitude, and practices (KAP) survey is a quantitative tool, which uses a standardized questionnaire, that measures the required domains in a predefined population. A KAP survey fundamentally records an "opinion" and is based on the "declaration" (i.e., statements). KAP of an individual can considerably influence disease insight and management. Poor knowledge about the risks of untreated hypothyroidism may interfere with compliance and optimal treatment. Little knowledge about the importance of the thyroid function test

may lead to hesitancy in routine laboratory investigation, given the importance of frequent TSH measurements to monitor and stabilize the dose of thyroid replacement therapy. More than half of the patients are unaware of the genetic predilection associated with hypothyroidism, which may be the reason for almost 25% of patients not being conscious about getting their family members tested for the disease [3].

Better pharmaco-therapeutic outcomes can be achieved through better understanding of hypothyroidism and thyroxine replacement therapy via counseling. Improved outcomes can be measured in terms of knowledge, attitude and practice score [4].

METHODOLOGY

Development Phase: The construction of self-structured questionnaire involved literature review with duration of one month.

Validation Phase: The questionnaire was circulated among 15 members (Experts, lay personnel, patients). Duration of validation was two months, this total of 15 members consist of:

• Expert panel: 5 physicians from general medicine and OBG department of the oxford medical hospital and research institute, attibele, Bangalore.

• Other panel members: 10 members comprising lay personnel and patients.

Scoring questionnaire: each question is assessed on basis of four parameters (relevance, simplicity, clarity, ambiguity). Each parameter possesses score range between (1-4).

Then the questionnaires was collected back and scored for its relevance, simplicity, clarity and ambiguity and entered in Microsoft excel sheet. Internal content validation of the items was carried out by expert panel, Face validation of the item by other panel members comprising of lay personnel and patients. The Cronbach's alpha was calculated using SPSS Software and Cronbach's alpha coefficient should be 0.7 or greater for corrected item. A correlation value less than 0.2 indicated that the corresponding item did not correlate with the overall scale and would be discarded.

The Cronbach's alpha coefficient acceptability criteria are as follows:

• $\alpha \geq 0.9$ indicates excellent internal consistency.

• $0.9 > \alpha \geq 0.8$ indicates good internal consistency.

• $0.8 > \alpha \geq 0.7$ indicates acceptable internal consistency.

• $0.7 > \alpha \geq 0.6$ indicates questionable internal consistency.

• $0.6 > \alpha \geq 0.5$ indicates poor internal consistency.

• $0.5 > \alpha$ indicates unacceptable internal consistency.

The entire comments from content and face validation were considered and thoroughly discussed by the research team. The items were edited, removed or remain unchanged after extensive discussion among the researchers. The revised questionnaire was then proceeded to examine the construct validity and test-retest reliability.

The self-structured KAP questionnaire has 12 knowledge, 7 attitude, 8 practice questions which is a total of 27 items after thorough validation. The questions include:

KNOWLEDGE

1. Thyroid gland is a butterfly-shaped gland, located in the neck

2. Hypothyroidism is a medical condition due to low-thyroid hormone levels

3. Hypothyroidism is not related to increased TSH levels

4. Iodine deficiency in diet may lead to hypothyroidism

5. Patients with hypothyroidism may be at an increased risk of having depression

6. Patients with hypothyroidism might have more risk of having increased cholesterol levels

7. Thyroid disorders does not run in families

8. Patients with swelling or abnormality in the neck may be suffering from hypothyroidism

9. Certain medications may increase the risk for developing hypothyroidism

10. Hypothyroidism does not occur in pregnancy

11. Hypothyroidism is diagnosed by measuring TSH levels in blood

12. Hypothyroidism is treatable

ATTITUDE

1. Women are at greater risk for developing hypothyroidism and should be tested at regular interval for it.

2. People above the age of 35years should be tested frequently for hypothyroidism

3. Pregnant women should be tested for hypothyroidism

4. People with relatives or family members diagnosed with hypothyroidism should be tested.

5. Treatment for hypothyroidism should be initiated after the consultation with physician only

6. Thyroid medication should be stopped during pregnancy

7. Thyroid medications can be stopped once the thyroid tests are normal

PRACTICE

1. Do you take your medication for hypothyroidism daily?

2. Do you miss any doses of your medication for hypothyroidism?

3. Do you take your medication 30-60 min before breakfast on empty stomach?

4. Do you take your thyroid medicine with any other medicines?

5. As advised by your physician, do you get your TSH level tested regularly?

6. Did you ask your doctor for more information/ counseling on how to manage hypothyroidism?

7. Do you avoid eating cabbage, cauliflower, and soya?

8. Do you search more information on management of hypothyroidism.

RESULTS

Validation of KAP Questionnaire on Hypothyroidism

The KAP questionnaire was given to 15 members consisting of expert panel and other panel for evaluation and scores were obtained by them.

Average scores of each question

The average scores were obtained from both the panel members for validation of KAP questionnaire and tabulated, which is represented in Table 1 .

The overall average of all the items was found to be 3.84 and the I-CVI (%) was found to be 93.13%. The average of each item of questionnaire along with its respective I-CVI was presented in the Table 2Figure 1 .

Average scores of each question with I-CVI

The overall average of all the parameters like relevance, clarity, simplicity and ambiguity was found to be 3.79,3.87,3.87,3.85 and its S-CVI (%) were found to be 94.5,96.75,96.85 and 96.27% respectively.

All the parameters involved in validation of KAP questionnaire evaluation along with its respective S-CVI was presented in the Table 3Figure 2 .

Overall average score with S-CVI

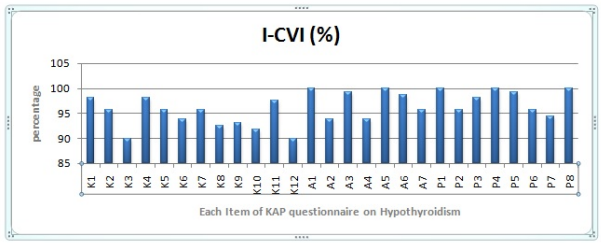

Figure 1: Shows the data ofI-CVI vs Each item of KAP Questionnaire on Hypothyroidism

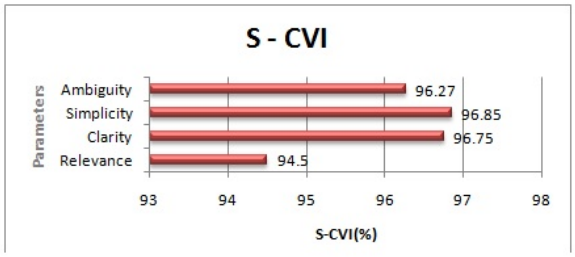

Figure 2: The data of S-CVI vs parameters used for validationof kap questionnaire on hypothyroidism

Cronbach's alpha is calculated for above data by using SPSS Software and Cronbach's alpha coefficient was found to be 0.85, (shown in Figure 3) which indicates that all the items present in the KAP questionnaire on Hypothyroidism is Acceptable and there is no need of change or correction in any of the item of KAP questionnaire. Hence the entire-item present in the KAP questionnaire on Hypothyroidism was validated.

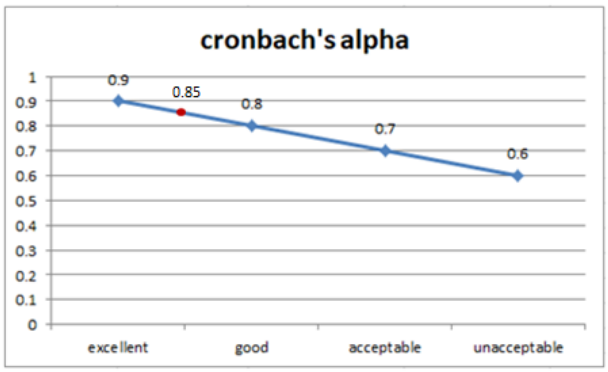

Figure 3: Cronbachs alpha value for self-structured KAP questionnaire.

DISCUSSION

The aim of this study was to develop a new questionnaire to assess the knowledge, attitude and practice on hypothyroidism. Validation of questionnaire is an important step in any questionnaire based

Table 1: The average scores of each questions after validation

Question no.	Relevance	Clarity	Simplicity	Ambiguity	Average
K1	4	4	3.7	4	3.925
K2	3.8	3.8	3.8	3.9	3.825
K3	3.6	3.8	3.4	3.6	3.6
K4	3.8	4	4	3.9	3.925
K5	3.8	3.7	3.9	3.9	3.825
K6	3.6	3.7	3.9	3.8	3.75
K7	3.6	3.9	3.9	3.9	3.825
K8	3.6	3.8	3.7	3.7	3.7
K9	3.7	3.7	3.8	3.7	3.725
K10	3.6	3.7	3.8	3.6	3.675
K11	3.9	3.9	3.9	3.9	3.9
K12	3.5	3.7	3.6	3.6	3.6
A1	4	4	4	4	4
A2	3.4	3.8	4	3.8	3.75
A3	3.9	4	4	4	3.975
A4	3.6	3.8	3.8	3.8	3.75
A5	4	4	4	4	4
A6	4	3.9	4	3.9	3.95
A7	3.8	3.9	3.8	3.8	3.825
P1	4	4	4	4	4
P2	3.8	3.8	3.8	3.9	3.825
P3	4	4	4	3.7	3.925
P4	4	4	4	4	4
P5	3.9	4	4	4	3.975
P6	3.6	3.9	3.9	3.9	3.825
P7	3.8	3.7	3.9	3.7	3.775
P8	4	4	4	4	4

study [5]. Overall, the questionnaire was successful when applied in hypothyroid patients.A drafted questionnaire should always be ready for establishing validity. Validity is the amount of systematic or built-in error in questionnaire [6].

Quantification Of Content Validity: The content validity of instrument can be determined using the viewpoints of the panel of experts. This panel consists of content experts and lay experts. Lay experts are the potential research subjects and content experts are professionals who have research experience or work in the field. In qualitative content validity method, content experts and target group's recommendations are adopted on observing grammar, using appropriate and correct words, applying correct and proper order of words in items and appropriate scoring. However, in the quantitative content validity method, confidence is maintained in selecting the most important and correct content in an instrument, which is quantified by content validity ratio (CVR). In this way, the experts are requested to specify whether an item is necessary for operating a construct in a set of items or not. To this end, they are requested to score each item [7].Raters will review all of the questionnaire items for readability, clarity and comprehensiveness and come to some level of agreement as to which items should be included in the final questionnaire. The item-rated content validity indices (CVI) are usually denoted as I-CVI. While the scale-level CVI termed S-CVI will be calculated from I-CVI.[15] S-CVI means the level of agreement between raters. Sangoseni et al proposed a S-CVI of $\geq$0.78 as significant level for inclusion of an item into the study [7]. If the I-CVI is higher than 79 percent, the item will be appropriate. If it is between 70 and 79 percent, it needs revision. If it is less than 70 percent, it is eliminated [8] [9] .

Determining Face Validity Of An Instrument: Face validity is established when an individual (and or researcher) who is an expert on the research subject reviewing the questionnaire (instrument) con-

Table 2: The average scores and its I-CVI (%) for each item of KAP.

Question number	average	I-CVI (%)
K1	3.925	98.1
K2	3.825	95.6
K3	3.6	90
K4	3.925	98.1
K5	3.825	95.6
K6	3.75	93.75
K7	3.825	95.6
K8	3.7	92.5
K9	3.725	93.1
K10	3.675	91.8
K11	3.9	97.5
K12	3.6	90
A1	4	100
A2	3.75	93.75
A3	3.975	99.3
A4	3.75	93.75
A5	4	100
A6	3.95	98.75
A7	3.825	95.6
P1	4	100
P2	3.825	95.6
P3	3.925	98.1
P4	4	100
P5	3.975	99.3
P6	3.825	95.6
P7	3.775	94.3
P8	4	100
OVERALL AVERAGE		93.13

Table 3: Overall average score with S-CVI

Parameters	Overall average	S-CVI (%)
Relevance	3.79	94.5
Clarity	3.87	96.75
Simplicity	3.87	96.85
Ambiguity	3.85	96.27

cludes that it measures the characteristic or trait of interest. Face validity involves the expert looking at the items in the questionnaire and agreeing that the test is a valid measure of the concept which is being measured just on the face of it. This means that they are evaluating whether each of the measuring items matches any given conceptual domain of the concept [10, 11] .Face validity is related to the appearance and apparent attractiveness of an instrument, which may affect the instrument acceptability by respondents [12] .

CONCLUSION

A self-structured KAP Questionnaire was developed and validated with the help of experts and other panel members after thorough internal content (ICV-I) and face validation (SCV-I) and procured an Cronbach's alpha coefficient of 0.85 which indicates good internal consistency among the questionnaire items. A 27 item KAP questionnaire was finalized having 12 knowledge item, 7 attitude item and 8 practice item. The questionnaire emphasizes on

knowledge about diseases, attitude of the patients towards medication taking habitsalso the practice to improve the health related quality of life.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

REFERENCES

[1] Hallengren B. Hypothyroidism–clinical findings, diagnosis, therapy. Thyroid tests should be performed on broad indications. Lakartidningen. 1998;95(38):4091–4097.

[2] Rai S, Sirohi S, Khatri AK, Dixit S, Saroshe S. Assessment of Knowledge and Awareness Regarding Thyroid Disorders among Women of a Cosmopolitan City of Central India. Ntl J Community Med. 2016;7(3):219–241.

[3] Vyas U, Sethi B, Khandelwal D. A cross-sectional survey to assess knowledge, attitude, and practices in patients with hypothyroidism in India. Thyroid Research and Practice. 2018;15(1):15–15. Available from: 10.4103/trp.trp_25_17.

[4] SushmaMaharjan, HimalPaudelChhetri. Improving Knowledge, attitude and practice towards hypothyroidism in Nepal. ijopp. 2015;8(2):67–71.

[5] Lohit K, Vidya KR, Manjunath GN. Development and validation of questionnaire to assess the knowledge, attitude and practice towards adverse drug reactions reporting among healthcare professionals. J Int Med Dent. 2016;3:63–72.

[6] Zahiruddin WM, Arifin WN, Mohd-Nazri S, Sukeri S, Zawaha I, Bakarra. Development and validation of a new knowledge, attitude, belief and practice questionnaire on leptospirosis in Malaysia. BMC public health. 2018;18(1):331–374.

[7] Bolarinwa OA. Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. Medknow; 2015. Available from: 10.4103/1117-1936.173959.

[8] Zamanzadeh V, Ghahramanian A, Rassouli M, Abbaszadeh A, et al. Design and Implementation Content Validity Study: Development of an instrument for measuring Patient-Centered Communication. Journal of Caring Sciences. 2015;4(2):165–178. Available from: 10.15171/jcs.2015.017.

[9] Gulseren S, Gulseren L, Hekimsoy Z, Cetinay P, Ozen C, Tokatlioglu B. Depression, Anxiety, Health-Related Quality of Life, and Disability in Patients with Overt and Subclinical Thyroid Dysfunction. Archives of Medical Research. 2006;37(1):133–139. Available from: 10.1016/j.arcmed.2005.05.008.

[10] Galbo AML, Bree >D, Kuik DJ, Lips PTAM, Blomberg BMEV, Langendijk JA, et al. The prevalence of hypothyroidism after treatment for laryngeal and hypopharyngeal carcinomas: are autoantibodies of influence? Acta Oto-Laryngologica. 2007;127(3):312–317. Available from: 10.1080/00016480600818096.

[11] Clyde PW, Harari AE, Getka EJ, Shakir KMM. Combined Levothyroxine Plus Liothyronine Compared With Levothyroxine Alone in Primary Hypothyroidism. JAMA. 2003;290(22):2952–2952. Available from: 10.1001/jama.290.22.2952.

[12] Nykamp SG, Dykes NL, Zarfoss MK, Scarlett JM. Association of the risk of development of hypothyroidism after iodine 131 treatment with the pretreatment pattern of sodium pertechnetate Tc 99m uptake in the thyroid gland in cats with hyperthyroidism: 165 cases (1990-2002). Journal of the American Veterinary Medical Association. 2005;226(10):1671–1675. Available from: 10.2460/javma.2005.226.1671.

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