Osmangazi Journal of Med, 2025;47(3):395-403
DOI: 10.20515/otd.1603943

Research Article
Araştırma Makalesi

Osmangazi Journal of Medicine
e-ISSN: 2587-1579

Evaluation of YouTube Videos in Information about Thyroid Diseases During Pregnancy

Bir Çalışma Gebelikte Tiroid Hastalıkları Bilgilendirmesinde YouTube Videolarının Değerlendirilmesi

Deniz Taşkiran[1], Salih Kolsuz[2], Dilek Yeniay[2], Orhan Ay[3], Vehbi Yavuz Tokgöz[4]

[1] Giresun University Faculty of Medicine, Deparrtment of Obstetrics and Gynecology, Giresun, Türkiye
[2] Giresun University Gynecology and Pediatrics Training and Research Hospital, Giresun, Türkiye
[3] Necmettin Erbakan University Faculty of Medicine, Deparrtment of Obstetrics and Gynecology,Konya, Türkiye
[4]Eskişehir Osmangazi University Faculty of Medicine, Deparrtment of Obstetrics and Gynecology, Eskişehir, Türkiye

ORCID ID of the authors
DT. 0000-0001-7270-4566
SK. 0000-0003-3485-5130
DY. 0000-0002-1838-2022
OA. 0000-0002-9685-5374
VYT. 0000-0002-4113-385X

Correspondence / Sorumlu yazar:
Deniz TAŞKIRAN

Giresun University Faculty of Medicine,
Deparrtment of Obstetrics and Gynecology,
Giresun, Türkiye

e-mail: deniztaskiran93@gmail.com

Abstract: Access to quality and reliable information sources during pregnancy, which is a special period, is important for both maternal and fetal health. The reliability and quality of the information obtained from video platforms such as YouTube are important. This study was designed to evaluate the quality and reliability of YouTube videos on thyroid disorders which are common during pregnancy. A total of 248 videos found on YouTube with the keywords 'thyroid disorders during pregnancy,' 'pregnancy and thyroid disorders' and 'pregnancy and thyroid gland' were recorded. After applying criteria, the remaining 68 videos were evaluated. General characteristics of the videos, modified DISCERN scoring and Global Quality Scale (GQS) scoring were performed. The videos were divided into two groups based on their sources: Obstetricians and Gynecologists, and Internal Medicine/Endocrinology physicians. A 10-parameter scoring system including necessary information about thyroid disease during pregnancy was used. As a result of the analysis of 68 videos evaluated in the study; it was observed that the information on diagnosis and treatment in the videos prepared by Internal Medicine/Endocrinology physicians regarding of thyroid diseases in pregnancy was better than the videos prepared by Obstetrics and Gynecology physicians ($p<0.05$). When videos were evaluated in terms of quality and reliability, both groups were found to have similar quality and reliability. When all videos were analyzed, 41% were classified of high quality, 41% were of medium quality, and 18% were of low quality. The quality and reliability of YouTube videos on thyroid diseases during pregnancy were found to be high. However, the video content needs to be more comprehensive.
Keywords: YouTube, Thyroid Disease, Pregnancy

Özet: Özel bir dönem olan gebelikte kaliteli ve güvenilir bilgi kaynağına ulaşım hem anne hem de fetüs sağlığı için önemlidir. Bu dönemde YouTube gibi video platformlarından öğrenilen bilgilerin güvenilirliği ve kalitesi önemlidir. gebelik döneminde sık görülen tiroid bozuklukları ile ilgili YouTube video kalite ve güvenilirliğinin değerlendirilmesi için bu çalışma dizayn edilmiştir. YouTube'da, 'gebelik döneminde tiroid hastalıkları', 'gebelik ve tiroid bozuklukları' ve 'gebelik ve tiroid bezi' anahtar kelimeleri ile bulunan 248 video kaydedildi. Dışlama kriterleri sonrasında kalan 68 video değerlendirildi. Videoların genel özellikleri, modifiye DISCERN skorlaması ve Global Quality Scale (GQS) skorlaması yapıldı. Videolar kaynaklarına göre Kadın Hastalıkları ve Doğum doktorları ile İç Hastalıkları/Endokrinoloji doktorları olmak üzere iki gruba ayrıldı. Gebelik döneminde tiroid hastalığı ile ilgili gerekli bilgileri içeren 10 parametrelik bir puanlama sistemi kullanıldı. Çalışmada değerlendirilen 68 video analizinin sonucunda; gebelikte tiroid hastalıkları açısından İç Hastalıkları/Endokrinoloji doktorlarının hazırladıkları videolarda tanı ve tedavi konusundaki bilgilerin Kadın Hastalıkları ve Doğum doktorlarının hazırladığı videolardan daha iyi olduğu görüldü ($p< 0,05$). Paylaşılan videoların, kalite ve güvenilirlik açısından değerlendirildiğinde her iki grupta benzer kalite ve güvenilirlikte olduğu görüldü. Videoların tamamı incelendiğinde %41'inin yüksek kalitede, %41'inin orta kalitede, %18'inin düşük kalitede olduğu görüldü. Gebelikte tiroid hastalıkları ile ilgili YouTube'da yayınlanan videoların kalite ve güvenilirliği yüksek bulunmuştur. Ancak video içeriklerinin daha kapsamlı hale getirilmesi gerekmektedir.
Anahtar Kelimeler: YouTube, Tiroid Hastalığı, Gebelik

Ethics Committee Approval: Ethics committee approval was not received because the study was conducted on the public YouTube Video platform.

Informed Consent: The authors declared that informed consent form was signed by the participants.

Authorship Contributions Video viewing: DT, SK. Concept: DT, DY. Design: DT, OA. Data Collection or Processing: DT, SK. Analysis or Comment: DT, OA, DY. Literature Review: DT, SK. Writing: DT, VYT

Copyright Transfer Form: Copyright Transfer Formwas signed by all authors.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

Received : 19.12.2024
Accepted :21.03. 2025
Published :.26.03.2025

How to cite/ Atıf için: Taşkiran D, Kolsuz S, Yeniay D, Ay O, Tokgöz YV, Evaluation of YouTube Videos in Information about Thyroid Diseases During Pregnancy, Osmangazi Journal of Medicine, 2025;47(3):395-403

1. Introduction

Nowadays, the internet is frequently used for health research. For pregnant women, who are a special population, the reliability and quality of information are especially important. Misinformation may pose a risk to both maternal and infant health.

Some physiological changes may occur in thyroid hormones during pregnancy. Thyroid stimulating hormone (TSH) level decreases due to the trotrophic effect of human chorionic gonadotropin (hCG) hormone secreted from the corpus luteum in early pregnancy and from the placenta in late pregnancy. Since hCG and TSH have a common alpha subunits, weak thyroid stimulating effect of hCG occurs (1). Hypothyroidism, hypertroidism or subclinical hypothyroidism due to physiological changes may affect both mother and fetus. However, not all fluctuations in thyroid function tests that occur during pregnancy are pathological. Although the fetal thyroid gland becomes functional between 10-12 weeks, it does not mature until 18-20 weeks and the fetus benefits from maternal thyroid hormone in early pregnancy(2). Preterm labour, miscarriage, low birth weight and impaired fetal neurodevelopment may be seen due to untreated hypothyroidism.

The American College of Obstetricians and Gynaecologists (ACOG) recommends that thyroid function tests in pregnant women be kept within a certain trimester-specific range. The trimester-specific TSH range varies during pregnancy. Symptomatic patients whose TSH values are not within the specified range or who are clinically symptomatic should be treated. Iodine, has an important role not only in thyroid hormone production, but also during pregnancy period. The need for dietary iodine intake increases by approximately 50% during pregnancy. In case of insufficient iodine intake, pregnant women should be informed and necessary iodine supplementation should be made for these women. Thyroid function tests of pregnant women who get supplementation or treatment should be followed up in every 4-6 weeks (3).

It has been shown that the internet and digital media usage has been gradually increasing among pregnant women in the United States of America (4). Pregnant women use the internet to obtain some information about frequently curious topics such as fetal development, pregnancy complications, drug use, and weight gain during pregnancy (5). YouTube is one of the most used web-based platform where health information resources are frequently used[6]. Accessing to YouTube which is the most widely used global network facilitates getting some information, since the internet access has become easy and cheap associated with the development of the information technologies worldwide. It is necessary to evaluate whether the content and quality of the videos presented here are appropriate and additionally we should keep in mind that there may be incomplete and misleading information. Especially in a special period such as pregnancy, getting some misinformation may pose some risks for both mothers and babies. Accessing to reliable and high quality video content becomes even more important in this period.

It is important to evaluate thyroid gland functions during pregnancy and inform pregnant women about this issue. In our study, we aimed to evaluate the content, quality and reliability of videos related to thyroid diseases during pregnancy on the YouTube video platform, which is easily accessible.

2. Materials and Methods

In our study, the videos related to thyroid diseases during pregnancy on YouTube, were examined on 30 September 2024. Three trending topics related to thyroid diseases during pregnancy were selected in the search engine and a search was performed after cache cleaning. The search was performed with the keywords ‘thyroid diseases during pregnancy’, ‘pregnancy and thyroid disorders’ and ‘pregnancy and thyroid gland’.

As a result of the keywords typed into the search engine, a total of 248 videos were carefully monitored by two independent investigators, taking into account the exclusion criteria. Previous studies have shown that the majority of internet searches look at the first page and more than 83% view the first 3 pages (7). Therefore, the sample size was made by considering the first 3 pages.

Exclusion criteria (Figure 1);

1. Narration of the video by someone other than a specialist in Gynaecology and Obstetrics, Internal Medicine/Endocrinology

2. Having video content independent from the subject

3. Having repetitive video

4. Audio is not clearly understood in the video

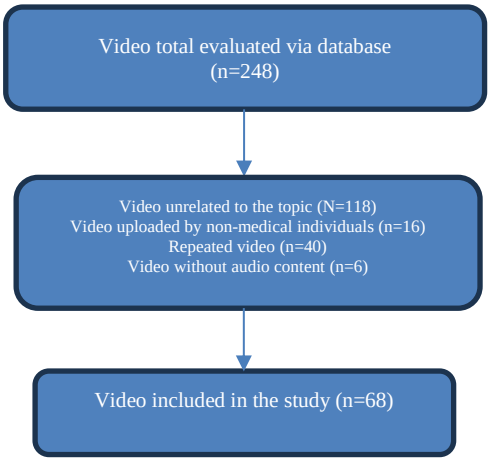

Figure 1. Flowchart of video selection according to exclusion criteria

Descriptive video characteristics such as URL addresses of the videos included in the study, the source of the video, duration (seconds), number of likes and dislikes, number of comments, number of views, time elapsed since the video was published (days) were collected. Parameters related to thyroid diseases in pregnancy were evaluated to determine the appropriateness of the video content to the subject matter.

Reliability assessment

The reliability and integrity of the video contents were assessed using the modified DISCERN (m DISCERN) scale. This scale is a scale created to evaluate the reliability of information about the questions and treatment options of individuals about any problem in terms of health care. The m DISCERN scale, which was adapted from the original DISCERN scale, includes five questions with 'yes and no' answers (8).

These questions are

1- Have reliable sources of information been used?

2- Are additional sources related to the problem indicated?

3- Are the answers to the question presented in a balanced and impartial manner?

4- Is the video short, clear and understandable?

5- Are controversial issues related to the subject mentioned?

The reliability of the information given in the video was scored from 1 to 5 by giving '1' point if the answer to these questions is yes and '0' point if no.

Quality assessment

The Global Quality Scale (GQS) is a scale that uses a scoring system from 1 to 5 that provides information about the usability, quality and flow of videos. According to this system, 1-2 points indicate low quality, 3 points indicate medium quality, and 4-5 points indicate high quality (9).

The parameters used in the GQS scale are as follows;

1- Video quality is low, site flow is slow, information is insufficient, content is not suitable for patients

2- In general terms, the video quality is poor, the flow is weak and most of the information on the subject is missing, the use for patients is limited

3- Medium quality and fluency video, some of the important information is discussed but there is missing information, partially sufficient for patients

4- The video quality and flow are good, it contains most of the information on the subject and controversial issues are addressed, useful for patients

5- Video quality and content are at a high level, useful for patients, and provide clear information on the subject.

Evaluation of video content parameters

It is expected that the necessary topics and content should be in the video in order to inform the patients about thyroid diseases in pregnancy. The question titles related to these topics were evaluated in the video content, and 1 point was given if these questions were answered in the video, and 0 points were given if not.

Parameters in the video content:

1- Is general information about thyroid diseases in pregnancy given (complaints, symptoms, etc.)?

2- Is information about TSH values appropriate for the gestational week provided?

3- Is information provided about how to diagnose thyroid disease during pregnancy?

4- Is information provided about the treatment to be given to patients with thyroid disease?

5- Is information provided about the frequency of thyroid disease during pregnancy?

6- Have pregnant women been provided with information about nutrition in thyroid disorders?

7- Is information provided about the possible effects of this period on the fetus?

8- Is information provided about the follow-up periods of thyroid patients during pregnancy?

9- Is information provided about general recommendations for patients with thyroid disease?

10- Is information provided for the follow-up of patients with thyroid disease after pregnancy?

Ethical approval

Since YouTube™ is an open platform, no human human or animal participants was included in the study because the videos watched were general information videos and no Ethics Committee approval was required in this study, as in similar studies(10).

Statistical analysis

Statistical analysis of our study was performed using SPSS for Windows 20.0 (IBM SPSS, Chicago). In the evaluation of the data, nominal data were evaluated as number and percentage (%), measured data were evaluated as mean ± standard deviation, median value (minimum - maximum). Kolmogorov Smirnov test was used for normality distribution of the groups. Mann-Whitney U test and Kruskal-Wallis test were used for non-parametric variables and Chi-Square test was used for the evaluation of categorical data. $p<0.05$ was accepted as statistically significant.

3. Results

Total of 248 videos reviewed in our study, 118 were found to be irrelevant, 16 were uploaded by non-medical individuals, 40 were repetitive videos, 6 had unclear audio content and were excluded from the study. The remaining 68 videos were included into the study (Figure 1). The general characteristics of the videos included in the study such as video duration, number of views, number of likes/dislikes, number of comments, number of days the video was shown in Table 1.

The videos included in the study were divided into two groups as Obstetrics and Gynecology and Internal Medicine/Endocrinology doctors according to the source who prepared the videos. It was found that 35 of the videos were prepared by Obstetrics and Gynaecology doctors and 33 by Internal Medicine/Endocrinology doctors. When the videos were divided into groups according to their sources, and there were no statistically significant difference between the two groups in terms of video duration, number of views, number of likes, number of comments, and number of days the video was published. The mean GQS scores and m DISCERN scores were 3.23±1.01 and 3.23±1.11; 3.42±0.93 and 3.61±0.82 in the videos prepared by Gynecology and Obstetrics and Internal Medicine / Endocrinology doctors, respectively. No statistically significant difference was observed between the two groups in terms of mean GQS and m DISCERN scores ($p>0.05$) (Table 2).

It was found that the rate of informing about the diagnosis of the disease was 0.66 ± 0.48 and the rate of informing about the treatment of the disease was 0.54 ± 0.50 in the Obstetrics and Gynecology physicians group, while the rate of providing informing about the diagnosis of the disease was 0.91 ± 0.29 and the rate of informing about the treatment of the disease was 0.79 ± 0.41 in the Internal Medicine/Endocrinology physicians group. The rate of mentioning the diagnosis and treatment of the disease was found to be statistically significantly higher in videos prepared by Internal Medicine / Endocrinology doctors ($p<0.05$).

All videos in the study were grouped as low quality (1 to 2), medium quality (3) and high quality (4 to 5) in terms of information quality according to GQS

score. Twelve videos were low quality (18%), 28 videos were medium quality (41%) and 28 videos were high quality (41%). The parameters that were found to be statistically significant as a result of pairwise comparison in the groups divided according to GQS scores were shown in Table 3. The publishing time of the high quality group was found to be statistically longer than the medium quality group. m DISCERN scoring and the number of views were statistically significantly higher in the high quality group than in the low and medium quality groups. When the videos were evaluated in terms of content parameters, it was found that information about how to diagnose the disease, treatment, follow-up period and possible effects of the disease on the foetus were statistically significantly higher in the high quality group compared to the other groups ($p<0.05$) (Table 3).

The distribution of video content parameters evaluated in the study shown in Table 4. It was observed that 68% of the videos provided general information about thyroid diseases, 78% of them about the diagnosing thyroid problems, 68% provided information about treatment of the disease and 69% were about possible effects on the fetus during pregnancy period.

It was observed that some information was included less than half of the videos, including 48% about TSH value appropriate for the gestational week, 30% about the frequency of thyroid diseases during pregnancy, 44% about the diet of pregnant women, 41% about the follow-up intervals of those with thyroid disease during pregnancy, 41% about general information about thyroid diseases during pregnancy, and 33% about post-pregnancy follow-up of those with thyroid disease during pregnancy (Table 4).

Table 1. Evaluation of general features of the videos (n=68)

	Mean ± SD	**Median (min – max)**
Video duration (minute)	4,01± 2,7	2,03 (1,1- 16,2)
Number of views	56790,74 ± 153289,57	5200 (37 - 981000)
Number of likes	404,65 ± 2885,04	10 (0 - 24000)
Number of dislikes	0 ± 0	0 (0 - 0)
Number of comments	37,19 ± 106,22	0 (0-549)
Number of days published	1697,40 ± 1059,23	1440 (270 – 3960)
GQS score	3,32 ± 0,96	3 (1- 5)
m DISCERN score	3,39 ± 1,03	3 (0 – 5)

m DİSCERN; Modified DİSCERN, GQS; Global Quality Scale

Table 2. Comparison of video content between two areas of expertise

	Obstetrics and Gynecology (n=35, 51,5%)		**Internal medicine / Endocrinology (n=33, 48,5%)**		**p**
	Mean± SD	**Median (min-max)**	**Mean± SD**	**Median (min-max)**	
Video duration (minutes)	5,8±3,56	1,5 (0,42 – 15,19)	5,4±3,3	2,06(0,24- 17,27)	0,597
Number of views	68514±180599,68	3800 (55 – 981000)	46007,07±122126,11	5200 (37- 639000)	0,547
Number of likes	730± 4049,83	10 (0- 24000)	71,67±181,71	11,00 (0- 820)	0,343
Number of comments	44,12± 118,72	1 (0 - 549)	30,94±94,70	0 (0- 523)	0,617
Number of days published	1768,2±1070,40	1800 (270 - 3960)	1629,9±1074	1350 (330 - 3960)	0,493
Information about the diagnosis of the disease	0,66 ± 0,48	1 (0-1)	0,91 ± 0,29	1 (0-1)	**0,011**
Information about the frequency of the disease	0,29 ± 0,45	0 (0-1)	0,33 ± 0,47	0 (0-1)	0,670
Information about the treatment of the disease	0,54 ± 0,50	1 (0-1)	0,79 ± 0,41	1 (0-1)	**0,032**
Information about follow-up of the disease	0,60 ± 1,53	0 (0-1)	0,52 ± 0,50	1 (0-1)	0,759
m DISCERN score	3,23±1,11	3 (1- 5)	3,61±0,82	4 (2 - 5)	0,116
GQS score	3,23±1,01	3,00 (1,00 - 5)	3,42±0,93	3 (2 - 5)	0,408

Mann- Whitney U test was used, m DİSCERN; Modified DİSCERN, GQS; Global Quality Scale

Table 3. Classification of videos according to quality scale

	Poor quality (n= 12, 18%)		Medium quality (n=28, 41%)		High quality (n=28, 41%)		p	Pairwise comparison results		
	Mean±SD	Median(min-max)	Mean±SD	Median (min-max)	Mean±SD	Median (min-max)		P-M	M-H	P-H
Video duration(minutes)	4,66±5,15	1,41(1,11-14,14)	1,98 ± 2,66	1,24 (0,24-14,09)	5,45 ±5,15	3,36 (0,42-17,27)	**0,014**	-	+	-
Number of likes	66,84 ±93,15	25,00 (2-277)	903,18±4616,00	6 (0-24000)	97,92±181,23	16 (0-820)	0,171	-	-	-
Number of comments	42,16±113,99	8 (0-419)	30,59±107,73	0(0-549)	42,59±106,44	6 (0-523)	0,114	-	-	-
m DISCERN score	2,38±0,96	3 (1-4)	3,25±0,71	3(2-4)	4,03±080	4(2-5)	**0,000**	-	+	+
Information about the diagnosis of the disease	0,38±0,50	0(0-1)	0,77±0,42	1(0-1)	0,92±0,26	1(0-1)	**0,001**	+	-	+
Information about the treatment of the disease	0,46±0,51	0(0-1)	0,51±0,50	1(0-1)	0,92±0,26	1(0-1)	**0,001**	-	+	-
Information about the frequency of the disease	0,15±0,37	0(0-1)	0,22±0,42	0(0-1)	0,48±0,50	0(0-1)	0,056	-	-	-
Information about nutritional support	0,38±0,50	0(0-1)	0,33±0,48	0(0-1)	0,59±0,50	1(0-1)	0,090	-	-	-
Information about the effect on the fetus	0,38±0,50	0(0-1)	0,70±0,46	1(0-1)	0,88±0,32	1(0-1)	**0,004**	-	-	+
Information about the follow-up period of the disease	0,23±0,43	0(0-1)	0,22±0,42	0(0-1)	0,98±0,96	1(0-1)	**0,000**	-	+	+
Number of views	97032,23±268850,41	8200(55-981000)	29436,22±74393,51	1800(37-244000	67320,88±144036,12	9300(146-639000)	**0,038**	-	+	+
Provide general information	0,30±0,48	0(0-1)	0,37±0,49	0(0-1)	0,88±0,32	1(0-1)	0,052	-	-	-
Number of days published	1410,15±1140,61	1080(270-3930)	1830,77±1080,16	1140(390-3960)	1680,18±1020,15	1800(270-3960)	0,332	-	-	-

Kruskal Wallis test was used, m DİSCERN; Modified DİSCERN, GQS; Global Quality Scale, P; Poor quality, M; Medium quality, H; High quality

Table 4. Comparison of both areas of expertise according to video content

	Total (n=68, %)		Obstetrics and Gynecology		Internal medicine / Endocrinology	
	Yes	No	Yes	No	Yes	No
1. Has general information been given about thyroid diseases during pregnancy?	46 (68%)	22 (32%)	21	13	25	9
2. Has information been given about TSH values appropriate for the week of pregnancy?	33 (48%)	35 (52%)	16	15	17	20
3. Has information been given about how to diagnose thyroid disease during pregnancy?	53 (78%)	15 (22%)	23	11	30	4
4. Has information been given about the treatment to be given to those with thyroid disease during pregnancy?	46 (68%)	22 (32%)	20	16	26	6
5. Has information been given about the frequency of thyroid disease during pregnancy?	21 (30%)	47 (70%)	10	25	11	22
6. Has information been given about nutrition for those with thyroid disease during pregnancy?	30 (44%)	38 (56%)	16	19	14	19
7. Has information been given	47 (69%)	21 (31%)	25	11	22	10

about the possible effects of thyroid disease on the fetus during pregnancy?						
8. Is information given about the follow-up period of thyroid patients during pregnancy?	28 (41%)	40 (59%)	12	24	16	16
9. Are general recommendations given about thyroid disease during pregnancy?	28 (41%)	38 (59%)	14	22	14	16
10. Has information been given for follow-up after pregnancy?	23 (33%)	45 (67%)	12	26	11	19

4. Discussion

The accuracy and reliability of the information provided in these videos are important in terms of health literacy. Since pregnant women constitute a special group, Diseases that occur during pregnancy and the drugs used in their treatment are more important than other populations in terms of both women's and infants health. The quality and reliability of the videos published on public video platforms are as important as the content of the subjects described in the videos.

It is important that the quality and reliability of the videos should be high, because access to the information is easy and more useful in those platforms such as YouTube. We categorised the videos according to the quality using GQS scores and it was found that more than half of the videos had at least medium quality in our study. YouTube is a widely used video platform for the evaluation of health information resources and the videos may be published on various topics regarding diseases which were seen during pregnancy (11). During pregnancy, women often seek obtain some information easily on the topics such as drug use during pregnancy and gestational diabetes which might affect the individual and infants health via YouTube (12). In some studies, it has been concluded that patients have good glycaemic control and improved outcomes related to gestational diabetes with easy access to information and increased health literacy(13). There are many videos on YouTube about thyroid diseases in pregnancy. In our study, we evaluated the high quality and reliable videos on YouTube, and we found that pregnant women can benefit from YouTube by obtainig useful and true information about this issue.

Thyroid disorders cause maternal and fetal changes with different mechanisms at different periods during pregnancy. Hypothyroidism has been is estimated to occur in approximately 4% of pregnancies and hyperthyroidism in approximately 2.4% of pregnancies (14). Since fetal thyroid gland becomes functional around 18 to 20 weeks, transplacental passage of maternal thyroid hormone in early pregnancy becomes important for fetal development. Due to the weak thyrotropic effect of hCG, which is high in early pregnancy, causes TSH levels to be lower in pregnant women than in non-pregnant women (15). After the first trimester of pregnancy, TSH level tends to increase due to the decrease in hCG level. Therefore, TSH value reference intervals may vary during early pregnancy and in the later stages of pregnancy. These mechanisms should be considered in the diagnosis and treatment of thyroid disease. In our study, general information about thyroid diseases in pregnancy, diagnosis and treatment of thyroid diseases in pregnancy, and possible effects of thyroid diseases on the fetus were mentioned in more than half of the videos, suggesting that the use of YouTube video platform may be beneficial for pregnant women.

The diagnosis, treatment and follow-up process of the thyroid disease during pregnancy are performed by both Obstetrics and Gynecology and Internal Medicine / Endocrinology. In the current study, we have found that the contents and informations of the videos on YouTube were better prepared by Internal Medicine/Endocrinology compared to the Obstetricians and Gynecologists.

There are different opinions regarding the follow-up of thyroid diseases in pregnancy. The follow-up of the disease is performed in accordance with the recommendations of different organisations such as the American Thyroid Association, the World Health Organization, and the Turkish Society of Endocrinology and Metabolism. Which diets to be recommended for these patients were mentioned in less than half of the videos that we examined. In this respect, we think that YouTube video content should be improved.

A study of 223,512 pregnant women showed that untreated overt hypothyroidism was associated with an increased risk of preeclampsia, preterm delivery, gestational diabetes mellitus and neonatal intensive care unit admission[16]. Risk factors for thyroid dysfunction include a history of thyroid dysfunction, known thyroid antibody positivity, type 1 diabetes mellitus, morbid obesity, and living in iodine-deficient regions. Pregnant women with thyroid disease and using levothyroxine during pregnancy should be evaluated every 4 to 6 weeks until mid-pregnancy and then once in the second and third trimesters for a target value of TSH <2.5 mIU/L; the risk of complications may increase at higher values (17). While these risks have been shown in studies, we think that the diagnosis, treatment, risk factors and follow-up of the disease should be explained in more detail by Gynecologists and Obstetricians on the YouTube video platform.

During pregnancy, iodine requirement increases due to various factors. There is an increase in estrogen-mediated thyroid binding globulin and the requirement for the fetal thyroid gland increases in the advancing weeks of pregnancy. For these reasons, 220 to 250 μg of iodine intake per day is recommended during pregnancy(18). Daily oral supplements containing 150 μg of iodine should be recommended for women who are considering pregnancy, are pregnant or breastfeeding. According to our study data, we stated that sufficient information was not provided regarding general recommendations and diet; so more detailed information should be provided to pregnant women on YouTube informative videos regarding iodine use.

In a YouTube study on gout, videos posted by academic institutions and doctors were shown to have higher DISCERN and GQS scores and greater quality and reliability (19). In YouTube videos posted on umbilical hernia, DISCERN and GQS scores of videos posted by doctors were found to be higher (20). Studies showed that videos on health topics were more reliable and of higher quality when posted by doctors. Our study has shown that the topics posted by doctors may vary between different departments, but are similar in terms of quality and reliability. Using certain scales in the evaluation of YouTube videos is important in terms of quality and reliability standards.

Our Limitations

Since the videos published by non-medical individuals were not evaluated in our study, we could not comment on the reliability of other videos, which is the primary limitation of our study.

5. Conclusion

This study was conducted to evaluate the content, quality and reliability of videos published on the YouTube video platform to raise public awareness about thyroid diseases that are frequently encountered during pregnancy. Thyroid diseases are quite common during pregnancy and the management can be complicated due to the many rules that the pregnant should comply with. Many questions about thyroid diseases during pregnancy can remain unanswered for women. In order to solve these questions more clearly, it is important to have access more reliable sources for pregnant women. The more recent and reliable videos published on public video platforms such as YouTube are important providing the appropriate and useful information for those specific population. There may be deficiencies even in videos published by experts on the subject on this platform. In terms of diagnosis and treatment of thyroid diseases during pregnancy, Gynecologists and Obstetricians need to share more detailed and reliable information. Pregnant women may have difficulty accessing accurate information about thyroid diseases that occur during pregnancy from videos on YouTube video platforms.

REFERENCES

1. Yamazaki, K., Sato, K., Shizume, K., Kanaji, Y. et al., Potent thyrotropic activity of human chorionic gonadotropin variants in terms of 125I incorporation and de novo synthesized thyroid hormone release in human thyroid follicles. The Journal of Clinical Endocrinology & Metabolism, 1995. 80(2): p. 473-479.
2. Burrow, G.N., Fisher D.A., Larsen P.R. Maternal and fetal thyroid function. N Engl J Med, 1994. 331: p. 1072-1078.
3. Mandel, S.J., Hypothyroidism and chronic autoimmune thyroiditis in the pregnant state: maternal aspects. Best practice & research clinical endocrinology & metabolism, 2004. 18(2): p. 213-224.
4. Sayakhot, P., Carolan-Olah M. Internet use by pregnant women seeking pregnancy-related information: a systematic review. BMC pregnancy and childbirth, 2016. 16: p. 1-10.
5. Narasimhulu, D.M.,Karakash, S., Weedon, J., Minkoff, H. Patterns of internet use by pregnant women, and reliability of pregnancy-related searches. Maternal and child health journal, 2016. 20: p. 2502-2509.
6. Van Kessel, P., 10 facts about Americans and YouTube. 2019.
7. Jansen, B.J.,Spink, A. How are we searching the World Wide Web? A comparison of nine search engine

transaction logs. Information processing & management, 2006. 42(1): p. 248-263
8. Kocyigit, B.F., Akaltun, M.S., Sahin ,A.R. YouTube as a source of information on COVID-19 and rheumatic disease link. Clinical rheumatology, 2020. 39: p. 2049-2054.
9. Koller, U., Waldstein, W., Schatz, K., Windhager, R. YouTube provides irrelevant information for the diagnosis and treatment of hip arthritis. International orthopaedics, 2016. 40: p. 1995-2002.
10. Esen, E., Aslan, M.,Sonbahar, B.Ç., Kerimoğlu, R. S. YouTube English videos as a source of information on breast self-examination. Breast cancer research and treatment, 2019. 173: p. 629-635.
11. Yuksel, B., Cakmak, K., Healthcare information on YouTube: Pregnancy and COVID-19. International Journal of Gynecology & Obstetrics, 2020. 150(2): p. 189-193.
12. Hansen, C., Interrante, J., Ailes, E., Frey,M., Broussard, C., et al Assessment of YouTube videos as a source of information on medication use in pregnancy. Pharmacoepidemiology and drug safety, 2016. 25(1): p. 35-44.
13. Pirdehghan, A., Eslahchi, M., Esna-Ashari, F., Borzouei, S. Health literacy and diabetes control in pregnant women. Journal of family medicine and primary care, 2020. 9(2): p. 1048-1052.
14. Dong, A.C., Stagnaro-Green, A. Differences in diagnostic criteria mask the true prevalence of thyroid disease in pregnancy: a systematic review and meta-analysis. Thyroid, 2019. 29(2): p. 278-289.
15. Li, C.,Shan, Z., Mao, J.,Wang, W., Xie,X., Zhou, W., et al., Assessment of thyroid function during first-trimester pregnancy: what is the rational upper limit of serum TSH during the first trimester in Chinese pregnant women? The Journal of Clinical Endocrinology & Metabolism, 2014. 99(1): p. 73-79.
16. Männistö, T., Mendola, P., Grewal, J., Xie, Y., Chen, Z., et al., Thyroid diseases and adverse pregnancy outcomes in a contemporary US cohort. The Journal of Clinical Endocrinology & Metabolism, 2013. 98(7): p. 2725-2733.
17. Moleti, M., Alibrandi, A., Di Mauro, M., Paola, G., Perdichizzi, L.G., et al. Preconception Thyrotropin Levels and Thyroid Function at Early Gestation in Women with Hashimoto Thyroiditis. J. Clin. Endocrinol. Metab. 2023;108:e464–e473.
18. Secretariat, W., Andersson, M., Benoist, B., Delange, F., Zupan, J. Prevention and control of iodine deficiency in pregnant and lactating women and in children less than 2-years-old: conclusions and recommendations of the Technical Consultation. Public health nutrition, 2007. 10(12A): p. 1606-1611.
19. Onder, M.E., Zengin, O. YouTube as a source of information on gout: a quality analysis. Rheumatol Int. 2021 Jul;41(7):1321-1328.
20. Cakmak G. Evaluation of Scientific Quality of YouTube Video Content Related to Umbilical Hernia. Cureus. 2021 Apr 25;13(4):e14675.