

# Analysis of the Turkish informative videos for gambling disorder on YouTube

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## ABSTRACT

**Aims:** The low rates of treatment seeking in gambling disorder (GD) and the popularization of online gambling increase the importance of informative videos on digital platforms. We aimed to evaluate the characteristics and quality of Turkish informative videos for GD on YouTube.

**Methods:** A total of 116 videos that met the study criteria were examined by two independent psychiatrists. In addition to quantitative characteristics such as the speakers, video duration, number of the views, likes, and comments, the quality and reliability of the videos were evaluated using the Global Quality Scale (GQS) and modified DISCERN scale.

**Results:** 46.6% of the videos were in the professional group (featuring a speaker who is a physician, psychologist, or another mental health professional, or voice-over videos uploaded by health/academic channels). According to GQS scores, 58.6% of the videos were of low quality, 24.1% were of medium quality, and 17.2% were of good/excellent quality. Despite higher quality scores for professional videos (GQS scores:  $3.24 \pm 0.79$ ,  $1.90 \pm 0.46$ , respectively), non-professional videos had higher daily average views, likes, and comments. It was found that there was a negative correlation between the GQS scores and the average daily views, likes, and comments, whereas only video duration showed a positive correlation with the modified DISCERN scores.

**Conclusion:** When creating informative videos for GD, including experiences shared by patients, their relatives, or celebrities along with the medical information presented by mental health professionals can ensure high quality and reliability while also providing higher levels of interaction, thereby reaching a wider audience.

**Keywords:** Gambling, gambling disorder, YouTube, behavioral addictions

## INTRODUCTION

Gambling, defined as taking a risk with something of value in the hope of achieving a higher gain, involves uncertainty and the role of chance; it spans the spectrum from social gambling, problematic gambling, to gambling disorder (GD).<sup>1</sup> In social gambling, the purpose is entertainment, and there is no loss of control over the gambling behavior, with losses being controlled. Although not included in international diagnostic systems, the term 'problematic gambling' is used in the literature to describe gambling behavior that goes beyond social limits, with increasing risks and unpredictable losses. In problematic gambling, although gambling causes problems in people's lives, these individuals do not meet the diagnostic criteria for GD.<sup>1,2</sup>

Gambling stretches back to the depths of human history, but considering maladaptive gambling as a psychiatric disorder is relatively recent. This disorder was first included under the name 'pathological gambling' in the 3<sup>rd</sup> edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III), published by the American Psychiatric Association in

1980, under the category of impulse control disorders. The diagnostic criteria for pathological gambling were reviewed in the DSM-IV, published in 1994, and it was included in the addiction category with the DSM-5 in 2013, being renamed as GD in this edition.<sup>1,3,4</sup>

The prevalence of GD in the United States is estimated to be 0.5% of the adult population, also similar or slightly higher estimates in other countries.<sup>5</sup> Recognized as a complex psychiatric disorder influenced by environmental and genetic factors, the risk factors for GD include male gender, being single, young age, living alone, low education level, and financial difficulties.<sup>6</sup> One of the significant clinical features of GD is its high comorbidity with other psychiatric disorders. In a study conducted on 2099 individuals receiving treatment for GD, the rate of coexisting psychiatric disorders was reported to be 73%, while another study in the United States found that 96.3% of individuals diagnosed with GD met the diagnostic criteria for at least one psychiatric disorder during their lifespan.<sup>7,8</sup> It is noted that a range of psychiatric

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disorders, such as substance use disorders (SUD), impulse control disorders, major depression and other mood disorders, anxiety disorders, post-traumatic stress disorder, and attention deficit hyperactivity disorder, are highly comorbid with GD.<sup>1,3,5,7</sup> In addition to these disorders, increased suicide rates in GD compared to the general population have also been demonstrated in various studies.<sup>9,10</sup>

Technological developments have brought a new dimension to GD, which negatively affects the individual, their family, and society in various ways. Online gambling, with its unique features, has rapidly become a significant and growing problem worldwide in recent years. Factors such as its easy accessibility, flexibility in timing, higher interaction, anonymity, and variety of games have played a significant role in the spread of online gambling.<sup>11</sup> Despite the serious problems it creates, studies have shown that the rate of seeking treatment for GD is quite low. Various reasons such as individuals' tendencies to deny, feel ashamed, hide the situation, and desire to handle the problem alone play a role in the low treatment application rates.<sup>12,13</sup> Considering this situation, easily accessible and accurate information sources can provide significant benefits for informing and educating individuals with gambling problems and their relatives, as well as especially young people, who are identified as a risk group.

As the internet develops and becomes widespread, sources of health information are shifting from traditional media to digital media.<sup>14</sup> In a 2014 report on the digital health literacy of European citizens, more than 75% of participants indicated that they considered the internet to be a good source for searching health information, and 60% reported using the internet to search for health information.<sup>15</sup> The digital media platform YouTube, which was established approximately 19 years ago, is now one of the most visited video-sharing sites, with over 500 videos uploaded per minute. YouTube, a platform where anyone can upload videos for free at any time, has become a resource for health information as well as other fields. However, misleading and low-quality videos pose the risk of negatively influencing individuals' decisions on health-related issues.<sup>16</sup> Concerns about the accuracy and quality of videos uploaded in the health field, especially due to the lack of content moderation, have laid the groundwork for studies in this area.<sup>16-18</sup> Considering the financial, familial, social, professional, and legal problems, as well as the high psychiatric comorbidity intertwined with GD, we believe that the low rates of treatment applications for GD and the widespread prevalence of online gambling increase the importance of informative videos on digital platforms. In this context, our study aimed to analyze the quality and reliability, along with other quantitative characteristics, of Turkish informative videos about GD on YouTube, a topic that has not yet been addressed in the literature.

## METHODS

### Study Design

In this study, similar to previous studies with a similar design, no ethics committee approval was required as publicly available videos were used and no human or animal data were

used.<sup>16-18</sup> All procedures were carried out in accordance with the ethical rules and the principles.

To access the videos on YouTube, the search history was cleared. In incognito mode and without logging into personal accounts, the terms 'gambling disorder' and 'gambling addiction' were separately entered into the YouTube (<https://www.youtube.com>) search bar, and the search was conducted on August 30, 2024. Studies on internet search engines have indicated that more than 90% of search engine users click on a result on the first three pages of search results.<sup>17</sup> Therefore, in our study, the first 100 videos listed for each term were evaluated for suitability according to the study criteria by two psychiatrists (H.İ.Ö., F.S.). Videos without sound, repetitive, unrelated, requiring a paid subscription for access, intended for humor, film/music/advertisements, and news videos were excluded from the study. Videos divided into multiple parts were considered as a single video, and their average values were used for analysis. According to these criteria, a total of 116 videos included in the study were reviewed by two independent psychiatrists (Figure).

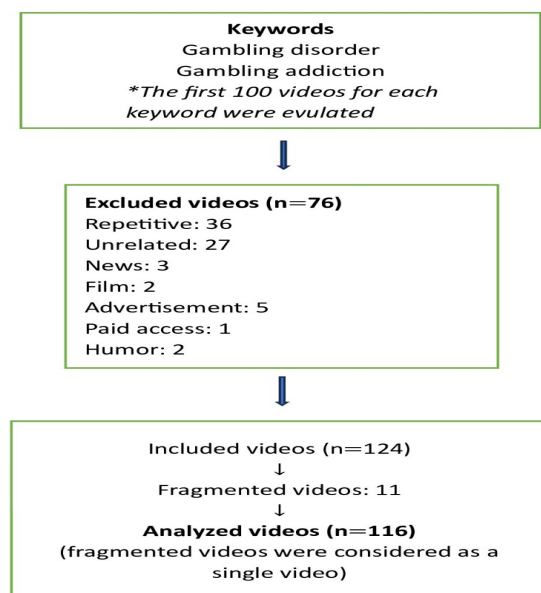


Figure. The flowchart of the videos selection

Information regarding the speaker in the video (physician, psychologist, or other mental health professional, voice-over, patient or their relative, individual/celebrity or youtuber), the video's length (seconds), the time elapsed since the upload date on YouTube (days), average daily views [total views/time elapsed since the upload date on YouTube (days)], average daily likes [total likes/time elapsed since the upload date on YouTube (days)], and average daily comments [total comments/time elapsed since the upload date on YouTube (days)] was identified and recorded. In addition to these variables, the videos were classified as professional and non-professional. The professional videos group consisted of videos featuring physicians, psychologists, and other mental health professionals as speakers, as well as voice-over videos uploaded by health or academic channels. The non-professional videos group included videos featuring personal experiences of patients or their relatives, videos with individuals/celebrities

or youtubers as speakers, and voice-over videos uploaded by channels other than health or academic ones.

The overall quality of the videos was evaluated by two independent psychiatrists using the Global Quality Scale (GQS).<sup>19</sup> Additionally, the comprehensiveness and reliability of the videos in the professional group were scored using the modified DISCERN scale.<sup>17,20</sup>

### Global Quality Scale (GQS)

It was developed by Bernard et al.<sup>19</sup> to evaluate the quality of health information presented online. The scale is rated between 1 to 5. The scoring is done by considering the flow of information, adequacy, and usefulness for patients. A score of 1 indicates the lowest quality, 3 indicates average quality, and 5 indicates the highest quality. It has been widely used in studies evaluating health videos broadcasted online in English, Turkish, or other languages.<sup>16-18,21-24</sup>

### Modified DISCERN

It is a modified version of the original DISCERN scale developed by Charnock et al.,<sup>20</sup> which consists of 16 questions.<sup>17</sup> It consists of a total of 5 questions. The health information provided is scored as no (0) and yes (1) in response to each question in the scale. The total score of the scale can vary between 0 and 5. It has been used in many studies to assess the reliability of health videos on YouTube in English, Turkish or other languages.<sup>16,17,21,22,25,26</sup>

### Statistical Analysis

Numerical variables were given as mean±standard deviation or median (interquartile range) depending on their distribution, and categorical variables were given as frequencies and percentages in descriptive statistics. The normality of the distribution was evaluated using the Shapiro-Wilk test. The inter-rater agreement for the GQS and Modified DISCERN scales was assessed using Cohen’s kappa (κ) coefficient. For comparing professional and non-professional video groups, the t-test was used for normally distributed numerical data, and the Mann Whitney U test was used when normal distribution was not met. The direction and level of relationships between the GQS and modified DISCERN scores and the independent variables studied were examined using Spearman correlation analysis. The significance level in the analyses was set at p<0.05. Statistical Package for the Social Sciences (SPSS; IBM Corp., Armonk, NY) version 23.0 software package was used for data analysis.

## RESULTS

Of the 116 videos included in the study, 46.6% (n=54) were in the professional group (featuring a speaker who is a physician, psychologist, or another mental health professional, or voice-over videos uploaded by health/academic channels). The majority of the speakers in the videos were physicians and patients or their relatives. While the number of videos sharing the experiences of patients or their relatives was 35 (30.2%), the number of videos featuring physicians as speakers was 34 (29.3%). The median duration of the reviewed videos was found to be 866 seconds (25<sup>th</sup>-75<sup>th</sup> percentile: 424-1631), and

the median daily view count was 26.7 (25<sup>th</sup>-75<sup>th</sup> percentile: 3.97-90.1). The average GQS score of the videos, evaluated by two independent psychiatrists, was calculated as 2.52±0.92. According to GQS scores, 58.6% (n=68) of the videos were of low quality, 24.1% (n=28) were of medium quality, and 17.2% (n=20) were of good to excellent quality. The average modified DISCERN score of the videos in the professional group was found to be 2.90±0.48. The characteristics and quality evaluations of the videos are presented in detail in Table 1.

**Table 1. The characteristics and quality evaluations of the videos (n=116)**

Videos category	
Professional, n (%)	54 (46.6%)
Non-professional, n (%)	62 (53.4%)
<b>Speakers in the videos</b>	
Physicians, n (%)	34 (29.3%)
Psychologists/other mental health professionals, n (%)	20 (17.2%)
Patients/their relatives, n (%)	35 (30.2%)
Individuals/celebrities/youtubers, n (%)	19 (16.4%)
Voice-over, n (%)	8 (6.9%)
<b>Video duration (seconds)</b>	866 (424-1631)
<b>Duration of YouTube presence (days)</b>	653 (122-1010)
<b>Average number of daily views</b>	26.7 (3.97-90.1)
<b>Average number of daily likes</b>	0.27 (0.01-1.44)
<b>Average number of daily comments</b>	0.15 (0.0-0.92)
<b>GQS</b>	
GQS, mean±SD	2.52±0.92
Poor quality (1-2), n (%)	68 (58.6%)
Moderate quality (3), n (%)	28 (24.1%)
Good/excellent quality (4-5), n (%)	20 (17.2%)
Modified DISCERN, mean±SD	2.90±0.48

Note: Data is presented as mean±SD or median (25<sup>th</sup>-75<sup>th</sup> percentile) for numerical variables, and as count (n) and percentage (%) for categorical variables, SD: Standard deviation, GQS: Global Quality Scale

In determining the inter-rater agreement, the κ coefficient was calculated as 0.946 for the GQS scale and 0.884 for the modified DISCERN scale (p<0.001) (Table 2). These results indicate a high level of agreement between the raters.<sup>27</sup>

**Table 2. Inter-rater agreement**

	Mean±SD	z	p	Cohen κ
<b>GQS</b>				
GQS1	2.48±0.91	10.2	<0.001	0.946
GQS2	2.56±0.96			
<b>Modified DISCERN</b>				
Modified DISCERN1	2.87±0.48	6.55	<0.001	0.884
Modified DISCERN2	2.93±0.51			

Abbreviations: SD: Standard deviation, GQS1: First rater score, GQS2: Second rater score, modified DISCERN1: First rater score, modified DISCERN2: Second rater score, SD: Standard deviation, κ: Kappa, p<0.05 statistical significance level, GQS: Global Quality Scale

When comparing professional and non-professional videos, it was found that the average GQS scores of professional videos were higher (3.24±0.79, 1.90±0.46, respectively, p<0.001). However, non-professional videos had higher daily average

views, daily average likes, and daily average comments compared to professional videos ( $p<0.001$ ). Comparisons between professional and non-professional video groups are presented in [Table 3](#).

The direction and level of relationships between the GQS and modified DISCERN scores and the independent variables investigated in the study are presented in [Table 4](#). It was found that the GQS score showed a low positive correlation with video duration and the time the video had been on YouTube (days), while it had a negative correlation with average daily views, likes, and comments ( $p<0.05$ ). The modified DISCERN score only showed a significant correlation with video duration ( $r_s=0.72$ ,  $p<0.05$ ).

## DISCUSSION

To the best of our knowledge, this is the first study to analyze the Turkish informative videos for GD on YouTube. The main finding was that the majority of the videos were of low quality, and most of the videos featured speakers who were not mental health professionals. Another significant finding was that videos with mental health professionals as speakers had higher quality, but non-professional videos had higher daily view counts, daily comment counts, and daily like counts, which are parameters indicating video interaction.

The development of technology and the widespread use of the internet have made digital platforms one of the main sources people use to obtain information about health issues.<sup>27,28</sup> YouTube, one of the most preferred video-sharing platforms, hosts many videos about general information, experiences, diagnosis, treatment, and coping methods for various diseases. However, YouTube does not guarantee the quality or reliability of these videos for its users.<sup>16</sup> This situation carries the risk of patients and their relatives obtaining incomplete, misleading, or incorrect medical information, which has the potential to negatively impact their health. In a pioneering study by Keelan et al.,<sup>29</sup> it was reported that there

are numerous anti-immunization videos on YouTube, and that the content of these videos contradicts reference sources. They recommended that clinicians should be aware of online video-sharing sites and be prepared to respond to patients seeking health information from these sources. Similar to our study results, numerous studies analyzing YouTube videos on different diseases have reported that the majority of informative videos on YouTube are of low quality.<sup>18,24,30-33</sup>

The majority of the videos analyzed in our study were non-professional videos. In the literature, studies conducted with similar methodologies for different diseases show that there are varying proportions of professional and non-professional videos.<sup>16-18,32-35</sup> This proportional difference between studies may be due to the prevalence of diseases, the level of awareness in the community, or other disease-specific characteristics. However, consistent with our study, previous studies found that professional videos were of higher quality.<sup>16,32,36-41</sup> The higher quality and reliability of video content uploaded by health professionals and health channels indicates their competence and sense of responsibility towards their profession, institutions and their community.

Despite professional videos being of higher quality, the average daily views, average daily likes, and average daily comments were lower compared to non-professional videos. Furthermore, in the correlation analysis that included all videos in the study, a negative correlation was found between GQS scores and average daily views, average daily likes, and average daily comments. In addition, no significant relationship was found between the modified DISCERN scale scores, used to evaluate the comprehensiveness and reliability of professional videos, and the average daily views, average daily likes, and average daily comments. There was a positive correlation only between the modified DISCERN scale scores and video duration. It is expected that longer videos can convey information more comprehensively and holistically. Consistent with our study results, a study analyzing YouTube videos about agoraphobia also highlighted that the average

**Table 3. Comparison of professional and non-professional videos**

	Professional (n=54)	Non-professional (n=62)	Effect size	p
Video duration (s)	606 (228-1629)	1009 (613-1609)		0.07
Duration of YouTube presence (d)	857 (334-1289)	173 (67.5-464)	0.498	<0.001
Average number of daily views	3.91 (0.49-26.4)	55 (24.3-179)	0.663	<0.001
Average number of daily likes	0.03 (0.0-0.21)	1.06 (0.20-2.74)	0.559	<0.001
Average number of daily comments	0.0 (0.0-0.04)	0.64 (0.26-2.42)	0.759	<0.001
GQS (Mean±SD)	3.24±0.79	1.90±0.46	0.813	<0.001

Note. Data is presented as mean±standard deviation or median (25<sup>th</sup>-75<sup>th</sup> percentile) for numerical variables, rank biserial correlation,  $p<0.05$  statistical significance level, s: Seconds, d: Days, SD: Standard deviation, GQS: Global Quality Scale

**Table 4. Correlation between GQS and modified DISCERN scores and video characteristics**

		Video duration (seconds)	Duration of YouTube presence (days)	Average number of daily views	Average number of daily likes	Average number of daily comments
GQS	$r_s$	0.29*	0.26*	-0.43*	-0.31*	-0.41*
modified DISCERN	$r_s$	0.72*	0.01	-0.01	0.24	0.11

Abbreviations. GQS: Global Quality Scale,  $r_s$ : Spearman correlation coefficient, \*significant relationship at  $p<0.05$  level (two-tailed)

number of likes and views of the included videos did not reflect professionalism, quality or reliable content.<sup>16</sup> Another study analyzing YouTube videos on essential tremor reported that the correlation analysis showed a significant negative correlation between average DISCERN and GQS scores and viewer interaction parameters (video power index, like ratio, etc.).<sup>18</sup> A review of the literature analyzing health-related content on YouTube reveals that many studies report higher interaction parameters-such as views, likes, and comments-for the videos of low quality and reliability. In a systematic review study conducted in this field, it was reported that 13 studies found a negative correlation between video quality and the number of views, and 6 studies found a negative correlation between video quality and the number of likes.<sup>42</sup> This may be due to the recognizability of the speakers (individuals, celebrities, youtubers, etc.) in the videos and/or the fact that they share engaging content due to interaction concerns. On the other hand, professional videos may have been less popular among YouTube users due to their preference for medical and formal language/flow. Regardless of the reason, the fact that low-quality videos have higher interaction (average daily views, likes, and comments) in a serious psychiatric disorder like GD, where treatment seeking rates are already quite low, poses a risk of negatively impacting health. In addition, we encountered 5 advertisements for illegal gambling sites or gambling videos, which were excluded from our study. These results highlight a significant issue that policymakers in our country should address, while also underscoring the necessity for YouTube officials to act responsibly.

### Limitations

Our current study has some significant limitations. Firstly, the choice of keywords (gambling addiction, gambling disorder) and the evaluation of the first 100 videos for each keyword may have excluded other videos related to GD. Additionally, YouTube is a dynamic video-sharing platform with variability. Factors such as the number of likes and views can alter the visibility of videos, and existing videos can be removed while new videos can be added. Finally, the limitation of including only videos in the Turkish language can also be considered a limitation.

### CONCLUSION

Considering the online gambling dimension brought by technological changes and the low treatment seeking rates in GD, video-sharing platforms like YouTube can be an important source of information. In this context, the potential negative impact of incomplete/misleading information and guidance on individuals' treatment adherence and prognosis should be considered by both policymakers and YouTube officials. When creating informative videos for GD, including experiences shared by patients, their relatives, or celebrities along with the medical information presented by mental health professionals can ensure high quality and reliability while also providing higher levels of interaction, thereby reaching a wider audience. Considering YouTube's dynamic nature, replicating a study with a similar design in the coming years could be useful to assess any changes in the reliability, quality, and interaction parameters of videos related to GD.

Additionally, there is a need for studies that evaluate and compare the Turkish and English informative videos about GD.

### ETHICAL DECLARATIONS

#### Ethics Committee Approval

As in previous studies with a similar design, no ethics committee approval was required as publicly available videos were used and no human or animal data were used in this study.

#### Informed Consent

This study did not require informed consent as it did not involve any human subjects or animal experiments.

#### Referee Evaluation Process

Externally peer-reviewed.

#### Conflict of Interest Statement

The authors have no conflicts of interest to declare.

#### Financial Disclosure

The authors declared that this study has received no financial support.

#### Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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