



## EVALUATION OF THE YOUTUBE® VIDEOS QUALITY ADDRESSING SUICIDE AMONG OLDER ADULTS

### AVALIAÇÃO DA QUALIDADE DE VÍDEOS PUBLICADOS NA PLATAFORMA YOUTUBE® SOBRE SUICÍDIO NA POPULAÇÃO IDOSA

Neize Oliveira de Arruda<sup>1\*</sup>, Natalia Quevedo dos Santos<sup>1</sup>, Luiz Antonio Lazarin Trentinalha<sup>1</sup>,  
Caroline Maria de Freitas Vieira<sup>1</sup>, Lucas França Garcia<sup>1</sup>, Leonardo Pestillo de Oliveira<sup>1</sup>

**ABSTRACT:** Ease of access to digital media can influence the behavior of recipients, related to suicidal ideation and completed suicide. **Objective:** The study analyzed the quality of videos on the YouTube® platform about suicide of older adults, published by health professionals or institutions. **Method:** The selected videos were evaluated by two reviewers, indicating that the majority of videos were of moderate to high quality according to the criteria of the *DISCERN* and *Global Quality Score* (GQS) instruments. **Results:** Videos produced by healthcare institutions tended to have a higher quality score compared to those from individual sources. **Conclusion:** The findings suggest an urgent need to improve the quality of health information made available online and a lack in the production of high-quality content, capable of serving both health professionals and the lay public, highlighting the need for incentives for the production of content about suicide in the older adults.

**KEYWORDS:** Audiovisual Media. Health Communication. Suicide Attempt.

<sup>1</sup> Graduate Program in Health Promotion, Cesumar University – Unicesumar, Maringá, Paraná, Brazil.

\*Corresponding author: Neize Oliveira de Arruda – E-mail: [neizearruda86@gmail.com](mailto:neizearruda86@gmail.com)

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**RESUMO:** A facilidade de acesso aos meios digitais pode influenciar o comportamento dos receptores, relacionados à ideiação suicida e ao suicídio consumado. **Objetivo:** O estudo analisou a qualidade dos vídeos da plataforma *YouTube*® sobre suicídio de pessoas idosas, publicados por profissionais ou instituições de saúde. **Metodologia:** Os vídeos selecionados foram avaliados por dois revisores, indicando que a maioria dos vídeos apresentava qualidade moderada a alta segundo os critérios dos instrumentos *DISCERN* e *Global Quality Score* (GQS). **Resultados:** Vídeos produzidos por instituições de saúde tendiam a ter uma maior pontuação de qualidade comparados aos de fontes individuais. **Conclusão:** Os achados sugerem necessidade urgente, em melhorar a qualidade das informações de saúde, disponibilizadas *on-line* e carência na produção de conteúdo de alta qualidade, capazes de atender tanto profissionais da saúde quanto público leigo, salientando necessidade de incentivos para produção de conteúdo sobre suicídio na população idosa.

**PALAVRAS-CHAVE:** Mídia Audiovisual. Comunicação em Saúde. Tentativa de Suicídio.

## INTRODUCTION

The National Health Promotion Policy (PNPS) seeks to promote health by training agents involved in the improvement of health conditions as part of comprehensive care within the Health Care Network<sup>1</sup>. Health education, paired with the use of technology such as educational videos has emerged as a valuable resource, owing to its accessibility across various age groups<sup>2</sup>.

Social media platforms are increasingly used to share and disseminate health information, the elderly population accesses platforms like YouTube® to watch health-related videos<sup>3-4</sup>. To promote health and achieve Goal 16 of the 2030 Agenda, which focuses on the culture of peace, the use of digital tools facilitates the dissemination of information in a more accessible manner. These tools are also effective in promoting well-being and combating violence<sup>5-6</sup>.

Violence is defined as the deliberate use of force, aggression, or threats, either against oneself or others, and is characterized as an act capable of causing psychological and/or physical harm, which, Depending on its severity, it can lead to fatal outcomes<sup>1</sup>. In this context, it is also important to consider biological factors, such as malnutrition and exposure to psychoactive substances (e.g., alcohol, drugs) during pregnancy, which may increase vulnerability and impulsivity. Moreover, external factors as accidents, self-harm (suicide), aggression (homicide), or unclear causes of trauma can also contribute to violence<sup>7</sup>.

Social factors, including lack of family support, limited access to education, economic inequality, lack of social integration, and exposure to violent content both within the family and in the media. The issue among these factors is the aggressive behavior descending from a source, and as a prevention, actions are essential to address this matter, as highlighted in the World Report on Violence and Health<sup>8</sup>.

In Brazil, the leading causes of death in 2021 among individuals at the age 70 and over, including biological factors, were infectious diseases (19.76%), cerebrovascular diseases (7.38%), followed by ischemic heart disease (7.06%). However, there has been a concerning increase in the suicide rates among the elderly over recent years, a trend that requires measures to curb its rise<sup>2</sup>.

In the exploration of strategies to address these rising rates, the concept of *expanded health* is considered, emphasizing the importance of quality-of-life improvements. These improvements are focused on lifestyle changes and individual care, a perspective reinforced by the Ottawa Charter, which advocates for achieving comprehensive physical, social, and mental well-being through such changes<sup>9</sup>.

Consequently, there is a need to rethink how strategies are understood and implemented. One example is the initiative launched in Singapore, which involved the creation of an Interministerial Committee comprising representatives from the Ministries of Health, Community Development, Labor, and National Development, alongside healthcare professionals. This committee was tasked with identifying key areas requiring urgent intervention, such as housing, sanitation, transportation, and health services, among others. Additionally, a crisis hotline was established to provide immediate support to individuals in distress. Following the implementation of these measures, Singapore has witnessed a decline in suicide rates<sup>10</sup>.

To prevent suicide, the World Health Organization (WHO) recommends several key measures, including: restricting access to means of suicide, guiding the media on responsible reporting, promoting the development of emotional and social skills, and taking prompt action to identify, assess, guide, and monitor individuals displaying suicidal behaviors<sup>11-13</sup>.

In terms of professional and managerial guidance, the virtual space has been increasingly utilized as a tool for health education, facilitating the dissemination of information and providing opportunities for professional updates. It also enables professionals to better understand and address the needs of

the population accessing these platforms. Monitoring through social media can serve as a valuable tool in mapping health issues and suggesting strategies for potential solutions<sup>3</sup>.

The potential of digital media, with YouTube® being one of the most popular platforms, along with the social and cultural impact it has on this demographic group, suggests that its use can contribute to decision-making in political management, thereby improving health indicators<sup>4</sup>.

It is important to emphasize that the accessibility of mobile devices, internet connectivity, and the widespread use of social media have resulted in this generation, immersed in the online world, having immediate access to vast amounts of information. This information can be published by any individual, regardless of their expertise on a given topic, through platforms that facilitate such publications. Consequently, this constant stream of information can overwhelm the population, creating confusion regarding its reliability, a phenomenon often referred to as the "infodemic"<sup>5</sup>.

Given the exponential growth of the infodemic, efforts to mitigate its impact are being implemented through infodemiology, which has emerged as a critical tool in curbing the spread of misinformation. This approach aims to educate the public about health and science, thereby reducing susceptibility to fake news. Another concerning issue within various online communities is the widespread promotion of unregulated content in easily accessible, free applications. These platforms often share everything from fad diets, typically endorsed by celebrities, to harmful discussions about self-harm and self-inflicted injuries<sup>7</sup>.

In this context, the present study evaluates the quality of content related to suicide among the elderly, published by health professionals or institutions on the YouTube® platform.

## METHODOLOGY

This descriptive study employs a quantitative approach to systematically assess the quality of video content on the YouTube® platform that provides information about suicide in the elderly population. Data collection took place in October 2023. The analyzed information is publicly accessible and, in accordance with Law No. 12,527 of November 18, 2011, does not require approval from the CEP/Conep (National Research Ethics Commission) system, as stated in Subparagraph II, Sole Paragraph, Article 1 of Resolution 512/2016 of the National Health Council. The methodology follows the design established in previous studies<sup>8-11</sup>.

A search was conducted on the YouTube® platform using the keyword "elderly suicide" in an incognito tab to minimize potential biases in the search results. The applied filters included publication source (restricted to professional or health institutions), upload date within the past five years, and video duration exceeding three minutes, following the criteria used in previous studies<sup>11</sup>.

Two healthcare professionals—a nurse and a psychologist—analyzed the content of the selected videos. In cases of disagreement, a third evaluator would be consulted; however, as no significant discrepancies emerged, third-party arbitration was not required. The evaluations prioritized reliability, focusing on the influence of video content on public behavior and decision-making, particularly assessing whether the information provided was useful or not.

Videos that met the inclusion criteria had to be in Portuguese, with a minimum duration of three minutes, produced by healthcare professionals, uploaded within the last five years and, of these, the first 100 videos that the platform made available during the search were used. Of these, only 25 met the established premise. The criteria adopted for exclusion, in short, were: duplicate videos, advertisements,

low audiovisual quality, those that were not related to the topic aimed at the elderly population, uploaded more than the last five years and a minimum video duration of three minutes.

Those videos were excluded from analysis as follows: videos that were shorter than three minutes (N = 2), were posted more than five years ago (N = 13), were not related to the proposed theme (N = 38), were duplicates (N = 5), were not specific to the elderly population (N = 3), were produced by religious institutions or were not by health professionals (N = 4), totaling 65 videos unsuitable for the study. The list that met these criteria was saved in a playlist and the links were copied and stored in a personnel file folder in order to not lose access to the videos analyzed, since the platform reproduces another list as new publications appear. For offline analysis, the aTube Catcher 2023 program was used, which created a folder for access even if the video was no longer available on the platform.

The videos were assessed using validated instruments, namely the DISCERN tool, modified and adapted for the Brazilian Portuguese version, in conjunction with the Global Quality Scale (GQS). Developed by the British Library in 1999, DISCERN is widely recognized as a reliable tool for evaluating health-related publications and can be used by both organizations and individual users<sup>12</sup>.

The DISCERN instrument comprises three sections and 16 questions. However, for this study, nine questions were selected, each rated on a scale from 1 to 5. A score of 1 was assigned to videos that provided insufficient information, relied on the presenter's personal opinions, and lacked proper citation or mention of sources. Conversely, the highest scores were awarded to videos that presented information with clarity, cited their sources, and recommended additional research materials, while maintaining impartiality in information dissemination.

The GQS is formed by a 5-point Likert scale, where each score receives a score based on the quality of the information, where (1) is related to poor quality and unlikely to be used for patient education; (2) poor quality and limited use by patients due to some information present; (3) quality and flow below ideal; has some usefulness for patients; absence of important topics; presence of some information; (4) good quality and good flow; useful for patients because it covers the most important topics; (5) Excellent quality and flow; highly used for patients. During the evaluation of the videos, some factors were observed, namely: 1) clarity and ease of understanding of the information; 2) signs and symptoms of individuals in crisis; 3) whether the videos provide guidance on how professionals should approach individuals with suicidal ideation; 4) guidance on what it is like or where to seek help; 5) approach on the role of the media in relation to suicidal ideation and completion.

The degree of agreement between evaluators' responses was assessed using the Cohen's Kappa statistic. To identify which variables influenced the evaluations and contributed to increased video scores, Logistic Regression analysis was performed. Additionally, the Odds Ratio, derived from Logistic Regression, was used to determine the likelihood of each variable affecting the final evaluation outcomes. The Cohen's Kappa statistic is interpreted as moderate when ranging from 0.41 to 0.60, substantial between 0.61 and 0.80, and nearly perfect from 0.81 and 1.0.

## RESULTS

To carry out this study, in addition to the characteristics of the videos, the evaluators took into account the variables described in Tables 1 and 2. Table 1 presents measures of central tendency and dispersion of the video data, such as duration, views, likes, comments and number of subscribers.

**Table 1.** Measures of central tendency and data dispersion from the videos/channels evaluated

Variable	Minimum	Median	Mean	Maximum	Standart Deviation	Coefficient of Variation
Duration ( <i>min</i> )	3	20	39,00	96	35,75	0.92
Visualizations ( <i>f</i> )	22	226	745,28	4.900	1.090,21	1.46
Likes ( <i>f</i> )	0	16	48,92	249	64.93	1.33
Coments ( <i>f</i> )	0	0	1,92	13	3.13	1.63
Subscribers ( <i>f</i> )	164	7.300	85.568,60	1.130.000	233.297,59	2.73

The length of the videos, the number of Likes, and the number of comments exhibit little variation in central tendency and dispersion measures. In contrast, the number of views and total channel subscribers present more diverse values.

The average video length was 39 minutes, with a standard deviation of 35.75 minutes. The number of views showed greater variability, with a mean of 745.28 and a standard deviation of 1,090.21. The average number of Likes was 48.92, with a standard deviation of 64.93. Comments demonstrated limited variation, ranging from 0 to 13, with a mean of 1.92. The number of channel subscribers displayed high variability, with a mean of 85,568.60 and a standard deviation of 233,297.59.

Table 2 presents the absolute and relative frequency distribution of video producers by gender, indicating that 60% of the videos were produced by women.

**Table 2.** Absolute and relative frequency (in %) of video producers

Variable	Frequency	Percentage
Sex		
<b>FEM</b>	<b>15</b>	<b>60%</b>
<b>MASC</b>	<b>6</b>	<b>24%</b>
<b>SPEAKER GROUP</b>	<b>4</b>	<b>16%</b>

Among the analyzed videos, 15 (60%) featured female speakers, while 6 (24%) had male speakers. Additionally, 4 videos (16%) included two or more individuals, forming a category of mixed-gender speaker groups. The majority of content producers in the evaluated videos were female.

The study assessed videos published on YouTube® regarding suicide in the elderly population. These videos were classified as low, medium, or high quality using the DISCERN and GQS instruments, which have been employed in previous studies for technical validation. The evaluation process followed a systematic approach, consisting of three stages: video search, selection based on predefined study criteria, and subsequent analysis and assessment of the selected content.

The search was conducted on YouTube® in anonymous browsing mode to prevent algorithmic biases from influencing the search history. The keywords “elderly suicide” were used, retrieving the first 100 videos, of which 25 met the inclusion criteria for analysis. The initial phase involved video selection according to specific inclusion and exclusion criteria. The evaluation was carried out by two health professionals with expertise in the subject, ensuring greater rigor in the assessment process.

Table 3 presents the answers provided by each evaluator for each DISCERN, GQS question, as well as the assessment of whether the channel is specialized in the dissertation topic.

**Table 3.** Results of evaluations by question

Variable	Frequency	Frequency
Specialized Channel	Evaluator A (%)	Evaluator B (%)
0	6 (24%)	4 (16%)
1	19 (76%)	21 (84%)
<b>Q16</b>		
2	2 (8%)	5 (20%)
3	11 (44%)	7 (28%)
4	9 (36%)	7 (28%)
5	3 (12%)	6 (24%)
<b>GQS</b>		
2	2 (8%)	5 (20%)
3	9 (36%)	7 (28%)
4	12 (48%)	8 (32%)
5	2 (8%)	5 (20%)

It is observed that the absolute frequencies diverge quantitatively in some cases, however, when observing the percentages represented by such quantities, one can see the proximity between them. Regarding the agreement on the channel being specialized, for example, it is noted that evaluator A classifies 19 out of the 25 videos evaluated, while evaluator B said there were 21, a variation of 2 units and 8% in the category. Especially, due to the small sample size, these values seem very close, however, only statistical agreement tests can confirm this hypothesis. The symmetry or degree of agreement between the answers provided by the evaluators was measured using the Kappa-Cohen statistic, as shown in Table 4. The values range from 0.47 to 0.75, indicating moderate to substantial agreement.

**Tabela 4.** Cohen-Kappa test, confidence intervals and p-value for each question asked

Question	Kappa	Lower Bound (K)	Upper Bound (K)	p-Value
Specialized Channel	0.75	0.43	1.00	< 0.001
Q1	0.47	0.19	0.74	0.001
Q2	0.70	0.54	0.86	< 0.001
Q3	0.61	0.41	0.82	< 0.001
Q4	0.51	0.28	0.75	< 0.001
Q5	0.70	0.54	0.85	< 0.001
Q6	0.53	0.31	0.76	< 0.001
Q7	0.74	0.62	0.85	< 0.001
Q8	0.48	0.18	0.78	0.002
Q16	0.51	0.29	0.73	< 0.001
GQS	0.64	0.45	0.83	< 0.001
DISCERN	0.75	0.48	1.00	<0.001

The evaluators demonstrated moderate agreement on questions 1, 4, 6, 8, and 16, and substantial agreement on questions 2, 3, 5, and 7 in both the GQS and DISCERN assessments, as well as on determining whether a channel is specialized. Based on this classification and the corresponding confidence intervals, we found an adequate level of agreement among the evaluators, particularly in the GQS, which is one of the response variables in this study.

Given the evaluators' agreement, the covariates contributing to video quality were assessed based on their respective scores in DISCERN and GQS. A logistic regression model was applied to identify factors associated with higher scores. The first model used the DISCERN sum scores as the response variable, categorized as above or below 27 points, distinguishing videos with at least one evaluation of good or excellent quality. The second model considered the GQS score as the response variable, categorized as above or below 3 points, thereby separating low-quality videos from those of higher

quality. Due to the small sample size, methodologies incorporating multiple levels, such as multinomial models, were deemed inappropriate.

Table 5 summarizes the significant factors in the logistic regression model explaining GQS scores. The analysis revealed that video duration, number of views, and number of comments were significant variables positively influencing video quality. In contrast, the number of Likes and subscribers showed a negative association with quality.

**Table 5.** Significant factors in the logistic regression model to explain the GQS

Variable	Odds Ratios	Standard Error	Confidence Interval	p-Value
Duration	1.034389 **	0.014745	1.008204 – 1.067349	0.018
Visualization	1.007572 **	0.003397	1.002072 – 1.015673	0.025
Likes	0.889694 **	0.042208	0.795329 – 0.962371	0.014
Coments	1.928232 **	0.555283	1.205485 – 3.865276	0.023
Subscribers	0.999956 **	0.000022	0.999887 – 0.999987	0.045
Specialized Channel	1.702150	1.663828	0.257288 – 13.742028	0.586

Each 1-minute increase in video duration corresponds to a 3.43% rise in the GQS value. Similarly, an additional 10 views results in a 5.57% increase in GQS. However, an increase of 1 Like is associated with an 11.03% decrease in GQS, while each additional comment leads to a 92.82% increase in the GQS value. Furthermore, a rise of 1000 subscribers corresponds to a 4.4% reduction in GQS. These findings suggest that longer videos with more views and comments tend to have higher GQS values, whereas a higher number of Likes and subscribers is linked to videos with lower GQS scores. Notably, the regression model using DISCERN as the dependent variable did not yield significant results at the 5% significance level (i.e., 95% confidence).

## DISCUSSION

The primary objective of this study was to assess the quality of videos related to suicide awareness in elderly populations, particularly those produced by health professionals. While the videos provide valuable information regarding the signs and symptoms of suicide, they lack a focused approach for individuals in crisis. Moreover, the language used is not sufficiently clear to ensure understanding by both health professionals and the general public.

In the review of literature on suicide among the elderly, numerous studies were identified; however, none specifically offered a critical analysis of the quality and reliability of video content on this topic disseminated via the YouTube® platform. That said, studies addressing the quality of information shared online have been conducted. Consequently, this study followed the methodology employed in previous research<sup>10,15–17</sup>.

The primary objective of this study was to evaluate the quality of videos addressing suicide among elderly individuals, particularly those produced by health professionals. Although the videos reviewed provided information on the signs and symptoms of suicide, they lacked an adequate focus on addressing individuals in crisis, using clear language accessible to both health professionals and the general public.

The classification of videos for analysis depends on several factors, and many of the videos reviewed were deemed to be of low quality. This finding aligns with other studies that evaluated videos on specific pathological conditions<sup>10,15</sup>. These findings raise concerns regarding the veracity and significance of the information shared. However, similar research has shown moderate reliability and

quality, as exemplified by a study that systematically reviewed and assessed the quality and reliability of YouTube videos on HIV/AIDS<sup>18</sup>.

During the search for videos to include in the analysis, it was noted that a considerable number of selected videos (N = 100) did not meet the established criteria for further examination, resulting in a final sample of 25 videos for analysis. The videos were independently rated by two evaluators, who were unaware of each other's assessments. The instruments used to evaluate the reliability and quality of the videos were DISCERN and GQS, respectively. The evaluators reached a consensus, classifying the videos as of moderate quality.

In seeking supporting evidence to minimize potential errors in the evaluators' analyses, logistic regression was employed, as demonstrated in the study by Silveira et al. (2021). The coefficients obtained in this study, such as the number of Likes and the number of subscribers, represent variables that contributed to the positive evaluation of the videos, specifically those of moderate quality. It is understood that video length serves as an indicator, suggesting that longer videos are perceived as containing more important and consistent information. A higher number of views implies greater interest in the content, which, in turn, leads to an increase in comments. However, the study did not focus on the content of the comments, as these may carry negative connotations.

Upon reaching consensus among the evaluators, logistic regression was applied to analyze the relationship between the response variable and one or more independent variables. This approach facilitated the identification of covariates that contributed to enhancing the evaluation of video reliability and quality, as assessed using the DISCERN and GQS instruments. Potential biases in this agreement could influence the classification of video quality, suggesting that a larger sample size might provide a more robust validation or challenge to the findings<sup>19</sup>.

Regarding the limitations of the sample, it is noteworthy that longer videos tended to generate a higher number of views and comments. This could be interpreted as a relationship where these variables create an impression that longer videos offer more precise information, thus attracting more viewers. However, it is important to recognize that the high view count may also reflect repeated or interrupted viewing sessions, particularly for longer videos, with no certainty that these were fully watched<sup>20,21</sup>.

The sample consisted of 100 videos, but only 25 (N = 25) met the criteria for inclusion in the analysis. Several factors contributed to the limited sample size, such as the exclusive search for videos in Portuguese and the reliance on a single platform. Exploring additional platforms like Instagram, Facebook, or specific websites could have yielded more comprehensive results. Moreover, expanding the search to include a broader range of terms might have further improved the sample<sup>16</sup>.

It is important to consider that factors such as new uploads, likes, views, and comments may alter the ranking and presentation of videos, potentially affecting the quality assessment. These dynamic changes could either promote higher-quality videos or shift the visibility of lower-quality content, thereby influencing the results. A significant finding of this study is the higher frequency of video uploads by women on the subject, which may reflect greater concern with the topic, especially in light of the substantial gender disparity in reports of self-inflicted injuries, where women account for 70.3% of cases, compared to 29.7% in men<sup>16</sup>.

It is important to highlight that the Epidemiological Bulletin emphasizes the necessity for professionals to undergo technical training in order to recognize warning signs and contribute effectively in this context. The present study may serve as a valuable resource in this regard, as the process of evaluating and refining information disseminated by the media aids in transmitting more accurate and credible information to the audience<sup>13</sup>.



A primary limitation of this study is the small number of videos that met the inclusion criteria, which may restrict the generalizability of the results. Additionally, the exclusion of videos in languages other than those selected and the focus on a single platform could have constrained the breadth of the findings. Future studies could benefit from a larger sample size and the inclusion of diverse social media platforms to offer a more comprehensive perspective.

Another notable limitation is the potential for bias introduced by the evaluators, despite efforts to minimize such influences. The application of additional methods, such as triangulation with other forms of qualitative assessment, could enhance the robustness of the findings in future research.

Healthcare professionals encounter challenges in communicating with one another when managing individuals in crisis. We propose advancing research on mental health, suicide prevention, and the elderly population by providing accessible information for both the general public and healthcare professionals. Moreover, we recommend conducting further studies utilizing video analysis to explore this issue in greater depth.

## CONCLUSION

This study underscores the necessity of a critical and meticulous approach to the dissemination of suicide-related information concerning the elderly population on digital platforms, with a focus on promoting mental health and preventing suicide in this vulnerable age group.

The findings also emphasize the urgent need to enhance the quality of health information about suicide in the elderly available on YouTube®. Health professionals and organizations should be encouraged to create high-quality, evidence-based content that is accessible to a general audience. Additionally, the establishment of fact-checking and content curation mechanisms is essential to ensure the widespread dissemination of only accurate and useful information.

Integrating digital education strategies for both content creators and consumers could significantly improve health literacy. This is particularly crucial for the elderly population, who may be more vulnerable to misleading or substandard information.

In conclusion, this study reinforces the importance of a critical, thoughtful approach to the dissemination of suicide-related information for the elderly on digital platforms. The recommendations provided here can play a vital role in advancing mental health promotion and suicide prevention efforts for this at-risk demographic.

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