

**A CONTENT ANALYSIS OF YOU-TUBE VIDEOS RELATED TO  
STUTTERING**

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**August 2022**

## **CERTIFICATE**

This is to certify that this dissertation entitled “**A Content Analysis of You-Tube Videos Related to Stuttering**” is bonafide work submitted in part fulfillment for the degree of Master of Science (Speech-Language Pathology) of the student with Registration Number 20SLP035. This has been carried out under the guidance of the faculty of this institute and has not been submitted earlier to any other university for the award of any other Diploma or Degree

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## CHAPTER I

### INTRODUCTION

Stuttering is a speech disorder characterized by automatic disturbances in speech that can obstruct efficient conversations in social and performance-based situations. It is frequently associated with anxiety in everyday interactions (Iverach et al., 2017). It is a disorder with complex interrelationship between sensorimotor, value judgments, emotional states, learning and memory, structural and functional brain discrepancies, genetic factors, sociocultural drawbacks, psychological, and social factors that influence the stability of speech motor system (Smith et al., 2006). Because of a lack of information regarding stuttering and widespread negative views, the common people have developed their own views about stuttering.

The internet is a useful resource that enables users to rapidly find information on a range of health-related issues. Many Social Media Networks that include YouTube, Twitter, Facebook etc provide more health-related information and support. All these information and support obtained from social media network will have big influence on common people's life and their actions (Simpson et al., 2018). Researchers and practitioners in the fields of healthcare have been using social media to treat patients with chronic medical problems and to help others at risk of developing illnesses.

One of the leading social media to obtain information is You-Tube. It has the potential to play a significant role in the sharing and transmission of relevant health-related information, both in terms of its role as a video store and as a social networking platform for people to access and discuss (Madathil et al.,2015). As YouTube is a constantly expanding, unique, and rich information resource that presents possibilities for content analysis and processing. In order to explore interesting information about

public opinions and sentiments, it is necessary to investigate and comprehend a theme through YouTube content (Ahmad et al., 2017).

Content analysis involves the process of analyzing written, oral, or visual communication messages. The researcher can use content analysis to test theoretical issues and gain a wider range of data. Using content analysis, it is easy to group words into fewer content-related groups. Words, phrases, and the like are assumed to have the same meaning when classified into the same categories (Cavanagh et al., 1997).

### **Needs of the study**

Several Content Analysis were done in the field of Audiology that include the analysis of infant hearing loss, hearing aid, Tinnitus and also in the speech and language field that included analysis of videos of autism spectrum disorder, vocal health and child language disorder. There is a dearth of studies on using content analysis related to stuttering. So, there is a need to analyze stuttering videos on You-Tube.

### **Aim of the study**

To examine the source, content, understandability and actionability of videos on You-Tube related to stuttering.

### **Objective of the Study**

- To evaluate and content and frequency of video related to stuttering.
- To determine the understandability and actionability of videos about stuttering.
- To determine how meta-data of video varies across the different sources of videos.

## CHAPTER II

### REVIEW OF LITERATURE

Stuttering is a speech disorder characterized by automatic speech disturbances that can obstruct efficient conversations in social and performance-based situations. It is frequently associated with anxiety in everyday interactions (Iverach et al., 2017). It is a disorder with complex interrelationship between sensorimotor, value judgments, emotional states, learning and memory, structural and functional brain discrepancies, genetic factors, sociocultural drawbacks, psychological, and social factors that influence the speech motor system's stability (Smith et al., 2006). It is generally understood by how it influences someone else's desire or ability to communicate with others.

A person who stutters is more likely to encounter negative communication situations, such as being teased, avoiding, not getting opportunities to participate in social situations (Danaher et al., 2014). Negative experiences of stutter can lead to nervousness and anxiety during public speaking, which occurs when people are worried about future speech failures and dissidence in their ability to converse (Blumgart et al., 2010). The Common people in the society will form their own opinion and personal views based on the information exposed to them through movies, television, comic books and prints that makes the public to spread a negative opinion and indifference about stuttering. Popular culture provides knowledge that shapes society's views and ultimately shape how people perceive the world.

#### **2.1 Role of mass media**

Stangor and Schaller (1996) explained the majority of misconceptions were communicated through the social network in which they are “bought, sold, traded,

checked out, and otherwise shared by millions, even billions of people across boundaries of distances and time untraveled by personal communication". Due to the rise of social media platforms and technology over the past ten years, most people's methods of receiving and disseminating information have changed. Further, people rely heavily on technology to gather information. They use social media to "get information" extra than they do books, publications, television, movies, news outlets, mobile, email, or face-to-face communication. (Flanagin & Metzger, 2000). Many Internet users end up choosing pages that are both meaningful and unimportant. People are becoming more dependent on internet information without questioning its truthfulness or accuracy. As a result, there is a risk that people will be misinformed by online sources. The most publicly accessible internet video-sharing platform at present is YouTube. Most of the health-related material created by experts, organizations and consumers can accesses from You-Tube (Rotman et al., 2010).

A meta-analysis done by Madathil et al. (2015) using online databases like PubMed and Web of Knowledge reviewed 18 articles to find out the characteristics of health care information on YouTube. According to the findings found that YouTube is rapidly being used as a medium for the spread of health care data. The main strategies employed by researchers to evaluate YouTube were content and frame analysis. Additionally, YouTube contains false information that deviates from the reference standards and is more likely to be discovered by ordinary users. Videos created by government entities and professional associations included reliable and good-quality information. YouTube's use as a gateway for the promotion of unscientific treatments and medications that have not yet received approval from the necessary authorities has the potential to alter patients' opinions on sensitive topics like immunizations. This study acknowledges the need for designing interventions to help people critically

integrate information from YouTube with other reliable information sources to make wise healthcare decisions.

In another study it was also explored that health-related videos on YouTube may contain misleading and potentially harmful health information by analyzing the content of YouTube videos about Cancer Research and Treatment (Esen et al., 2018). As YouTube is a constantly expanding, unique, and rich information resource that presents possibilities for content analysis and processing. In order to explore interesting information about public opinions and sentiments, it is necessary to investigate and comprehend a theme through YouTube content (Ahmad et al., 2017).

## **2.2 Qualitative content analysis of YouTube videos**

Content analysis involves the process of analyzing written, oral, or visual communication messages. The researcher can use content analysis to test theoretical issues and gain a wider range of data. Using content analysis, it is easy to group words into fewer content-related groups. Words, phrases, and the like are assumed to have the same meaning when classified into the same categories (Cavanagh et al., 1997). A trend is emerging in which content is analyzed using data from social media websites. This information can be in the form of text, but it can also be in the form of graphical images or videos. Despite the fact that most social media research has focused on the vocabulary and grammar of Status on Facebook updates and Twitter feeds (Chew & Eysenbach, 2010). There are many studies emerging in qualitative research related to You-Tube video content analysis in health settings.

The content of YouTube videos for people with chronic obstructive pulmonary disease was examined by Stellefson et al. (2014). After coding the video authors identified that More than half of the videos provided guidance on managing medications, but significantly fewer focused on quitting smoking. Most of the videos

were uploaded by an organizations or agencies which is related to health, and many of them were deemed to be of extremely high quality. Code adherence differed by media source with consumer videos obtaining the lowest quality ratings. The number of "likes, "dislikes," and user comments, which are indicators of user engagement, were generally low across all sources. According to the findings of this study, YouTube could potentially be used to educate patients about COPD, although the quality and content of the videos that are already available vary significantly.

A study done by Basch et al. (2017) analyzed prostate cancer-related YouTube videos. After Analyzing the 100 videos found that the most of videos were posted by both public and government or medical specialists. Informational purposes accounted for the majority of videos (78.0%), which were then followed by discussions on the diagnosis, screening, and treatment of prostate cancer. The study's findings indicate the necessity to assist consumers in developing the knowledge and abilities to recognize reliable information in order to assist them in making decisions as society grows more and more dependent on technology. Additionally, YouTube content analysis was done for several disorders in the fields of speech, language, and audiology.

### **2.3 Content Analysis of YouTube videos in the field of speech and hearing**

A Trend of a shift in In-Person Consultation to Seeking Information from Online Media for many health-related queries warrants an examination for the professionals to look for materials that are uploaded on the social media network so that they can give proper guidance to the patients about videos on YouTube.

PEMAT Audio/Visual Material, meta-data, video source, etc. are some of the tools and methods that evaluate the quality of the video. The strength of the evaluation is increased by evaluating online data on a variety of aspects. The strength of the evaluation is increased by evaluating online data on a variety of aspects.

Manchaiaha et al. (2020) examined 100 YouTube videos content about hearing aids. Study goal was to determine the origin, content, and quality of the video. The top 100 English language videos aimed at people looking for information on hearing aids were recognized and manually categorized. General video information, metadata, and the video source were all gathered. Themes were pre-determined before analysis and content of the video were examined according to the themes. PEMAT-Audio/Visual Material was used to evaluate the materials' understandability and actionability. Study Findings revealed that Hearing aid videos on YouTube covered a broad variety of topics, and some discrepancies were discovered between information sources. These videos' low accessibility may lead to inconsistent consumer behavior. From the conclusion of the study authors explained that to enhance the informational value and quality of the YouTube videos about hearing aids, professional participation is also necessary.

Gunjawate et al. (2021) analyzed the infant hearing loss on You-Tube. Source, content, and digital data of the video were obtained. A pre-designed fact sheet on "infant hearing loss" from the National Institute on Deafness and Other Communication Disorders and information on early hearing detection and intervention systems from the National Center for Hearing Assessment and Management-Utah State University were used to extract and code the video's content. PEMAT-Audio/Visual Material was used to evaluate the materials' understandability and actionability. Overall, both understandability and actionability received poor ratings. This suggests that there is scope for change and more details in all topics pertaining to infant hearing loss.

Bellon-Harn, Manchaiaha and Morris (2020) analyzed 100 different videos on YouTube that aimed at families of children with an autism spectrum disorder. Video content was categorized and also the video source was determined. The videos' quality

was assessed using the PEMAT for Audio-visual Materials. Several topics were covered in the YouTube videos regarding autism spectrum disorder, with most of the content concentrating on symptoms and signs. For the majority of categories, there was no difference in content across video source, while differences were seen in a few. All videos, regardless of source, received low comprehensibility and accessibility scores (i.e., less than 70%). Professionally produced videos, on the other hand, were better in terms of comprehension.

Basch et al. (2018) did a content analysis of the top 100 videos of tinnitus on YouTube. They first identified the upload sources, and then they analyzed the videos to according to what pertinent information was present from a recent fact sheet from the National Institute on Deafness and Other Communication Disorders. The Top most 100 tinnitus videos that have received the most views have already been uploaded by the general public who expressed their personal experiences. To enhance the availability and transparency of systematic health information on YouTube and other social media platforms, actions must be taken.

Bellon-Harn et al. (2020) looked into the speech and language videos on YouTube in terms of meta data, source of the video, type of content obtained from the video, understandability, and actionability. The top 100 most popular videos regarding children with speech and/or language disorders were identified. For the duration of the video, frequency of like, and frequency of dislike, a significant difference across video sources was seen, but not for the number of views. There were many different topics discussed in YouTube videos about speech and/or language issues, symptoms, signs, and treatments were more frequent in most of the videos. Videos scored poorly on actionability (32%), but their understandability was close to adequate (68 %). Videos made by experts had superior understandability than videos from other upload sources,



however no significant difference were found with respect to actionability across sources. Findings of the study suggest that content of the video relating to speech and/or language impairments may be better understood by professionals with the use of research insights on the meta-data, video source, kind of informational content, understandability, and actionability of YouTube videos.

Bellon-Harn et al. (2020) examined how You-Tube videos reflect vocal health in terms of their metadata, source of upload, content type, understandability, and actionability. After analyzing the You-Tube videos about vocal health. The upload source (consumer, professional, or media), frequency of popularity, video length, thumbs up and thumbs down frequency, and the category of informational content were all identified. PEMAT-Audio/Visual Material was used to evaluate the 100 top-rated videos understandability and actionability. Study Results suggested that for views and dislikes, there was a substantial difference across the categories of source of the video, but no differences were found for video length or frequency of likes. Most of the YouTube videos' content was informative and primarily focused on guidance for those who use their voices professionally. Understandability scores of (71.5%) and actionability scores of (74%) was obtained after rating the all 100 videos which indicates adequate scores. Consumer-uploaded videos had better actionability than professional sources, but there was no noticeable difference in the understandability of the various source of the video. Professionals may get insight from research on the metadata, source, type of informational material, understandability, and actionability of YouTube videos about vocal health.

Manchaiaha et al. (2020) evaluated source, content, understandability, and usability of You-Tube videos that provided hearing loss information. The top 100 videos on YouTube were examined, and numerous data points were classified

individually. (i.e., video source, online content, and statistics of popularity) In addition, the PEMAT for Audiovisual Materials scoring system has been used to evaluate the comprehensibility and relevance of each video. Their result suggested that YouTube videos about hearing loss cover a wide variety of topics. The low quality of these videos was cause for concern, as they may not result in acceptable consumer choices to address their hearing problems. To encourage the necessary changes, efforts must be made to improve the quality and information of these videos.

Donaher and Minkoff (2014) investigated the fame and tone of consumer comments, as well as the representation of stuttering on YouTube. The analysis included 50 videos on YouTube related to stuttering. The following variables were measured using both descriptive and inferential statistics.: (a) video type, (b) presenter age, (c) behaviors of diagnostic reliability, (d) reliability of diagnostic content and (e) perception of public. Findings of the study revealed that on average 27,494 people watched the videos, and 95% of them gave them positive feedback, Clinical instances of stuttering behaviors were judged as being of "poor" to "very poor" quality in a total of 64% of the videos. and for stuttering content it is rated as 52% which is poor to very poor. The majority of user-generated thoughts were defined as being negative (28%) rather than positive (12%), with 34% of the comments being neutral.

YouTube video content analysis was done in the field of audiology related to the topics of hearing aids, infant hearing loss, and tinnitus and also in the language and speech disorders on the topics like autism, speech and language disorders, and videos related to vocal health. Most of the studies suggest that clinicians should take caution when using YouTube for clinical purposes. There is a dearth of studies on using content analysis related to stuttering Ultimately Inco-operating all these findings and suggestion objectives of the study include

- To evaluate and content and frequency of video related to stuttering.
- To determine the understandability and actionability of videos about stuttering
- To determine how meta-data of video varies across different sources.

## **CHAPTER III**

### **METHOD**

#### **3.1 Study Design**

The Design used in the Study was Cross-Sectional in nature. Recent YouTube research on topics including tinnitus, autistic spectrum disorder, infant hearing loss, hearing aids, speech and language difficulties, prostate cancer, and skin cancer served as inspiration for the design and methodology.

#### **3.2 Ethical Approval and Consent**

As the study didn't involve human subjects ethical approval and consent was not required.

#### **3.3 Data Extraction**

The main purpose of the study was to analyze top viewed 100 videos on YouTube related to stuttering. The major reason for including 100 videos for analysis is due to the consistency with the previous literature and reason for using popularity-based criteria is that the people who are seeking for specific information are most likely to access the most popular videos.

Key words "Stuttering" and "Stammering" were used in the study as a broad search with a wide inclusion criteria to replicate the search that member of general public may do. To determine the top 100 videos with more views, the number of views for each video was counted. Video content that is related to stuttering with more views was only included for analysis. Content of the video which is not pertaining to stuttering was excluded from the list. In order to limit user-targeted search results and eliminate bias, the browser history and cookies were cleared, and the search was performed in private mode Mozilla Firefox. (Version 62.0.3).

Following a search using two key words stuttering and stammering and the use of the inclusion criteria, a total of 119 of the most viewed videos (n=1760) on YouTube after using the keywords stuttering and stammering was identified. 19 videos were excluded from the list. Among them (n=8) music videos of stuttering, (n=7) content not pertaining to stuttering, and (n=4) cartoon and game videos related to stuttering. The general information, the source of the video, and the popularity were three data that were extracted from 100 videos.

### ***3.3.1 General Information***

Title of the video, video uploaded date, and video duration.

### ***3.3.2 Video Sources***

The source of the video was categorized as: (1) consumer (representative of the general public) (2) professional (a topic expert who has the required qualifications); (3) media (videos uploaded by different channels, a clip that originated from the television).

### ***3.3.3 Popularity of video***

The number of views, frequency of likes and frequency of dislikes.

Once the suitable videos were selected, basic video-meta data were entered into an Excel spreadsheet. This included the title of the video, duration of the video, date when it was uploaded, the total number of views on the day of selection, number of thumbs up (likes), and number of thumbs down (dislikes).

## **3.4 Video Content Evaluation and Determining Frequency of each content**

Content of the videos on YouTube related to stuttering was analyzed and formed the content into 14 different categories and the frequency of each category was

determined. The frequency of the video was determined using manually coding the videos (i.e., video would be marked as 0 if it didn't give any information about the specific category and 1 for if the video is explaining about the category).

### **3.5 Examination of Understandability and actionability**

Each video's understandability and actionability were evaluated using the Patient Education Materials Assessment Tool for Audiovisual Materials. (PEMAT-A/V; Agency for Healthcare Research and Quality, 2013; Shoemaker, Wolf, & Brach, 2014). Among 17 items, understandability sub scale contains 13 item (i.e., health information that can be understood by individuals from diverse backgrounds and with varying levels of health literacy) and actionability sub scale had 4 items (i.e., health information that enables individuals to easily identify what they need to do). A Score of 1 was given for the item if it is agreed with the video, and score of 0 was given for item which is disagreed and items which is not applicable no score is given and it is noted as not applicable. By dividing the number of items scored by 1 (i.e., agree) by the total number of items rated, the percentage of understandability and actionability subscale scores was determined. The calculation excluded items that were indicated as not applicable. Understandability and actionability both increase as the percentage rises. Scores below 70% suggest that the information in the video is difficult to learn or difficult to put to use. All the Total 100 videos were rated by one researcher and Another researcher scored 20% of the 100 videos that were chosen randomly using PEMAT Audio-Visual Material.

### **3.6 Data Analysis**

IBM SPSS Statistics Software version 2.0 was used to conduct further statistical analysis. For checking how meta-data and the PEMAT-A/V scores varied across the

video source non parametric test like Kruskal-Wallis H test and Mann-Whitney test was selected after the data failed the Shapiro wilk normality test, Descriptive statistics of all the variables was carried out. Correlation of meta-data was found out using spears man correlation test. The inter-rater reliability for PEMAT-A/V subscale ratings was examined using the Cronbach's alpha test.

## CHAPTER IV

### RESULTS

The objectives of the study were to evaluate the content and frequency of videos related to stuttering, determine the understandability and actionability of videos about stuttering, and also to identify how meta-data of video varies across the different sources of videos. After analyzing the 100 videos on YouTube related to stuttering, content in the video is formed into categories and the frequency of each category was obtained. Categories of videos was also organized according to the video sources uploaded. Further, PEMAT-Audio/Visual Material was used to evaluate the videos understandability and actionability. SPSS Software was used to find out the descriptive statistics of meta-data which included video popularity, frequency of like, frequency of dislikes, length of the video, and also the scores of understandability and actionability obtained from analyzing the video using PEMAT Audio/Visual Material.

#### **4.1 Video Content and Frequency evaluation**

After analyzing the 100 videos on YouTube related to stuttering. 14 categories were obtained which included cause of stuttering, definition of stuttering, types of Stuttering, core behaviors of stuttering, secondary behaviors of stuttering, motivational talk of persons with stuttering, life experience of a person with stuttering, incidence and prevalence of stuttering, normal non-fluency and stuttering, name of personalities who stutters, speech therapy techniques, self-strategies of You-Tuber, other strategies and techniques for stuttering and home remedy for stuttering. The frequency of each categories also obtained which is depicted in Table 4.1. which shows that category like self strategies of You-Tuber, (n=38) other strategies/ techniques for stuttering, (n=33) and life experience of a person with stuttering (n=22) being more in number and Home



Remedy for stuttering, (n=2) normal non-fluency and stuttering, (n=3) Types of stuttering being less in number (n=3).

**Table 4.1**

*Categories and frequency of categories obtained*

| Categories                                  | Frequency of each category |
|---|----------------------------|
| Causes of Stuttering                        | 26                         |
| Definition of Stuttering                    | 11                         |
| Types of Stuttering                         | 3                          |
| Core Behaviors of Stuttering                | 14                         |
| Secondary Behaviors of Stuttering           | 12                         |
| Motivational Talk of Person with Stuttering | 12                         |
| Life Experience of a Person with Stuttering | 22                         |
| Incidence and Prevalence of Stuttering      | 10                         |
| Normal Non-Fluency and Stuttering           | 3                          |
| Names of Personalities who stutter          | 9                          |
| Speech Therapy Techniques                   | 16                         |
| Other Strategies/Techniques for Stuttering  | 33                         |
| Self-Strategies of You-Tuber                | 38                         |
| Home Remedy for Stuttering                  | 2                          |

#### **4.2 Video Source and Popularity**

The Top popular 100 videos on YouTube related to stuttering were coded according to different sources. It was found that 41 videos were created by consumers (representative of the general public), 31 videos were created by media (videos uploaded by a particular channel), and 28 were created by professionals (a topic expert who has the required qualifications). Table 4.2 describes the descriptive data from the

meta-data based on popularity for videos from various sources which conclude that media created video received more number of views (n=289025) than professional (n=69850) and consumer-based videos (n=148419.7). While comparing the length of video consumer-based video had more lengthy content (n=8.77) than professional (n=8.40) and media-based video (n=7.09). With Respect to Frequency of likes media created video received more number of like (n=5764) than professional (1943.5) and consumer-created videos received more number of dislikes (n=174.4) than professional (n=47.2) and media created videos. (n=170.6).

**Table 4.2**

*Descriptive data of video source and popularity*

|                                | Mean     | Median | Min-to<br>Max | Standard<br>deviation | Standard<br>Error | 95%<br>Confidence<br>Interval |
|--------------------------------|----------|--------|---------------|-----------------------|-------------------|-------------------------------|
| <b>Frequency of Popularity</b> |          |        |               |                       |                   |                               |
| Consumer                       | 148419.7 | 350000 | 2998757       | 466491.8              | 72853.7           | 26375.97<br>to113324.88       |
| Professional                   | 69850    | 48799  | 562679        | 112117                | 21188.1           | 3298.3 to<br>8230.0           |
| Media                          | 289025   | 137388 | 1671610       | 373541                | 67089.9           | 1176.7to<br>295662.6          |
| <b>Video length (mins)</b>     |          |        |               |                       |                   |                               |
| Consumer                       | 8.77     | 7.15   | 25.9          | 6.57                  | 1.02              | 6.6 to 10.8                   |
| Professional                   | 8.40     | 6.25   | 42.14         | 7.92                  | 1.49              | 5.3 to 11.47                  |
| Media                          | 7.09     | 6.39   | 13.16         | 4.31                  | 0.77              | 5.5 to 8.6                    |

|                              | Media  | Median | Min-to Max | Standard deviation | Standard Error | 95% CI          |
|------------------------------|--------|--------|------------|--------------------|----------------|-----------------|
| <b>Frequency of likes</b>    |        |        |            |                    |                |                 |
| Consumer                     | 3860.4 | 1700   | 22939      | 7599.7             | 1186.8         | 390.9 to 3496.9 |
| Professional                 | 1943.4 | 594.5  | 46952.0    | 4004.0             | 756.6          | 57.8 to 71.9    |
| Media                        | 5764.2 | 2700   | 18980.00   | 6722.9             | 1207.4         | 1461.6 to 6259. |
| <b>Frequency of dislikes</b> |        |        |            |                    |                |                 |
| Consumer                     | 174.4  | 35     | 4100       | 641.2              | 100.1          | -27.8 to 376.9  |
| Professional                 | 47.2   | 28     | 288.0      | 68.1               | 12.8           | 20.5 to 73.5    |
| Media                        | 170.6  | 45     | 1700       | 338.0              | 59.8           | 48.4 to 298.7   |

### 4.3 Evaluation of Understandability and Actionability

PEMAT-Audio/Visual Material was used to evaluate the videos understandability and actionability. In This Understandability subscale had 13 items and actionability subscale had 4 items. Each item is scored as agree (score of 1), disagree (score of 0), or not applicable (no score and noted as not applicable). The percentage of understandability and actionability subscale scores were calculated by dividing the number of items scored by 1 (i.e., agree) by the number of items rated. Items that were identified as not applicable were not included in the calculation. Table 4.3 depicts the Descriptive statistics of Patient Education Materials Assessment Tool for Audiovisual Materials (PEMAT-A/V) items. With Regards to Understandability around 70% of video uses common everyday language (item no 3) 90% of video material makes its purpose completely evident which is in (item no 1). And 90% of videos uses active voice (item no 5). With Regards to Actionability, 70% of videos explain at least one action the user can take. While a large number of the video did not provide a summary, informative headers, and logical sequence.

**Table 4.3**

*Descriptive statistics Patient Education Materials Assessment Tool for Audiovisual Material*

| PEMAT-A/V factors and items  | Frequency |       |                |
|--|-----------|-------|----------------|
|  | Disagree  | Agree | Not Applicable |
| <i>Subscale: Understandability</i>   |           |       |                |
| <b>Topic: Content</b>  |           |       |                |
| Item 1: The material makes its purpose completely evident  | 3         | 97    | 0              |
| <b>Topic: Word choice and style</b>  |           |       |                |
| Item 3: The material uses common, everyday language  | 23        | 77    | 0              |
| Item 4: Medical terms are used only to familiarize the audience with the terms. When used, medical terms are defined | 37        | 63    | 0              |
| Item 5: The material uses the active voice   | 93        | 7     | 0              |
| <b>Topic: Organization</b>   |           |       |                |
| Item 8: The material breaks or “chunks” information into short sections  | 45        | 37    | 18             |
| Item 9: The material’s sections have informative headers   | 45        | 30    | 25             |
| Item 10: The material presents information in a logical sequence   | 50        | 50    | 0              |
| Item 11: The material provides a summary   | 57        | 25    | 18             |
| <b>Topic: Layout and design</b>  |           |       |                |
| Item 12: The material uses visual cues (eg; arrow, box, highlighting) to draw attention to the key point             | 0         | 4     | 96             |
| Item 13: Text on screen is easy to read  | 2         | 39    | 59             |
| Item 14: The material allows the user to hear the words clearly  | 10        | 80    | 10             |
| <b>Topic: Use of visual aids</b>   |           |       |                |
| Item 18: The material uses illustrations and photographs that are clear and uncluttered                              | 3         | 28    | 61             |

|   |    |    |     |
|---|----|----|-----|
| Item 19: The material uses a simple table with short and clear row and column headings            | 0  | 5  | 95  |
| <i>Subscale: Actionability</i>  |    |    |     |
| Item 20: The material clearly identifies at least one action the user can take                    | 23 | 77 | 0   |
| Item 21: The material addresses the user directly when describing actions                         | 43 | 57 | 0   |
| Item 22: The material breaks down any action into manageable, explicit steps                      | 60 | 40 | 0   |
| Item 25: The material explains how to use the charts, graphs, tables, or diagrams to take actions | 0  | 0  | 100 |

A Descriptive Statistic of the PEMAT Audio Visual Materials Score across different sources was done. It also presents the overall understandability and actionability of 100 videos. Table 4.4 shows 100 videos understandability and actionability scores which indicates a score of 69.3 for understandability and 61.7 for actionability which is considered to be inadequate. From this findings it is found that videos uploaded by professionals had a score of 72.6 for understandability and 70.6 for actionability which indicates good understandability and actionability.

#### **Table 4.4**

*Descriptive Statistics of Understandability and Actionability scores shows 69.3% for understandability and 61.7% for actionability for overall 100 videos. 72.6% of Understandability and 70.6% of actionability was obtained for professional created videos.*

| Source                   | Mean           | Median | Min to Max | Standard deviation | Standard Error | 95% confidence interval |
|--------------------------|----------------|--------|------------|--------------------|----------------|-------------------------|
| <b>Understandability</b> |                |        |            |                    |                |                         |
| Consumer                 | 70.5           | 72     | 70         | 16.3               | 2.5            | 65.3 to 75.6            |
| Professional             | <b>72.6**</b>  | 77     | 63         | 16.8               | 3.1            | 66.9 to 71.9            |
| Media                    | 64.8           | 66     | 70         | 19.1               | 3.4            | 57.8 to 71.9            |
| All                      | <b>69.3**</b>  | 71.5   | 70         | 17.5               | 1.7            | 65.8 to 72.5            |
| <b>Actionability</b>     |                |        |            |                    |                |                         |
| Consumer                 | 59.3           | 66     | 75         | 27.7               | 4.1            | 65.3 to 75.6            |
| Professional             | <b>70.62**</b> | 100    | 67         | 24.5               | 4.6            | 66.1 to 79.1            |
| Media                    | 55.1           | 50     | 100        | 26.3               | 4.9            | 44.9 to 65.3            |
| All                      | <b>61.7**</b>  | 66.1   | 100        | 27.7               | 2.7            | 61.7 to 72.7            |

#### 4.5 Association between video source and meta-data

The Kruskal–Wallis H test was performed to examine any difference seen in the video meta data including the Frequency of likes, Frequency of dislikes, Frequency of popularity, length of the video, and, PEMAT Audio/Visual Material Scores. The PEMAT scores included the scores of understandability and actionability across different sources of video uploaded by professionals, consumers, and media. Findings of the Kruskal-Wallis H test are depicted in Table 4.5.

**Table 4.5**

*Findings of Kruskal Wallis Test for video meta-data and source*

|             | Frequency of likes | Frequency of Dislikes | Frequency of popularity | Score of understandability | Score of actionability | length of video |
|-------------|--------------------|-----------------------|-------------------------|----------------------------|------------------------|-----------------|
| Chi-Square  | 14.466             | 4.061                 | 14.678                  | 3.113                      | 12.181                 | .521            |
| Df          | 2                  | 2                     | 2                       | 2                          | 2                      | 2               |
| Asymp. Sig. | <b>.001**</b>      | .131                  | <b>.001**</b>           | .211                       | <b>.002**</b>          | .77             |

Frequency of likes (chi-square=14.466,  $p < 0.005$ ), frequency of popularity (chi-square=14.678,  $p < 0.005$ ), scores of actionability (chi-square=12.181,  $p < 0.005$ ) showed significant differences across video sources but no significant difference was found in frequency of dislikes (chi-square=4.061,  $p = 0.1$ ) scores of understandability (chi-square=3.11,  $p = 0.21$ ) length of video (chi-square=0.52,  $p = 0.77$ ).

Mann-Whitney U test was done to find out how the meta-data of video, understandability, and actionability scores varied across each pair of sources. Three pair-wise analyses were done that include media and consumer-based, consumer and professional based and media and professional based videos. Among different variables, frequency of popularity showed significant differences across media- and consumer-based videos ( $p = 0.002$ ) which is shown in Table 4.6.

**Table 4.6**

*Findings of Mann-Whitney U Test done across Media and Consumer Based Videos*

|                        | Frequency of likes | Frequency of dislikes | Frequency of Popularity | Scores of Understandability | Scores of Actionability | Length of the video |
|------------------------|--------------------|-----------------------|-------------------------|-----------------------------|-------------------------|---------------------|
| Mann Whitney U         | 509.000            | 565.000               | 358.000                 | 542.500                     | 479.000                 | 571.50              |
| Z                      | -1.439             | -.802                 | -3.156                  | -1.060                      | -1.852                  | -.728               |
| Asymp. Sig. (2-tailed) | .150               | .423                  | <b>.002**</b>           | .289                        | .064                    | .467                |

Pairwise analysis done across the consumer and professional-based videos found that the frequency of likes showed a significant difference ( $p = 0.003$ ) which is depicted in Table 4.7 in which the X-axis shows Mann-Whitney U Test Score Y axis shows different variables like frequency of popularity, frequency of dislikes, frequency of likes, length of the video, scores of understandability.

**Table 4.7**

*Results of Mann-Whitney U Test done across Consumer and Professional Based videos*

|                        | Frequency of likes | Frequency of dislikes | Frequency of Popularity | Scores of Understandability | Scores of Actionability | Length of the video |
|------------------------|--------------------|-----------------------|-------------------------|-----------------------------|-------------------------|---------------------|
| Mann-Whitney U         | 328.000            | 455.00                | 499.5                   | 508.0                       | 412.0                   | 547                 |
| Z                      | -3.007             | -1.455                | -.910                   | -.809                       | -2.10                   | -.330               |
| Asymp. Sig. (2-tailed) | <b>0.03**</b>      | .146                  | .363                    | .419                        | .035                    | .741                |

A significant difference was found between the frequency of likes ( $p=0.01$ ), frequency of popularity ( $p=0.01$ ), and scores of actionability ( $p=0.01$ ) across videos created by media and Professional after Mann-Whitney Test Analysis which is shown in Table 4.8 in which X-axis shows Mann-Whitney U Test Score Y axis shows different variables like frequency of popularity, frequency of dislikes, frequency of likes, length of the video, scores of understandability.

**Table 4.8**

*Results of Mann-Whitney U Test done across Media and Professional Based Videos*

|                        | Frequency of likes | Frequency of dislikes | Frequency of popularity | Understandability scores | Scores of actionability | length of video |
|------------------------|--------------------|-----------------------|-------------------------|--------------------------|-------------------------|-----------------|
| Mann-Whitney U         | 210.500            | 309.000               | 209.000                 | 318.000                  | 221.500                 | 412.500         |
| Z                      | -3.393             | -1.898                | -3.415                  | -1.764                   | -3.354                  | -.326           |
| Asymp. Sig. (2-tailed) | <b>.001**</b>      | .058                  | <b>.001**</b>           | .078                     | <b>.001**</b>           | .744            |



#### 4.9 Association between Different Types of Meta-Data

Spear's man rank correlation test was used to obtain a correlation between the meta-data of the video. The result of the spearsman rank correlation found that the frequency of likes and dislikes had a strong positive correlation with No of views ( $r=0.816$ ,  $p=0.001$ ). Length of Video had a small positive correlation with the frequency of likes ( $r=0.35$ ,  $p=0.001$ ).and frequency of like had a strong positive correlation with the frequency of dislikes ( $r=0.80$ ,  $p=0.001$ ) which is depicted in Table 4.9.

**Table 4.9**

*Results of Spears man rank correlation between different meta data*

|                   |                 | frequency<br>of likes | frequency<br>of dislikes | frequency<br>of<br>popularity | length<br>of<br>video |
|-------------------|-----------------|-----------------------|--------------------------|-------------------------------|-----------------------|
| Spearman's<br>rho | Correlation     |                       |                          |                               |                       |
|                   | Frequency       | 1.000                 | .805**                   | .816**                        | .353**                |
|                   | of likes        |                       |                          |                               |                       |
|                   | Coefficient     |                       |                          |                               |                       |
|                   | Sig. (2-tailed) | .                     | .000                     | .000                          | .000                  |
|                   | N               | 100                   | 100                      | 100                           | 100                   |
|                   | Correlation     |                       |                          |                               |                       |
|                   | Frequency       | .805**                | 1.000                    | .800**                        | .198                  |
|                   | of dislikes     |                       |                          |                               |                       |
|                   | Coefficient     |                       |                          |                               |                       |
|                   | Sig. (2-tailed) | .000                  | .                        | .000                          | .049                  |
|                   | N               | 100                   | 100                      | 100                           | 100                   |
| Correlation       |                 |                       |                          |                               |                       |
| Frequency of      | .816**          | .800**                | 1.000                    | .196                          |                       |
| popularity        |                 |                       |                          |                               |                       |
| Coefficient       |                 |                       |                          |                               |                       |
| Sig. (2-tailed)   | .000            | .000                  | .                        | .051                          |                       |
| N                 | 100             | 100                   | 100                      | 100                           |                       |

|           |                 |        |      |      |       |
|-----------|-----------------|--------|------|------|-------|
|           | Correlation     |        |      |      |       |
| length of | Coefficient     | .353** | .198 | .196 | 1.000 |
| video     | Sig. (2-tailed) | .000   | .049 | .051 | .     |
|           | N               | 100    | 100  | 100  | 100   |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

#### 4.10 Association between Categories and Video Source

The 14 Categories Obtained from Analyzing 100 videos are organized according to the different sources (consumer, media, professional) uploaded. Among different Categories like self strategies of You-Tuber which include Tongue exercises, Jaw exercises, vocal cord exercises, etc. are majorly uploaded in consumer-based videos. Professional Based Videos uploaded more related to the speech therapy Techniques, core and secondary behaviors of stuttering, Types of Stuttering and normal non-fluency and stuttering, Topics like motivational talk of stutter, the life experience of the stuttering is mostly seen in the video uploaded by consumers and media. Other Strategies include psychological strategies like the mind power Technique, treating through the subconscious mind, and Hypnotizing videos to reduce stuttering. Different Yoga Aasan like Simhasan, Bhramari Pranayama, Ujjayi Pranayama, etc to reduce stuttering was uploaded majorly in the video of media and Professional. Table 4.8 depicts the different 14 categories that include the causes, definition, types, core and secondary behaviors of stuttering, Motivational Talk and Life Experience of a person with stuttering, Incidence and Prevalence of Stuttering, Normal non-fluency and stuttering, Name of Personalities who stutter, Speech Therapy Techniques, Other Strategies and Techniques, Self Strategies of You-Tuber and Home Remedy For Stuttering were organized according to the source in which the categories are uploaded.

**Table 4.10***Frequency of Categories Organized According to different Sources*

| Categories                                  | Source   |              |       |
|---|----------|--------------|-------|
|   | Consumer | Professional | Media |
| Causes of Stuttering                        | 7        | 8            | 11    |
| Definition of Stuttering                    | 7        | 0            | 4     |
| Types of Stuttering                         | 1        | 2            | 0     |
| Core Behaviors of Stuttering                | 2        | 5            | 2     |
| Secondary Behaviors of Stuttering           | 4        | 7            | 3     |
| Motivational Talk of Person with Stuttering | 7        | 1            | 4     |
| Life Experience of a Stutterer              | 10       | 1            | 11    |
| Incidence and Prevalence of Stuttering      | 6        | 1            | 3     |
| Normal Non-Fluency and Stuttering           | 0        | 3            | 0     |
| Names of Personalities who stutter          | 2        | 2            | 5     |
| Speech Therapy Techniques                   | 0        | 14           | 2     |
| Other Strategies/Techniques for Stuttering  | 5        | 10           | 17    |
| Self-Strategies of You-Tubers               | 32       | 5            | 0     |
| Home Remedy for Stuttering                  | 1        | 0            | 1     |

**4.11 Inter-rater reliability**

20 randomly selected videos were given to other researchers to rate them using PEMAT Audio/Visual Material. Then the inter-rater reliability was found using Cronbach's alpha test, which gave a score of 0.84 for understandability and 0.93 for actionability, which indicates that both understandability and actionability scores had high correlation. Table 4.11 gives the results of Cronbach's alpha coefficient.

**Table 4.11**

*Findings of Cronbach's alpha co-efficient*

| Scores            | Cronbach's alpha co-efficient |
|-------------------|-------------------------------|
| Understandability | 0.84                          |
| Actionability     | 0.93                          |

## **CHAPTER V**

### **DISCUSSION**

This study aimed to evaluate the content and frequency of videos related to stuttering, to determine the understandability and actionability of videos about stuttering, and also to identify how meta-data of video vary across the different sources of videos. After analyzing the 100 videos on YouTube related to stuttering content the video is formed into categories and the frequency of each category was obtained. Categories of videos were also organized according to the video sources uploaded then the understandability and actionability of the video were analyzed using PEMAT Audio/Visual Material.

After analyzing 100 videos on You-Tube related to stuttering specific categories related to stuttering were obtained that include cause of stuttering, definition of stuttering, types of Stuttering, core behaviors of stuttering, secondary behaviors of stuttering, motivational talk of person with stuttering, life experience of a person with stuttering, incidence and prevalence of stuttering, normal non-fluency and stuttering, name of personalities who stutters, speech therapy techniques, self-strategies of You-Tuber, other strategies and techniques for stuttering and home remedy for stuttering. As there was no literature that explains the content analysis of You-Tube videos about stuttering, results of present study are compared with the content analysis done in other communication disorders.

With regards to source, present research found that 41 videos were uploaded by consumers, 28 videos were uploaded by professionals, and 32 videos by media. These results were consistent with the study done by Basch et al. (2018) which analyzed the content analysis of tinnitus videos on You-Tube which found out that most of the videos were consumer-based and videos created by the professionals were less. Present study

findings were not consistent with the study done by Manchaiaha et al. (2020) for the You-tube video content analysis of hearing aids which identified that majority of the video were uploaded by professionals.

With Respect to video-meta data current study revealed that the media-created video had more popularity (n=289025) than professional (n=69850) and consumer-based videos (n=148419) which were in accordance with the study done by Manchaiaha et al. (2020) for the analysis of hearing aid and also consistent with the content analysis of infant hearing loss done by Gunjawate et al. (2021). It can be due to the media-created video having more attractive features like interviewing famous personalities in a famous television channel and they talking about their experiences about stuttering. These all factors can make the public to access the video more.

For the Frequency of likes, professional created videos got less number of likes (n=1943.5) compared to media (n=5764) and consumer-based videos (n=3860.4) These findings were also consistent with previous work done in the content analysis of hearing aids by Manchaiaha et al. (2020) and also with the content analysis done on tinnitus videos Basch et al. (2018). It can be due to people won't be understanding the different speech therapy techniques and medical terms used in the videos or mostly the people will be more curious to know or like how person with stuttering speaking about their problem, and how he or she cured their problem in few days.

For the length of video, consumer created video have more duration than videos created by professionals and media. Current results correlate with the content analysis of You-Tube video related to stuttering done by Manchaiaha et al. (2020) and also the study done by Gunjawate et al. (2021) which analyzed the content of You-Tube Videos related to speech and language disorders. It can be due to in the most of the consumer-created videos they are explaining their experiences in life about stuttering, how they

overcome the stuttering and also the strategies to reduce stuttering. all these factors can make the video to be lengthier.

With Regards to Understandability and actionability scores present study received a score of 69.3% for understandability and 61.7% for actionability. Current results indicate that videos in You-Tube related to stuttering are inadequate. This can be due to frequency of videos uploaded by consumers is more than professionals in which they are explaining their own self-strategies to reduce stuttering. which is not clinically reliable. As these videos are uploaded by consumer, they may be less reliable compared to those uploaded by professionals.

Among the different sources professional videos had more understandability and actionability. This results is in agreement with the study done by Manchaiaha et al. (2020) and Bellon-harn. et al. (2020). for the content analysis of autism spectrum videos on You-Tube. While Manchaiaha et al. did the study in hearing aids.

Even Though professional created videos received more understandability and actionability but in terms of popularity and frequency of likes it is in the third position compared with consumer and media-based videos.

The reason for this can be due to when people search for a particular video they will be more curious to know how we can reduce the stuttering instantly or people will be seeing the video of a stutter that explaining how they over-come stuttering in few days or videos that featuring celebrities.

Another reason can be due to common people are not aware of which profession deals with stuttering so people will just see the title of the video like how stuttering will reduce instantly in 2 minutes or home remedy for stuttering and see such type of video more rather than looking into the videos like having titles like pull out and cancellation strategies to reduce stuttering or what is voluntary stuttering.

## CHAPTER VI

### SUMMARY AND CONCLUSION

The study was aimed to explore the content, source, understandability and actionability of 100 most viewed videos related to stuttering and to identify the how the video meta-data varies across different sources and also how the categories obtained from analyzing the content of the videos varies across different source were determined. 100 most viewed were selected by applying inclusion and exclusion criteria and each videos source, content, frequency of likes, frequency of dislike, Number of views, length of the video were extracted and stored in the excel sheet which is illustrated in the appendix section. Patient Education Material Assessment Tool was used to obtain understandability and actionability scores which is also documented in the excel sheet. Further SPSS Software was used to do the descriptive statistics of meta-data, understandability and actionability scores and also to see how these variables vary across different sources.

From the results of current study, 14 categories and frequency of each categories were obtained in which the categories like self-strategies of You-Tuber, other strategies/ techniques for stuttering and life experience of a person with stuttering being more in number and categories like Home Remedy for stuttering, normal non-fluency and stuttering and Types of stuttering being less in number.

Analyzing different meta-data concluded that media created video received more no of likes and popularity. Consumer Created video had more lengthy content than other sources. For the frequency of dislikes consumer created video received more in number.



From the analysis of understandability and actionability scores concluded that overall, 100 videos received poor understandability and actionability which had a score of 61.7 and 69.3 percentage respectively.

### **Future Implications of the Study**

- This Research Findings will help the professionals to understand what type of health-related information is exposed on the social media-Network.
- Professionals can also use the results of the study to counsel the patient who is using different social media to seek health related information.
- By creating accessible, evidence-based knowledge across a variety of topics, professionals can also contribute to the digital world by uploading different videos and reliable information about stuttering.
- Clients may learn from experts how to seek, locate, comprehend, and critically analyze information from electronic sources (e.g., identify good search terms and credible sources).

### **Limitations of the study**

- Although PEMAT-AV is a reliable tool for evaluating video material, the binary form of the grading scale (yes/no) may not have accurately reflected the degree to which each need for understandability and actionability was satisfied.
- Only two key words were used in this study to search videos which is stuttering and stammering. Future studies can use more key words to explore the content of more videos
- PEMAT-AV was intended to be utilized by both lay people and medical professionals. Future studies should consider the opinion of public also.

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## APPENDIX

| Title                                    | Date        | Length    | Source | Dislike | Like  | Video popularity | Codes                                  | Sub codes                     | Understandability | Actionability |
|--|-------------|-----------|--------|---------|-------|------------------|--|-------------------------------|-------------------|---------------|
| what cause stuttering/what is stuttering | May 4 2021  | 5: 40 min | Media  | 675     | 7.2 k | 12,14,248        | Definition of stuttering               |                               | 84%               | 90%           |
|  |             |           |        |         |       |                  | cause of stuttering                    | organic cause                 |                   |               |
|  |             |           |        |         |       |                  | Incidence and prevalence of stuttering |                               |                   |               |
|  |             |           |        |         |       |                  | Name of famous person who stutter      |                               |                   |               |
| The real reason people stutter           | jan 12 2017 | 3:05 min  | media  | 324     | 13k   | 7,17,612         | Definition of stuttering               |                               | 75%               | 75%           |
|  |             |           |        |         |       |                  | cause of stuttering                    | Physical cause                |                   |               |
|  |             |           |        |         |       |                  |  | organic cause                 |                   |               |
|  |             |           |        |         |       |                  | secondary behaviours of stuttering     | anxiety                       |                   |               |
|  |             |           |        |         |       |                  |  | stress                        |                   |               |
|  |             |           |        |         |       |                  | speech therapy                         |                               | 87.50%            | 100%          |
| 4 exercises to reduce stuttering         | May 22 2020 | 4:15 min  | media  | 20      | 995   | 4,76,368         | Techniques to reduce stuttering        | Relaxation                    |                   |               |
|  |             |           |        |         |       |                  |  | Slow rate                     |                   |               |
|  |             |           |        |         |       |                  |  | Prolongation or flexible rate |                   |               |

|  |             |       |          |      |      |           |   |   |      |        |
|--|-------------|-------|----------|------|------|-----------|---|---|------|--------|
|  |             |       |          |      |      |           |   | Practice                                    |      |        |
| Tony Robbins - 30 years of stuttering, cured in 7 minutes!     | Sep 24 2013 | 10:02 | consumer | 4.1k | 47k  | 3 million | Negative experiences of a stutter                   |   | 45%  | 55.00% |
|  |             |       |          |      |      |           | Motivational talk                                   |   |      |        |
|  |             |       |          |      |      |           | Self strategies for stuttering                      | mind power technique                        |      |        |
| How to stop stuttering? What can you do if your child stutters | May 3, 2019 | 13:35 | consumer | 70   | 4,6k | 82,120    | Incidence and prevalence of stuttering              |   | 100% | 30%    |
|  |             |       |          |      |      |           | secondary behaviors of stuttering                   | stress anxiety, fear, isolation, depression |      |        |
|  |             |       |          |      |      |           | cause of stuttering                                 | organic cause                               |      |        |
|  |             |       |          |      |      |           | strategies to improve stuttering                    | strategies for parents                      |      |        |
|  |             |       |          |      |      |           |   | strategies for teacher                      |      |        |
|  |             |       |          |      |      |           |   | strategies for communication partner        |      |        |
|  |             |       |          |      |      |           | Techniques to reduce stuttering                     | Slow rate                                   |      |        |
|  |             |       |          |      |      |           |   | deep breath                                 |      |        |
|  |             |       |          |      |      |           | self strategies of stuttering used by the you tuber | Pratice/prepare well                        |      |        |
|  |             |       |          |      |      |           |   | do not shy away from strangers              |      |        |
|  |             |       |          |      |      |           |   | have patience                               |      |        |
|  |             |       |          |      |      |           |   | join a public speaking club                 |      |        |

|                                     |              |           |          |     |       |          |  |   |        |        |
|-------------------------------------|--------------|-----------|----------|-----|-------|----------|--|---|--------|--------|
| Some Tips on how to stop stuttering | May 12 2021  | 11:14     | slp      | 31  | 2k    | 49,584   | secondary behaviours of stuttering     | stamp their feet  | 55.50% | 66.66% |
|                                     |              |           |          |     |       |          |  | Eye blink   |        |        |
|                                     |              |           |          |     |       |          |  | jerky body movements  |        |        |
|                                     |              |           |          |     |       |          | core behaviours' of stuttering         | repetition, prolongation, block                             |        |        |
|                                     |              |           |          |     |       |          | Techniques to reduce stuttering        | Prolongation  |        |        |
|                                     |              |           |          |     |       |          |  | Take the fear   |        |        |
| Types of stuttering                 | June 26 2017 | 3: 52     | slp      | 28  | 1.2 k | 75,541   | Definition of stuttering               |   | 33.33% | 33.33% |
|                                     |              |           |          |     |       |          | Types of stuttering                    | Traditional stuttering                                      |        |        |
|                                     |              |           |          |     |       |          |  | Organic Stuttering  |        |        |
|                                     |              |           |          |     |       |          | core behaviours' of stuttering         | repetition, prolongation, block                             |        |        |
|                                     |              |           |          |     |       |          | secondary behaviours' of stuttering    | blink eyes, facial grimace, Tapping a foot, finger movement |        |        |
|                                     |              |           |          |     |       |          |  |   |        |        |
|                                     |              |           |          |     |       |          |  |   |        |        |
| How to stop stuttering              | Dec 6 2019   | 13:19 min | consumer | 116 | 7.5 k | 1,93,775 | incidence and prevalence of stuttering |   | 80%    | 100%   |
|                                     |              |           |          |     |       |          | causes of stuttering                   | organic cause   |        |        |
|                                     |              |           |          |     |       |          |  | Anxiety problem   |        |        |
|                                     |              |           |          |     |       |          |  | Behavioural adaptation                                      |        |        |
|                                     |              |           |          |     |       |          | secondary behaviours of stuttering     | fear, self concious, social anxiety                         |        |        |
|                                     |              |           |          |     |       |          | self strategies of youtuber            | Physical relaxation   |        |        |
|                                     |              |           |          |     |       |          |  | deep breathing  |        |        |

|  |               |           |          |      |      |          |                               |  |        |        |
|--|---------------|-----------|----------|------|------|----------|-------------------------------|--|--------|--------|
|  |               |           |          |      |      |          |                               | relaxing jaw muscle, massaging               |        |        |
|  |               |           |          |      |      |          |                               | Slow down your speech                        |        |        |
|  |               |           |          |      |      |          |                               | Try to focus attention from yourself         |        |        |
|  |               |           |          |      |      |          |                               | controlling the pace'                        |        |        |
| Biden shares vulnerable story on how to overcome stg | feb6 2020     | 10:04 min | media    | 1.7k | 19k  | 50,47,80 | Motivational speech           |  | 60%    | 100%   |
|  |               |           |          |      |      |          | experience as a stutter       | Negative experience                          |        |        |
|  |               |           |          |      |      |          | self strategies of youtuber   | Pratice Infront of the mirror                |        |        |
|  |               |           |          |      |      |          |                               | confidence and reinforcement from his mother |        |        |
| Cure for stuttering                                  | Feb 11 2020   | 2:21 sec  | media    | 143  | 3.6k | 2,58,648 | causes of stuttering          | Genetic cause                                | 37,5%  | 0%     |
|  |               |           |          |      |      |          |                               | organic cause                                |        |        |
| Mastering the struggle of stuttering                 | May 8 2016    | 8:50 min  | media    | 107  | 3.4k | 1,56,176 | Personal experince of stutter | Negative experience                          | 66.66% | 30%    |
|  |               |           |          |      |      |          | Motivational speech           | Take responsible as positive for negative    |        |        |
|  |               |           |          |      |      |          |                               | Develop more courage                         |        |        |
|  |               |           |          |      |      |          |                               | choose mastery than fear                     |        |        |
| Stammering speech therapy within 8 days              | sep 23 2019   | 6:05 min  | slp      | 98   | 2k   | 80,963   | Speech therapy video          |  | 85%    | 100%   |
| How i overcome my stammer                            | March 28 2017 | 5:51 min  | consumer | 24   | 860  | 97,092   | Personal experince of stutter | Negative experience                          | 50%    | 66.66% |
|  |               |           |          |      |      |          | self strategies               | deep breathing                               |        |        |



|   |             |           |          |     |      |                |   |  |        |     |
|---|-------------|-----------|----------|-----|------|----------------|---|--|--------|-----|
|   |             |           |          |     |      |                |   | Pratice the script                               |        |     |
|   |             |           |          |     |      |                |   | Taking the psychological element                 |        |     |
| How do people develop stutter           | Aug 29 2017 | 4:19 min  | media    | 111 | 9.4k | 2,84,027       | famous personalities who stutter          |  | 81%    | 33% |
|   |             |           |          |     |      |                | incidence and prevalence of stuttering    |  |        |     |
|   |             |           |          |     |      |                | core behaviours                           | repetition,prolongation,tics, pause              |        |     |
|   |             |           |          |     |      |                | Diagnostic criteria                       | childhood onset fluency disorder                 |        |     |
|   |             |           |          |     |      |                | secondary behaviours of stuttering        | stress,anxiety,shy,anxious                       |        |     |
|   |             |           |          |     |      |                | causes of stutering                       | Genetic cause                                    |        |     |
|   |             |           |          |     |      |                |   | Neurological cause                               |        |     |
|   |             |           |          |     |      |                | Techniques                                | Direct instruction, slow down speech             |        |     |
| How I overcome my fear of stuttering    | oct11 2018  | 10:46 min | media    | 71  | 12k  | 2,77,308       | definition of stuttering                  |  | 66.60% | 50% |
|   |             |           |          |     |      |                | incidence and prevalence of stuttering    |  |        |     |
|   |             |           |          |     |      |                | personal experince of stutter in his life | Negative experience                              |        |     |
|   |             |           |          |     |      |                | famous personalites who stutter           |  |        |     |
| The thing is I stutter megha washington | may 19 2014 | 13:14 min | media    | 93  | 11k  | 5,34,174 views | Personal experience of stutter            | Negative experience                              | 66.66% | 50% |
|   |             |           |          |     |      |                | self stratergies of stutter               | loop hole method, change the word at last minute |        |     |
|   |             |           |          |     |      |                |   | smooth speech, sing every thing you say          |        |     |
| Home remedy to cure stuttering          | sep 26 2014 | 6:05 min  | consumer | 272 | 5,9k | 3,54,551 views | Ayurveda exercise for stuttering          | Bhramani Pranayama,                              | 75%    | 25% |

|  |              |           |          |     |       |                |                                     |  |     |        |
|--|--------------|-----------|----------|-----|-------|----------------|-------------------------------------|--|-----|--------|
|  |              |           |          |     |       |                |                                     | simhasana,ujayi pranayama,             |     |        |
|  |              |           |          |     |       |                | Home remedy                         | eat gooseberry, black pepper,          |     |        |
| Life with stutter and social anxiety                   | Jan 13 2021  | 13:07 min | media    | 145 | 23k   | 3,98,912 views | Personal life experience of stutter | Negative experience                    | 44% | 50%    |
|  |              |           |          |     |       |                | self strategies                     | avoid stuttering                       |     |        |
|  |              |           |          |     |       |                |                                     | stutter freely                         |     |        |
| Why do some people develop stutter                     | Jul 25 2019  | 4:13 min  | media    | 533 | 11k   | 16,73,184      | definition of stuttering            |  | 83% | 66,66% |
|  |              |           |          |     |       |                | causes of stuuetering               | organic cause                          |     |        |
| Pull out and cancellation strategies by peachie speech | June 29 2020 | 8:10      | slp      | 27  | 622   | 54,309         | speech therapy strategy             | pull out cancellation                  | 91% | 100%   |
| easy onset and light contact stuttering strategy by    | May 12 2020  | 6:58      | slp      | 34  | 929   | 91,324         | speech therapy strategy             | easy onset and light contact           | 91% | 100%   |
| How to instantly stop stuttering                       | June 7 2016  | 2:30      | consumer | 203 | 10k   | 3,27,352       | self strategy                       | speak in a rhythm                      | 44% | 4000%  |
| Stuttering Therapy techniques cancellation             | June 4 2019  | 6:16      | slp      | 14  | 491   | 48,014         | speech therapy strategy             | cancellation technique                 | 44% | 100%   |
| what is stuttering by peechie speech                   | May 12 2020  | 2:34      | slp      | 8   | 252   | 27,547         | definition of stuttering            |  | 90% | 100%   |
|  |              |           |          |     |       |                | core behaviours                     | repetition, prolongation, block        |     |        |
|  |              |           |          |     |       |                | cause of stuttering                 | genetic cause                          |     |        |
|  |              |           |          |     |       |                |                                     | Physical cause                         |     |        |
| Tips to stop stuttering                                | June 14 2021 | 1:47      | media    | 150 | 2.7 k | 2,77,301       | strategies to reduce stuttering     | easy contact                           | 30% | 30%    |
|  |              |           |          |     |       |                |                                     | motivation and confidence from parents |     |        |
|  |              |           |          |     |       |                |                                     | famous personality stutters            |     |        |

|  |             |       |          |     |      |          |                                      |  |     |      |
|--|-------------|-------|----------|-----|------|----------|--------------------------------------|--|-----|------|
| Top 10 exercise for stuttering                     | Feb 10 2017 | 21:15 | consumer | 129 | 3.7k | 1,81,647 | Self strategies to reduce stuttering | breaking tensions (dance movements)                      | 81% | 100% |
|  |             |       |          |     |      |          |                                      | Voice and breathing (sing and read aloud)                |     |      |
|  |             |       |          |     |      |          |                                      | relaxing   |     |      |
|  |             |       |          |     |      |          |                                      | using hand as foundation                                 |     |      |
|  |             |       |          |     |      |          |                                      | Articulation (preparing yourself for speaking mechanism) |     |      |
|  |             |       |          |     |      |          |                                      | acting   |     |      |
|  |             |       |          |     |      |          |                                      | applying new skill in social situation                   |     |      |
|  |             |       |          |     |      |          |                                      | Recording and diarying                                   |     |      |
|  |             |       |          |     |      |          |                                      | accountability partner                                   |     |      |
|  |             |       |          |     |      |          |                                      | challenge yourself to expand your mind                   |     |      |
| 4 exercise to reduce stuttering at home            | Oct 29 2018 | 6:27  | slp      | 288 | 19k  | 5,64,348 | speech therapy strategy              | diagrammatic breathing                                   | 77% | 100% |
|  |             |       |          |     |      |          |                                      | breathing exercises                                      |     |      |
|  |             |       |          |     |      |          |                                      | speaking on exhale                                       |     |      |
|  |             |       |          |     |      |          |                                      | Pacing (accompany your speech with body movements)       |     |      |
|  |             |       |          |     |      |          |                                      | light contact of sounds                                  |     |      |
| what I have to say is important, even if I stutter | aug 1 2018  | 3:21  | slp      | 4   | 567  | 17,914   | Self strategies to reduce stuttering | stutter freely, live freely                              | 44% | 66%  |
|  |             |       |          |     |      |          |                                      | motivational speech                                      |     |      |
| Do these 7 exercise every day to reduce stuttering | nov 9 2020  | 8:20  | media    | 27  | 2.7k | 65,062   | strategies to reduce stuttering      | jaw technique  | 91% | 66%  |
|  |             |       |          |     |      |          |                                      | diaphragmatic breathing                                  |     |      |

|   |             |           |          |    |      |          |  |   |     |     |
|---|-------------|-----------|----------|----|------|----------|--|---|-----|-----|
|   |             |           |          |    |      |          |  | loud vowel pronunciation                    |     |     |
|   |             |           |          |    |      |          |  | pausing technique                           |     |     |
|   |             |           |          |    |      |          |  | gentle onset technique                      |     |     |
|   |             |           |          |    |      |          |  | confident eye contact technique             |     |     |
|   |             |           |          |    |      |          |  | self advertising technique                  |     |     |
| How can I overcome my stammering? Whats my first step | nov 26 2016 | 3:00 min  | consumer | 62 | 1.7k | 1,03,718 | Self strategies to reduce stuttering   | changing the way you talk to yourself       | 44% | 66% |
|   |             |           |          |    |      |          |  | accept your stuttering                      |     |     |
|   |             |           |          |    |      |          |  | be calm confident and creative              |     |     |
| The invisible challenges of stuttering                | jan 24 2021 | 3:49 secs | media    | 3  | 267  | 5,571    | secondary behaviours of stuttering     | shame, embarsement, avoid words, situations |     |     |
|   |             |           |          |    |      |          |  | physical struggle experinced by stutter     | 72% | 33% |
| what is stuttering?                                   | may 4 2015  | 11:13     | slp      | 63 | 1.9k | 88,884   | DSM 5 criteria for stuttering          | childhood onset fluency disorder            |     |     |
|   |             |           |          |    |      |          | incidence and prevalence of stuttering |   |     |     |
|   |             |           |          |    |      |          | causes of stuttering                   | genetic                                     |     |     |
|   |             |           |          |    |      |          |  | developmental lag of child                  |     |     |
|   |             |           |          |    |      |          |  | neurophysiological cause                    |     |     |
|   |             |           |          |    |      |          |  | family dynamics                             |     |     |
|   |             |           |          |    |      |          | stratergies to reduce stuttering       | Relaxing (yoga, meditation)                 | 70% | 33% |

|   |             |       |       |    |      |        |                                  |   |     |      |
|---|-------------|-------|-------|----|------|--------|----------------------------------|---|-----|------|
|   |             |       |       |    |      |        |                                  | breathing techniques                            |     |      |
|   |             |       |       |    |      |        |                                  | speaking Infront of mirror                      |     |      |
|   |             |       |       |    |      |        |                                  | read books out load                             |     |      |
|   |             |       |       |    |      |        |                                  | being gentle with yourself                      |     |      |
| new study on stuttering causes, interview with nobert   | jan 26 2017 | 2:53  | media | 11 | 415  | 24,217 | causes of stuttering             | organic cause                                   | 60% | 66%  |
|   |             |       |       |    |      |        |                                  | reduction in the blood flow to the frontal part |     |      |
| speech therapy stammering & stuttering problem solution | may 27 2019 | 12:50 | slp   | 86 | 1.7k | 63,587 |                                  |   | 80% | 100% |
|   |             |       |       |    |      |        | core behaviours                  | repetition, prolongation, block                 |     |      |
|   |             |       |       |    |      |        | causes of stuttering             | genetic   |     |      |
|   |             |       |       |    |      |        |                                  | behavioural adaptation                          |     |      |
|   |             |       |       |    |      |        | famous personality who stutters  |   |     |      |
|   |             |       |       |    |      |        | stratergies to reduce stuttering | repeat tough vocabulary or break & tell         |     |      |
|   |             |       |       |    |      |        |                                  | make a script and pratice infront of mirror     |     |      |
|   |             |       |       |    |      |        |                                  | improve the lung capacity by prolonging vowel   |     |      |
|   |             |       |       |    |      |        |                                  | inhale and speak sentences                      |     |      |
|   |             |       |       |    |      |        |                                  | comfortable with speaker                        |     |      |
|   |             |       |       |    |      |        |                                  | pratice   |     |      |

|   |             |            |          |     |      |          |  |  |     |     |
|---|-------------|------------|----------|-----|------|----------|--|--|-----|-----|
|   |             |            |          |     |      |          |  | feedback                                     |     |     |
|   |             |            |          |     |      |          |  | monitoring the rate of speech                |     |     |
| Best Adult stammering Treatment & Get rid of stammering | sep 27 2018 | 3:40       | slp      | 44  | 1.3k | 50,000   | speech therapy strategies                                | prolongation and relaxation strategy         | 75% | 66% |
| haklana yaani stammering se pareshan                    | feb 8 2021  | 12:13      | media    | 554 | 13k  | 3,56,613 | incidence and prevalence of stuttering                   |  |     |     |
|   |             |            |          |     |      |          | types of stuttering                                      | developmental stuttering                     | 80% | 90% |
|   |             |            |          |     |      |          |  | acquired stuttering                          |     |     |
|   |             |            |          |     |      |          | cause of stuttering                                      | organic cause                                |     |     |
|   |             |            |          |     |      |          |  | psychological cause                          |     |     |
|   |             |            |          |     |      |          |  | genetic cause                                |     |     |
|   |             |            |          |     |      |          | strategies for parents                                   | give time to child for complete the sentence |     |     |
|   |             |            |          |     |      |          |  | don't make fun of the kids, don't criticize  |     |     |
|   |             |            |          |     |      |          | strategies to reduce stuttering                          | relaxation,                                  |     |     |
|   |             |            |          |     |      |          |  | deep breathing                               |     |     |
|   |             |            |          |     |      |          |  | vocal fold exercise                          |     |     |
|   |             |            |          |     |      |          |  | phonation exercises                          |     |     |
|   |             |            |          |     |      |          |  | hammer technique for sentences               |     |     |
|   |             |            |          |     |      |          |  | control your breathing                       |     |     |
| how to overcome stammering in hindi                     | dec 28 2017 | 12:01 secs | consumer | 738 | 14k  | 3,80,910 | negative experiences and feelings experienced by stutter |  | 72% | 33% |
|   |             |            |          |     |      |          | cause of stuttering                                      | behavioural adaptation                       |     |     |

|   |             |       |          |    |      |        |                                 |   |     |      |
|---|-------------|-------|----------|----|------|--------|---------------------------------|---|-----|------|
|   |             |       |          |    |      |        | famous personality who stutters |   |     |      |
|   |             |       |          |    |      |        | self strategies for stuttering  | speaking slowly   |     |      |
|   |             |       |          |    |      |        |                                 | breathing exercises   |     |      |
|   |             |       |          |    |      |        |                                 | pratic the stuttering words   |     |      |
|   |             |       |          |    |      |        |                                 | accept ypur stuttering  |     |      |
|   |             |       |          |    |      |        |                                 | improve your confidence   |     |      |
| how can I overcome my stammering          | may 30 2014 | 1:25  | consumer | 40 | 171  | 23,888 | self strategies for stuttering  | yoga, pranayama   | 57% | 33%  |
| stammering solution by Sandeep Maheshwari | may 6 2018  | 3:09  | consumer | 16 | 1.7k | 31,670 | motivational speech of stutter  |   |     |      |
|   |             |       |          |    |      |        | self strategies for stuttering  | improve your confidence   | 85% | 100% |
| cure stammering for ever                  | jul 23 2017 | 14:00 | consumer | 72 | 2.6k | 76,647 | types of stuttering             | stammering in every day conversation                                | 62% | 100% |
|   |             |       |          |    |      |        |                                 | stammering in nervousness situation                                 |     |      |
|   |             |       |          |    |      |        | cause of stuttering             | adernaline production and hormonal imbalance that cause nervousness |     |      |
|   |             |       |          |    |      |        | self strategies for stuttering  | calm down your body   |     |      |
|   |             |       |          |    |      |        |                                 | yoga ashanas  |     |      |
|   |             |       |          |    |      |        |                                 | humming exercises   |     |      |
|   |             |       |          |    |      |        |                                 | respiratory exercise to increase lung capacity                      |     |      |
|   |             |       |          |    |      |        |                                 | decrease your rate  |     |      |

|   |             |       |          |     |      |                |  |  |     |      |
|---|-------------|-------|----------|-----|------|----------------|--|--|-----|------|
|   |             |       |          |     |      |                |  | focus on the sound when you are producing  |     |      |
|   |             |       |          |     |      |                |  | memorize your role model when speak fluent |     |      |
| stammering cure exercises in hindi                            | aug 6 2016  | 1:29  | media    | 36  | 570  | 54,135         | stratergies to reduce stuttering               | yoga,simhasan,meditation                   | 50% | 100% |
| How to avoid stammering during interview                      | feb 7 2017  | 3:14  | media    | 55  | 782  | 43,416         | secondary behaviour of stuttering              | hesitation, nervousness, uncertainty       | 54% | 33%  |
|   |             |       |          |     |      |                | tips to reduce stuttering in interview, public | stay calm                                  |     |      |
|   |             |       |          |     |      |                |  | go for mock interview                      |     |      |
|   |             |       |          |     |      |                |  | pratice the stuttered word                 |     |      |
|   |             |       |          |     |      |                |  | pay attention to grooming skill            |     |      |
|   |             |       |          |     |      |                |  | pay attention to body language             |     |      |
|   |             |       |          |     |      |                |  | have knowledge about content of interview  |     |      |
| stammering 3 excercise which give instant result in 3 minutes | nov 5 2020  | 11:29 | consumer | 291 | 11k  | 1,96,972       | self stratergies to reduce stuttering          | mouth exercises                            | 70% | 100% |
|   |             |       |          |     |      |                |  | buzzing technique                          |     |      |
|   |             |       |          |     |      |                |  | tongue vibration                           |     |      |
| life with a stammer   | may 31 2018 | 13:04 | media    | 15  | 2.1k | 79,908views    | life experience of a stutter                   |  | 33% | 33%  |
|   |             |       |          |     |      |                |  |  |     |      |
|   |             |       |          |     |      |                | onset of stuttering                            |  |     |      |
| haklana stammering problem cure treatment                     | oct 30 2020 | 13:32 | slp      | 243 | 10k  | 2,21,361 views | stratergies to improve stuttering              | vocal cord exercises                       | 88% | 100% |



|   |             |       |          |     |      |                |                                   |  |     |     |
|---|-------------|-------|----------|-----|------|----------------|-----------------------------------|--|-----|-----|
|   |             |       |          |     |      |                |                                   | tongue twister exercises                 |     |     |
|   |             |       |          |     |      |                |                                   | counting exercises                       |     |     |
|   |             |       |          |     |      |                |                                   | socalization                             |     |     |
|   |             |       |          |     |      |                |                                   | video recording of problem               |     |     |
| the brute force how I overcome stuttering             | aug 30 2016 | 13:50 | media    | 54  | 4.1k | 1,31,693       | motivational speech               |  | 66% | 33% |
|   |             |       |          |     |      |                | list of personalities who stutter |  |     |     |
|   |             |       |          |     |      |                | personal experience of a stutter  | negative experience                      |     |     |
| how to ovecome stammering in hindi/haklana kaise door | jan 22 2018 | 27:14 | consumer | 224 | 5.7k | 1.66.271 views | self stratergies of youtuber      | preblock, inblock, post block correction | 72% | 33% |
|   |             |       |          |     |      |                |                                   | speak infront of mirror                  |     |     |
|   |             |       |          |     |      |                |                                   | pratice phone call                       |     |     |
|   |             |       |          |     |      |                |                                   | imagine and speak                        |     |     |
|   |             |       |          |     |      |                |                                   | video recording of problem               |     |     |
|   |             |       |          |     |      |                |                                   | deep breathing                           |     |     |
|   |             |       |          |     |      |                |                                   | speak softly                             |     |     |
|   |             |       |          |     |      |                |                                   | talk with opposite sex                   |     |     |
|   |             |       |          |     |      |                |                                   | tension-free, stress free speech         |     |     |
|   |             |       |          |     |      |                |                                   | meet with stranger people                |     |     |
|   |             |       |          |     |      |                |                                   | divort your mind                         |     |     |
|   |             |       |          |     |      |                |                                   | don't take stuttering serious            |     |     |

|                                 |              |           |          |    |      |              |  |   |     |     |
|---------------------------------|--------------|-----------|----------|----|------|--------------|--|---|-----|-----|
| how to cure stammering in hindi | june 11 2020 | 23:11     | consumer | 79 | 3.1k | 52,035 views | cause of stuttering                    | stuck in the present, anxiety, discomfort | 55% | 33% |
|                                 |              |           |          |    |      |              |  | situation specific stuttering             |     |     |
|                                 |              |           |          |    |      |              |  | past experience of stutter                |     |     |
|                                 |              |           |          |    |      |              |  | neuroplastic changes in brain             |     |     |
|                                 |              |           |          |    |      |              |  | behavioural adaptation                    |     |     |
|                                 |              |           |          |    |      |              | self strategies of youtuber            | handle the situation in subconscious      |     |     |
|                                 |              |           |          |    |      |              |  | collapse the anger                        |     |     |
|                                 |              |           |          |    |      |              |  | improve your self image                   |     |     |
|                                 |              |           |          |    |      |              |  | avoid modelling of other person           |     |     |
|                                 |              |           |          |    |      |              |  | normal your breathing pattern             |     |     |
| stammering problem cure part 1  | nov 6 2020   | 8:10 secs | consumer | 40 | 1.3k | 24,186 views | incidence and prevalence of stuttering |   |     |     |
|                                 |              |           |          |    |      |              | cause of stuttering                    | behavioural adaptation                    |     |     |
|                                 |              |           |          |    |      |              |  | due to suppressed emotions                |     |     |
|                                 |              |           |          |    |      |              |  | social anxiety                            |     |     |
|                                 |              |           |          |    |      |              |  | negative thoughts in subconscious         |     |     |
|                                 |              |           |          |    |      |              |  | hereiditary                               |     |     |
|                                 |              |           |          |    |      |              |  | psychosomatic cause                       |     |     |
|                                 |              |           |          |    |      |              | self strategies of youtuber            | work on subconscious level                | 55% | 66% |

|   |              |          |             |     |      |                |                                  |                                       |     |      |
|---|--------------|----------|-------------|-----|------|----------------|----------------------------------|---------------------------------------|-----|------|
| stammering therapy programme                          | jul 28 2017  | 2:01 sec | profesional | 35  | 1k   | 67,135 views   | strategies to reduce stuttering  | yoga therapy                          | 87% | 100% |
|   |              |          |             |     |      |                |                                  | speech therapy                        |     |      |
|   |              |          |             |     |      |                |                                  | group therapy                         |     |      |
| stammering problem cure treatment 1                   | jan 24 2020  | 16:57    | profesional | 239 | 7.4  | 1,95,565 views | definition of stuttering         |                                       | 90% | 100% |
|   |              |          |             |     |      |                | characteristics of stuttering    | initial,final,middle syllable stutter |     |      |
|   |              |          |             |     |      |                | speech therapy exercises         | phonation duration                    |     |      |
|   |              |          |             |     |      |                |                                  | counting                              |     |      |
|   |              |          |             |     |      |                |                                  | jaw and tongue exercises              |     |      |
| my struggle with stammer/how to get over stammer      | sep 29 2021  | 07:05    | consumer    | 19  | 1.5k | 18,595         | negative experiences of youtuber |                                       | 44% | 33%  |
|   |              |          |             |     |      |                | self stratregies of youtuber     | pratice and talk infront of mirror    |     |      |
|   |              |          |             |     |      |                |                                  | motivation from celebrities           |     |      |
|   |              |          |             |     |      |                |                                  | modifying the pace of speech          |     |      |
|   |              |          |             |     |      |                |                                  | introducing pause in speech           |     |      |
| This teacher has stammering and he s using this       | jan 6 2018   | 03:03    | media       | 25  | 3k   | 94,412 views   | negative experience of stutter   |                                       | 71% | 66%  |
|   |              |          |             |     |      |                | motivational lesson from stutter | accept your stuttering                |     |      |
| how to stop stuttering (light contact and easy onset) | April 1 2020 | 05:48    | slp         | 2   | 38   | 3000 views     | speech therapy exercises         | light contact and easy onset          | 77% | 75%  |

|  |              |       |          |    |      |              |  |   |     |     |
|--|--------------|-------|----------|----|------|--------------|--|---|-----|-----|
| how to overcome stammering in hindi/how hrithik roshan | jan 31 2022  | 04:26 | consumer | 4  | 857  | 7,753        | self strategies of youtuber            | improve your self confidence            | 62% | 33% |
| a journey from stutter to mind trainer                 | oct 29 2018  | 13:13 | media    | 29 | 2.7k | 65,384       | definition of stuttering               |   | 44% | 66% |
|  |              |       |          |    |      |              | characteristics of stuttering          | repetition,prolongation,block           |     |     |
|  |              |       |          |    |      |              | secondary behaviours of stuttering     |   |     |     |
|  |              |       |          |    |      |              | incidence and prevalence of stuttering |   |     |     |
|  |              |       |          |    |      |              | cause of stuttering                    | neurophysiological change               |     |     |
|  |              |       |          |    |      |              | self strategies of stutter             | speak less and listen more              |     |     |
|  |              |       |          |    |      |              |  | action cures fear, make fear as friend  |     |     |
|  |              |       |          |    |      |              |  | exchange the difficult word             |     |     |
|  |              |       |          |    |      |              |  | accept your stuttering                  |     |     |
|  |              |       |          |    |      |              |  | observe speaker deeply                  |     |     |
|  |              |       |          |    |      |              |  | change the personality with the context |     |     |
| slp sanjay kumar after stammering therapy              | march 6 2016 | 02:02 | slp      | 0  | 68   | 4,921 views  | speech therapy exercises               | demonstration of airflow                | 80% | 25% |
| what is the solution for stammering, dr zakir Nasik    | nov 22 2020  | 09:03 | media    | 17 | 598  | 13,008 views | definition of stuttering               |   | 33% | 33% |
|  |              |       |          |    |      |              | cause of stuttering                    | organic cause                           |     |     |
|  |              |       |          |    |      |              |  | hereditary problem                      |     |     |

|  |              |       |          |    |       |             |   |                                     |      |      |
|--|--------------|-------|----------|----|-------|-------------|---|-------------------------------------|------|------|
|  |              |       |          |    |       |             |   | neurophysiological change           |      |      |
|  |              |       |          |    |       |             | self strategies of stutter              | duas in Islam to improve stuttering |      |      |
| stammering treatment/how to cure stammering      | jul 14 2015  | 01:47 | consumer | 13 | 344   | 23,000views | home remedy for stuttering              | ghee and gooseberry mix and eat     | 80%  | 33%  |
|  |              |       |          |    |       |             |   | eat black pepper                    |      |      |
|  |              |       |          |    |       |             |   | eat cinnamon                        |      |      |
| best 2 tips to remove stammering                 | oct 31 2020  | 05:21 | consumer | 21 | 577   | 9852        | self strategies of youtuber             | tongue twister exercises            | 75%  | 66%  |
|  |              |       |          |    |       |             |   | over articulation                   |      |      |
| daily morning exercises                          | may 15 2018  | 06:32 | consumer | 39 | 2.2k  | 38,790      | self strategies of youtuber             | om chanting                         | 100% | 100% |
|  |              |       |          |    |       |             |   | bhramari exercises                  |      |      |
|  |              |       |          |    |       |             |   | pronounce vowels and consonant      |      |      |
| speech language pathologist stuttering treatment | sep 23 2010  | 03:33 | media    | 45 | 946   | 1,93,439    | Speech therapy techniques               | easy onset, block release, Lidcombe | 87%  | 100% |
|  |              |       |          |    |       |             | definition of stuttering                |                                     |      |      |
|  |              |       |          |    |       |             | charactersits of stuttering             | repetition,prolongation,block       |      |      |
|  |              |       |          |    |       |             | secondary behaviours of stuttering      | a head nod, eye blink               |      |      |
| defeat your stammer with mc guire programme      | may 3 2016   | 02:24 | consumer | 2  | 48    | 4394        | McGuire programme related to stuttering |                                     | 66%  | 66%  |
| what to do if your child stutter                 | april 3 2020 | 04:54 | slp      | 28 | 365   | 11,534      | nnf and dysfluency, cause, technique    |                                     | 88%  | 66%  |
| visualization for stuttering                     | nov 20 2022  | 03:47 | media    | 0  | 61    | 1574 views  | strategies to reduce stuttering         | visualization                       | 100% | 33%  |
| stutter and strides                              | feb 4 2014   | 6:43  | media    | 19 | 2.1 k | 51,426      | life experiences of stutter             | negative                            | 55%  | 33%  |

|   |              |           |          |    |     |              |  |                                   |     |      |
|---|--------------|-----------|----------|----|-----|--------------|--|-----------------------------------|-----|------|
|   |              |           |          |    |     |              | motivational lesson from stutter             |                                   |     |      |
| fumbling my way to fluency/how I got overcome my stutter  | jul 28 2019  | 10:59     | media    | 20 | 923 | 24,801       | strategies to reduce stuttering              | accept your stuttering            | 37% | 33%  |
|   |              |           |          |    |     |              |  | taking pauses in sentences        |     |      |
|   |              |           |          |    |     |              | motivational lesson from stutter             |                                   |     |      |
|   |              |           |          |    |     |              | life experiences of stutter                  |                                   |     |      |
| how Hrithik roshan overcome stammering/stutter            | feb28 2020   | 02:47     | media    | 8  | 269 | 10,351 views | famous personalities who stutter             |                                   | 83% | 33%  |
|   |              |           |          |    |     |              | techniques to reduce stuttering              | praticce                          |     |      |
|   |              |           |          |    |     |              |  | speech therapy                    |     |      |
|   |              |           |          |    |     |              |  | master the fluency skill          |     |      |
| frequently questions asked questions about stuttering     | sep 23 2020  | 14:29 min | consumer | 10 | 1k  | 51,385       | negative experience                          |                                   | 55% | 66%  |
|   |              |           |          |    |     |              | characteristics of stuttering                | repetition, prolongation, block   |     |      |
|   |              |           |          |    |     |              | secondary behaviours of stuttering           | anxiety pysical problem           |     |      |
| google boxes watch stutter school                         | march 4 2021 | 06:39     | media    | 2  | 767 | 22000        | stutter school 4 days programme in australia | costal breath                     | 80% | 100% |
|   |              |           |          |    |     |              |  | using costal breath tell the name |     |      |
|   |              |           |          |    |     |              |  | speak with stranger               |     |      |
| easy onset and light contact to help to reduce stuttering | nov 2 2021   | 08:29     | slp      | 34 | 55  | 1669         | characteristics of stuttering                | repetition, prolongation, block   | 77% | 100% |

|  |               |       |          |    |      |              |                                   |  |     |      |
|--|---------------|-------|----------|----|------|--------------|-----------------------------------|--|-----|------|
|  |               |       |          |    |      |              | speech therapy strategy           | easy onset and light contact                   |     |      |
| let me finish a stuttering documentary                     | feb 22 2011   | 13:51 | consumer | 23 | 1.3k | 1,65,673     | motivational lesson from stutter  |  | 37% | 66%  |
|  |               |       |          |    |      |              | life experiences of stutter       | Negative                                       |     |      |
| what is voluntary stuttering                               | aug 10 2021   | 01:09 | slp      | 2  | 20   | 2488         | Speech therapy techniques         | voluntary stuttering                           | 40% | 33%  |
| bruce willis honored for American institute for stuttering | june 17 2021  | 04:56 | slp      | 97 | 973  | 50,310       | life experiences of stutter       | Negative                                       | 50% | 66%  |
| way to stop stuttering forever                             | may 19 2020   | 04:08 | consumer | 39 | 1.4k | 30,744       | self strategies of youtuber       | practice and sacrifice fear                    | 80% | 100% |
|  |               |       |          |    |      |              |                                   | give a speech, make video                      |     |      |
| why you should embrace your stutter                        | feb 3 2015    | 10:00 | media    | 26 | 4.1k | 1,37,388     | life experiences of stutter       | Negative                                       | 66% | 66%  |
|  |               |       |          |    |      |              | motivational lesson from stutter  |  |     |      |
|  |               |       |          |    |      |              | strategies to reduce stuttering   | speak slowly                                   |     |      |
|  |               |       |          |    |      |              |                                   | speak in singing style                         |     |      |
| how to treat a child's stutter                             | april 26 2011 | 5:53  | slp      | 61 | 843  | 1,36,550     | normal non fluency and stuttering |  | 83% | 66%  |
|  |               |       |          |    |      |              | cause of stuttering               | Unknown  |     |      |
|  |               |       |          |    |      |              |                                   | emotional and psychological cause              |     |      |
|  |               |       |          |    |      |              |                                   | difficulty of brain to execute motor movements |     |      |
|  |               |       |          |    |      |              | onset of stuttering               |  |     |      |
|  |               |       |          |    |      |              | speech therapy strategy           | direct and indirect therapy                    |     |      |
| I cant say my name how stuttering affects me               | oct 28 2018   | 10:42 | consumer | 17 | 1.8k | 76,082 views | life experiences of stutter       |  | 55% | 66%  |

|                                      |               |       |          |    |      |              |   |  |     |      |
|--------------------------------------|---------------|-------|----------|----|------|--------------|---|--|-----|------|
|                                      |               |       |          |    |      |              | secondary behaviours and emotional break down |  |     |      |
|                                      |               |       |          |    |      |              | cause of stuttering                           | Trauma   |     |      |
|                                      |               |       |          |    |      |              |   | emotional and psychological cause                      |     |      |
| stuttering in children 3-5 years old | april 27 2021 | 08:03 | slp      | 6  | 246  | 11,542 views | normal non fluency and stuttering             |  | 70% | 100% |
|                                      |               |       |          |    |      |              | characteristics of stuttering                 | Repetition   |     |      |
|                                      |               |       |          |    |      |              | strategies to reduce stuttering in kids       | not to create anxiety and stress in childs environment |     |      |
|                                      |               |       |          |    |      |              |   | speak slowly   |     |      |
|                                      |               |       |          |    |      |              |   | discrimination between bumpy and smooth speech         |     |      |
|                                      |               |       |          |    |      |              |   | don't make them aware                                  |     |      |
|                                      |               |       |          |    |      |              |   | easy onset technique                                   |     |      |
| str on voluntary stuttering          | sep 24 2019   | 09:56 | slp      | 4  | 49   | 3920         | speech therapy strategy                       | demonstration of voluntary stuttering                  | 70% | 66%  |
| origin of my stammering              | jul 11 2018   | 4:06  | consumer | 26 | 2.3  | 35000        | life experiences of stutter                   |  | 57% | 66%  |
|                                      |               |       |          |    |      |              |   |  |     |      |
| why do people stammer                | april 20 2021 | 02:55 | consumer | 48 | 2.1k | 19,081       | characteristics of stuttering                 | repetition, prolongation,block                         | 90% | 66%  |
|                                      |               |       |          |    |      |              | types of stuttering                           | developmental,psychological,neurogenic                 |     |      |
|                                      |               |       |          |    |      |              | strategies to reduce stuttering               | pratice speaking slowly                                |     |      |
|                                      |               |       |          |    |      |              |   | avoid trigger words                                    |     |      |
|                                      |               |       |          |    |      |              |   | try mindfulness  |     |      |
|                                      |               |       |          |    |      |              |   | using different apps                                   |     |      |
|                                      |               |       |          |    |      |              |   | meditation   |     |      |



|                                       |               |       |          |     |       |          |   |   |     |      |
|---------------------------------------|---------------|-------|----------|-----|-------|----------|---|---|-----|------|
|                                       |               |       |          |     |       |          |   | speech therapy                                  |     |      |
| best yoga to cure stammering(english) | june 20 2018  | 07:15 | consumer | 110 | 7.9 k | 1,73,501 | self strategies of youtuber                   | yoga to reduce stuttering, exercise of neck     | 90% | 100% |
|                                       |               |       |          |     |       |          |   | sinhasan, relaxation exercises                  |     |      |
| stammering causes and treatment       | april 29 2020 | 06:23 | slp      | 24  | 478   | 18,529   | dsm 5 criteria of stuttering                  | childhood onset fluency disorder                | 70% | 33%  |
|                                       |               |       |          |     |       |          | characteristics of stuttering                 | repetition, prolongation,block                  |     |      |
|                                       |               |       |          |     |       |          | types of stuttering                           | developmental,psychological,neurogenic          |     |      |
|                                       |               |       |          |     |       |          | cause of stuttering                           | genetic causes                                  |     |      |
|                                       |               |       |          |     |       |          |   | neurological causes                             |     |      |
|                                       |               |       |          |     |       |          |   | organic cause                                   |     |      |
|                                       |               |       |          |     |       |          | strategies to reduce stuttering               | no judgmental approach                          |     |      |
|                                       |               |       |          |     |       |          |   | allow kids to complete sentence                 |     |      |
|                                       |               |       |          |     |       |          |   | have a relaxed home environment                 |     |      |
|                                       |               |       |          |     |       |          |   | slow and relaxed manner                         |     |      |
|                                       |               |       |          |     |       |          |   | give consistent feedback                        |     |      |
|                                       |               |       |          |     |       |          |   | speech therapy                                  |     |      |
|                                       |               |       |          |     |       |          |   | consult paediatrician for neurological          |     |      |
| cure stammering using mind power      | oct 11 2018   | 12:03 | consumer | 12  | 770   | 10,398   | cause of stuttering                           | emotional and psychological cause               | 55% | 33%  |
|                                       |               |       |          |     |       |          | psychological strategies to reduce stuttering | understand your mind be friendly with your mind |     |      |

|                                       |               |       |          |     |     |          |  |                                     |     |      |
|---------------------------------------|---------------|-------|----------|-----|-----|----------|--|-------------------------------------|-----|------|
|                                       |               |       |          |     |     |          |  | meditation, increase the focus      |     |      |
| stammering home remedies and exercise | march 1 2018  | 14:45 | media    | 871 | 23k | 6,95,643 | incidence and prevalence of stuttering |                                     | 70% | 66%  |
|                                       |               |       |          |     |     |          | onset of stuttering                    |                                     |     |      |
|                                       |               |       |          |     |     |          | famous personalities who stutter       |                                     |     |      |
|                                       |               |       |          |     |     |          | secondary behaviours of stuttering     | stress, anxiety,                    |     |      |
|                                       |               |       |          |     |     |          | cause of stuttering                    | genetic causes                      |     |      |
|                                       |               |       |          |     |     |          |  | organic cause                       |     |      |
|                                       |               |       |          |     |     |          |  | reduction of blood flow in brain    |     |      |
|                                       |               |       |          |     |     |          | home remedy for stuttering             | eat gooseberry, black pepper        |     |      |
|                                       |               |       |          |     |     |          | techniques to reduce stuttering        | pratice difficult words             |     |      |
|                                       |               |       |          |     |     |          |  | speak slowly                        |     |      |
|                                       |               |       |          |     |     |          |  | speak with stranger                 |     |      |
|                                       |               |       |          |     |     |          |  | breathing techniques                |     |      |
|                                       |               |       |          |     |     |          |  | feed back                           |     |      |
|                                       |               |       |          |     |     |          |  | make phone call and tell            |     |      |
| Over-come stuttering and stammering   | march 23 2018 | 10:26 | consumer | 30  | 2k  | 40,503   | self stratregies of youtuber           | imagine you speak fluently, clearly | 88% | 100% |
|                                       |               |       |          |     |     |          |  | hold your breath when you talk      |     |      |
|                                       |               |       |          |     |     |          |  | read loudly                         |     |      |
|                                       |               |       |          |     |     |          |  | start speak infront of public       |     |      |

|   |              |       |              |    |      |        |  |  |     |      |
|---|--------------|-------|--------------|----|------|--------|--|--|-----|------|
|   |              |       |              |    |      |        |  | pratice the word which is stuttered        |     |      |
| best techniques to stop stammering                    | sep 25 2020  | 10:00 | consumer     | 29 | 2.5k | 42,989 | self stratergies of youtuber                   | speak slowly                               | 81% | 100% |
|   |              |       |              |    |      |        |  | try a new language and speak               |     |      |
|   |              |       |              |    |      |        |  | substitute other words for stuttered word  |     |      |
|   |              |       |              |    |      |        |  | tongue twister exercises                   |     |      |
|   |              |       |              |    |      |        |  | put /mm/ word before stuttered word        |     |      |
| remove stuttering (rules for remove stammering)       | sep 9 2020   | 08:18 | consumer     | 10 | 671  | 10,650 | characteristics of stuttering                  | repetition, prolongation, block            | 77% | 66%  |
|   |              |       |              |    |      |        | self stratergies of youtuber                   | tongue exercises                           |     |      |
|   |              |       |              |    |      |        |  | breathing techniques                       |     |      |
|   |              |       |              |    |      |        |  | vocal cord exercises                       |     |      |
|   |              |       |              |    |      |        |  | yoga to reduce stuttering                  |     |      |
| I will hypnotize in the video to overcome stuttering  | feb 9 2021   | 43:23 | proffesional | 8  | 288  | 7,763  | psychological stratergies to reduce stuttering | hypnotisation video to overcome stammering | 80% | 70%  |
| stammering alphabet pratice                           | jan 19 2019  | 08:40 | consumer     | 35 | 284  | 34,498 | self stratergies of youtuber                   | buzzing technique for lips                 | 66% | 66%  |
| how to ovecome fear of stammering/how to stop stammer | march 3 2022 | 08:00 | consumer     | 0  | 1.7k | 1,243  | life experiences of stutter                    |  | 90% | 100% |
|   |              |       |              |    |      |        | self stratergies of youtuber                   | speak with stranger                        |     |      |
|   |              |       |              |    |      |        |  | face the fear and speak                    |     |      |

|  |             |       |              |    |      |        |                                 |   |     |     |
|--|-------------|-------|--------------|----|------|--------|---------------------------------|---|-----|-----|
|  |             |       |              |    |      |        |                                 | ignore the negative people and speak                  |     |     |
| top 5 exercises/videos of exercises to overcome stammering     | jul 17 2016 | 05:28 | consumer     | 74 | 2.5k | 89,313 | self strategies of youtuber     | close your eyes and concentrate on speech             | 66% | 66% |
|  |             |       |              |    |      |        |                                 | open and close hand exercises                         |     |     |
|  |             |       |              |    |      |        |                                 | clench your teeth and breathe                         |     |     |
|  |             |       |              |    |      |        |                                 | up and down your shoulder (shoulder exercises)        |     |     |
|  |             |       |              |    |      |        |                                 | move your head posteriorly, laterally, anteriorly     |     |     |
| stammering proven 3 exercises for instant results in 2 minutes | jul 18 2021 | 14:49 | profesional  | 8  | 363  | 4013   | cause of stuttering             | emotional and psychological cause                     | 70% | 66% |
|  |             |       |              |    |      |        | techniques to reduce stuttering | mind power techniques                                 |     |     |
|  |             |       |              |    |      |        |                                 | smile and speak                                       |     |     |
|  |             |       |              |    |      |        |                                 | stretch your body, shoulder                           |     |     |
|  |             |       |              |    |      |        |                                 | maintain your eye contact with speaker                |     |     |
|  |             |       |              |    |      |        |                                 | build confidence in speaker                           |     |     |
| best reading technique for stammering                          | may 19 2021 | 27;20 | consumer     | 27 | 1.4k | 17,527 | self strategies of youtuber     | set your mind set while reading                       | 66% | 66% |
|  |             |       |              |    |      |        |                                 | choose the local language in which stuttering is more |     |     |
|  |             |       |              |    |      |        |                                 | read words used in daily life                         |     |     |
| haklane kaise door kaire/stammering                            | jan 30 2022 | 10:00 | proffesional | 0  | 273  | 4024   | techniques to reduce stuttering | relaxation exercises                                  | 70% | 33% |

|  |               |       |          |    |     |        |                                  |   |      |     |
|--|---------------|-------|----------|----|-----|--------|----------------------------------|---|------|-----|
|  |               |       |          |    |     |        |                                  | deep breathing exercises                        |      |     |
|  |               |       |          |    |     |        |                                  | yoga exercises(simhasan)                        |      |     |
|  |               |       |          |    |     |        |                                  | tongue exercises                                |      |     |
|  |               |       |          |    |     |        |                                  | vocal cord exercises                            |      |     |
|  |               |       |          |    |     |        | cause of stuttering              | genetic causes                                  |      |     |
|  |               |       |          |    |     |        |                                  | environmental causes                            |      |     |
|  |               |       |          |    |     |        |                                  | organic cause                                   |      |     |
|  |               |       |          |    |     |        |                                  | neurological causes                             |      |     |
|  |               |       |          |    |     |        |                                  | emotional and psychological cause               |      |     |
|  |               |       |          |    |     |        | famous personalities who stutter |   |      |     |
| speaking technique to avoid stuttering             | jul 28 2021   | 3:00  | consumer | 5  | 501 | 4,701  | self strategies of youtuber      | breathing techniques                            | 66%  | 66% |
|  |               |       |          |    |     |        |                                  | exhale and inhale through mouth and speak       |      |     |
| is stammering a problem? hear it from a 20year old | march 18 2019 | 01:59 | consumer | 14 | 670 | 19,233 | techniques to reduce stuttering  | music therapy                                   | 80%  | 66% |
|  |               |       |          |    |     |        | life experiences of stutter      | negative  |      |     |
| real life experience for stammer in pune           | jul 9 2018    | 04:40 | consumer | 64 | 837 | 17,614 | self strategies of youtuber      | smile and speak with strangers                  | 100% | 33% |
|  |               |       |          |    |     |        |                                  | pratice infront on the mirror and focus on lips |      |     |
| from stammering to international public speaker    | aug 31 2021   | 04:42 | consumer | 10 | 288 | 6725   | motivational lesson from stutter |   |      |     |
|  |               |       |          |    |     |        | life experiences of stutter      | school experiences                              | 80%  | 33% |