Table 1: Monthly growth of YouTube videos on subjects related to COVID-19

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Month (2020)** | **Videos** | **Views** | **Likes** | **Dislike** | **Comments** |
| January | 05 | 233,785,965 (26.98%) | 823,043 (7.50%) | 41,417(6.07%) | 7,247(0.44%) |
| February | 28 | 60,588,950 (6.99%) | 876,237 (7.98%) | 56,583(8.29%) | 128,915(7.95%) |
| March | 199 | 504,729,941 (58.25%) | 8,494,140 (77.42%) | 475,843 (69.77%) | 1,192,601(73.61%) |
| April | 117 | 67,325,872(7.77%) | 777,465 (7.08%) | 108,124 (15.85%) | 291,229 (17.97%) |
| **Grand Total** | **349** | **866,430,728** | **10,970,885** | **681,967** | **1,619,992** |

Table 1 gives a broad overview of the statistics of published YouTube videos about COVID-19, by month, together with the numbers of views, likes, dislikes, and comments. Based on the published videos, the above data shows the highest number of videos were released in March, i.e. 199 out of the total 349 for the four-month period. Videos posted in March also received the highest numbers of views (504,729,941), likes (8,494,140), dislikes (475,843), and comments (1,192,601).

 Table 2: Language

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Language | No. of Videos | No. of Views | Likes | Dislike | No. of Comment |
| English | 334 | 824,429,849 | 10,290,390 | 628,832 | 1,567,533 |
| Hindi | 15 | 42,000,879 | 680,495 | 53,135 | 52,459 |
| **Grand Total** | **349** | **866,430,728** | **10,970,885** | **681,967** | **1,619,992** |

Table 2 shows the language of videos published during the 4 month period. 334 videos were posted in English and 15 videos in Hindi. The 334 videos published in English attracted 824,429,849 views, 10,290,390 likes, 628,832 dislikes and 1,567,533 comments. Videos posted in the English language attracted significantly more viewers than videos posted in Hindi.

Table 3: Characteristics of YouTube Videos on COVID-19

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Content | No. videos | % | English | Hindi | Views | Likes | Dislikes | Comments |
| Clinical symptoms | 14 | 4.01 | 14 | 0 | 23,706,373 | 282,682 | 11,819 | 40,623 |
| Death report | 23 | 6.59 | 22 | 1 | 22,849,220 | 173,682 | 25,947 | 78,523 |
| General information | 227 | 65.04 | 216 | 11 | 681,761,669 | 7,951,640 | 546,965 | 1,177,715 |
| Lockdown | 18 | 5.15 | 18 | 0 | 20,363,434 | 178,848 | 20,429 | 69,026 |
| Precaution | 28 | 8.02 | 27 | 1 | 72,938,440 | 1,632,927 | 41,015 | 128,864 |
| Treatment/outcome | 39 | 11.17 | 37 | 2 | 44,811,592 | 751,106 | 35,792 | 125,241 |
| **Grand Total** | **349** | **100** |  **334** | **15** | **866,430,728** | **10,970,885** | **681,967** | **1,619,992** |
| **Mean**  | **58.16** | **SD 84.18** |  |  |  |  |  |  |

In Table 3, videos were classified as per their COVID-19 information content, in terms of symptoms, death reports, general information, lockdown, precautions, and treatment. Videos uploaded by a variety of news agencies, governments, and hospital sectors with information on the current status of infections, and classified as per their content. The highest number of videos published in the period (277 out of 349; 65.04%) contained general information about the disease. Out of these 277 videos, 216 videos were in English and 11 in Hindi. The majority of the videos focused on general information, with only 4.01% videos focused on clinical symptoms, and 11.17% on treatment and outcomes.

Table4: Distribution of videos by duration

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Duration | No. videos | Percentage | Total Views | Likes | Dislikes | Comments |
| 1-10 min | 229 | 65.34 | 448,693,684 | 7,333,862 | 427,436 | 1,129,191 |
| 11-20min | 60 | 17.32 | 94,854,090 | 1,709,829 | 126,495 | 293,361 |
| 20-30 min | 18 | 5.11 | 45,152,161 | 631,176 | 44,397 | 88,957 |
| 30-40 min | 7 | 1.98 | 10,072,791 | 197,807 | 6,339 | 24,255 |
| 40-50 min | 5 | 1.42 | 19,988,737 | 220,506 | 15,278 | 51,694 |
| 50-60 min | 5 | 1.70 | 2,907,562 | 13,462 | 1,646 | 3,358 |
| > 60 min | 25 | 1.70 | 244,761,703 | 864,243 | 60,376 | 29,176 |
| Total | 349 | 100% | **866,430,728** | **10,970,885** | **681,967** | **1,619,992** |

A total of 349 videos were posted by various agencies. Table 4 shows the numbers of videos categorized by duration. The highest number of videos were found to have durations between 1 and 10 minutes. These short videos received high numbers of likes, views, comments and also dislikes. In comparison to videos of other durations, these 229 short videos were most effective, attracted the most viewers, and had the greatest impact, with 448,693,684 views, 7,333,862 likes, 427,436 dislikes, and 1,129,191 comments.

Table 5: Top News Channels

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| News Channel | No. videos | Average duration | % | Total views (average) | Likes (average) | Dislikes (average) | Comments (average) |
| NBC News | 24 | 16 min 25 s | 6.81 | 21,597,646 (899,901) | 138,587 (5,774) | 18,971(790) | 71,991 (2,999) |
| ABC News | 17 | 6 min 5 s | 4.8 | 15,799,423 (929,377) | 119,268 (7,015) | 14,129(831) | 75,592 (4,446) |
| Global News | 16 | 21 min 7 s | 4.54 | 9,907,257 (619,203) | 57,698 (3,606) | 8,675 (542) | 20,991 (1,399) |
| MSNBC | 16 | 6 min 5 s | 4.54 | 14,749,318 (921,832) | 125,339 (7,833) | 35,454 (2,215) | 85,390 (5,336) |
| CBS This Morning | 12 | 6 min 8 s | 3.40 | 15,297,506 (1,274,792) | 75,972(6,331) | 13,985(1,165) | 42,413 (3,534) |
| TODAY | 10 | 12 min 3 s | 2.84 | 14,575,708 (1,457,570) | 83,661 (8,361) | 16,018 (1,601) | 56,539 (5,653) |
| Med Cram – Medical Lectures Explained CLEARLY | 9 | 12 min 11 s | 2.55 | 7,606,329 (845,147) | 122,291 (13,587) | 3,221 (357) | 19,068 (2,118) |
| Sky News | 9 | 4 min 44 s | 2.55 | 25,416,031 (2,824,003) | 140,146 (15,571) | 8,470 (941) | 31,425 (3,928) |
| CBC News | 8 | 25 min 8 s | 2.27 | 6,196,428 (774,553) | 61,181(7,647) | 4,719 (589) | 17,145 (2,143) |
| DW News | 7 | 11 min 14 s | 1.98 | 6,273,311 (896,187) | 41,609 (5,944) | 3,155 (450) | 15,285 (2,183) |
| Fox News | 7 | 1 hr 6 min 57 s | 1.98 | 6,231,020 (890,145) | 69,116(9,873) | 7,478(1,068) | 28,025 (4,003) |
| Total news agencies – 139 | 349 |  |  |  |  |  |  |

The 349 videos were categorized into 139 news agencies, and news agencies were sorted according to the number of videos posted during the period. Table 5 shows the top 11 news agencies in this list, with seven or more videos each posted within the period, together with the frequency of videos published by the agency, durations of videos posted and the reception to these videos (views, likes, dislikes, comments). NBC News posted the highest number of videos, totaling 24 videos with an average duration of 16 minutes and 25 seconds. ABC News and Global News posted 17 and 16 videos respectively, with average durations of 6 minutes and 5 s, and 21 minutes and 7 s, respectively.

Table 6: Distribution of videos by source

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Source | No. videos | Percentage | Total views | Likes | Dislikes | Comments |
| Government | 17 | 4.87 | 34,439,109 | 354,482 | 26,505 | 37,773 |
| Health | 25 | 7.16 | 77,914,195 | 1,757,438 | 59,412 | 138,024 |
| Individual | 55 | 15.75 | 343,231,826 | 4,101,086 | 200,453 | 369,033 |
| News channel | 250 | 71.63 | 406,668,523 | 4,653,425 | 394,296 | 1,071,711 |
| Non-profit Organization | 2 | 0.57 | 4,177,075 | 104,454 | 1,301 | 3,451 |
| **Grand Total** | **349** | **100** | **866,430,728** | **10,970,885** | **681,967** | **1,619,992** |

In this section, we consider the source of the videos published during the study period, as shown in Table 6. Videos were categorized based on the types of organization that uploaded them, namely government, health, individual, news channel, and non-profit organization. News channels (71.63%) were the single largest source of videos, with these videos attracting the highest proportion of views, likes, dislikes, and comments. The total viewership of the 250 videos was 406,668,523 views, 4,653,425 likes, 394,296 dislikes, and 1,071,711 comments. The most reliable and the highest quality videos were provided by the government and health organizations, but these two sources contributed only 4.87% and 7.16% of videos respectively.

Table7: Analysis of views, likes and dislikes by video source

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Government (range) | Average | Health(range) | Average | News channel(range) | Average | Individual(range) | Average | Non-profit organization(range) | Average |
| View Count | 34,439,109(47,129- 10,701,477) | 2,025,829 | 77,914,195(125,945-21,328,944) | 3,116,567 | 406,668,523(11,437-21,469,394) | 1,626,674 | 343,231,826(11,180-222,878,191) | 8,971,216 | 4,177,075(685,652-3,491,423) | 2,088,537 |
| Like | 354,482(722-98,110) | 20,815 | 1,757,438(1,268-824,384) | 73,226 | 4,653,425(84-386,767) | 18,613 | 4,101,086(133-732,326) | 87,152 | 104,454(14,401-90,053) | 52,227 |
| Dislike | 26,505(19-10,130) | 1,559 | 59,412(128-20,991) | 2,475 | 394,296 (3-21,475) | 1,577 | 200,453(10-42,875) | 3,943 | 1,301(304-997) | 650 |
| Comment | 37,773(248-15,993) | 2,360 | 138,024(320-44,479) | 5,751 | 1,071,711 (7-80,747) | 4,639 | 369,033(18-54,546) | 7,214 | 3,451(1,605-1,846) | 1,725 |

Table 7 shows the average, and range (minimum, maximum) figures for views, likes, dislikes, and number of comments of videos for each source.

Table8: Top 10 videos on COVID-19 by numbers of views

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Title | News Channel | Language | Time  | View Count | Like Count | Dislike Count | CommentCount |
| [LIVE] Coronavirus Pandemic: Real Time Counter, World Map, News | Roylab Stats | English | 9 hr 28 min 28 s | 222,878,191 | 732,326 | 37,452 | 0 |
| How wildlife trade is linked to coronavirus | Vox | English | 8 min 49 s | 21,469,394 | 386,767 | 21,475 | 58,625 |
| The Coronavirus Explained & What You Should Do | Kurzgesagt – In a Nutshell | English | 8 min 35 s | 21,328,944 | 824,384 | 9,514 | 44,479 |
| Journalist goes undercover at 'wet markets', where the Coronavirus started | 60 Minutes Australia | 60 Minutes Australia | English | 27 min 31 s | 13,972,568 | 101,973 | 13,414 | 0 |
| Coronavirus: Last Week Tonight with John Oliver (HBO) | Last Week Tonight | English | 20 min 10 s | 13,923,649 | 291,328 | 11,623 | 25,527 |
| What Coronavirus Symptoms Look Like, Day By Day | Science Insider | English | 5 min 19 | 13,543,087 | 182,989 | 5,023 | 15,663 |
| How To See Germs Spread (Coronavirus) | Mark Rober | English | 10 min 21 s | 12,443,283 | 454,770 | 6,859 | 26,430 |
| Coronavirus: How the deadly epidemic sparked a global emergency | Four Corners | ABC News In-depth | English | 45 min 52 s | 11,801,541 | 71,998 | 6,736 | 21,659 |
| The shocking centre of the COVID-19 crisis | Sky News | English | 5 min 19 s | 11,561,527 | 30,056 | 1,956 | 0 |
| Bill Gates makes a prediction about when coronavirus cases will peak | CNN | English | 10 min 52 s | 11,429,306 | 104,806 | 17,521 | 80,747 |

The ten most highly-viewed videos published by news and media agencies during the study period are presented in Table8. It was revealed that the video entitled “[LIVE] Coronavirus Pandemic: Real-Time Counter, World Map, News” published by Roylab Stats in English received 22,287,819 views. This was followed by the video “How wildlife trade is linked to Coronavirus” by Vox, also in English, which was viewed 21,469,394 times. The data also revealed that all ten of the highest-viewed videos were published in the English language. The longest video duration was 9 hours, 26 minutes and 28 seconds.

 Table 9: Summary characteristics of all 349 videos by views, likes and dislikes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Characteristics | Total  | Per Day | Minimum  | Maximum |
| Total views | 866,430,728 | 2,482,609 | 11,180 | 222,878,191 |
| Total likes | 10,970,885 | 31,525 | 84 | 824,384 |
| Total dislikes  | 681,967 | 1,960 | 3 | 42,857 |
| Total comments | 1,619,992 | 4,939 | 7 | 80,747 |

Table 9 gives the overall video statistics of the viewership. The videos have a combined view count of 866,430,728, with an average number of views per day of 2,482,609 (range 11,180 to 222,878,191 per day). The combined likes and dislikes received were 10,970,885 total likes (average of 31,525 per day; range 84 to 824,384 per day) and 681,967 total dislikes (average of 1,960 per day; range 3 to 42,857). In total, the videos received 1,619,992 comments (average 4,939 per day; range 7 to 80,747).