International Journal of Advanced Culture Technology Vol.8 No.3 133-139 (2020)
DOI https://doi.org/10.17703/IJACT.2020.8.3.133

.IJACT 20-9-16

A Public Perception Study on the new word "Corona Blue" :Focusing on Social Media Big Data Analysis

Myung Suk, Ann

[1]*Associate Prof., Dept. of theology, SeoulJangsin Univ., Korea*
annmyungsook@naver.com

Abstract

The purpose of this study is to contribute to the provision of basic data for psychological quarantine policy and counseling by examining the public perception of the "corona blue" phenomenon through analysis of social media big data. To do this, key words related to the word 'Corona Blue' were derived and analyzed using the big data analysis program 'Textom'. As a result of the analysis, words such as 'Corona 19', 'depression', 'problem' and 'overcome' were derived as key words. For the analysis results,"pride and awarenes as the public perception of Corona 19", "depression and anxiety as a group trauma as the corona blue phenomenon", "spreading a psychological quarantine culture and demanding social healing as the perception of overcoming corona Blue," and "hope for return to daily life and changes in daily life as the perception of post corona" were discussed. In conclusion, we have identified the need for active psychological support from the community By revealing that Corona Blue is a depression as a group trauma. At this time, it is confirmed that it is necessary to prioritize social healing and psychological quarantine for the main risk groups such as youth or the vulnerable, who are the socially weak.

Keywords: *Corona Blue, Big Data, Corona 19, Depression, Public Perception*

1. Introduction

Recently, the world has faced a disaster situation due to a novel infectious disease called Corona 19. Disaster experiences such as new infectious diseases not only cause physical and physical damage, but also socially spread tension and fear, causing a collective type of infectious disease stress situation [1]. Middle East Respiratory Syndrome (MERS) in 2015, Acute Severe Respiratory Syndrome (SARS) in Hong Kong in 2003, and Ebola, a pandemic in West Africa in 2014, were also depressed, anxiety, nervous, aggression, and fear among medical staff and the general public. And other mental health problems [2-4]. The 2020 Corona 19 incident also caused an infectious disease stress phenomenon, and the new term 'corona blue' to refer to this phenomenon appeared. Corona Blue is a compound word of Corona 19 and Blue. According to a survey that analyzed the public's psychological and mental state, half of the people experience anxiety and depression due to coronavirus (48%)[5]. As the need for psychological quarantine by the people due to Corona Blue is increasing, there is a need to understand "Corona Blue" from various angles. In particular, there is a need to utilize social media big data for Corona Blue resarch, social media is useful for understanding contemporary public perception because it is 'a medium that reveals vivid experiences and types by creating natural language

Manuscript Received:August 26, 2020/Revised:September 18, 2020/Accepted:September 23, 2020
Corresponding Author: annmyungsook@naver.com
Tel:+82-10-2395-2301, Fax: +82-31-799-9015
Author's affiliation
Associate Professor, Dept. of Theology, Seouljangsin Univ., Korea

texts in everyday contexts'[6]. Therefore, the purpose of this study is to contribute to the provision of basic data for psychological quarantine policies and counseling by examining the public perception of the ‘Corona Blue’ phenomenon through social media big data analysis, and improving the understanding of Corona Blue.

2. Research Method

2.1 Social Media Big Data Analysis

Big data generally refers to a large amount of data that exceeds the range that can be analyzed. In the analysis of big data, statistical techniques and distributed processing techniques are applied to facilitate handling of a wide range of data. Text mining, an analysis method using big data, is a technique that extracts and discovers meaningful knowledge from unstructured language in a free form [7]. In order to collect and analyze the data of this study, the social matrix program 'textom'[8], which is useful for network analysis, was used. Textom searches data such as Naver and Daum, the portal search sites, and provides ranking and data for related keywords, and provides matrix information according to the frequency of search keywords.

2.2. Analysis Overview

the keyword to be collected for analysis is 'Corona Blue'. The data collection period is about 7 months from January 1, 2020 to July 22, 2020, including the initial outbreak of Corona 19. The collection channels were set to Naver and Daum's cafés, blogs, Twitter, Facebook, and YouTube for easy access to websites and information. 20,510 words derived through refinement and editing from 6,471 collected texts collected from Textom, an analysis tool, were used for this study.

2.3. Analysis Procedures

The analysis procedure is as follows. First, as a result of collecting data, a total of 6,471 collection lists of 'Corona Blue' were created as an analysis list. Then it went through the assumption that punctuation marks and investigations were removed. It was edited by the researcher to exclude meaningless onomatopoeia. Text mining was conducted by the noun refining method to derive 20,510 words. Second, for the derived 20,510 words, 100 words related to 'Corona Blue' were determined in consideration of the importance of the words among the words with a high frequency of appearance. Third, the frequency of related words that appeared simultaneously in a sentence was derived. Then, an N-gram analysis was performed to give direction between words and words. The simple frequency analysis helps to analyze the frequency of the entire data, while the N-gram analysis helps to intuitively grasp the responses of the audience. In this study, N-gram analysis was performed by separating it into words, and the direction between words was indicated by keyword 1 and keyword 2 of N-gram. Fourth, the TF-IDF analysis, which indicates the importance of the word in the document, and the similarity of the word were analyzed. Through this process, key words of data and their meanings are extracted from various angles. Through this, the conclusion of public perception of' Corona Blue' was drawn.

3. Results

3.1.Key Words and Fequencies Related to 'Corona Blue'

As a result of assuming 6,471 text data written in the key word “Corona Blue,” a total of 20,510 nouns were derived. A simple frequency analysis was conducted. As a result, as shown in Table 1[8], the top 100 words are listed in order of high frequency. Among the 100 words, the words with high frequency of appearance related to Corona Blue are 'Corona' (3863), 'Blue' (3044), 'Depression' (2278), 'Corona 19' (1148), and 'Overcome' (1141), 'problems' (980). Accordingly, it was confirmed that corona, blue, depression, corona 19, overcoming, problem nouns are frequently mentioned in relation to the corona blue discourse.

Table 1. Key Word Frequency

ranking	noun	frequency	percentage	cumulative rate	ranking	noun	frequency	percentage	cumulative rate
1	Corona	3863	3.18%	3.18%	26	Korea.	438	0.36%	20.23%
2	Blue.	3044	2.51%	5.69%	27	The healing.	431	0.35%	20.59%
3	Depression	2278	1.87%	7.57%	28	Infectious disease.	418	0.34%	20.93%
4	Corona 19.	1148	0.94%	8.52%	29	Financial pain.	393	0.32%	21.25%
5	Overcome	1141	0.94%	9.46%	30	Crisis.	386	0.32%	21.57%
6	Problem.	980	0.80%	10.27%	31	This time	378	0.31%	21.88%
7	Work	970	0.79%	11.07%	32	The appeal.	370	0.30%	22.19%
8	Prolonged	848	0.69%	11.77%	33	Meaning.	348	0.28%	22.48%
9	The world.	828	0.68%	12.45%	34	Lee Nak-yeon.	339	0.28%	22.76%
10	Clinic	738	0.60%	13.06%	35	Online.	330	0.27%	23.03%
11	New words	695	0.57%	13.63%	36	The distance.	329	0.27%	23.30%
12	Heart.	694	0.57%	14.20%	37	Discussion.	328	0.27%	23.57%
13	People.	680	0.56%	14.76%	38	Support.	324	0.27%	23.84%
14	Depression.	622	0.51%	15.28%	39	Depressed	317	0.26%	24.10%
15	Youth	612	0.50%	15.78%	40	Video.	313	0.26%	24.36%
16	At times.	546	0.45%	16.23%	41	Talk	312	0.26%	24.61%
17	Society.	511	0.42%	16.65%	42	bipolarization	310	0.25%	24.87%
18	Operations.	504	0.41%	17.07%	43	Scholar	280	0.23%	25.10%
19	Diffusion	504	0.41%	17.48%	44	Model country	278	0.23%	25.33%
20	Psychology.	501	0.41%	17.90%	45	Progress	276	0.23%	25.56%
21	The situation.	494	0.40%	18.30%	46	Reporter	275	0.23%	25.78%
22	Program.	493	0.40%	18.71%	47	Situation	275	0.23%	26.01%
23	Unrest	488	0.40%	19.11%	48	Progress	265	0.22%	26.23%
24	Stress.	463	0.38%	19.50%	49	Health.	263	0.22%	26.45%
25	Economic	453	0.37%	19.87%	50	Citizens.	258	0.21%	26.66%

ranking	noun	frequ ency	percentage	cumulative rate	ranking	noun	frequ ency	percentage	cumulative rate
51	Life	256	0.21%	26.87%	76	Daily life	199	0.16%	31.57%
52	Method	254	0.21%	27.08%	77	Improvement.	196	0.16%	31.73%
53	Since then	251	0.21%	27.29%	78	Service	195	0.16%	31.89%
54	Today	250	0.21%	27.49%	79	Hold	195	0.16%	32.05%
55	Overcome blue	248	0.21%	27.70%	80	Return	194	0.16%	32.21%
56	Infecti ous disea se	247	0.20%	27.90%	81	Promotion.	191	0.16%	32.37%
57	Time	246	0.20%	28.10%	82	Consulting	190	0.16%	32.53%
58	Removal.	246	0.20%	28.31%	83	Business.	189	0.16%	32.68%
59	Prevention	246	0.20%	28.51%	84	Child	185	0.16%	32.83%
60	Crill oil.	242	0.20%	28.71%	85	Recently.	182	0.15%	32.98%
61	Need	238	0.20%	28.91%	86	Seminar	173	0.15%	33.13%
62	Healing.	238	0.20%	29.10%	87	July.	171	0.14%	33.27%
63	Nation	232	0.20%	29.29%	88	Period.	171	0.14%	33.41%
64	Non-face-to-face	230	0.19%	29.48%	89	Culture.	170	0.14%	33.55%
65	Change.	228	0.19%	29.67%	90	Psychological healing	167	0.14%	33.69%
66	Symptoms.	221	0.19%	29.85%	91	The anxiety.	167	0.14%	33.83%
67	Campaign.	218	0.18%	30.03%	92	The degree.	166	0.14%	33.96%
68	Life.	217	0.18%	30.21%	93	Re-spread	165	0.14%	34.10%
69	Mask.	212	0.18%	30.39%	94	Target	163	0.14%	34.23%
70	Show	211	0.17%	30.56%	95	Confirmation	162	0.13%	34.37%
71	Project.	210	0.17%	30.73%	96	Hope	158	0.13%	34.50%
72	Psycholo gical quaranti ne	210	0.17%	30.91%	97	Offer	157	0.13%	34.63%
73	Psycholo gical health.	203	0.17%	31.07%	98	Lethargy	154	0.13%	34.75%
74	Prevention .	201	0.17%	31.24%	99	Era	154	0.13%	34.88%
75	Occurrenc e.	199	0.17%	31.40%	100	Psychological counseling	153	0.13%	35.01%

3.2. N-gram Analysis Result

N-gram analysis is a method of grasping the frequency and direction of two words that appear side by side in order of precedence. As a result of the analysis of N-gram , the highest co-occurrence frequency was 'Corona-Blue'. In other words, when the Corona keyword was used, the number of blue keywords appeared at the same time was 2269. The second was ‘Lee Nak-yeon- Rep.’(490), and the third was ‘crisis-problem’ (253). Also, use Keyword1 and Keyword2 to find out the direction between keywords. The first Keyword1 'Corona' led the Keyword2 'Blue' word. This means that Corona Blue occurred in the context of Corona 19. Keyword 1 that follows is ‘Lee Nak-yeon’, ‘Crisis’, ‘Economy’, ‘Blue’, and ‘Positive’. This can be interpreted as being treated as an important issue in the context of Corona Blue in our society. Table 2[8] shows the analysis results of this N-gram.

Table 2. N-gram Analysis Result

word1	word2	Co-appearance frequency	word1	word2	Co-appearance frequency
Corona	Blue	2269	Depression	Lethargy	246
			Blue	Overcome	246
			Depression	Newwords	245
			Situation	Prolonged	245
			Daily life	Change	245
			Corona19	Depression	244
			Youth	Psychological health.	236
			Diffusion	Work	212
			Society	Distance	209
			Change	Depression	181
			Mentalhealth	Increase	172
			Coronablue	Healing	167
			Dailylife	Comeback	161
Nakyeon Lee	lawmaker	490			
Crisis	Problem	253			
Economy	Problem	249			
Blue	Economy	249			
bipolarization	Problem	248			
Time	World	248			
Picture	Talk	247			
Problem	Time	247			
diseases	Crisis	247			
Korea	Model country	246			
World	Korea	246			
Problem	Extremities	246			

3.3.Word Importance (TFIDF) and Word Similarity (Euclidean Coefficient)

This analysis is conducted when trying to find out how important a word is in a document. As a result, 'Corona'(3724.108), 'Blue'(3327.282), 'Problem'(2990.289), 'Depression'(2480.092), 'Corona 19' (2428.778), 'Overcome' (2257.32), 'World' (2139.17), 'Jang Gihwa' (1956.972), 'Youth'(1944.568), and 'Heart' (1884.726). These words are the ten most important words in the document, as shown in table 3[8]. You can see that these words are important words that have led to a very serious and heated discussion through social networks in a particular document. In addition, as a result of extracting data on the correlation and direction based on the frequency of co-occurrence, the words that showed a high correlation in the Eulidean coefficient were 'Corona Blue/Depressed'(0.92546440075) and 'Corona Blue/Corona 19'(0.8989847), 'Corona Blue/Overcoming' (0.903326351095), as shown in table 4[8].

Table 3. Word Importance (TFIDF)

Word	TFIDF
Corona	3724.108
Blue	3327.282
Problem	2990.289
Depression	2480.092
Corona19	2428.778
Overcome	2257.32
World	2139.17
Prolonged	1956.972
Youth	1944.568
Heart	1884.726

Table 4. Word Similarity (Euclidean Coefficient)

	Coronablue	Depression	Corona19	Overcome	
Coronablue	0	0.92546440075	0.898984745545	0.903326351095	
Depression	0.92546440075	0	0.897937927384	0.877830555644	
Corona19	0.898984745545	0.897937927384	0	0.843826238111	
Overcome	0.903326351095	0.877830555644	0.843826238111	0	

4. Discussion

4.1. Public Perception of the COVID-19 Outbreak: Pride and Awarenes

The words 'quarantine' (59th) and 'mask' (69th) show that references to quarantine are being made online. The 246 word pairs for "World-Korea" and "Korea-Exemplary Country" indicate pride in Korea in the coronavirus situation. It prides itself on being a model country for quarantine by maintaining transparent information disclosure and an autonomous democratic system. In n-gram analysis, there were 212 word pairs for 'proliferation-work', 245 word pairs for 'avaluation-prolongation', 249 word pairs for 'economy-problem', and 246 word pairs for 'problem-positive poles. These results indicate that the nature of work is changing due to the spread of' Corona 19'. Also, as the 'situation' becomes 'Prolonged,' there is a warning about the shrinking economy. Concerns are arising about the vulnerable social groups such as non-regular workers, freelancers, and migrant workers. There is concern that they will be in great pain from the 'bipolarization' of the economy.

4.2. The Phenomenon of Corona Blue: Depression and Anxiety as a Group Trauma

Out of 100 words, 'depression' was ranked 3rd, and 'anxiety' was also ranked 23rd. In addition, there were 246 word pairs for 'depression-lethargy', 245 word pairs for 'depression-new words', and 244 word pairs for 'corona 19-depression'. This suggests that the words of Corona 19 and depression are mentioned together. There are 181 word pairs for 'change-depression'. It shows that a major change (65th) has occurred in everyday life such as social isolation and refraining from going out due to Corona 19. It also indicates that corona blue occurred as 'stress' (24th) overlapped. The words 'prolonged' (8th), 'anxiety' (91th), 'confirmed' (95th), and 're-spread' (93th) show that the public shares anxiety about prolonging and re-spread of the corona crisis and also 'confirmed'(95th) is related to the phenomenon of stigmatization toward patient.

Therefore, 'Corona Blue,' experienced by more than half of the people, is a collective trauma of society that has lost 'we' through social distancing [9].

4.3. Perception of Overcoming Corona Blue: Spreading a Psychological Quarantine Culture and Demanding Social Healing

'Blue-Overcome' 246 word pairs show that they are talking about overcoming while speaking corona blue. In terms of Euclidean coefficient, 'Corona Blue/Overcome' showed a high correlation. In other words, it suggests that Corona Blue and overcome are frequently used in the same sentence. 167 word pairs for 'Corona Blue-Healing' show the public's anticipation for psychological quarantine to overcome Corona Blue. The words 'healing' (27th), 'culture' (89th), 'performance' (70th), and 'project' (71th) show public interest in healing culture. On the other hand, the word 'youth' (15th) and the 236 word pairs of 'youth-psychological health promotion' in n-gram mean that social media has a great interest in youth psychological health. According to the Seoul Daily, an article on August 5, 2020, counseling for youth anxiety and depression increased 44.5% from last year. Therefore, attention should be paid to psychological quarantine for youth. Meanwhile, 'citizen' (50th), 249 word pairs of' and 'blue-economy' in n-gram, 'bipolarization' (42th), 249 word pairs in 'economy-problem', and 246 words in 'problem-bipolarization' suggest public discourse on economic bipolarization. Therefore, it is necessary to first select the vulnerable class and prepare a specific support plan to approach

'social healing' [10].

4.4. Perceptions of the Post Corona: Hope for Return to Daily Life and Changes in Daily Life

'Everyday-Return' 161 word pairs, the 96th word of hope, show the hope of returning to daily life after the end of the coronavirus. Human beings are 'the existence of a relationship with the body' [11]. The words 'mind' (12th), 'person' (13th), 'depression' (14th), and 'non-face-to-face' (64th) refer to the return of daily life that people who are tired of' 'non-face-to-face' (64th) to meet with body to body. Meanwhile, the word 'after' (53th), 'online' (35), 'era' (99th), and 'everyday-changing' pairs suggest that there is an issue after the coronavirus. The post-corona era as 'New Normal' and predicted that changes in HOME (Healthcare, Online, Manless, Economy at Home) will occur throughout life [12]. Now, we are facing the task of how human beings, who are social beings, will take care and communicate with each other while heading to the 'untact' culture.

5. Conclusion

The purpose of this study is to contribute to the provision of basic data for psychological quarantine policy and counseling by examining the public perception of the 'corona blue' phenomenon through analysis of social media big data. To do this, key words related to the word 'Corona Blue' were derived and analyzed using the big data analysis program 'Textom'. As a result of the analysis, words such as 'Corona 19', 'depression', 'problem' and 'overcome' were derived as key words. For the analysis results, 'public perception of Corona 19', 'Corona Blue phenomenon', 'Perception of overcoming Corona Blue,' and 'Perception of Post Corona' were discussed. In conclusion, we have identified the need for active psychological support from the community By revealing that Corona Blue is a depression as a group trauma. At this time, it is confirmed that it is necessary to prioritize social healing and psychological quarantine for the main risk groups such as youth or the vulnerable, who are the socially weak.

Refercnce

[1] Joo Eon Park, Seok Hoon Kang, Sung Doo Won, Dae Young No, Won Kim, "Assessment Instruments for Disaster Behavioral Health," *Anxiety and mood.* vol.11, no.2, pp.91-105, Oct. 2015.

[2] Cheng-Sheng Chen, Hsiu-Yueh Wu, Pinchen Yang, Cheng-Fang Yen, "Psychological distress of nurses in Taiwan who worked during the outbreak of SARS," *Psychiatr Services*.vol.56, no.1. pp.76-79 Jan. 2005. https://doi.org/10.1176/appi.ps.56.1.76

[3] DongHun Lee, JiYun Kim) , HyunSuk Kang, "The Emotional Distress and Fear of Contagion Related to Middle East Respiratory Syndrome(MERS) on General Public in Korea," *Korean Journal of Psychology:General*.vol.35, no.2, pp. 355-383. 2016.

[4] Byungchul Chun, "Definition and management of the close contacts with Middle East respiratory syndrome cases: reflection and lessons in 2015 Korean outbreak," *Journal of the Korean Medical Association*, vol.58, no.8, pp.692-699, 2015.

[5] Eunhwan Lee, "Corona 19th Generation, Good Mental Health" Gyeonggi Research Institute (GRI)," *Issue & Diagnosis*. 414. p.4 .2020.

[6] Hangje Jo. *Qualitative methodology of media culture research.* Culture Look. p.147, 2015.

[7] James Manyika, Michael Chui, McKinsey Global Institute, Brad Brown, Jacques Bughin, Richard Dobbs, Charles Roxburgh, Angela Hung Byers, *Big Data: The next frontier for innovation, competition, and productivity.* McKinsey Global Institute. 2011. https://doi.org/10.5437/08956308X5601005

[8] http://www.textom.co.kr/home/sub/manual_collecting.php?pnm=3

[9] Peter Felix Kellerman, *Socio Drama and Collective Trauma,* Woojin Park Translation, Sigma Press, 2016.

[10] Do Won Ko, "The need for social healing to overcome Corona Blue," in *Proc. the Democratic Party's response strategy seminar to overcome Corona 19 Corona Blue*, pp.15-35, June 2020.

[11] James B. Nelson, *Body Theology*, Westminster John Knox Press, 1992

[12] https://www.cnbc.com/2020/04/29/how-the-coronavirus-pandemic-will-impact-the-future-of-work.html