

ORIGINAL ARTICLE IN GLOBAL HEALTH AND COVID-19

**Health-related quality of life during stay-at-home order and attitudes toward
vaccination against COVID-19 in the District of Columbia, USA**

Phronie JACKSON^{1*}, Collette BROWN², Latoya CALLENDER^{1, 2}

Affiliations:

¹ *Ph.D. Assistant Professor, University of the District of Columbia, College of Agriculture, Urban Sustainability and Environmental Sciences, Health Nursing, and Nutrition Department. Health Education/Public Health Program. Coordinator Washington, USA*

² *Ph.D. Professor, Monroe College, School of Allied Health Professions, Bronx, NY, USA.*

Corresponding author:

Phronie Jackson*, *Ph.D., Assistant Professor, University of the District of Columbia College of Agriculture, Urban Sustainability and Environmental Sciences Health Nursing, and Nutrition Department Health Education/Public Health Program Coordinator Washington, USA. 4250 Connecticut Avenue, NW, Building 71 Room 5232, Washington, DC 20008 E-mail: phronie.jackson@udc.edu*

Abstract

Introduction: A spike in the cases of coronavirus (COVID-19) across the District of Columbia (DC) area has caused the mayor to issue a stay-at-home order between April 1, 2020 – May 15, 2020 to mitigate its transmission. The purpose of this study was to examine health related quality of life (HRQoL) during the stay-at-home order resulting from the COVID-19 pandemic and attitude towards vaccination against COVID-19 of residents living in Washington, DC’s Ward 5 neighborhood.

Methods: A cross-sectional design to collect electronic data on experiences and perceptions of 102 adults living in Ward 5 of DC was used. An ad hoc 28-question survey was developed. Descriptive analyses (frequency and percentages) were conducted. Data was collected using Qualtrics, then exported to Statistical Package for the Social Sciences (SPSS), version 25.

Results: One hundred and two ($N = 102$) residents participated in the study. Most of the participants were female (79.4%), between 37 and 58 years old (47%), black (79%), had a graduate degree (38.24%), and earned over \$75,000 (37.25%) annually. Results indicated that 20% of households received food from charitable organizations, while 27% worried that their food might run out. Approximately 19% were unable to receive dental services, 17.8% and 15.7% reported mental health and emotional impacts respectively, and 13.4% reported educational disruptions. Approximately 47% responded that they will take the COVID-19 vaccine. Most (77%) of the participants perceived that their overall health was good/very good.

Discussion and Conclusion: Based on continued increase in COVID-19 cases across the United States, residents might return to previous restrictions and negative impacts might be greater on residents. Lessons learned from this study can be used to create policies and programs that limit the negative impacts of COVID-19 and increase attitudes toward vaccination uptake.

KEY WORDS: Coronavirus; Washington, DC; Health-related Quality of Life; mental health; restrictions; survey; vaccine.

TAKE-HOME MESSAGE: COVID-19 stay-at-home restrictions have many negative social and health impacts of residents in Ward 5. Addressing the determinants that lead to these restrictions are important to reduce COVID-19 incidence and improve their HRQoL. Uptake of vaccines may provide a promising option.

Competing interests: none declared.

Copyright © 2021 Phronie Jackson et al.

Edizioni FS Publishers

This is an open access article distributed under the Creative Commons Attribution (CC BY 4.0) License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. See <http://www.creativecommons.org/licenses/by/4.0/>.

Cite this article as: Jackson P, Brown C, Callender L. Health-related quality of life during stay-at-home order and attitudes toward a vaccination against COVID-19 in the District of Columbia, USA [published online ahead of print January 15th, 2021]. *J Health Soc Sci*. doi10.19204/2021/hlth4.

Received: 01 Dec 2020

Accepted: 05 Jan 2021

Published Online: 15 Jan 2021

INTRODUCTION

On January 30, 2020, the World Health Organization (WHO) announced that severe acute respiratory syndrome coronavirus (SARS-CoV-2), the virus that causes COVID-19 was a public health emergency [1]. Although much was not known about the virus (in its early stage), public health officials knew that the virus had a long incubation period, was highly infectious, and that there were no vaccines or antivirals to combat the disease [2]. On March 7, 2020, the first case of COVID-19 was diagnosed in the District of Columbia (DC), and by March 31st, there were a total of 586 diagnosed cases and 11 deaths [3].

As a result of the increased incidence rate, the Mayor of DC mandated a stay-at-home order (Mayor Order 2020-054) that went into effect on April 1, 2020 at 12:01 AM, as a strategy to reduce the incidence of infections [4]. The order was originally set to end on April 24, 2020 but was extended to May 29, 2020 [5]. The order specified that residents should only leave home to engage in essential activities, including obtaining medical care that cannot be provided through

telehealth and obtaining food and essential household goods; perform or access essential governmental functions; work at essential businesses; engage in essential travel; or engage in allowable recreational activities, as defined by the Mayor's Order [5]. Violators of the order risked being charged for a misdemeanor, which could have resulted with a fine and/or imprisonment [6].

Most of Ward 5 is in the northeast region on of Washington. According to the U.S. Census Bureau (2018), Ward 5 has 87,850 residents, a median age of 35.4, a median household income of \$68,375, and approximately 34% of residents use public transportation to get to work [7]. Although the stay-at-home order curtailed the spread of the virus [8], it interrupted work and school schedules, impacted the ability to receive food and healthcare services, and overall emotional, physical, and psychological health [9, 10]. Despite numerous public health campaigns, daily press briefings and news media that informed the public to wear face masks, practice social distancing, wash their hands frequently, new cases and deaths continue to increase. Despite the antivaccination movement and debate among scientist between pros and cons, it seems likely that vaccinations might be an additional possible solution to mitigate the virus. Therefore, this study assessed the HRQoL and attitudes towards vaccination because of the stay-at-home order due to the COVID-19 pandemic of residents living in Washington, DC's Ward 5 neighborhood.

METHODS

Study Design and procedure

The study utilized a cross-sectional design to collect electronic data on experiences and perceptions of adults who live in Ward 5 of DC. The survey collected data on Ward 5 residents' lived experiences during the COVID-19 pandemic initial restrictions, their perceptions of their health-related quality of life, as well as the likelihood of taking a COVID-19 vaccine. The survey was created electronically using Qualtrics. A link was generated after making the survey.

Study participants and sampling

Study consisted of 102 adult residents (18 years and older) of Ward 5, DC. The researchers used convenience sampling to collect data from the participants. The participants are not representative of Ward 5 residents and the DC area because data were difficult to obtain due to the stay-at-home restrictions. In addition, the link was posted on social media (Facebook), and potential participants were sent the link via email or text messages and were asked to send the link to other eligible members of Ward 5.

Study instruments and measures

Participants completed a 28-question survey, which consisted of socio-demographic questions and questions pertaining to their experiences and perceptions surrounding COVID -19 restrictions. The questionnaire consisted of four major sections: a) demographic information of the participants; b) experiences of participants during the stay-at-home COVID-19 restrictions; c) questions regarding their perceptions on their health-related quality of life; and d) uptake of the COVID-19 vaccine.

The demographic questions were obtained from Harrison et al. [11], while the CDC's HRQL-4 instrument was used to collect data on self-rated general health and number of healthy days when a person was physically or mentally unhealthy or was limited in conducting usual activities within the last 30 days [12]. All the study variables were measured using descriptive statistics.

Demographic questions contain information on gender, age, race/ethnicity, education, and income. HRQoL refers to perceived physical and mental health over time [12]. Perception questions focused on health-related quality of life (physical, mental health, emotional health, and overall health). One question asked about the attitudes regarding COVID-19 vaccine uptake. Responses ranged from *yes*, *yes, but with some conditions*, *not sure*, and *no*. Questions on participants' experiences focused on personal experiences (ability to receive medical services, and family experiences (ability to receive food).

Ethical aspects

This research was approved by University of the District of Columbia (IRB No: 1617781-2). Participants were provided with an electronic informed consent, which was attached at the beginning of the survey. After reading the informed consent, participants had the option to take the survey. Data were collected anonymously from each participant.

Data analysis

Data was collected in Qualtrics and then exported to Microsoft Excel spreadsheet. Data was analyzed using Microsoft Excel. Categorical variables were presented in numbers and percentages.

RESULTS

Socio-demographics characteristics of participants

One hundred and two ($n = 102$) residents participated in the study. All the participants lived in Ward 5. Most of the participants were female ($n = 81$, 79.4%); were between 37 and 58 years old ($n = 48$, 47%); were black ($n = 80$, 79%); had a graduate degree ($n = 39$, 38.24%); and earned over \$75,000 ($n = 38$, 37.25%) in annual income (Table 1).

Table 1. Sociodemographic characteristics of participants ($n = 102$).

Variables	Number (%)	Mean	SD
Gender			
Male	21 (20.59)	1.79	0.4
Female	81 (79.41)		
Age			
18 – 25	7 (6.86)	3.92	1.5
26 – 36	15 (14.71)		
37 – 47	15 (14.71)		
48 – 58	24 (23.53)		
59 – 69	24 (23.53)		
70+	17 (16.67)		
Race/Ethnicity			

Black	80 (78.43)	3.60	1.2 5
White	16 (15.69)		
Other	6 (5.88)		
Education			
High School or Less	7 (6.86)	5.28	1.8 6
Some College	22 (21.57)		
Associate Degree	7 (6.86)		
Bachelor's Degree	26 (25.49)		
Graduate Degree	39 (38.24)		
Income			
Less than \$ 25,000	15 (14.71)	6.47	2.6 6
\$ 25,000 - \$ 54,999	26 (25.49)		
\$ 55,000 - \$ 74,999	23 (22.55)		
\$ 75,000 or more	38 (37.25)		

Participants' experience

The past month before the participants took the survey, they were asked to check one or more ways in which they negatively impacted by COVID-19 (Table 2). Of the 108 responses, participants reported that their family/home life ($n = 32$, 14.7%), sense of well-being ($n = 29$, 13.4%), and their children/their education ($n = 27$, 12.4%) were negatively impacted by COVID- 19. Approximately 19% of participants were unable to receive dental service ($n = 21$, 19.4%).

Table 2. Personal experience of participants due to COVID-19 ($n = 102$).

Over the past month	Number	Percentage
Negatively Impacted		
Ability to get food	14	6.5
Ability to get health services	14	6.5
Ability to get medications	6	2.8
Family/Home Life	32	14.7
Health insurance or benefits	1	0.5
Intimacy/Sex life	16	7.4
Education	27	12.4
Emotional state	24	11.0
Sense of Safety at Home	6	2.8
Sense of well-being	29	13.4
Work	18	8.3
Not Impacted	20	9.2
Unable to Get Health Services		
Addiction services	1	0.9
Aging services	1	0.9
Dentist	21	19.4
Disability services	2	1.8
Elective Surgery	4	3.6
Home Health Care	1	0.9
Mental Health Care	4	3.6

Primary Care	3	2.8
Reproductive Health Care	4	3.6
Social Services	1	0.9
Specialty Services	7	6.5
Other	8	7.4
None of these	51	47.2

Table 3 highlights the household experiences of the participants because of COVID-19. Approximately 27% worried that their food might run out before they get money to buy more; and approximately one in every five households received food from charitable organizations.

Table 3. Household experience of participants due to COVID-19 ($n = 102$).

	Number	Percentage
Worried about whether food will run out before we get money to buy more.		
True	23	26.7
False	63	73.3
Food we bought did not last and we do not have money to get more		
True	8	9.3
False	78	90.7
Received food from charitable organizations		
Weekly	7	8.1
Twice a month	1	1.1
Once a month	12	13.9
Never	60	69.8
Didn't know service was available	6	7.0

Table 4 describes the health-related quality of life of the participants. Ninety-seven participants (95%) reported that their physical health was not impacted; 18 (17.8%) were mentally impacted; while 16 (15.7%) reported that they were unable to perform usual daily activities. Despite the effects of the pandemic, 77% of the participants perceived that their overall health was good/very good.

Table 4. Health-related Quality of Life of participants ($n = 102$).

	No. of Days	Percentage
No. of Days Impacted by Physical Health		
0	97	95.0
1-7	2	1.9
8-14	2	1.9
15-21	0	0.0
22-30	1	1.0
No. of Days Impacted by Mental Health		
0	84	82.4
1-7	7	6.9
8-14	2	1.9
15-21	4	3.9
22-30	5	4.9
No. of Days Unable to Do Usual Activities		
0	86	84.3
1-7	5	4.9
8-14	5	4.9

15-21	1	1.0
22-30	5	4.9
Self-Reported Health Status	No. of Participants	Percentage
Very Poor	0	0.0
Somewhat Poor	2	2.3
Average	17	19.8
Somewhat Good	30	34.9
Very Good	37	43.0

Participants' perceptions

Table 4 summarizes the participants' attitudes toward taking the COVID-19 vaccines. Less than half (46.6%) responded that they were willing to take the vaccine.

Table 5. Attitudes Toward COVID-19 Vaccine Uptake ($n = 102$).

	Number	Percentage
Willingness to take Vaccine		
Yes	14	16.3
Yes (with Conditions)	26	30.2
Not sure/May be	21	24.4
No	25	29.1

DISCUSSION AND CONCLUSION

This study focused solely on adults residing in Washington, DC's Ward 5 community. The study participants confirmed what has been reported in the literature regarding experiences related to food insecurity [13] education [14] dental services [15] and perceptions around health-related quality of health [16] during the stay-at-home COVID-19 restrictions. However, this study results are contrary to Reiter, Pennell, & Katz [17] study findings on future vaccine uptake among adults.

Findings on experiences

The results of the surveys indicated that 27% of the study participants experienced food insecurity during the COVID-19 restrictions and needed to obtain food from charitable organizations. They were worried about running out of food. Data from this survey, supports the Capital Area Food Bank's (CAFB) Hunger Report 2020 [18]. The report suggests there is a substantial increase in food insecurity in the wake of COVID-19 [19]. Twelve percent of this study's respondents reported that the restrictions requiring schools to close and created the need for home schooling caused issues for not only children, but also for parents. According to CANVAS, (2020) [20], 38% of the parents that they surveyed indicated that they experienced challenges managing their work/daytime obligations and their child(ren)'s schooling [21]. Accessing needed health services during the COVID-19 restriction was a negative experience for many of the respondents. Dental services were reported by 19% of the respondents. It was the health service indicated most frequently by the respondents as not available during the restrictions. Unlike most routine medical visits that can be done using television/video formats, most general dental procedures cannot be done virtually [22]. and require in person visits.

During those appointments, the patient's mouth must be exposed and open, therefore not protected by a face mask or covering. This protocol does not provide safeguards from droplets and the virus could be transmitted during a common dental procedure [23]. This contributed to the recommendation to close dental practices [24]. In lieu of the many negative experiences the study participants reported, 77% indicated that their overall health was good/very good.

Findings on perceptions

The majority of the study participants' reported being impacted zero days relating to quality-of-life indicators such as, physical health, 95%, mental health, 82% and ability to do usual activities, 84% between April 1, 2020 to May 15, 2020 during the time that DC government imposed the COVID-19 restrictions. The respondents perceived that their mental health was adversely affected. This included their sense of well-being, 13% and emotional state, 11%. These results are in line with the findings of a recent Kaiser Family Foundation report, that suggests mental health is impaired by COVID-19 restrictions. The report indicated that based on the stay-at-home order, 47% of the respondents perceived stress and worry negatively impacted their mental health [25]. Seven percent of our study participants indicated that their mental health was affected 1 -7 days and 5% indicated between 22 – 30 days their mental health was affected. Swarbrick and Brown [26], describes the inability to carry out everyday function, as a characteristic of a mental illness or mental disorder. Five percent of this study's participants reported that between one to seven days, eight to 14 days and 22 – 30 days they were not unable to do usual activities. Like our study, Kim and Laurence [27], found that the COVID-19 restrictions are distressing on mental health. In lieu of the many negative experiences the study

participants reported, 77% indicated that their overall health was good/very good. These responses might be overestimated because the data were collected in the infancy of the pandemic and many people might have been hopeful that new cases might decline, and normal life will resume.

Attitude towards vaccination against COVID-19

Uptake of a future COVID-19 vaccine among this study's participants appeared varied. Responding with a resounding yes that they would take the vaccine were 16%. This is unlike Reiter et al. [17], where overall, 69% of participants were willing to get a COVID-19 vaccine. Those participants were more likely to be willing to get vaccinated if they thought their healthcare provider would recommend vaccination. In this study the respondents' willingness to take the vaccine was not influenced by their physician's recommendation to take the vaccine. This study's respondents stating yes (with Conditions) equaled 30% while 26% select not sure/maybe. These individuals might be convinced to get vaccinated for COVID-19. Finally, 29% of this study's participants responded with a flat no to be willing to take the vaccine. Some of the comments relating to not taking the vaccine were: "I don't trust the CDC", "I don't trust the government", "I don't trust it". These results and those of a recent Pew Research Center study about a COVID-19 vaccine indicates the public are divided when it comes to taking the vaccine [28]. When we started this study there were not any developed and approved vaccines. In recent weeks three pharmaceutical companies have submitted vaccine to the FDA for approval [29].

Study strengths and limitations

Research involving human participants are understood to have limitations. A possible limitation of this study could be the small sample size. However, according to Eiko [30], a small sample size is neither good nor bad and all research informs the body of knowledge. Future research should include adult residents from all 8 wards of Washington, DC to determine if there are similarities in responses to experiences and perceptions of stay-at-home COVID-19 restrictions and future vaccine uptake among adults. This research study examined the experiences and perceptions of stay-at-home COVID-19 restrictions had on adult residents of ward 5 in Washington, DC. We asked questions about experiences and perceptions, concerns, observations, views, interactions, and determinants to explore the HRQoL and vaccination attitudes of Ward 5 Adult Residents during the time when COVID-19 Pandemic restrictions were in place. This study provided some base line data for how the adult residents of ward 5 were impacted by the restrictions imposed due to the COVID-19 Pandemic. As restrictions are once again being instituted and vaccines and clinical trials are becoming available, there is a growing interest in understanding the experiences and perceptions of stay-at-home COVID-19 restrictions and future vaccine uptake among populations with similar demographic of the adults in Ward 5 of DC. The attitudes towards the vaccination could be affected by the stay-at-home order and the study period, it could indeed change in the future. The results of this current research will assist us in making recommendations to policymakers on the types of programs for ward 5 residents that may reduce issue related to food insecurity, mental health, and education issues with particular emphasis on underserved communities. These interventions are

likely to reduce the negative experiences and perceptions during future COVID-19 restrictions for residents of ward 5. The investigators of this current study conclude that this research adds to the understanding of the experiences and perceptions of stay-at-home COVID-19 restrictions and future vaccine uptake among adults in Ward 5 of DC.

Acknowledgments

This research has been facilitated by the services provided by the District of Columbia Center for AIDS Research, an NIH funded program (P30AI117970), which is supported by the following NIH Co-Funding and Participating Institutes and Centers: NIAID, NCI, NICHD, NHLBI, NIDA, NIMH, NIA, NIDDK, NIMHD, NIDCR, NINR, FIC and OAR. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

References

1. World Health Organization. Rolling updates on coronavirus disease. 2020 [cited 2020 Nov 30] Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>.
2. Centers for Disease Control and Prevention. Implementation of mitigation strategies for community COVID-19 transmission. Atlanta, GA: US: Department of Health and Human Services, CDC; 2020 [cited 2020 Nov 30]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/community/community-mitigation.html>.

3. District of Columbia Government. COVID-19 Surveillance. 2020 [cited 2020 Nov 30]. Available from: <https://coronavirus.dc.gov/data>.
4. District of Columbia Government. Mayor Bowser Issues Stay-At-Home Order. 2020 [cited 2020 Nov 30]. Available from: <https://coronavirus.dc.gov/release/mayor-bowser-issues-stay-home-order>.
5. Centers for Disease Control and Prevention. (2020, September 4). Timing of State and Territorial COVID-19 Stay-at-Home Orders and Changes in Population Movement — United States, March 1–May 31, 2020. *Morbidity and Mortality Weekly Reports*; 2020 [cited 2020 Nov 30]. Available from: <https://www.cdc.gov/mmwr/volumes/69/wr/mm6935a2.htm#References>.
6. District of Columbia Government. COVID-19 Surveillance. 2020 [cited 2020 Nov 30]. Available from: <https://coronavirus.dc.gov/data>.
7. U.S. Census Bureau. *Census Reporter*; 2018 2020 [cited 2020 Nov 30]. Available from: <https://censusreporter.org/profiles/61000US11005-ward-5-dc/>.
8. Centers for Disease Control and Prevention. Implementation of mitigation strategies for community COVID-19 transmission. Atlanta, GA: US. Department of Health and Human Services, CDC; 2020 [cited 2020 Nov 30]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/community/community-mitigation.html>.
9. Giusti EM, Pedroli E, D'Aniello GE, Stramba Badiale C, Pietrabissa G, Manna C, et al. The Psychological Impact of the COVID-19 Outbreak on Health

- Professionals: A Cross-Sectional Study. *Front Psychol.* 2020 July 10;11:1684.
<https://doi.org/10.3389/fpsyg.2020.01684>.
10. Pedrosa AL, Bitencourt L, Fróes A, Cazumbá M, Campos R, de Brito S, et al. Emotional, Behavioral, and Psychological Impact of the COVID-19 Pandemic. *Front Psychol.* 2020;11:566212. <https://doi.org/10.3389/fpsyg.2020.566212>.
 11. Harrison E, Lord L, Asongwed E, Jackson P, Johnson T, Jean Baptist A, et al. Perceptions, Opinions, Beliefs, and Attitudes About Physical Activity and Exercise in Urban-Community-Residing Older Adults. *J Prim Care Community Health.* 2020 Jan-Dec;11:2150132720924137. doi: 10.1177/2150132720924137.
 12. Centers for Disease Control and Prevention. CDC HRQOL-14. Healthy Days Measure. 2018 [cited 2020 Nov 30]. Available from: https://www.cdc.gov/hrqol/hrqol14_measure.htm#1.
 13. Waxman E, Gupta P. More Than One in Six Adults Were Food Insecure Two Months into the COVID-19 Recession. Urban Institute; 2020 [cited 2020 Nov 30]. Available from: <https://www.urban.org/research/publication/more-one-six-adultswere-food-insecure-two-months-covid-19-recession> 8 SNAP. American Community Survey. 2018. ACS 1-Y.
 14. Garbe A, Ogurlu U, Logan N, Cook P. Parents' Experiences with Remote Education during COVID-19 School Closures. *Am J Qual Res.* 2020;4(3):45–65. <https://doi.org/10.29333/ajqr/8471>.
 15. Otto M. Many dental procedures considered 'non-essential' during COVID-19 crisis. Association of Health Care Journalists; 2020 [cited 2020 Jul 13]. Available

from:"<https://healthjournalism.org/blog/2020/03/many-dental-procedures-considered-non-essential-during-covid-19-crisis/>".

16. U.S. Census. 2020. Household Pulse Survey: Measuring Social and Economic Impacts during the Coronavirus Pandemic. 2020. [cited 2020 Nov 30]. Available from: <https://www.census.gov/programs-surveys/household-pulse-survey.html>.
17. Reiter PL, Pennell ML, Katz ML. Acceptability of a COVID-19 vaccine among adults in the United States: How many people would get vaccinated? *Vaccine*. 2020 Sep 29;38(42):6500–6507. doi: 10.1016/j.vaccine.2020.08.043.
18. Capital Area Food Bank (CAFB). Hunger Report. 2020 [cited 2020 Nov 30]. Available from:<https://storymaps.arcgis.com/stories/e764da62715f4931985ee493e15e0dfc>.
19. Capital Area Food Bank (CAFB). Hunger Report. 2020 [cited 2020 Nov 30]. Available from:<https://storymaps.arcgis.com/stories/e764da62715f4931985ee493e15e0dfc>.
20. Canvas. 2020. New survey shows parents' top challenges with online learning. [cited 2020 Nov 30]. Available from:<https://www.prnewswire.com/news-releases/new-survey-shows-parents-top-challenges-with-online-learning-301049124.html>.
21. Grover S, Goyal SK, Mehra A, Sahoo S, Goyal S. A Survey of Parents of Children Attending the Online Classes During the Ongoing COVID-19 Pandemic. *Indian J Pediatr*. 2020 Oct 10. Doi: <https://doi.org/10.1007/s12098-020-03523-5>.

22. da Costa CB, Peralta FDS, Ferreira de Mello ALS. How Has Teledentistry Been Applied in Public Dental Health Services? An Integrative Review. *Telemed J E Health*. 2020 Jul;26(7):945–954. doi: 10.1089/tmj.2019.0122.
23. Peng X, Xu X, Li Y, Zhou X, Ren B. Transmission routes of 2019-nCoV and controls in dental practice. *Int J Oral Sci* 2020;12(1):9. Doi: <https://doi.org/10.1038/s41368-020-0075-9>.
24. Brian Z, Weintraub JA. Oral Health and COVID-19: Increasing the Need for Prevention and Access. [Erratum appears in *Prev Chronic Dis* 2020;17. http://www.cdc.gov/pcd/issues/2020/20_0266e.htm.] *Prev Chronic Dis* 2020;17:200266. DOI: <http://dx.doi.org/10.5888/pcd17.200266>.
25. Panchal N, Kamal R, Orgera K, Cox C, Garfield R, Hamel L, et al. The Implications of COVID-19 for Mental Health and Substance Use. 2020 Aug 21 [cited 2020 Nov 30]. Available from: <https://www.kff.org/coronavirus-covid-19/issue-brief/the-implications-ofcovid-19-for-mental-health-and-substance-use/>.
26. Swarbrick M, Brown JK. *Mental health first aid USA*. Lutherville, MD: Mental Health Association of Maryland; 2013.
27. Kim HH, Laurence J. COVID-19 restrictions and mental distress among American adults: evidence from Corona Impact Survey (W1 and W2). *J Public Health (Oxf)*. 2020 Nov 23;42(4):704–711. doi: 10.1093/pubmed/fdaa148.
28. Pew Research Center (2020). U.S. Public Now Divided Over Whether To Get COVID-19 Vaccine. Retrieved from: <https://www.pewresearch.org/science/2020/09/17/u-s-public-now-divided-over-whether-to-get-covid-19-vaccine/>

29. Food and Drug Administration. FDA Takes Additional Action in Fight Against COVID-19 By Issuing Emergency Use Authorization for Second COVID-19 Vaccine. FDA; 2020 [cited 2020 Nov 30]. Available from: <https://www.fda.gov/news-events/press-announcements/fda-takes-additional-action-fight-against-covid-19-issuing-emergency-use-authorization-second-covid>.
30. Eiko F. When small samples are problematic. 2017 Sep 13 [cited 2020 Nov 30]. Available from: <https://eiko-fried.com/small-samples-can-be-inherently-problematic/>.