

# THE UTILIZATION AND EFFECTS OF CHIROPRACTIC CARE DURING THE COVID-19 PANDEMIC: A SURVEY OF NORTHEAST CHIROPRACTORS

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## ABSTRACT

**Objective:** To describe the guideline adherence, patient care attributes, and financial effects that the COVID -19 pandemic had on Northeast chiropractors' response and role in providing essential services during the peak of the Covid-19 pandemic.

**Methods:** Northeast-state chiropractic associations disseminated an anonymous online survey consisting of short answer and multiple-choice questions exploring 3 areas of interest: CDC and DPH guideline adherence, the management and effects of patient care, and the financial and practice dynamics due to Covid-19. State associations emailed their respective members with the survey link. Survey responses are included in line with STROBE reporting guidelines.

**Results:** All states of the Northeast Chiropractic Council participated in the survey. Most chiropractors reported following CDC-DPH guidelines, which included screening, sanitation, and personal protective equipment. Many chiropractors reported prescribing home care to both acute and non-acute patients. Few chiropractors reported patients being diagnosed with lab-confirmed Covid-19 following chiropractic treatment. Few chiropractors reported themselves, an immediate family member, or chiropractic staff testing positive for Covid-19. Respondents reported treating less than half the number of patients they treated on average prior to the pandemic. Less than half of respondents reported seeking financial aid. Risk of bias was moderately low (ROBUST; 6/8) and STROBE checklist items were adequately addressed.

**Conclusion:** In the Northeast region of the United States of America, overwhelmingly chiropractic physicians

followed the CDC-DPH guidelines. Chiropractors provided essential care for their patients, with generally low reports of Covid-19 positive patients or staff. Chiropractor's financial aid need may be a result of PPE expenses and decreased patient volume. Chiropractors were also able to adapt to telehealth in the management of patient care. (*J Contemporary Chiropr* 2022;5:251-258)

**Key Indexing Terms:** Chiropractic; Covid; Survey Research; Telehealth

## INTRODUCTION

The first case of Covid-19 was identified in Wuhan, China in December of 2019. The World Health Organization found that the virus spreads from person to person, mostly through respiratory droplets. (1) The first U.S. cases of Covid-19 were confirmed in California and Washington, following widespread confirmed cases throughout the United States. (2)

On March 13th 2020, the United States declared a National Emergency due to the spread of Covid-19. (3) "Stay at Home" orders began in March at the epicenter of the crisis in New York State. Massachusetts, Connecticut, Rhode Island and New Jersey soon followed that lead. (4,5) With the emergency response plans initiated, only "Essential Services" in business, industry and the service providing economy were allowed to remain open. (6)

The U.S. Department of Homeland Security defined the national standard for "Essential Services." The chiropractic profession was deemed an "Essential Service" because services provided by Doctors of Chiropractic (DC) are helpful in reducing the patient load on our finite emergency medical services capabilities. DCs provide care for patients of all age groups and treat a diverse array of conditions. These services reduce unnecessary overload on urgent care centers and hospital emergency departments. As well, chiropractic services provide immediate and cost-effective care that meets the health care needs for many patients during a crisis. (7-9)

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As chiropractors provided care, state, federal and international agencies such as the CDC, DPH, and WHO put forward guidelines for best practice measures of Essential Services during the Covid-19 pandemic. These guidelines included (a) checking temperatures of all staff, patients, and visitors; (b) requiring facemasks for all workers and patients; (c) elimination of contaminated environments; (d) strict social distancing measures; (e) sanitation of all used equipment; and (f) decreased capacity of individuals in the practice environment per time. (10-12) Health officials believed that by practicing these health-promoting behaviors, the spread of COVID-19 in the United States could be diminished. (13-15) Within the northeast of the United States, most states experienced their peak infection rates between April and May of 2020. (16)

The implementation of federal or state guidelines and supposed efficacy has been left to the determination of each individual healthcare provider. How the provider specifically answered the call during the height of the pandemic should be evaluated. Guidelines may be difficult to implement in chiropractic clinics, due to most clinicians having to seek cleaning materials, facemasks, gloves, and thermometers independently. Although a majority of healthcare facilities had adequate PPE during fall of 2020, PPE utilization was questionable and reports varied including PPE often had to be reused due to a disruption of PPE supply chains. (17) During the peak of the pandemic, these materials were in large demand by the public and other essential service establishments. (18,19) Additionally, some prices of such items had been increased or items were difficult to have readily available due to access, low inventory, or delayed shipping times. (20, 21) Previous papers have found that other healthcare professions had higher rates of CDC guideline adherence (86.47%) in situations of patient contact when Covid-19 was not suspected. (22)

This survey aims to assess the professions' guideline adherence and vet chiropractors' response and role in providing essential services during the Covid-19 pandemic. The survey also strives to serve as a guide to which policies may require more attention to increase compliance to provide needed health services. Additionally, the survey reflects provider utilization of financial aid due to economic hardship.

## METHODS

### *Survey Development*

This paper presents the findings of the analyzed results of a survey e-mailed to licensed DCs in the northeast region (CT, NH, ME, NY, NJ, RI, MA, and VT) under the auspices of the North East Chiropractic Council (NECC). The NECC is a regional organization representing the

chiropractic profession and includes representatives from all the states, and the region's 2 main educational institutions: The University of Bridgeport School of Chiropractic (UBSC) and New York College of Chiropractic (NYCC). Study design was approved by UB-IRB 45 CFR46.104(d)(2).

A cross-sectional survey was developed to evaluate the effects of COVID-19 on chiropractic utilization within the Northeast region of the United States. This region includes Connecticut, Massachusetts, Vermont, New Hampshire, Rhode Island, Maine, New Jersey, and New York. A 5-member committee composed of practicing chiropractors, academic professors and academic researchers from the North East Chiropractic Council, compiled questions for the survey in an iterative fashion to focus on the following topic areas: 1) CDC and DPH guideline adherence 2) the management and effects of patient care 3) the financial and practice dynamics due to Covid-19. The result of this process was 41 multiple-choice and short answer questions. The estimated time to complete the survey was 15 minutes.

Sociodemographics of survey respondents included age, gender, practicing state, role within clinic, and duration of time as a licensed chiropractor.

### *Study Subjects and Recruitment*

An electronic question survey was developed using Google Forms to gather responses to the 41 developed questions. An open URL link, available to anyone with Internet access, was then distributed to each of the state associations involved. The link was then sent out to specific email lists curated by each of the state associations. Responses were collected over a 4-week time period from 6/26/2020 to 7/26/2020. No social media platforms were used to distribute the survey. Voluntary electronic consent was obtained by all participants and included an agreement to reading all information regarding the survey and affirmed the participant was at least 21 years of age. Survey participants were told that they could withdraw at any time and that all responses were confidential. No identifying information was obtained and all data is stored in a password protected electronic format.

Survey candidates were required to be licensed practicing chiropractors in the Northeast region. Selected representatives of each Northeast state were asked to distribute the survey to their known qualifying contacts within their respective state. Representatives were also asked to send one reminder per week for 3 weeks. The survey link sent was created through Google Forms in July of 2020

Table 1.

	States in the Northeast									
SEC. A	Total %	A	B	C	D	E	F	G	H	Margin of Error
CDC-DPH safety protocols were followed	97.5	99.0	97.1	96.9	100.0	95.8	100.0	77.8	100.0	1.5
Patients were verbally screened for Covid-19 symptoms prior to or at appointment	93.8	93.9	95.7	96.9	96.8	91.7	100/0	66.7	86.1	2.3
Symptomatic patient temperatures were taken	68.1	56.6	69.6	77.6	79.0	62.5	68.0	44.4	66.7	4.4
All patient temperatures were taken	46.7	37.4	46.4	64.3	48.4	25.0	36.0	22.2	55.6	4.7
SEC. B										
All involved materials within the treatment setting were sanitized	92.4	90.9	82.6	98.0	95.2	95.8	92.0	94.4	91.7	2.5
Only materials encountered/touched by patients were sanitized	54.0	54.5	52.2	58.2	58.1	37.5	36.0	55.6	61.1	4.7
Doctors washed their hands with soap and water for 30 seconds between every patient	61.9	57.6	56.5	70.4	72.6	66.7	56.0	55.6	47.2	4.6
Doctors used sanitizer on their hands between every patient	80.1	81.8	73.9	82.7	75.8	79.2	84.0	72.2	88.9	3.8
Doctors wore gloves when in contact with patients	26.3	25.3	21.7	43.9	27.4	20.8	0.0	11.1	16.7	4.1
Doctors did not wash their hands, use hand sanitizer, nor wear gloves when in contact with patients	1.8 *									
Doctors did not wash their hands or use hand sanitizer when in contact with patients	2.8 *									
SEC. C										
Patients were required to wear a facemask	86.8 *									3.2 *
Doctors were required to wear a facemask	92.1	93.9	94.2	91.8	98.4	100.0	88.0	55.6	88.9	2.5
All staff were required to wear facemasks	91.5	92.9	92.8	92.9	95.2	100.0	84.0	55.6	91.7	2.6

Doctors were not required to wear a plastic face shield or goggles	1.2 *										
<b>SEC. D</b>											
Patients with lab confirmed Covid-19 following chiropractic treatment	<0.5 *										0.4 *
Doctors, immediate family members of doctors, and chiropractic staff members with lab confirmed Covid-19	5.3 *										2.1 *
<b>SEC. E</b>											
Home care was prescribed to acute and non-acute patients during the pandemic	84.8 *										3.4 *
Telehealth options were used to provide a paid service	20.6	19.2	17.3	30.4	24.2	12.5	28.0	5.6	16.7		3.8
Average number of patients seen per week prior to the pandemic	117 Patients										108.2
E. Average number of patients seen per week during the peak of Covid-19	45 Patients										39.5
E. Doctors financially concerned about being able to practice	Less *than 25%										3.8 *
E. Doctors who do not plan to change their long-term practice plans	70.5% *										
E. Doctors who plan to retire sooner	9.9% *										

\* Percentages based on aggregated data of state reported statistics

### Analysis

All results are reported as percent (%) of sample +/- standard error (SE). No inferential statistical analyses were performed. Risk of Bias Utilized for Surveys Tool (ROBUST) scored 6/8 (low risk of bias).

## RESULTS

7004 individuals were contacted to take the survey, with 434 total surveys without repeated data, for a response rate of 6.2%. 72.3% of respondents were male, 27.7% of respondents were female. The average age of respondents

was 53.9 years old. 92.9% of respondents were practice owners, 4.4% were associates, and 2.8% responded as 'other'. The average time as a licensed chiropractor was 26.6 years in practice. 28.8% of respondents were from Massachusetts, 22.6% were from New Jersey, 15.9% were from New York, 14.3% were from Connecticut, 5.5% were from Rhode Island, 5.8% were from Vermont, 4.1% were from New Hampshire, and 8.3% were from Maine.

While 97.5% +/- 1.5% of survey respondents reported following CDC-DPH safety protocols, only 46.7% +/- 4.7% reported taking all patient temperatures. One state did report that 64.3% of respondents reported

taking all patient's temperatures. Additionally, 68.1% +/- 4.4% of respondents reported taking symptomatic patients' temperatures. States varied in their reporting of symptomatic temperatures taken from 44.4% to 79.0%. Further screening demonstrated that 93.8% +/- 2.3% of respondents reported verbally screening patients for Covid-19 symptoms prior to or at their appointment. See Table 1, Section A.

Regarding sanitation, 92.4% +/- 2.5% of respondents reported sanitizing all materials involved within the treatment setting. Each state varied in their reporting of sanitizing only materials encountered or touched by patients from 36% to 61.1%. Additionally, 61.9% +/- 4.6% of respondents reported washing their hands with soap and water for 30 seconds between each patient. 80.1% of participants reported using sanitizer on their hands between every patient. In total, a low number of 1.8% of respondents reported neither washing their hands, nor using hand sanitizer or gloves in between patients. 2.8% of respondents neither washed their hands nor used hand sanitizer in between patients. Regarding PPE, 26.3% +/- 4.1% of respondents reported doctors were required to wear gloves when in contact with patients. See Table 1, Section B.

In reporting the use of personal protective equipment, 86.8% +/- 3.2% of respondents reported that clinic patients were required to wear a facemask. 92.1% +/- 2.5% of respondents reported doctors were required to wear a facemask in the clinic. Similarly, 91.5% +/- 2.6% of respondents reported that all staff was required to wear facemasks. 91.2% of respondents reported that they were not required to wear a plastic face shield or goggles while in contact with patients. A majority of respondents reported that they required patients, staff, and themselves to wear masks in their practice setting. Forms of PPE that were not heavily utilized were face shields, goggles, and gloves. See Table 1, Section C.

#### *Management and Effects of Patient Care*

84.8% +/- 3.4% of respondents reported that they prescribed home care to both acute and non-acute patients during the pandemic. 20.6% +/- 3.8% of respondents used telehealth options to provide a paid service. Chiropractors reported that following treatments of patients within their practice, that less than .5% of patients were diagnosed with lab confirmed Covid-19. 5.3% of respondents reported themselves, an immediate family member, or a staff member had lab confirmed Covid-19. See table 1, Section D, Section E.

#### *Financial and Practice Dynamics*

Respondents reported that prior to the pandemic, they treated approximately 117 patients per week. During stay-at-home orders, respondents reported that they

treated an average of 45 patients per week. However, over three quarters of respondents reported that they are not financially concerned about being able to practice chiropractic again. On average 70.5% of respondents reported they have not changed their long-term plan regarding practice, while 9.9% reported they would retire sooner. A majority of respondents felt their associations and organizations which support chiropractic education or the profession were helpful in providing guidelines and recommendations for safe practice during the pandemic. Of those respondents seeking aid, they reported using either multiple forms of aid or a paycheck protection program. See Table 1, Section E.

## **DISCUSSION**

This article examined adherence of chiropractors to safety guidelines, financial and practice dynamics, as well as the management of patients during the peak of Covid-19. The pandemic resulted in CDC-DPH guidelines set forth to help reduce lab-confirmed cases. Many healthcare providers were listed as essential healthcare providers during the pandemic, chiropractors included. (7) Chiropractors have been shown to demonstrate adherence to clinical practice guidelines (23), yet previous research had not been well recorded on chiropractic safety guideline adherence during global pandemics.

Chiropractors had a direct role during the Covid-19 pandemic by providing musculoskeletal care. Generally, patients have reported positive perceptions and high satisfaction rates of chiropractic care in the management of their pain. (24,25) This care reduced the occurrence of acute and chronic pain presentations that may have otherwise required the attention of medical providers overwhelmed by the overflow of Covid-19 patient care. The broad scope of chiropractors' includes diagnostic work-up, exercise prescriptions, soft tissue modalities and therapies, nutritional consulting, and other home care advice. Home advice consisting of exercises, self-applied-modalities, and stretching have been shown to be effective in managing chronic and acute musculoskeletal pain. (26)

While there was some discrepancy in how guidelines were integrated into respondents' practices, survey results confirmed chiropractic offices regularly used practices and procedures that ensured clean and sanitary working conditions, compliant with CDC guidelines. The results showed survey respondent's adherence to the Covid-19 safety guidelines were such that almost no Covid-19 infections occurred in patients following a visit to their chiropractic office. For clinicians, it is imperative that we demonstrate guideline adherence to continue to be trusted providers of healthcare.

During the pandemic guidelines were regularly being modified and updated. (27) Information on how best to accommodate guidelines was a group task shared not only by state, federal, and international agencies such as the CDC, DPH, and WHO; but also by chiropractic associations. Professional associations such as the NECC and the various state associations of the northeast made it their business to stay abreast of the ever-changing guidelines and help disseminate that information directly to their members.

Over half of chiropractors do not practice in hospital settings. (28) Although patient volumes nearly halved during stay-at-home orders, most chiropractors were able to maintain their office practices with little intent for long-term changes. Additionally, almost most half of respondents reported applying for multiple forms of financial aid, which may have assisted with maintaining their practices.

As results showed, modified patient interactions to implement new CDC guidelines and a rise in telehealth options ensured patients continued to receive chiropractic care. Previous sources have discussed telehealth services. While telehealth services are not typically used by chiropractors as seen in the pandemic, the profession certainly is able to adapt to it as a practice. (29-32) Patients can trust that chiropractic providers enlist the most current evidence to practice and adhere to state and national guidelines to ensure the health and safety of their patients. When faced with inevitable future outbreaks, chiropractors can be relied on to quickly adopt and implement current health standards and guidelines to comply with national efforts to protect our communities while still delivering necessary care to those with musculoskeletal pain.

#### *Limitations*

One consideration for why some respondents may not have completed the survey is if they concluded they have not been following guidelines. We can think that individuals are more likely to complete the survey, if they feel CDC-DPH Covid-19 guidelines were adhered to. Additionally, there may have been inconsistencies in what respondents interpreted as necessary Covid-19 guideline measures.

Survey data captured was obtained from known available contacts. These included state organizations that are included with the NECC. There are doctors who either belongs to another, non-associated organization, or who may not belong to any organization, which would have been missed from survey solicitation.

This survey captured only the northeast region of the United States. A larger, nationwide survey including a larger population of respondents may ensue in different

results. Additional data points might be captured with additional studies.

Lastly, potential different survey results may occur when comparing the Northeast to other regions of the United States of America. Pacific, Southeast, and/or Midwest states may have had different guidelines requirements and as such their providers would have responded differently to the survey.

#### **Sources of Funding**

We received no funding for this project.

#### **CONCLUSION**

Overwhelmingly Northeast chiropractic physicians reported following the Covid-19 CDC-DPH guidelines (97.5%). Chiropractors were able to adapt to telehealth (20.6%) and in person treatment to provide essential care for patients. Even in the height of the pandemic, due to guideline adherence there were low reports of Covid-19 positive patients or staff (Patients <0.5%, Staff 5.3%). Open-ended respondents offered rationale for utilization of financial aid to include personal protective equipment expenses and decreased patient volume.

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