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# Relationship between COVID-19 pandemic-associated anxiety and burnout in NY frontline workers

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## INTRODUCTION

- Coronavirus disease 2019 (COVID-19) is caused by the severe acute respiratory syndrome coronavirus 2, first identified in Wuhan, China in December 2019.
- Frontline workers are physicians, physician assistants, nurse practitioners, nurse anesthetists, nurses, respiratory therapists, firefighters, law enforcement officers, and emergency medical service personnel who must physically work while risking COVID-19 infection.
- COVID-19 anxiety is manifested as cognitive, behavioral, emotional, and physiological symptoms associated with the pandemic.
- Burnout is a job-related psychological syndrome emerging as a prolonged response to chronic interpersonal stressors.
- The COVID-19 pandemic has led to frontline workers experiencing an increase in mental health conditions from increased workloads, longer shifts, exhaustion, inadequate equipment, high threat of exposure, safety concerns, and the increased need to make ethically challenging decisions.
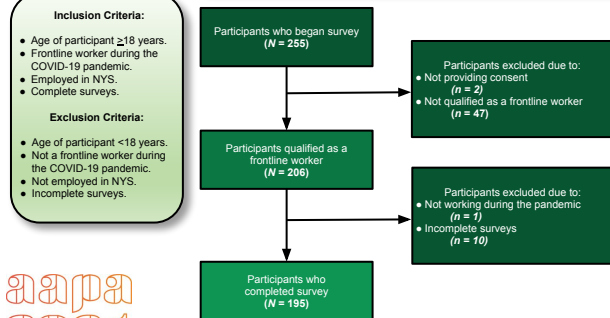
## PURPOSE

- To investigate if a relationship exists between COVID-19 pandemic-associated anxiety and burnout in NY frontline workers.

## METHODS

- Survey consisted of 17 demographic questions and 15 questions from previously validated and reliable survey instruments.
  - 5 from the Coronavirus Anxiety Scale [90% sensitivity, 85% specificity].
  - 10 from the COVID-19 Burnout Scale [92% reliability].
- An *a priori* power analysis revealed minimum sample size to achieve significance was 172 respondents at 90% power and α = .05 (G-power Version 3.1.9.6, Germany).
  - As shown below, Figure 1 depicts the flow chart of participants in our study.
- Data analyzed with IBM SPSS Statistics Version 26 (Armonk, NY).
- IRB approved (F20-15) on 12/28/2020 as a prospective exploratory study.



**Figure 1.** Flow Chart of Participants

**Inclusion Criteria:**
- Age of participant ≥18 years.
- Frontline worker during the COVID-19 pandemic.
- Employed in NYS.
- Complete surveys.

**Exclusion Criteria:**
- Age of participant <18 years.
- Not a frontline worker during the COVID-19 pandemic.
- Not employed in NYS.
- Incomplete surveys.

Participants who began survey (*N* = 255)

Participants excluded due to:
- Not providing consent (*n* = 2)
- Not qualified as a frontline worker (*n* = 47)

Participants qualified as a frontline worker (*N* = 206)

Participants excluded due to:
- Not working during the pandemic (*n* = 1)
- Incomplete surveys (*n* = 10)

Participants who completed survey (*N* = 195)

## RESULTS



**Figure 2.** Demographic Data of Respondents' Professions *N* = 195

Which of the following is your current frontline worker profession?

- Certified Registered Nurse Anesthetist
- Emergency Medical Services
- Firefighter
- Nurse
- Nurse Practitioner
- Physician
- Physician Assistant
- Police

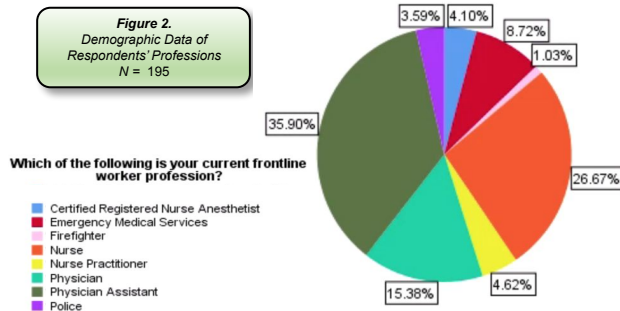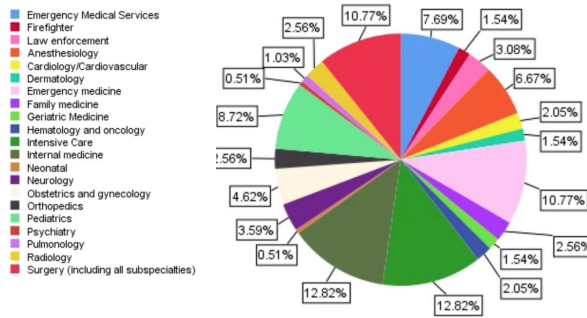3.59% | 4.10% | 8.72% | 1.03% | 26.67% | 4.62% | 15.38% | 35.90%



**Figure 3.** Demographic Data of Respondent's Departments *N* = 195

Which of the following most closely aligns with the department in which you work?

- Emergency Medical Services
- Firefighter
- Law enforcement
- Anesthesiology
- Cardiology/Cardiovascular
- Dermatology
- Emergency medicine
- Family medicine
- Geriatric Medicine
- Hematology and oncology
- Intensive Care
- Internal medicine
- Neonatal
- Neurology
- Obstetrics and gynecology
- Orthopedics
- Pediatrics
- Psychiatry
- Pulmonology
- Radiology
- Surgery (including all subspecialties)

10.77% | 7.69% | 1.54% | 3.08% | 6.67% | 2.05% | 1.54% | 10.77% | 2.56% | 2.05% | 1.54% | 12.82% | 12.82% | 0.51% | 3.59% | 4.62% | 2.56% | 1.03% | 0.51% | 8.72% | 2.56%

- As shown in Figure 2., majority of our respondents were Physician Assistants, comprising about 36% of our sample.
- Professions were broken down into departments, depicted in Figure 3. Majority of respondents worked in Internal Medicine or Intensive Care during the pandemic.
- A Pearson Correlation was run to measure the strength of the association between our two variables, the CAS and CBS (r = 0.646, *p* < 0.0005).

**Table 1.** Spearman rho Correlations    *N* = 195

| Variables | Correlation Coefficient |
|---|---|
| Trouble falling or staying asleep x Felt difficulties sleeping | 0.716 |
| Lost interest in eating x Felt nauseous or had stomach problems | 0.624 |
| Hopeless x Helpless | 0.757 |
| Hopeless x Trapped | 0.743 |
| Trapped x Helpless | 0.722 |
| Helpless x Depressed | 0.701 |
| Trapped x Depressed | 0.676 |
| Tired x Depressed | 0.674 |
| Hopeless x Depressed | 0.668 |
| Depressed x Difficulty sleeping | 0.621 |
| Tired x Hopeless | 0.616 |
| Helpless x Worthless/Like a failure | 0.614 |
| Trapped x Worthless/Like a failure | 0.600 |

*All results are significant at *p* < 0.0005

## CONCLUSION

- There is a moderate positive correlation between COVID-19 pandemic-associated anxiety and burnout in NY frontline workers.
- There were moderate positive correlations in the reported frequency of the following CBS variables: Being tired and hopeless, tired and depressed, hopeless and trapped, hopeless and depressed, trapped and helpless, trapped and depressed, trapped and worthless, helpless and depressed, helpless and worthless, and depressed and having difficulty sleeping.
- Future work should focus on efforts to prevent pandemic-associated stress through healthy work design and supportive workplace policies.

## CLINICAL RELEVANCE

Our study might help us understand if certain populations in NY experienced higher levels of COVID-19-associated anxiety and burnout and can help guide further research for frontline worker mental health during future pandemics as well as initiate or bring more awareness to mental health resources and counseling for frontline workers.

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