



## Data Article

# A comprehensive dataset describing nurse's emotions, perceived stressors and coping mechanisms during the first surge of the COVID-19 pandemic



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## ABSTRACT

A comprehensive and validated questionnaire modified from previous epidemics [1,2] was distributed to frontline HCWs at high risk for COVID-19 at our community-based teaching hospital, the epicenter of the pandemic in our state. Results of the full analysis were previously reported [3] indicating that our nursing staff were more likely to report feelings of stress, emotional exhaustion and fatigue compared to physicians and other health professionals. We highlight the pandemic's specific impact on nurses' emotions, perceived stressors and effective coping mechanisms used during the first surge of COVID-19.

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Specifications Table

Subject	<ul style="list-style-type: none"><li>• Psychology</li><li>• Health and medical sciences</li><li>• Sociology</li></ul>
Specific subject area	Perceived stressors and coping mechanisms of nurses when battling the first surge of COVID-19.
Type of data	Raw database within a Microsoft Excel document.
How data were acquired	After Institutional Review Board (IRB) review and approval, a comprehensive and validated questionnaire derived and modified from previous epidemics distributed via an online survey platform in August of 2020 to frontline nurses at high risk for exposure to COVID-19. Response choices were multiple choice and Likert scaled in nature. De-identified data was collected into a secure database, and subsequently coded.
Data format	Microsoft Excel raw database housed in repository: <a href="https://doi.org/10.3886/E142222V1">https://doi.org/10.3886/E142222V1</a> .
Parameters for data collection	Inclusion Criteria: Employed as a nurse at our community-based teaching hospital.  Exclusions Criteria: Not employed as a nurse at our community-based teaching hospital  Participants meeting inclusion criteria were allotted four weeks to complete the anonymous and voluntary survey. There were 750 eligible participants in the target population.
Description of data collection	Convenience sampling was used with de-identified survey data collected into a secure database, and subsequently coded.
Data source location	Institution: Stamford Health City/Town/Region: Stamford, Connecticut Country: United States Latitude and longitude (and GPS coordinates, if possible) for collected samples/data: 41° 3' 10" N, 73° 32' 20" W
Data accessibility	Repository name: Inter-university Consortium for Political and Social Research (ICPSR), openICPSR Direct URL to data: <a href="https://www.openicpsr.org/openicpsr/project/142222/version/V2/view">https://www.openicpsr.org/openicpsr/project/142222/version/V2/view</a>
Related research article	Rose S, Hartnett J, Pillai S. Healthcare worker's emotions, perceived stressors and coping mechanisms during the COVID-19 pandemic. <i>PLoS One</i> . 2021;16(7):e0254252. Published 2021 Jul 9. doi: <a href="https://doi.org/10.1371/journal.pone.0254252">10.1371/journal.pone.0254252</a> .

Value of the Data

- Those caring for critically ill patients are at high risk for emotional distress, including nurses who spend the most time and energy caring for these patients. Conducted only weeks after the pandemic's onset in March of 2020, survey results among all frontline staff showed our nurses were at higher risk for inadequate coping mechanisms and perceived the workplace as more traumatic compared to other groups.
- The authors conducted an additional analysis on the nursing staff respondents, identifying differences in the management of their emotions, perceived stressors and coping mechanisms used while battling the first surge of COVID-19 patients.
- Emotions and coping strategies based on age group and years worked in healthcare illustrates how nurses responded to stress by demographics, establishing a targeted approach to support front-line nurses as the pandemic continues and during potential occurrences of equivalent occupational crises conditions
- The data described here is useful in comparing nurse's responses to past epidemics and creating coping mechanisms that align with the issues our nurses are currently facing. This data is the basis of future research directed at determining the effectiveness of interventions to support the mental health of nursing staff. The on-going pandemic provides an opportunity

for an evaluation of interventions aimed at supporting our HCWs in high-risk settings. The data can be utilized to create robust clinical trials to allow for evidence-based implementation of these interventions.

## 1. Data Description

The sample consisted of 143 nurses who responded to the survey. However only those nurses who reported having direct patient care during the pandemic were included in the analysis. This resulted in 12 (8.4%) nurses being removed from the analysis with the final demographic and survey analysis conducted on 131 (91.6%) nurses with direct patient care experience during the first surge of the pandemic at our hospital (Table 1).

Age group revealed a uniform distribution across all five sub-groups, however those 60 years of age or older made up the smallest sub-group (10.6%). The sample was predominantly female (95.3%), Caucasian (68.9%), and reported being married (58.8%). Additionally, most nurses reported either having a non-nursing Bachelor's or Master's degree (37.3%) or a Bachelor of Science degree in nursing (33.3%). The sample contained 24% of respondents with zero to five years of experience whereas 76% reported more than five years.

**Table 1**

Nursing sample demographic analysis. (Note: Not all respondents answered all questions. Table is based on a sample  $n = 131$ ).

Variable	Category	Count	Percent
Age Group	20–29	22	17.9
	30–39	35	28.5
	40–49	31	25.2
	50–59	22	17.9
	≥ 60	13	10.6
Gender	Male	5	3.9
	Female	121	95.3
	Chose not to disclose	1	0.8
Race	African American	6	4.9
	Caucasian	84	68.9
	Latino/Hispanic	7	5.7
	Asian	16	13.1
	Two or more Races	1	0.6
	Chose not to disclose	8	6.6
Marital Status	Married	77	58.8
	Single	37	28.2
	Divorced/Separated	11	8.4
	Choose not to disclose	6	4.6
Highest level of Education	Non-Nursing Bachelors or Masters	47	37.3
	Diploma in Nursing	3	2.4
	Associates in Nursing	10	7.9
	BSN	42	33.3
	MSN	23	18.3
	DNP	1	0.8
Hired as New Graduate Nurse	Yes	31	25.0
	No	93	75.0
Years Worked in Healthcare	0–5	31	24.0
	6–10	25	19.4
	11–15	15	11.6
	16–20	16	12.4
	>20	42	32.6

(continued on next page)

Table 1 (continued)

Variable	Category	Count	Percent
Time at Stamford Hospital	Less than 6 months	2	1.6
	6 months to 1 year	10	7.8
	1–3 years	29	22.5
	3–5 years	15	11.6
	5–10 years	14	10.9
	> 10 years	59	45.7

**Years worked in healthcare:** Those nurses with the lowest level of nursing experience (0–5 years) were more likely to have thought of calling in sick ( $p = 0.032$ ) and were also less likely to talk to members of the Army about stress reduction ( $p = 0.018$ ) (Table 2). They were also less likely to follow strict personal protective measures including mask, face shield, gown, hand washing as a personal coping strategy ( $p = 0.020$ ). Those nurses with fewer years of experience were more likely to avoid the news about COVID-19 related fatalities as a coping strategy ( $p = 0.041$ ).

**Age group:** Comparisons of the groups based on age (less than 40 years compared to 40 or more years of age), also revealed significant differences. Younger nurses were more likely to agree with the statement “I thought of calling in sick.” than nurses above 40 ( $p < 0.001$ ) and were more likely to agree that their stress was related to thinking they could transmit COVID-19 to loved ones ( $p = 0.031$ ). Younger nurses were more likely to disagree with the statement “My stress reduced because of the protective equipment provided to me by the hospital” ( $p = 0.034$ ). Similarly, while both age groups showed a high level of agreement with the use of strict personal protective measures as a coping strategy, younger nurses’ mean value on this item was significantly lower than those 40+ ( $p = 0.042$ ). These results as well as results for all survey items can be found in Table 3.

2. Experimental Design, Materials and Methods

The authors utilized a cross-sectional survey design engaging HCWs in our hospital who worked in high-risk areas from March of 2020 to July of 2020. The study tool is a comprehensive questionnaire derived and modified from the SARS epidemic in 2003 previously described in the SARS and the 2014 MERS-CoV epidemics [1,2].

The 37-item questionnaire included 5-point Likert scaled response options, with 1 representing “Strongly Disagree” and 5 representing “Strongly Agree”. Questions inquired about demographic information, staff feelings during the COVID-19 pandemic, factors that caused stress among staff during the COVID-19 pandemic, factors that helped reduce stress, personal coping strategies used during the pandemic and motivational factors for future epidemics/pandemics. All analyses were performed using SPSS version 25.0, and prior to study initiation, the study protocol was reviewed and approved as exempt by the Stamford Hospital’s Institutional Review Board (IRB) of record.

The database containing the raw survey data analyzed for this report as well as the survey questionnaire PDF can be found in openICPSR [4], with the corresponding SPSS syntax found in the appendix. Reporting for each item consists of the calculation of mean and standard deviation within group. Two variables were stratified (age group, years of experience in healthcare) in order to examine the differences between our younger nurses and older nurses (0–39 vs 40+), and years of experience ranging from five or less years’ experience compared to six or more years of experience. The cut-off points were applied to the data to allow relatively equal sample sizes in each of the groups for age. For years of experience, the cut-off was elected due to evidence reporting five or less years’ experience can be defined as a relatively new nurse [5–8].

**Table 2**

Years of Healthcare experience: Group t-tests (Means close to 1.0 indicate Strongly Disagree, means close to 5.0 indicate Strongly Agree).

Question	0–5		6 or more		p-value
	Mean	SD	Mean	SD	
I felt I had to do my job as it is my professional and ethical duty.	4.58	0.807	4.48	0.888	0.574
I felt nervous and scared.	4.26	0.893	1.34	0.912	0.662
I appreciated the special recognition for my job by hospital administration.	3.23	1.251	3.56	1.199	0.204
I thought of quitting my job.	2.32	1.400	2.27	1.311	0.843
I would quit my job if a COVID-19 outbreak recurred.	2.03	1.224	1.86	0.968	0.410
I thought of calling in sick.	2.68	1.492	2.02	1.220	0.032
It stressed me to see my colleagues getting sick.	4.20	0.761	4.00	1.148	0.279
It stressed me to think that I could transmit COVID-19 to my family and friends.	4.74	0.445	4.71	0.689	0.834
It stressed me to see patients with COVID-19 dying in front of me.	4.50	0.682	4.39	0.860	0.521
It was stressful not knowing when the COVID-19 pandemic will be under control.	4.58	0.765	4.68	0.602	0.439
I was stressed because I was Emotionally exhausted.	4.42	0.765	4.42	0.731	0.995
I was stressed because I was physically stressed / fatigued.	4.35	0.798	4.24	0.966	0.540
I was stressed because I experienced conflict between my duty and my own safety.	4.00	1.183	3.98	1.243	0.936
I was stressed because I felt there were not adequate protective measures.	4.35	0.798	4.22	1.080	0.536
I was stressed because there was a shortage of staff at times.	4.33	0.922	4.17	1.113	0.469
My stress reduced when I saw improvement in patient's condition.	3.87	0.900	3.84	0.875	0.901
My stress reduced because of the protective equipment provided to me by the hospital.	2.69	1.339	2.98	1.201	0.268
My stress reduced because all healthcare professionals were working together on the front line.	4.10	0.978	4.13	0.949	0.856
My stress reduced because of my confidence in the hospital staff in case I got sick from COVID-19.	3.06	0.998	3.25	1.031	0.376
My stress reduced when I shared jokes or humor with colleagues	4.23	1.055	4.08	0.790	0.425
My stress reduced when I got free meals from the hospital/community	4.16	0.779	3.93	1.003	0.238
Getting daily COVID updates from the hospital leadership helped reduce my stress.	3.97	0.912	3.95	0.912	0.921
Meeting with members of the Army to talk about the stress I was experiencing helped to reduce my stress.	2.88	0.992	3.41	0.911	0.018
I followed strict personal protective measures (e.g. mask, face shield, gown, hand washing etc. as a personal coping strategy.	4.35	0.661	4.63	0.545	0.020
I kept separate clothes for work to minimize transmission as a personal coping strategy.	4.53	0.571	4.52	0.789	0.934
I did relaxation activities, e.g. involved in prayers, exercise etc., as a personal coping strategy.	3.77	1.023	3.94	1.024	0.437
I chatted with family and friends to relieve stress and obtain support as a personal coping strategy.	3.84	1.241	4.00	1.112	0.495
I talked to myself and motivated myself to face the COVID-19 pandemic with positive attitude as a personal coping strategy.	3.84	0.898	4.07	0.982	0.242
I got help from family physicians or other doctors/therapists to reduce my stress and get reassurance.	3.16	1.157	2.73	1.320	0.109
I avoided media news about COVID-19 and related fatalities as a coping strategy.	3.57	1.25	3.00	1.331	0.041
I vented emotions by crying, screaming etc.	3.32	1.400	3.24	1.269	0.772
Adequate personal protective supplies provided by the hospital could promote my willingness to participate in any future epidemic/pandemics.	4.35	0.839	4.36	1.018	0.991
Available cure or vaccine for the disease could promote my willingness to participate in any future epidemic/pandemics.	3.87	1.056	4.15	1.044	0.192
Financial recognition of efforts could promote my willingness to participate in any future epidemic/pandemics.	4.55	0.723	4.41	0.961	0.456
Recognition from management and supervisors for the extra efforts could promote my willingness to participate in any future epidemic/pandemics.	3.97	1.016	4.18	1.009	0.302
Psychiatric help and therapy made available in work place to help reduce stress and anxiety could promote my willingness to participate in any future epidemic/pandemics.	4.00	0.931	3.57	1.131	0.058
Reduced working hours during outbreaks could promote my willingness to participate in any future epidemic/pandemics.	3.52	1.180	3.69	1.059	0.430

**Table 3**  
Age Group: Group *t*-tests (Means close to 1.0 indicate Strongly Disagree, means close to 5.0 indicate Strongly Agree).

Question	<40		40+		<i>p</i> -value
	Mean	SD	Mean	SD	
I felt I had to do my job as it is my professional and ethical duty.	4.40	1.100	4.59	0.607	0.256
I felt nervous and scared.	4.36	0.903	4.35	0.850	0.957
I appreciated the special recognition for my job by hospital administration.	3.38	1.209	3.64	1.132	0.235
I thought of quitting my job.	2.48	1.452	2.20	1.280	0.251
I would quit my job if a COVID-19 outbreak recurred.	2.09	1.210	1.80	0.863	0.131
I thought of calling in sick.	2.68	1.478	1.80	1.049	<0.001
It stressed me to see my colleagues getting sick.	4.20	0.959	3.94	1.172	0.184
It stressed me to think that I could transmit COVID-19 to my family and friends.	4.86	0.350	4.62	0.799	0.031
It stressed me to see patients with COVID-19 dying in front of me.	4.49	0.639	4.38	0.964	0.465
It was stressful not knowing when the COVID-19 pandemic will be under control.	4.72	0.590	4.61	0.699	0.338
I was stressed because I was Emotionally exhausted.	4.49	0.735	4.38	0.739	0.401
I was stressed because I was physically stressed / fatigued.	4.26	0.955	4.25	0.936	0.921
I was stressed because I experienced conflict between my duty and my own safety.	4.11	1.097	3.94	1.251	0.439
I was stressed because I felt there were not adequate protective measures.	4.33	0.873	4.23	1.078	0.554
I was stressed because there was a shortage of staff at times.	4.27	1.087	4.13	1.085	0.481
My stress reduced when I saw improvement in patient's condition.	3.89	0.832	3.88	0.839	0.927
My stress reduced because of the protective equipment provided to me by the hospital.	2.65	1.322	3.14	1.108	0.034
My stress reduced because all healthcare professionals were working together on the front line.	4.12	0.888	4.15	0.965	0.865
My stress reduced because of my confidence in the hospital staff in case I got sick from COVID-19.	3.20	0.980	3.20	1.042	0.971
My stress reduced when I shared jokes or humor with colleagues	4.16	0.941	4.06	0.794	0.547
My stress reduced when I got free meals from the hospital/community	4.11	0.824	3.88	1.000	0.176
Getting daily COVID-19 updates from the hospital leadership helped reduce my stress.	3.98	0.916	3.94	0.839	0.786
Meeting with members of the Army to talk about the stress I was experiencing helped to reduce my stress.	3.14	0.948	3.38	0.937	0.248
I followed strict personal protective measures (e.g. mask, face shield, gown, hand washing etc. as a personal coping strategy.	4.46	0.569	4.67	0.564	0.042
I kept separate clothes for work to minimize transmission as a personal coping strategy.	4.54	0.660	4.52	0.827	0.881
I did relaxation activities, e.g. involved in prayers, exercise etc., as a personal coping strategy.	3.75	1.057	4.06	0.975	0.097
I chatted with family and friends to relieve stress and obtain support as a personal coping strategy.	3.86	1.217	4.09	1.092	0.269
I talked to myself and motivated myself to face the COVID-19 pandemic with positive attitude as a personal coping strategy.	3.88	0.983	4.15	0.956	0.118
I got help from family physicians or other doctors/therapists to reduce my stress and get reassurance.	3.05	1.260	2.74	1.305	0.184
I avoided media news about COVID-19 and related fatalities as a coping strategy.	3.41	1.276	3.03	1.323	0.112
I vented emotions by crying, screaming etc.	3.47	1.226	3.24	1.278	0.310
Adequate personal protective supplies provided by the hospital could promote my willingness to participate in any future epidemic/pandemics.	4.32	0.995	4.41	0.911	0.586
Available cure or vaccine for the disease could promote my willingness to participate in any future epidemic/pandemics.	3.96	1.149	4.22	0.960	0.192
Financial recognition of efforts could promote my willingness to participate in any future epidemic/pandemics.	4.63	0.794	4.38	0.890	0.101
Recognition from management and supervisors for the extra efforts could promote my willingness to participate in any future epidemic/pandemics.	4.09	1.005	4.18	0.959	0.597
Psychiatric help and therapy made available in work place to help reduce stress and anxiety could promote my willingness to participate in any future epidemic/pandemics.	3.70	1.101	3.74	1.042	0.834
Reduced working hours during outbreaks could promote my willingness to participate in any future epidemic/pandemics.	3.82	1.071	3.58	1.068	0.201

Each of the 37 questions was assessed between groups using a group t-test. Results are reported in overall average within group including the standard deviation, p-value was determined by first assessing Levine's test for equality of variance between groups and using corresponding pooled variance estimates. A  $p$ -value less than 0.05 ( $p < 0.05$ ) was considered statistically significant. Some respondents did not answer every question. The analysis only included valid responses for each item. There was no missing value imputation conducted for this data. In addition, due to the exploratory nature of this analysis, there were no corrections applied to the  $p$ -values due to multiple comparisons.

## Ethics Statement

The study protocol (TSH\_Nursing\_2020001, Work Order #: 1-1337348-1) was reviewed and approved as exempt by the Stamford Hospital's Institutional Review Board (IRB) of record. Consent was obtained prior to participants completing the survey.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships which have or could be perceived to have influenced the work reported in this article. The authors received no specific funding for this work.

## CRediT Author Statement

**Suzanne Rose:** Conceptualization, Data curation, Investigation, Methodology, Project administration, Resources, Supervision, Writing – original draft, Writing – review & editing; **Josette Hartnett:** Investigation, Methodology, Resources, Writing – original draft, Writing – review & editing; **Seema Pillai:** Conceptualization, Investigation, Methodology, Project administration, Supervision, Writing – original draft, Writing – review & editing.

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## Supplementary Materials

Supplementary material associated with this article can be found in the online version at doi:[10.1016/j.dib.2022.107814](https://doi.org/10.1016/j.dib.2022.107814).

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