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# **Resilience of regional hospital nursing staff working during the COVID-19 pandemic measured by the Connor-Davidson resilience scale.**

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## **Introduction**

As the COVID-19 pandemic stretches on, the importance of resilience is increasing as it protects against PTSD while aiding an individual in selecting healthy coping strategies. In a study of 657 healthcare workers in New York City in April 2020, more than half of healthcare workers screened positive for acute stress (PTSD symptoms), almost half screened positive for depression, and one third screened positive for anxiety; many also reported symptoms of insomnia (Schechter *et al.*, 2020).

Resilience is important in nursing because it ensures a viable, healthy workforce for the future. Resilience has been described as the ability to ‘bounce back’ or effectively cope with adversity. The literature shows that resilience has been studied only related to chronic problems such as staffing issues, however, until this year; it has not been studied in the context of pandemics.

## **Background**

Duncan (2020) has recognized that resilience in staff [is] a critical attribute of a strong healthcare system, which requires long-term investment and sustained attention once a crisis abates. Resilience is important in nursing because it ensures a viable, healthy workforce for the future. Previous research on resilience has focused on chronic issues such as staffing shortages, but it has not been examined in the context of disasters (Duncan, 2020).

The concept refers to the means and ability for effective adjustment or to cope successfully with adverse circumstances (Lin *et al.*, 2020). Resilience can be viewed as either a process or a personality trait (Duncan, 2020).

Resilience is protective against post-traumatic stress disorder (PTSD) which makes it of particular importance during the current pandemic (Duncan, 2020). Anxiety and depression are also inversely related to resilience (Jin *et al.*, 2020). As described by Lin *et al.* (2020): ...nurses’ resilience scored lower than doctors and other support staff. Given the workload of nurses during the pandemic and the level of close contact with patients, the differences in resilience between nurses and other medical workers were not unexpected.

## **Purpose**

The purpose of the study was to examine and describe the perceived resilience of nursing staff at a regional hospital who were working during the COVID-19 pandemic.

## **Materials and Methods**

This was a paper-and-pencil survey study conducted at Mid Coast Hospital.

## **Instrument**

The data were collected using the Connor-Davidson Resilience Scale (CD-RISC). The selected tool was the ten-item version to facilitate participation. Permission to use the scale was obtained

through email from Johnathan Davidson (July 17, 2020).

The CD-RISC consists of ten items on a five-point scale where zero signifies '*not true at all*' and four means '*true nearly all the time*'. Total scores indicates resilience; the higher the total score, the higher level of resilience is in the participant (min 4; max 40). Moreover, CD-RISC measures six components of resilience: (1) the ability to adapt to change, (2) deal with what comes along (3) cope with stress (4) to stay focused and think clearly (5) to not get discouraged in the face of failure and (6) to handle unpleasant feelings such as anger, pain or sadness.

The CD-RISC has been widely used and the psychometric data on validity, reliability and factor structure have been obtained in various studies worldwide (Ahern, Kiehl, Sole & Byers, 2006).

### ***Data Collection***

After the IRB approval, recruitment flyers were distributed at the hospital [where?] inviting the staff to participate the survey. The survey packages and a box for completed surveys were distributed to different units (i.e. Emergency Department, Intensive Care Units [ICU], Inpatient [non-ICU], Outpatient, COVID 19, and other units). The packages included an invitation letter, a paper survey (CD-RISC) and a background information sheet. Altogether 109 packages were distributed and 69 completed surveys were returned (response rate 63%) .

A completed survey constituted consent to participate in the study. Participation in the study was voluntary and anonymous.

### ***Data Analysis***

The data were exported from Excel database into SPSS, version 17.0 (SPSS, Inc., Chicago, IL, USA). The data were analyzed statistically using descriptive and non-parametric tests. P values <0.05 were considered statistically significant.

### ***Ethical Review***

This expedited study was approved by the Institutional Review Board (protocol 20-09-1551) in October 18, 2020.

## ***Results***

### ***Respondent Demographics***

Majority of the respondents were RNs (95.7%) and represented two age groups of 25-34 years (27.5%) and 55-64 years (27.5%). Most of the study subjects had over five years of work experience (78.3%). Almost half of the respondents (44.9%) worked in an inpatient unit (non-ICU), 26.1% in Intensive Care Unit (ICU) and 17.4% in Emergency Department. (Table 1.)

**Table 1. Demographic information**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Age</b>		
18-24 years	4	5.8%
25-34 years	19	27.5%
35-44 years	8	11.6%
45-54 years	14	20.3%
55-64 years	19	27.5%
65 years or higher	5	7.2%
<b>Years of work experience</b>		
< 1 years	5	7.2%
1-2 years	4	5.8%
2-4 years	6	8.7%
> 5 years	54	78.3%
<b>Clinical role</b>		
RN	66	95.7%
Other	3	4.3%
<b>Practice setting</b>		
Emergency Department	12	17.4%
Intensive Care Unit (ICU)	18	26.1%
Inpatient (non-ICU)	31	44.9%
Outpatient, COVID 19	1	1.4%
Other	7	10.1%

**Resilience**

The respondents' answers to the CD-RISC-10 questions were first examined item-by-item. The lowest found score (Q8: mean 2.42, SD .946) focused on experiences of failure and the highest score (Q1: mean 3.33, SD .679) on adaptability. The total score (average) was obtained by adding up all 10 items and dividing the sum by the number of respondents. In the sample of all respondents, the total mean score was 29.74 (SD 5.64). This mean score, according to the cut-off points suggested in CD-RISC manual, is in the second quartile of the average/nominal score distribution, and may suggest problems in coping with stress or bouncing back from adversity. In almost half of the respondents (46.4%), the total score was  $\leq 29$ . (Table 2.)

**Table 2. Respondents' answers to the CD-RISC-10 item-by-item**

<b>CD-RISC-10 Questions</b>	<b>Mean</b>	<b>SD</b>
1. I'm able to adapt when changes occur	3.33	.679
2. I can deal with whatever comes my way	3.09	.772

3. I try to see humorous side of things when I am facing with problems	3.10	.770
4. Having to cope with stress can make me stronger	2.71	.865
5. I tend to bounce back after illness, injury or other hardship	3.22	.745
6. I believe I can achieve my goals, even if there are obstacles	3.14	.692
7. Under pressure, I stay focused and think clearly	2.93	.649
8. I'm not easily discouraged by failure	2.42	.946
9. I think myself as a strong person when dealing with life's challenges and difficulties	3.09	.842
10. I am able to handle unpleasant or painful feelings like sadness, fear and anger	2.80	.815
<b>Total score</b>	29.74	5.64

### ***Hardiness portrayed by different aspects of resilience***

The instrument, CD-RISC-10 consists of 10 statements describing different aspects of resilience. The scale serves mainly as a measure of hardiness, with items corresponding to flexibility (1 and 5), sense of self-efficacy (2, 4 and 9), ability to regulate emotions (10), optimism (3,6 and 8) and cognitive focus/maintaining attention under stress (7).

The mean scores for the aspects of resilience were calculated by adding the scores and dividing the sum by the number of items. In the respondents, the lowest resilience score was found in 'Ability to regulate emotions' (mean 2.80, SD .815) and the highest in 'Flexibility' (mean 3.28, SD .645). (Table 3.)

**Table 3. Aspects of resilience**

<b>Aspects of resilience</b>	<b>Mean</b>	<b>SD</b>
Flexibility (2 items)	3.28	.645
Sense of self-efficacy (3 items)	2.97	.664
Ability to regulate emotions (1 item)	2.80	.815
Optimism (3 items)	2.89	.620
Cognitive focus/maintaining attention under stress (1 item)	2.93	.649

### ***Resilience, age, work experience and practice setting***

Resilience was examined next in the different age, work experience and practice setting groups using non-parametric tests. Statistically significant differences ( $p < .05$ ) were found in 'flexibility' between the age groups. This aspect of resilience was lowest in the age group of 35-44 years and highest in the group of  $65 \geq$  years. No other significant differences in resilience were found between the age groups. An interesting finding was that, when comparing the respondent groups based on the work experience, no statistically significant differences were found. The lowest total resilience scores were found in the 'Outpatient, COVID 19' unit 'ICU', followed by 'Inpatient (non-ICU) units and ED. The findings suggest that there were statistically significant differences ( $p < .05$ ) in 'flexibility' between the practice settings. 'Flexibility' was

lowest in 'Outpatient COVID 19' unit and highest in the 'Other' units. Examination of resilience between different practice settings was challenging, because of the low response rates from some units.

### **Conclusions and Recommendations**

The CD-RISC-10 is intended neither to provide diagnostic information, nor to indicate that treatment or counselling is required. However, in conjunction with other assessments, it can provide useful information in deciding whether/what intervention is appropriate. A total score in the lowest or second quartile may suggest problems in coping with stress or bouncing back from adversity.

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