

Covid Reverberation, Resilience And Coping Among Icu Nurses – A Cohort Study

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Abstract –COVID 19 caused a wave of ‘fear of unknown’ all over the world and nurses being frontline workers had the major risk of exposure.

Objective - The study aimed to identify the fear caused before, during, and after working in the COVID intensive care unit. Similarities and differences were traced related to resilience and coping, as well as the passage of time.

Material & methods- Cohort Study design was adopted and conducted in three phases and data was collected before (when duty roster was shared), during, and after posting in the COVID ICU. **Results** -Fear anxiety was severe before the posting and was reduced thereafter, however, the severe fear turned into mild and moderate fear anxiety after the posting. Resilience and coping were reported to be high in young adults. A significant statistical association of resilience with age and marital status was found, on the other hand, coping had an association with gender, experience, and marital status. **Conclusion** - was drawn that with age the resilience and coping ability improved and married nurses were more

resilient and were able to cope up faster than single. A similar statistical association was observed for gender and years of experience with coping ability.

Keywords – Nursing, COVID 19, Resilience, Coping, Care, ICU

Key Message- Nurses are the manpower fighting at the ground level against COVID but the fear and anxiety faced by the nurses working in COVID ICU and resilience & coping adopted by them are reported in the article.

INTRODUCTION

Fear and anxiety are quite common in unseen circumstances like COVID 19, which testified the health care capacity. Nurses remarkably proved to be the strongest pillar all over the world. Nurses who worked in COVID units especially the COVID intensive care units dealt with the fear of the unknown because corona being the novel virus imposed doubts in everybody's mind in the initial phase. In March 2020 when the first case was admitted in our facility triggered anxiety regarding exposure to the virus, worries about nurses' family being at risk, fear of limited resources. These fears were predominant even before working in the COVID unit. In addition, literature reflects that those who work directly with coronavirus patients witnessed suffering and death, resulting in emotional fatigue and mental distress^[1]and even the post-traumatic stress manifestations were also experienced.^[2]

In this pandemic situation it was highly demanded from nurses to maintain their psychological and mental health,^[3] however, the literature has shown that the emergence of COVID-19 has significantly impacted the psychological and mental well-being of nurses. A systematic review of studies has shown a higher prevalence of anxiety and depression in nurses than in other frontline health care workers^[4] as well as in the general population^[5]. Hence, supporting the nursing workforce during the COVID-19 pandemic is of paramount importance. As unmanaged anxiety or fear related to COVID-19 may potentially lead to long-term effects on nurses' work performance and job satisfaction, leading to frequent absenteeism and eventual turnover.^[6,7] it is critically important to examine whether frontline nurses' fear of COVID-19 contributes to psychological distress, work satisfaction, and intent to leave their organization and the profession.

Nurses face patients while they undergo treatment, procedures examinations, witness their sickness, sadness sorrows, and in addition, nurses are expected to deliver expert care, also have performance pressure and workload. All this intensifies the stress which may lead to psychological issues. Therefore, resilience is another essential part of nurses' professional life because the amount of traumatic event experienced by a nurse can lead to permanent damage hence, it is an utmost need of the hour that nurses are explored for resilient coping.

Objectives of the study were:

- Assess the fear and anxiety caused due to posting in COVID ICU
- Compare the fear and anxiety levels before during and after the posting in COVID ICU
- Identify the level of resilience among nurses and resilient coping among nurses

- Association of sociodemographic variables with fear anxiety and resilience & coping

The findings of this study will provide inputs for policymakers and nursing administrators on how to effectively support the mental health of frontline nurses and sustain a well-engaged nursing workforce particularly during unpredicted situations and identify the factors that may influence resilience among nurses.

MATERIALS AND METHODS

Tool & sample - The cohort study was conducted among nursing officers at COVID dedicated ICU. An online survey was created using Google Forms and sent to nursing officers to describe the fear, anxiety, and resilience, coping related to COVID-19. Sampling techniques adopted was total sampling. Tool was validated by medical & nursing experts. Ethical approval was gained from the institutional ethical committee.

Data Collection - The study was conducted in three phases and data was collected before (when duty roster was shared), during (third day of posting), and after posting in the COVID ICU(third day of rest). Resilience was assessed immediately after the posting (first day of rest) and resilient coping was assessed on the third day of the rest after posting. Tools used were modified fear and anxiety COVID 19 scale, modified brief resilience scale (BRS), and brief resilience coping scale (BRCS). Validation and internal consistency reliability ($r=0.72$) were established statistically of tools.

| Variable assessed | Prospective observations | | |
|--------------------------------|----------------------------|--------------------------------|-----------------------------|
| | Before posting | During posting | After posting |
| Assessment of Fear & Anxiety | Day of duty roster sharing | 3 rd day of posting | 3 rd day of rest |
| Assessment of Resilience | | | First day of rest |
| Assessment of Resilient Coping | | | 3 rd day of Rest |

Participants were informed that their participation is voluntary and was guaranteed about the privacy and confidentiality of all information provided, which was used for research purposes only. Participants were informed that their participation is voluntary and was guaranteed about the privacy and confidentiality of all information provided, which was used for research purposes only.

During the routine rounds of COVID ICU, it was observed that staff had fear and anxiety to work in the COVID area. Some of the staff resisted and refused to work in the COVID ICU/wards.

Thus, a psychiatrist posted for counseling of COVID patients was involved in counseling the nursing officers as well. The counseling session was carried out on the day of the start of duty followed by the need of the nursing officers. In addition, to this day to day apprehensions were dealt with by the assistant nursing superintendents during rounds. Also, a training and induction program was conducted two days before the posting.

RESULTS

SECTION A - SOCIODEMOGRAPHIC PROFILE OF FRONTLINE NURSES

Study was conducted on 112 frontline COVID nurses, the mean age was 30 years with standard deviation of ± 5.79 and fifty percent (50.9%) of sample was between the age group of 21-29 years. Majority participants (75.9%) were female participants, graduates (67.9%), married were 58% and holding experience of less than 5 years were 44.6%. (refer table1)

TABLE 1 - SOCIODEMOGRAPHIC PROFILE OF FRONTLINE NURSES

N=112

| Variable | Frequency (f) | Percentage (%) |
|---------------------------|---|-----------------------|
| Age | | |
| 21-29years | 57 | 50.9 |
| 30-39years | 45 | 40.2 |
| 40 years and above | 10 | 8.9 |
| | Mean \pm SD(Range)= 30.92 \pm 5.79(23-49) | |
| Gender | | |
| Male | 27 | 24.1 |
| Female | 85 | 75.9 |
| Educational Status | | |
| GNM | 26 | 23.2 |
| B.Sc. Nursing | 76 | 67.9 |
| M.Sc. Nursing and above | 10 | 8.9 |
| Experience | | |
| <5years | 50 | 44.6 |
| 5-10years | 41 | 36.6 |
| >10years | 21 | 18.8 |
| Marital status | | |
| Single | 47 | 42 |
| Married | 65 | 58 |

SECTION B - ASSESS THE FEAR AND ANXIETY CAUSED DUE TO POSTING IN COVID ICU

Table 2 depicts that participants with **no fear anxiety before the posting** were 16.1% which drastically increased 44.6% during the posting and after the posting, it dipped to 33.9%.

Similarly, **mild fear and anxiety** before posting was 33% which **increased** during the posting to 41.1% and after posting it became 51.8%. This trend was **mainly due to the decrease in the severe fear anxiety** which was found to **decrease to nil** during and after posting, from 18.8% before posting.

The reason for the decrease in the severe fear anxiety was observed due to the training and induction program done two days before the posting.

Overall it was found that **mild** fear and anxiety were prevalent (**56.3%**) among the study sample whereas **severe** fear and anxiety were observed among **1.8%** only. **Moderate** fear and anxiety were reported among **21.4%** study sample. (Refer Table 2)

TABLE 2 – FEAR & ANXIETY AMONG NURSES

N=112

| Variable | Before COVID posting (score range= 6-30) | During COVID posting (score range= 8-40) | After COVID posting (score range = 6-30) | Total score (score range=20-100) |
|-----------------------------|---|---|---|-------------------------------------|
| No fear and anxiety | 18(16.1) | 50(44.6) | 38(33.9) | 23(20.5) |
| Mild fear and anxiety | 37(33) | 46(41.1) | 58(51.8) | 63(56.3) |
| Moderate fear and anxiety | 36(32.1) | 16(14.3) | 16(14.3) | 24(21.4) |
| Severe fear and anxiety | 21(18.8) | 00 | 00 | 02(1.8) |
| Mean ±SD (Range) | 18.69±5.84 (6-30) | 17.83±5.22 (8-32) | 14.32±3.65 (6-22) | 50.88±12.52 (24-82) |

Duty rosters were made in an unbiased manner so that all nurses perform duties due to which Fear anxiety before the posting was higher, as the nurse had to work in the area out of their routine or regular area.

SECTION C - LEVEL OF RESILIENCE AMONG NURSES AND RESILIENT COPING AMONG NURSES

Resilience is the ability of humans to bounce back to normal after a stressful situation and resilient coping is the extent to how much an individual is able to bounce back and different methods adopted to revert to normal.

In the study resilience among nurses was found to be moderate 82.1% . Mean score of resilience was 3.22 with a standard deviation of ±0.48. Resilient coping was also moderate at 57.1%. Mean score of resilient coping was 15.31 with a standard deviation of ±2.57. (Refer Table 3)

TABLE 3 – RESILIENCE AND RESILIENT COPING AMONG NURSES

N=112

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| Variable | Frequency (f) | Percentage (%) | Mean ±SD (Range) |
|-----------------------------------|---------------|----------------|-----------------------|
| BRS (score range=1-5) | | | |
| Low resilience (1-2.99) | 19 | 17 | 3.22±0.48 (2.20-4.50) |
| Moderate resilience (3-4.3) | 92 | 82.1 | |
| High resilience (4.31-5) | 01 | 0.9 | |
| BRCS(score range= 4-20) | | | |
| Low resilient copers (4-13) | 20 | 17.9 | 15.31±2.57 (4-20) |
| Moderate resilient copers (14-16) | 64 | 57.1 | |
| High resilient copers (17-20) | 28 | 25 | |

This reflects that study participants were able to have the ability to bounce back to the normal moderately. Further exploration revealed that organizational support like providing the resources (PPE kits, sanitization articles.) training and induction before posting, leadership support – managerial support by close monitoring and supervision to handle any issues, moreover telephonic **counseling was provided 24X7** and seven days rest was given after posting. Free of cost lodging boarding facilities were provided for the nursing officers who performed duties in COVID areas.^{5,6,7} These were support systems provided for resilient coping.

SECTION D - ASSOCIATION OF SOCIODEMOGRAPHIC VARIABLES WITH FEAR ANXIETY AND RESILIENCE & COPING

Association of **Fear anxiety with age** – Results revealed that young adults (21-29years) exhibited fear anxiety majorly and severe fear anxiety was also observed among this age group only and female participants. However, statistically, there was no association of age with fear anxiety.

Female participants exhibited lesser fear anxiety as compared to the males, in the category of no fear anxiety females were 73.6% and males were only 26.1%. Similarly, in mild and moderate fear anxiety 73 % and 83,3% were reported in females, however, the males were only 27 % and 16.7 % in the mild and moderate fear anxiety category. None of the male participants had severe fear anxiety whereas only two female participants had severe fear anxiety. Though the data reflect fear anxiety more in female participants statistically no association was found. Similarly, the association was not found between fear anxiety and educational status, working experience, or marital status.

Association of **Resilience** - severe fear anxiety was observed in the age group 21-29 years but the higher resilience was also observed in the same age group. Participants of age group 30-39 years exhibited moderate resilience. Statistically, age had an association with resilience score. Thus, it was interpreted that resilience was influenced by age. However, no statistical association was found between resilience and gender, educational status, working experience. Marital status has an association with resilience, which specifies that married participants had better resilience.

Association of **Resilient Coping**- results revealed that young age of 21-29years participants were more and resilient copers were evidently observed in same age group 48.4% were moderate resilient copers, 53.6 % were high resilient copers. In the age group of 30-39 years, Low resilient copers were observed 40% and 40.6% were moderate resilient copers and high resilient copers were 39.3%. In the age group of 40years and above only 05 % were low resilient copers 11% were moderate resilient copers and only two percent were high resilient copers. The statistical calculation revealed no association of resilient coping with age. (refer table 4)

Gender and resilient coping had a significant association as the chi-square value was 7.3, hence inference was drawn that gender influenced resilient coping. Similarly, the work experience too had an association with resilient coping which was evident with a chi-square value of 10.1.

Resilience depends on adaptation efforts and is commonly influenced by factors like marital status, years of experience. Nurses with good resilience successfully adopt proactive methods to deal with stress fear and anxiety. ^[8,9] Literature reveals that health care team members need to have an essential skill of resilience to adapt and recover from physical as well as psychological trauma/damage. This is the only skill that helps them to overcome and adapt to work-related fear and anxieties. ^[10,11]

Thus inference was drawn that with age the resilience and coping ability improved and married nurses were more resilient and were able to cope up faster than others. A similar statistical association was observed for gender and years of experience with resilient coping.

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| Variable | Fear and anxiety (21-100score) | | | | | BRS (score range=1-5) | | | | BRCS(score range= 4-20) | | | |
|---------------------------|-----------------------------------|-------------------------------------|---|--|-------------------------|-------------------------|-----------------------------|--------------------------|-------------------------|-----------------------------|-----------------------------------|-------------------------------|-------------------------|
| | No fear and anxiety (score 21-40) | Mild fear and anxiety (score 41-60) | Moderate fear and anxiety (score 61-80) | Severe fear and anxiety (score 81-100) | Chi-square (df) p value | Low resilience (1-2.99) | Moderate resilience (3-4.3) | High resilience (4.31-5) | Chi-square (df) p value | Low resilient copers (4-13) | Moderate resilient copers (14-16) | High resilient copers (17-20) | Chi-square (df) p value |
| Age | | | | | | | | | | | | | |
| 21-29years | 12(52.2) | 32(50.8) | 11(45.8) | 02(100) | 2.9 | 15(78.9) | 41(44.6) | 01(100) | 8.9 | 11(55) | 31(48.4) | 15(53.6) | 0.7 |
| 30-39years |) |) | 11(45.8) | — | (6) |) |) | — | (4) | 08(40) | 26(40.6) | 11(39.3) | (4) |
| 40 years & above | 08(34.8) | 26(41.3) | 02(8.4) | — | 0.8* | 03(15.8) | 42(45.6) | — | 0.03* | 01(5) | 07(11) | 02(7.1) | 0.9 |
| | 03(13) | 05(7.9) | | | | 01(5.3) | 09(9.8) | | | | | | |
| Gender | | | | | 1.6 | | | | 3.2 | | | | 7.3 |
| Male | 06(26.1) | 17(27) | 04(16.7) | — | (3) | 03(15.8) | 23(25) | 01(100) | (2) | 09(45) | 10(15.6) | 08(28.6) | (2) |
| Female |) | 46(73) | 20(83.3) | 02(100) | 0.6* |) | 69(75) | — | 0.2* | 11(55) | 54(84.4) | 20(71.4) | 0.02 |
| | 17(73.9) |) | | | | 16(84.2) | | | | | | | |
| Educational Status | | | | | | | | | | | | | |
| GNM | 05(21.7) | 14(22.2) | 06(25) | 01(50) | 5.9 | 02(10.5) | 24(26.1) | — | 3.9 | 04(20) | 18(28.1) | 04(14.3) | 2.5 |
| B.Sc. Nursing |) |) | 14(58.3) | 01(50) | (6) |) |) | 01(100) | (4) | 14(70) | 40(62.5) | 22(78.6) | (4) |
| M.Sc. Nursing and above | 18(78.3) | 43(68.3) | 04(16.7) | — | 0.4* | 16(84.2) | 59(64.1) | — | 0.4* | 02(10) | 06(9.4) | 02(7.1) | 0.6* |
| | — | 06(9.5) | | | | 01(5.3) | 09(9.8) | | | | | | |
| Experience | | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|-----------------------|----------|----------|----------|---------|------|----------|----------|---------|-------|--------|----------|----------|------|
| <5years | 11(47.8) | 27(42.8) | 10(41.7) | 02(100) | 4.1 | 09(47.4) | 40(43.5) | 01(100) | 2.4 | 13(65) | 21(32.8) | 16(57.1) | 10.1 |
| 5-10years |) |) | 11(45.8) | — | (6) |) |) | — | (4) | 06(30) | 26(40.6) | 09(32.2) | (4) |
| >10years | 08(34.8) | 22(35) | 3(12.5) | — | 0.6* | 08(42.1) | 33(35.9) | — | 0.7* | 01(5) | 17(26.6) | 03(10.7) | 0.03 |
| |) | 14(22.2) | | | |) |) | | | | | | |
| | 04(17.4) |) | | | | 02(10.5) | 19(20.6) | | | | | | |
| |) | | | | |) |) | | | | | | |
| Marital status | | | | | | | | | | | | | |
| Single | 11(47.8) | 26(41.3) | 08(33.3) | 02(100) | 3.4 | 12(63.2) | 34(37) | 01(100) | 5.6 | 10(50) | 20(31.2) | 17(60.7) | 7.5 |
| Married |) |) | 16(66.7) | — | (3) |) | 58(63) | — | (2) | 10(50) | 44(68.8) | 11(39.3) | (2) |
| | 12(52.2) | 37(58.7) | | | 0.3* | 07(36.8) | | | 0.03* | | | | 0.02 |
| |) |) | | | |) | | | | | | | |

Table 4- ASSOCIATION OF SOCIODEMOGRAPHIC VARIABLES WITH FEAR ANXIETY AND RESILIENCE & COPING

N=11

CONCLUSION

The study identified fears like risk for exposure to the novel virus and then carrying the same to their family in return risking the family too, moral distress was another anxiety source. Though with the organizational support of providing surplus resources (PPE kits etc), managerial supports by being available for sorting issues and monitoring the areas closely, training & induction program conduction, telephonic counseling sessions, fair distribution of staff, and unbiased approach on making duty rosters, these were few organizational, managerial and social support provided for the nurses in the institution so that fear anxieties are overcome, resilience is gained and adaptation occurs smoothly. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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