Chapter 4

RESULTS

Socio-demographic Characteristics of the study sample

Study results were tabulated and computed in frequency, percentage distribution, chi-square and t test. This study included staff nurses posted in the critical unit (CU) and non-critical unit (NCU).

Staff nurses posted in critical unit and non-critical units were equal with respect to an average age (31.35±4.4 years among CUSN and 31.89±4.6 years NCUSN). An equal number of female staff nurses were present from critical and non-critical units (58%, 58%) respectively. The gender wise ratio of staff nurses in this study has been just by chance, it was not purposeful. About marital status, majority (74%) staff nurses were married, the proportion of married staff nurses was equal from critical units (72%) and non-critical units (76%).

In both groups among married participants, few (25%, 21.05%) did not have child in CUSN and NCUSN respectively. About dependents (spouse / children / parents / others) on the participants' salary, 49 (98%) staff nurses from critical units and 50 (100%) from non-critical units expressed about having financially dependent on his / her salary. Participants were living in joint family (26%, 14%), the nuclear family (54%, 64%), and staying away from family (20%, 22%), in CUSN and NCUSN respectively.

Regarding habit of smoking/ alcoholism/ tobacco uses, only 8 (8%) staff nurses had these habits, which was equal (4%) in CU and NCU staff nurses. The majority (86%, 96%) staff nurses reported that their residence was 1 – 4 kilometre away from the hospital among CUSN and NCUSN respectively.

The professional educational degrees earned by participants included diploma (100%, 90%), graduation (0%, 10%) in CUSN and NCUSN group respectively. The mean score of work experience was 7.44±3.7 years, most of (62%, 56%) staff nurse from critical and non-critical units respectively had expressed that they were having 7 and above years of work experience.

Regarding the average daily patient assignment to staff nurses, 50 (50%) staff nurses from the critical unit reported about 1 to 2 patients, whereas 40 (80%) staff nurses from non-critical units reported of having 6-10 patient assignment. There was an almost equal proportion (66%, 60%) of suffering from health problems among staff nurses from critical and non-critical units respectively (Table 4).

Data presented in Table 4 shows that the obtained chi-square and t test values are not significant at 0.05 level of significance except professional qualification and average daily patient assignment. Thus, it is established that both the groups did not differ in their selected personal variables and they were equivalent in this regard before the change in the workplace.

Table 4: Socio-demographic profile of critical unit staff nurses and non-critical staff nurses   N=100

Socio-demographic characteristics		Types of Units		Total	χ^2 value	p value
		CUSN f (%)	NCUSN f (%)			
Age (in years)	Mean ±SD	31.35 ±4.47	31.89 ± 4.66	31.72 ±4.76		0.55
Gender	Female	29 (58%)	29 (58%)	58	0.00	1.0
	Male	21 (42%)	21 (42%)	42		
Marital Status	Married	36 (72%)	38 (76%)	74	0.20	0.65
	Unmarried	14 (28%)	12 (24%)	26		
If Married, No. of children (n=74)	0	9 (25 %)	8 (21.05%)	17	1.6	0.6
	1	17 (47.22%)	14 (36.84%)	31		
	2	10 (27.77%)	16 (42.10%)	26		
Presently living in-Family Type	Joint	13 (26%)	7 (14%)	20	2.271	0.32
	Nuclear	27 (54%)	32 (64%)	59		
	Staying single	10 (20%)	11 (22%)	21		
Financial dependant (family member depend on his/her salary)	Yes	49 (98%)	50 (100%)	99	0.00*	1.0*
	No	1 (2%)	0 (0%)	1		
Salary per month (Rs/Months)	Mean ±SD	21018.9 ± 4132.2	21179.4 ± 3823.5	21099.1 ± 3977.8		0.84
Habit of Smoking/ Alcoholism/ Tobacco use	Yes	4 (8%)	4 (8%)	8	0.00*	1.0*
	No	46 (92%)	46 (92%)	92		
Distance from residence to work place	1 – 4 KMs	43 (86%)	46 (96%)	79	1.4	0.80*
	5 – 9 KMs	3 (6 %)	2 (4%)	5		
	≥10 KMs	4 (8%)	2 (4%)	6		
Professional education in Nursing	GNM (Diploma)	50 (100%)	45 (90%)	95	3.3*	0.02*
	Graduation	0	5 (10%)	5		
Work experience (in Years)	Mean±SD	7.31±3.6	7.58±3.75	7.44±3.7		0.71
	1 to 3	10 (20%)	6 (12%)	16	3.113	0.21
	4 to 6	9 (18%)	16 (32%)	25		
	7 and above	31 (62%)	28 (56%)	59		
Work experience in present unit (in years)	1 to 3 yrs	29 (58%)	30 (60%)	59	2.9*	0.44*
	4 to 6	16 (32%)	19 (38%)	35		
	7 yrs and above	5 (10%)	1 (2%)	6		
Average daily patient assignment you get	1-2 patients	25 (50%)	0 (0%)	24	66.6*	0.00*
	3-5 patients	25 (50%)	10 (20%)	32		
	6-10 patients	0 (0%)	40 (80%)	41		
Suffering from any health problem	Yes	33 (66%)	30 (60%)	63	0.38	0.53
	No	17 (34%)	20 (40%)	37		

*Yates 'correction p-value

Hypothesis 1: H₀ Staff nurses posted in critical units will not differ in their mean scores of sub scales of burnout than those posted in non-critical units.

Table 5: MBI-HSS Subscale scores of staff nurses posted in critical vs non-critical units at baseline N=100

MBI-HSS Subscales	Staff nurses posted	Mean	SD	Median (Min.-Max)	Mean difference (95% CI)	t value	p value
Emotional exhaustion (EE)	Critical Unit	23.20	7.33	22 (7-40)	6.52 (3.88, 9.15)	4.9	≤0.01
	Non-critical Unit	16.68	5.87	17 (5-30)			
Depersonalization (DP)	Critical Unit	9.32	3.94	8 (5-21)	2.30 (0.85, 3.74)	3.2	≤0.01
	Non-critical Unit	7.02	3.29	7 (3-14)			
Personal accomplishment (PA)	Critical Unit	32.48	8.06	32 (19-45)	5.84 (2.97, 8.70)	4.0	≤0.01
	Non-critical Unit	38.32	6.25	40 (24-46)			

df=49

The obtained results presented in Table-5, confirms that the mean scores of emotional exhaustion, depersonalization and, personal accomplishment sub-scales were significantly differed on computing of independent 't' test.

The critical unit staff nurses (CUSN) demonstrated a higher mean score of emotional exhaustion (23.20), depersonalization (9.32) and a lower mean score of personal accomplishment (32.48) as compared to the mean scores of non-critical unit staff nurses (NCUSN) (Table-5)

Table 6: Burnout level of Staff Nurses posted in critical vs. non-critical at baseline

N=100

MBI-HSS Subscales	Staff nurses posted	Level of Burnout			χ^2 value	p value
		Low level (0-18) f (%)	**Moderate level (19-26) f (%)**	**High level (≥ 27) f (%)**		
Emotional Exhaustion (EE)	Critical Unit	13 (26)	22 (44)	15 (30)	14.6*	≤0.01
	Non-critical Unit	30 (60)	18 (36)	2 (4)		
		Low level (0-5)	**Moderate level (6-9)**	**High level (≥10)**		
Depersonali-zation (DP)	Critical Unit	5 (10)	28 (56)	17 (34)	10.98	≤0.01
	Non-critical Unit	19 (38)	21 (42)	10 (20)		
		Low level (≥40)	**Moderate level (34-39)**	**High level (0-33)**		
Personal Accomplish-ment (PA)	Critical Unit	14 (28)	10 (20)	26 (52)	7.98	0.01
	Non-critical Unit	26 (52)	11 (22)	13 (26)		

*Yates' p-value; df=2

Although, there is a statistically significant difference in the emotional exhaustion , depersonalization and, personal accomplishment mean scores of critical and non-critical unit staff nurses, however the results of MBI-HSS are categorised in high, moderate and low level of burnout which shows that the maximum number of staff nurses were falling in moderate levels of burnout subscale (EE and DP). In the Personal Accomplishment (PA) subscale, more than fifty percentage (52%) of staff nurses were in high levels of burnout, whereas the same proportion (52%) of staff nurses from non-critical units were in the low level of burnout.

Therefore, the null hypothesis was rejected and it was inferring that Staff nurses posted in critical units had higher level in burnout scores than those posted in non-critical units.

Hypothesis 2: H_0 Staff nurses posted in critical units will not have difference in value of heart rate (HR), galvanic skin response (GSR) and skin temperature than those posted in non-critical units.

Table 7: Heart rates, GSR and skin temperature scores of staff nurses posted in critical vs non-critical units at baseline N=100

CSPT parameter	Staff nurses posted	Mean	SD	Md (Min-Max)	Mean Diff (95% CI)	t value	p value
Heart rate (beat/minute)	Critical Unit	88.32	9.63	86.5 (67-107)	4.7 (1.6, 7.9)	2.99	≤0.01
	Non-critical Unit	83.56	5.82	84.5 (71-94)			
GSR (Amp ~ K)	Critical Unit	916.9	473.4	782.7 (338-1878.4)	229.1 (76.0, 382.1)	2.97	≤0.01
	Non-critical Unit	687.8	270.0	634.1 (370-1450)			
Skin temperature (°F)	Critical Unit	80.80	5.68	82 (67-89)	3.08 (0.89, 5.2)	2.79	≤0.01
	Non-critical Unit	83.88	5.34	85 (70-94)			

df=98

To find the significance differences in mean scores of heart rate and GSR scores between staff nurses posted in CU and NCUs, independent 't' test was computed and confirmed that the heart rate and GSR mean scores of staff nurses posted in CU and NCUs was significantly different.

To find the significance differences in mean scores of skin temperature between staff nurses posted in CU and NCUs, independent 't' test was computed and confirmed that the skin temperature mean scores of staff nurses posted in critical units was significantly differed with the mean scores of staff nurses posted in non-critical units.

Table 7 illustrates the difference in heart rate scores of staff nurses posted in critical units and non-critical units. The staff nurses posted in critical units had a higher mean scores of heart rate (88.32), then the staff nurses posted in non-critical units (83.56).

The GSR mean scores of staff nurses posted in CU and NCUs may peruse from Table 7. The staff nurses posted in critical units had a higher mean score of GSR value (916.9), then the staff nurses posted in non-critical units (686.8).

Table 7 shows difference in skin temperature scores of staff nurses posted in critical units and non-critical units. The staff nurses posted in critical units had a lower mean scores of skin temperature (80.8), then the staff nurses posted in non-critical units (83.88).

Therefore, **the null hypothesis** was not supported with regard to findings inferring that Staff nurses posted in critical units had higher value of heart rate, GSR scores and lower value of skin temperature scores than those posted in non-critical units.

Hypothesis 3: H_0 Staff nurses posted in critical units will not differ in mean scores of domain wise of quality of life than those posted in non-critical units.

Table 8: Differences in domains of quality of life scores of staff nurses posted in critical vs non-critical units at baseline   N=100

Domains' of Quality of Life	Staff nurses posted	Mean	SD	Md (Min-Max)	Mean Diff (95% CI)	t value	p value
Physical domain	Critical Unit	58.57	7.28	60.71 (39.3-71.4)	11.9 (8.7, 15.1)	7.48	≤0.01
	Non-critical Unit	70.50	8.59	67.85 (57.1- 89.3)			
Psychological domain	Critical Unit	59.00	10.39	58.33 (33.3-87.5)	11.5 (7.5, 15.5)	5.71	≤0.01
	Non-critical Unit	70.50	9.73	70.83 (50.0-87.5)			
Social domain	Critical Unit	69.83	15.69	75.00 (25.0-91.6)	7.16 (1.4, 12.8)	2.48	.015
	Non-critical Unit	77.00	12.99	75.00 (50.0-100.0)			
Environmental domain	Critical Unit	65.87	11.44	65.62 (40.6-93.7)	4.62 (0.6, 8.6)	2.29	.024
	Non-critical Unit	70.50	8.52	68.75 (59.3-90.6)			

df=98

To find the significance differences in mean scores of physical health, psychological health, social health and environmental health domains of QOL between staff nurses posted in CU and NCU, independent 't' test was computed and confirmed that the physical health, psychological health, social health and environmental health domains of QOL mean scores of staff nurses posted in and non-critical units was significantly different (Table 8 and Figure 5).
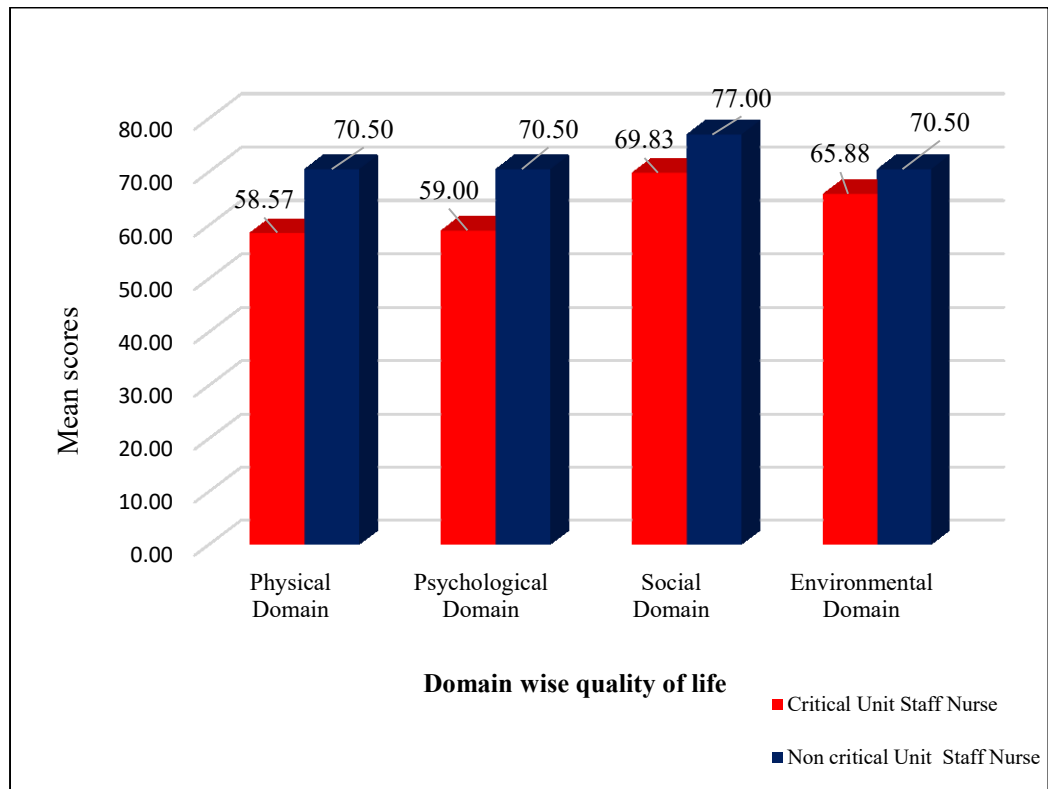
Figure 5: Domain wise Quality of life of staff nurses at baseline.

Therefore, **the null hypothesis** was not supported with regards to the findings inferring that the nurses posted in critical units had significantly lower scores in physical health, environmental health, social health and environmental health domain of QOL than those posted in non-critical units.

Hypothesis 4: H_0 Staff nurses posted in critical units will not differ in mean scores of overall quality of life and overall health than those posted in non-critical units.

Table 9: Differences in overall quality of life and overall health scores of staff nurses posted in critical vs non-critical units at baseline   N=100

Quality of Life	Group	Mean	SD	Median (Min.-Max)	Mean difference (95% CI)	t value	p value
Overall Quality of Life	Critical Unit Group	3.72	0.640	4.00 (3-5)	0.4 (0.22, 0.73)	3.7	≤0.01
	Non-critical Unit group	4.20	0.639	4.00 (3-5)			
Overall Health	Critical Unit Group	4.02	0.622	4.00 (2-5)	0.04 (0.19, 0.27)	0.34	0.73
	Non-critical Unit group	4.06	0.550	4.00 (3-5)			

df=98

To find the significance differences in mean scores of overall QOL and overall health independent 't' test was computed.

There was a significant difference in mean scores of overall quality of life between critical and non-critical unit staff nurses (p<0.00). But there was no significant difference found in overall health mean scores, between critical and non-critical unit staff nurses.

Therefore, the null hypothesis was partially rejected and it was inferred that Staff nurses posted in critical units had differences in mean scores of overall quality of life, whereas there was no difference in mean scores of the overall health of staff nurses posted in CU and NCUs.

Hypothesis 5: H_0 Staff nurses posted in critical units when shifted to non- critical units will not differ in mean scores of MBI-HSS sub scales of burnout.

Table 10: Differences in MBI-HSS Subscales scores at baseline and change of posting scores at 60th day of staff nurses posted in critical units   n=50

| MBI-HSS Subscales	Measurement of scores at	Staff nurses posted	Mean	SD	t value	p value
Emotional exhaustion (EE)	Baseline at 0th day	Critical Unit	23.20	7.33	8.8	≤0.01
	Change of posting test at 60th day	Non-critical Unit	11.38	8.76		
Depersonalization (DP)	Baseline at 0th day	Critical Unit	9.32	3.94	2.3	0.02
	Change of posting test at 60th day	Non-critical Unit	7.54	4.15		
Personal accomplishment (PA)	Baseline at 0th day	Critical Unit	32.48	8.12	3.8	≤0.01
	Change of posting test at 60th day	Non-critical Unit	37.70	8.13		

df=49

To find the significance changes in mean scores of MBI-HSS subscales between scores of staff nurses posted in critical units (baseline) and after a change in posting to non-critical units (at 60th day), paired 't' test was computed.

There was a significant difference in the mean scores of MBI-HSS subscales (EE, DP & PA) of critical unit staff nurses at baseline and 60th day after change of posting to non-critical unit.

The result shows emotional exhaustion (EE), and depersonalization (DP) mean scores of staff nurses posted in critical units were significantly reduced at 60th day after change in posting to non-critical unit.

Staff nurses are assessed for burnout score at different time point, at baseline, every 15th day during a change in posting from CU to NCU and after re-shifting to their original unit. Graphical presentation of data present in fig-8 shows that a gradual reduction in the subscale of burnout (MBI-HSS).

After re-shifting of SN to their original units (CU), there is a rise in mean scores of EE, and DP and decline of PA, but these are better than baseline score. Furthermore, at 30th day after re-shifting to SN to CU, the mean score of EE and DP became below baseline scores and PA score increase more than baseline.
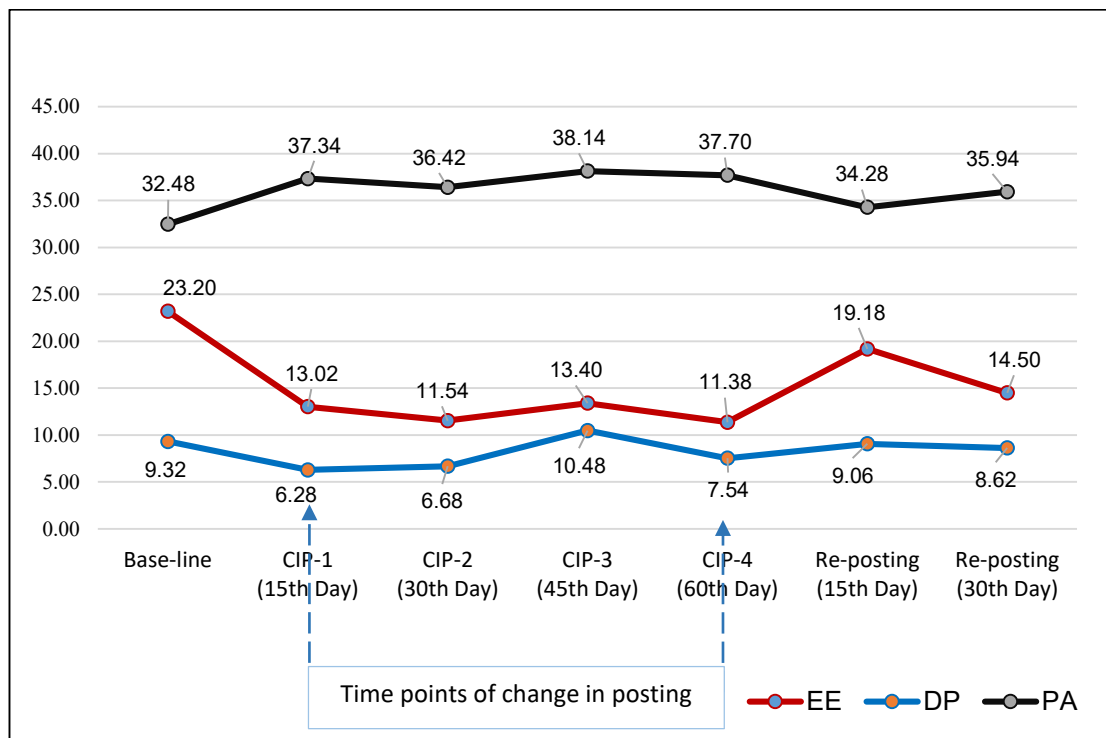
CIP=Change in posting; EE=Emotional exhaustion; DP Depersonalisation; PA Personal Accomplishment

Figure 6: Dynamic changes in MBI-HSS subscale of burnout of critical unit staff nurses

Similarly, the personal accomplishment (PA) sub-scale mean scores were improved from baseline to 60th day after shifting of staff nurses from critical to non-critical units.

Therefore, **the null hypothesis** was not supported with regard to findings inferring the staff nurses posted in critical units when shifted to non-critical units have significantly reduced mean scores in emotional exhaustion (EE), and depersonalization (DP) and mean gain in personal accomplishment (PA) subscales of MBI-HSS. Hence, this indicates that the change in the posting to non-critical units for 60 days has helped to reduce the burnout scores in critical unit staff nurses.

Hypothesis 6: H_0 Staff nurses posted in critical units when shifted to non- critical units will not differ in mean scare of heart rate, galvanic skin response (GSR) and skin temperature.

Table 11: Differences in heart rate, GSR and skin temperature scores at baseline and change of posting scores at 60th day of staff nurses posted in critical units
n=50

SPT parameter	Measurement of scores at	Staff nurses posted	Mean	SD	t value	p value
Heart rate (beats/min.)	Baseline at 0th day	Critical Unit	88.32	9.63	3.0	0.003
	Change of posting test at 60th day	Non-critical Unit	84.14	9.53		
GSR (Amp ~ K)	Baseline at 0th day	Critical Unit	917.02	473.38	4.57	≤0.01
	Change of posting test at 60th day	Non-critical Unit	652.94	336.72		
Skin temperature (°F)	Baseline at 0th day	Critical Unit	80.80	5.68	5.45	≤0.01
	Change of posting test at 60th day	Non-critical Unit	83.96	4.99		

df=49

To find the significance changes in mean scores of heart rate, GSR and skin temperature, between mean scores at baseline (critical unit) and change in the posting at 60th day (non-critical unit), paired 't' test value was computed.

There was a significant difference in the mean scores of heart rate, GSR and skin temperature of critical unit staff nurses at baseline and 60th day after change of posting to non-critical unit ($p<0.01$).

Hence, **the null hypothesis** was not supported with regard to findings inferring the staff nurses posted in critical units when shifted to non-critical units have significantly reduced mean scores in heart rate & GSR vales, and mean gain in skin temperature. Therefore, this indicates that the change in the posting to non-critical units for 60 days has helped to reduce heart rate at the lower range, lowers the GSR values and improves the skin temperature at optimal levels in critical unit staff nurses.

Hypothesis 7: H_0 Staff nurses posted in critical units when shifted to non-critical units will not differ in mean scores of quality of life-physical, psychological, social and environmental domain.

Table 12: Differences in QOL-physical domain scores at baseline and change of posting scores at 60th day of staff nurses posted in critical units   n=50

Quality of life Subscales	Measurement of scores at	Staff nurses posted	Mean	SD	t value	p value
Physical health	Baseline at 0th day	Critical Unit	58.57	7.28	7.13	≤0.01
	Change of posting test at 60th day	Non-critical Unit	68.64	7.97		
Psychological health	Baseline at 0th day	Critical Unit	59.00	10.39	4.87	≤0.01
	Change of posting test at 60th day	Non-critical Unit	67.33	10.28		
Social health	Baseline at 0th day	Critical Unit	69.83	15.69	3.8	≤0.01
	Change of posting test at 60th day	Non-critical Unit	78.83	14.98		
Environmental health	Baseline at 0th day	Critical Unit	65.88	11.44	2.0	≤0.01
	Change of posting test at 60th day	Non-critical Unit	71.25	13.06		

df=49

To find the significance changes in mean scores of physical health, psychological health, social health and environmental health domains of QOL at baseline and 60th day after the change of posting to non-critical unit a paired 't' test was computed.

The result shows there was a statistically significance difference in mean scores of physical health, psychological health, social health and environmental health domains of QOL of staff nurses at baseline and at 60th day after shifting to non-critical units.

Staff nurses are assessed at multiple time-point, at baseline, every 15th day during a change in posting from critical unit to non-critical unit and after re-shifting to their original units. After shifting to NCU at 15th, 30th and 60th day, there are elevation in the overall scores of QOL of CUSN. Although there was a slight reduction in the score, but after re-shifting to CU the overall QOL score remained above baseline

Hence, **the null hypothesis** was not supported with regard to findings inferring that there were difference in the mean scores quality of life-physical, psychological, social and environmental domains of critical unit staff nurses at baseline and at 60th day after shifted to non-critical units**.** Therefore, this indicates that the change in the posting to non-critical units for 60 days has helped to improve in physical, psychological, social and environmental domains of quality of life of critical unit staff nurses.

Hypothesis 8: H_0 Staff nurses posted in critical units when shifted to non-critical units will not differ in mean scores of overall quality of life and overall health.

Table 13: Differences in overall quality of life and overall health scores at baseline and change of posting scores at 60th day of staff nurses posted in critical units
                                                                                                                    n=50

Quality of life Subscales	Measurement of scores at	Staff nurses posted	Mean	SD	t value	p value
Overall quality of life	Baseline at 0th day	Critical Unit	3.72	0.64	7.10	≤0.01
	Change of posting test at 60th day	Non-critical Unit	4.26	0.63		
Overall health	Baseline at 0th day	Critical Unit	4.1	0.61	0.68	0.497
	Change of posting test at 60th day	Non-critical Unit	4.2	0.50		

df=49

To find the significance changes in mean scores of overall QOL and overall health at baseline and 60th day after the change of posting to non-critical unit a paired 't' test was computed.

The result shows there was statistically significant difference in mean scores of overall quality of life of staff nurses at baseline and at 60th day after shifted to non-critical units, but not a significant difference in overall health.
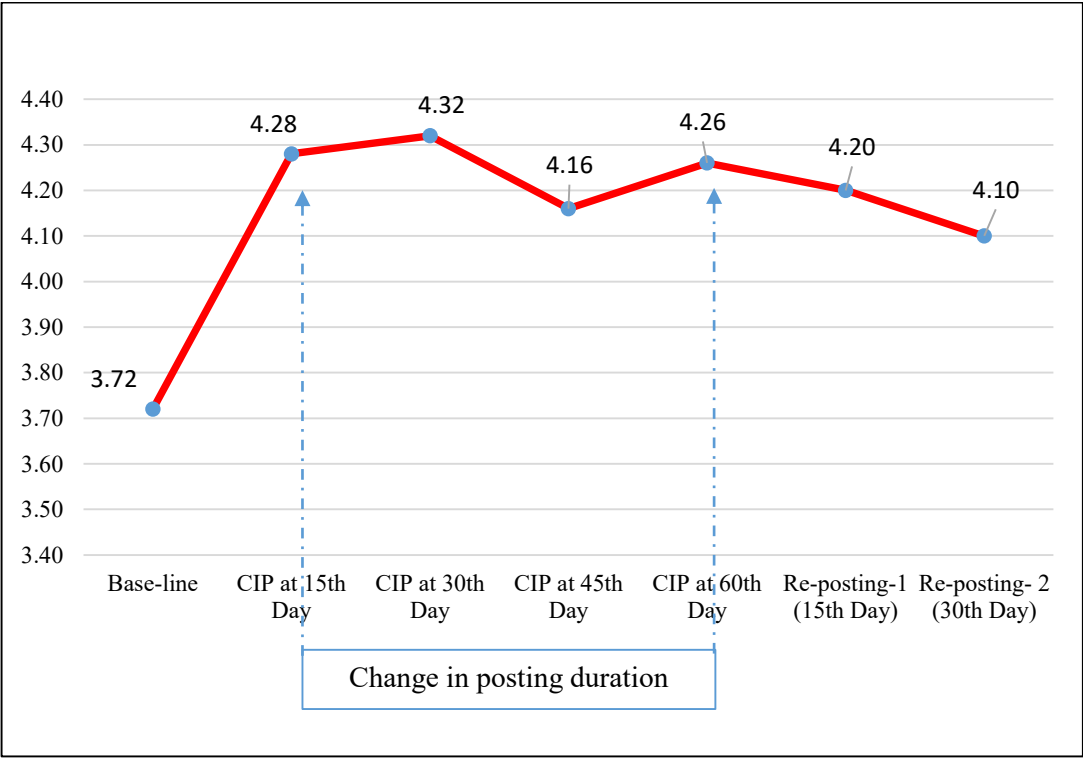
Figure 7: Dynamic changes in overall QOL of critical unit staff nurses

Hence, the null hypothesis was partially not supported with regard to findings inferring that there were difference in the mean scores of overall quality of life of critical unit staff nurses at baseline and at 60th day after shifting to non-critical units, but this change in posting from critical to non-critical unit did not make a difference in the overall health of staff nurses.

Hypothesis 9: H_0 Staff nurses posted in non- critical units when shifted to critical units will not differ mean scores of sub-scales of burnout.

Table 14: Differences in MBI-HSS Subscales scores at baseline and change of posting scores at 60th day of staff nurses posted in non-critical units   n=50

| MBI-HSS Subscales	Measurement of scores at	Staff nurses posted	Mean	SD	t value	p value
Emotional exhaustion (EE)	Baseline at 0th day	Non-critical Unit	16.68	5.88	3.67	≤0.01
	Change of posting test at 60th day	Critical Unit	21.92	8.46		
Depersonalization (DP)	Baseline at 0th day	Non-critical Unit	7.02	3.2	6.3	≤0.01
	Change of posting test at 60th day	Critical Unit	11.76	4.03		
Personal accomplishment (PA)	Baseline at 0th day	Non-critical Unit	38.3	6.3	4.5	≤0.01
	Change of posting test at 60th day	Critical Unit	32.74	9.37		

df=49

To find the significance changes in mean scores of MBI-HSS subscales between scores of staff nurses posted in non-critical units (baseline) and a after change in posting to critical units (at 60th day), paired 't' test was computed.

There was a significant difference in the mean scores of MBI-HSS subscales (EE, DP & PA) of non-critical unit staff nurses at baseline and 60th day after change of posting to critical unit. The result shows emotional exhaustion (EE), and depersonalization (DP) mean scores of staff nurses posted in non-critical units were significantly reduced at 60th day after change in posting to critical unit.

Staff nurses are assessed for burnout score at different time point, at baseline, every 15th day during a change in posting from NCU to CU and after re-shifting to their original unit. Graphical presentation of data presents in figure-8 shows that a gradual increase in the burnout scores (MBI-HSS) during change in posting.

After re-shifting of SN to their original units (NCU), there is a decline in mean scores of EE, and DP and raise in PA score, surprisingly these changes are better than baseline scores except in EE score. Furthermore, at 30th day after re-shifting to SN to NCU, the mean score of EE became almost equal to baseline, DP became below baseline scores and PA score increase more than baseline (Table 15).

Similarly, the personal accomplishment (PA) sub-scale mean scores were improved from baseline to 60th day after shifting of staff nurses from non-critical to critical units.
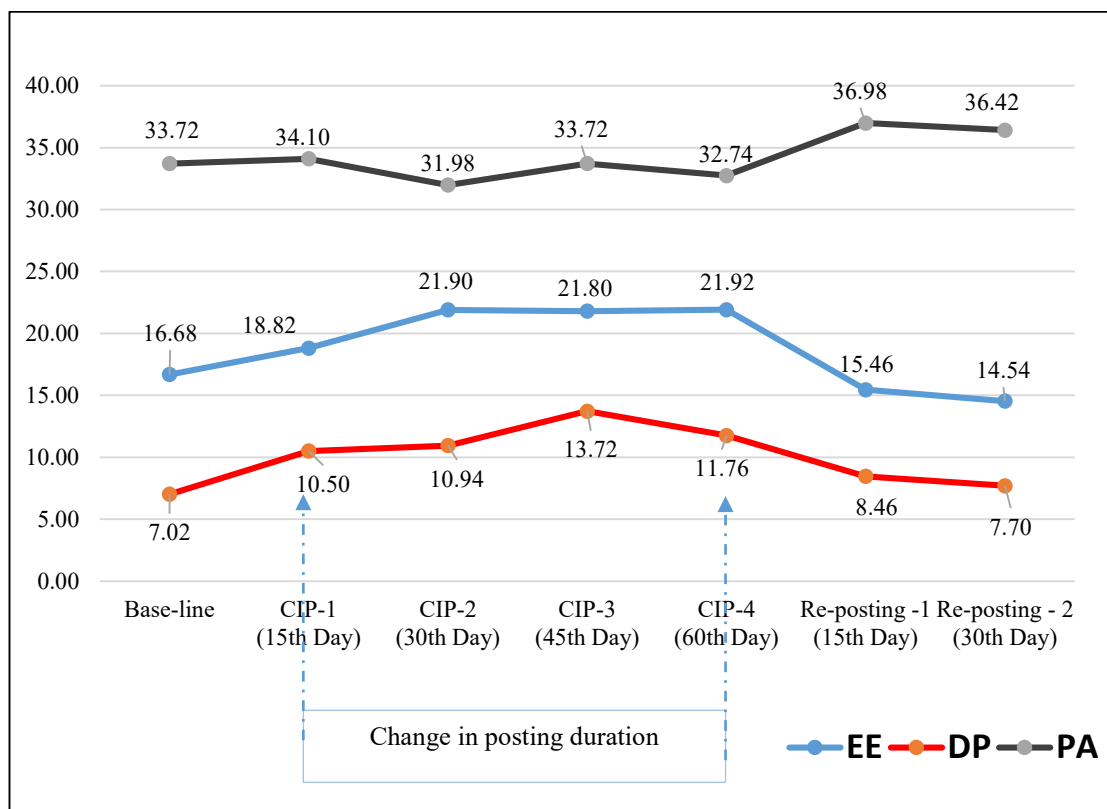
CIP=Change in posting; EE=Emotional exhaustion; DP Depersonalisation; PA Personal Accomplishment

Figure 8: Dynamic changes in MBI-HSS subscale of burnout of non-critical unit staff nurses

Therefore, **the null hypothesis** was not supported with regard to findings inferring that the staff nurses posted in non-critical units when shifted to critical units have significantly gain in mean scores in emotional exhaustion (EE), and depersonalization (DP) and a mean reduction in personal accomplishment (PA) subscales of MBI-HSS. Hence, this indicates that the change in the posting to critical units for 60 days has increased the MBI-HSS burnout scores in non-critical unit staff nurses.

Hypothesis 10: H_0 Staff nurses posted in non- critical units when shifted to critical units will not differ in mean scores of heart rate, galvanic skin response (GSR) and skin temperature.

Table 15: Heart rate, GSR, and skin temperature scores at baseline and change of posting scores at 60th day of staff nurses posted in non-critical units.   n=50

SPT parameter	Measurement of scores at	Staff nurses posted	Mean	SD	t value	p value
Heart rate (beats/min.)	Baseline at 0th day	Non-critical Unit	83.56	5.82	2.3	0.024
	Change of posting test at 60th day	Critical Unit	87.74	11.57		
GSR (Amp ~ K)	Baseline at 0th day	Non-critical Unit	687.80	270.09	6.14	≤0.01
	Change of posting test at 60th day	Critical Unit	1022.20	461.45		
Skin temperature (°F)	Baseline at 0th day	Non-critical Unit	83.88	5.34	4.29	≤0.01
	Change of posting test at 60th day	Critical Unit	79.42	6.25		

df=49

To find the significance changes in mean scores of heart rate, GSR and skin temperature, between mean scores at baseline (non-critical unit) and change in the posting at 60th day (critical unit), paired 't' test value was computed.

There was a significant difference in the mean scores of heart rate, GSR and skin temperature of non-critical unit staff nurses at baseline and 60th day after change of posting to critical unit (p<0.01).

Hence, **the null hypothesis** was not supported with regard to findings inferring that the staff nurses posted in non-critical units when shifted to critical units have significantly gained in mean scores of heart rate & GSR vales, and a mean reduction in skin temperature. Therefore, this indicates that the change in the posting to critical units for 60 days has increased heart rate at the upper range, increased the GSR values and declines the skin temperature at in non-critical unit staff nurses.

Hypothesis 11: H_0 Staff nurses posted in non- critical units when shifted to critical units will not differ in mean score of quality of life - physical, psychological, social and environmental domain.

Table 16: Differences in domain wise Quality of Life scores at baseline and change of posting scores at 60th day of staff nurses posted in non-critical units.

n=50

Quality of life- domain	Measurement of scores at	Staff nurses posted	Mean	SD	t value	p value
Physical health	Baseline at 0th day	Non-critical Unit	70.51	8.59	6.20	≤0.01
	Change of posting test at 60th day	Critical Unit	60.0	9.48		
Psychological health	Baseline at 0th day	Non-critical Unit	70.50	8.59	4.17	≤0.01
	Change of posting test at 60th day	Critical Unit	60.00	9.48		
Social health	Baseline at 0th day	Non-critical Unit	77.0	12.9	3.49	≤0.01
	Change of posting test at 60th day	Critical Unit	70.34	12.3		
Environmental health	Baseline at 0th day	Non-critical Unit	70.50	8.51	2.35	0.02
	Change of posting test at 60th day	Critical Unit	65.81	15.27		

df=49

To find the significance changes in mean scores of physical health, psychological health, social health and environmental health domains of QOL at baseline (non-critical unit) and 60th day after change of posting to critical unit, a paired 't' test was computed.

The mean scores of physical health, psychological health, social health and environmental health domains of QOL of non-critical unit staff nurses at baseline and 60th day after shifting to non-critical units were found significantly different ($p<0.05$) (Table 16).

Staff nurses are assessed at multiple time-point, at baseline, every 15th day during a change in posting from non-critical unit to critical unit and after re-shifting to their original units. After a change in posting to CU at 15th, 30th day overall QOL scores declined and then at 45th and 60th day stared raising in scores. After re-shifting to their original units, the mean score at 15th day is almost equal to their baseline scores and at 30th day more than baseline mean scores (Table 16 and Figure 9).
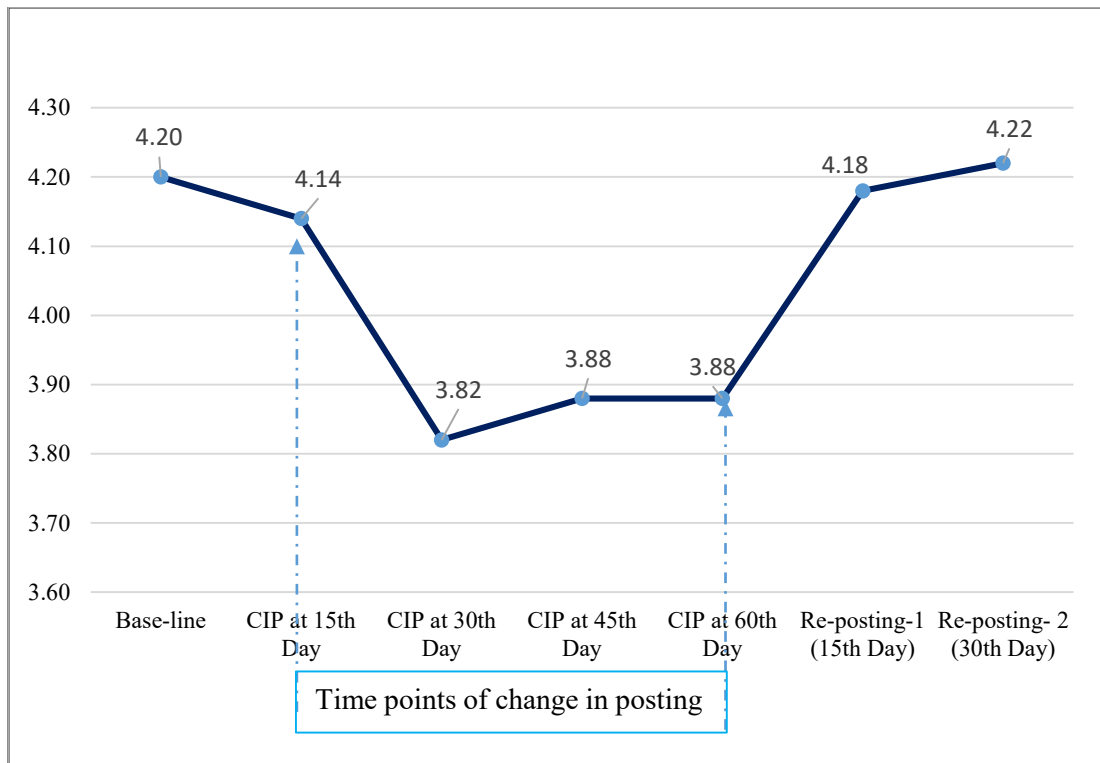
Figure 9: Dynamic changes in overall QOL of non-critical unit staff nurses

Hence, **the null hypothesis** was not supported with regard to findings inferring there were difference in the mean scores quality of life-physical, psychological, social and environmental domains of non-critical unit staff nurses at baseline and at 60th day after shifted to critical units. Therefore, this indicates that the change in the posting to critical units for 60 days has reduced in physical, psychological, social and environmental domains of quality of life of non-critical unit staff nurses.

Hypothesis 12: H_0 Staff nurses posted in non- critical units when shifted to critical units will not differ in mean score of overall quality of life and overall health.

Table 17: Overall quality of life and overall health scores at baseline and change of posting scores at 60th day of staff nurses posted in non-critical units

n=50

Quality of life Subscales	Measurement of scores at	Staff nurses posted	Mean	SD	t value	p value
Overall quality of life	Baseline at 0th day	Non-critical Unit	4.20	0.63	2.85	≤0.01
	Change of posting test at 60th day	Critical Unit	4.14	0.53		
Overall health	Baseline at 0th day	Non-critical Unit	4.06	0.54	1.29	0.22
	Change of posting test at 60th day	Critical Unit	3.96	0.44		

df=49

To find the significance changes in mean scores of overall QOL and overall health of non-critical unit staff nurses at baseline and 60th day after change of posting to critical unit, a paired 't' test was computed.

The mean scores of overall quality of life of non-critical unit staff nurses at baseline and 60th day after shifting to non-critical units were found significant differences ($p<0.05$), while overall health scores did not find significantly different.

Hence, the null hypothesis was partially rejected and it was inferred that there were difference in the mean scores of overall quality of life of non-critical unit staff nurses at baseline and at 60th day after shifted to critical units, but this change in posting from non-critical to critical unit did not make a difference in the overall health of staff nurses.