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RESEARCH ARTICLE

The Hunt and Hess Scale: Review

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ABSTRACT:
Sudden bleeding into the subarachnoid space is known as subarachnoid hemorrhage. The majorities of aneurysms are asymptomatic, and do not burst, but when they gradually grow unpredictably increase the risk of rupture and starts bleeding internally into subarachnoid space which is dangerous. Aneurysms can happen to anyone at any age. Proper diagnosis at right time can prevent rupture and serious complication due to SAH which may alter level of consciousness and other physiological functions in body. The assessment, Monitoring, Treatment and their outcome prediction is complex and challenging for nurses. The Hunt and Hess scale is useful for identifying severity of SAH and predictor of patient outcome.

KEYWORDS: SAH, Hunt and Hess Scale, Aneurysms.

INTRODUCTION:
Among neurological emergencies, SAH is a severely distressing cerebrovascular disease with complex causes that endangers brain perfusion and function and has a higher morbidity and fatality rate.[1]

SAH is defined as "non-traumatic bleeding into the subarachnoid area, the region between the arachnoid and the piamater of the central nervous system, showing prompt growing symptoms of neurological sequelae.[2]

With a median case-fatality of 27–44%, headaches brought on by subarachnoid hemorrhages (SAH) from burst aneurysms are among the deadliest.[3]

It is one of the most serious cerebrovascular diseases that threatens brain perfusion and function and has higher rates of morbidity and mortality. It is one of the neurological crises. It still has a mortality rate that ranges from 8.3% to 66.7%.

Subarachnoid hemorrhage (SAH), which affects 16,000 to 17,000 persons annually in the US, which is by a ruptured intracranial aneurysm (IA).

According to population-based research, it is associated with substantial morbidity and mortality; estimates reveal that 40% to 44% of individuals affected die within 30 days of their initiation.[4]

According to past studies smoking is the main cause of SAH, Additional risk factors for SAH include estrogen deficiency, alcohol use, and hypertension. SAH patients are more likely to have family history of having the illness, which indicates a heritable component.[5]

The Hunt and Hess scale which was developed in 1968 is one of the grading systems used to classify the severity of a subarachnoid hemorrhage based on the patient's clinical condition. It is used to forecast the patient's prognosis or result, with a higher grade indicating a worse survival rate. The scale bears the names of two doctors: Dr. Robert McDonald Hess and Dr. William E. Hunt.[6]

Table No.1: The Hunt and Hess Scale

Description	Grade
Asymptomatic, mild headache, slight nuchal rigidity	1
Moderate to severe headache, nuchal rigidity, no neurologic 2 deficit other than cranial nerve palsy	2
Drowsiness / confusion, mild focal neurologic deficit	3
Stupor, moderate-severe hemiparesis	4
Coma, decerebrate posturing	5

CONCLUSION:

Subarachnoid hemorrhage (SAH) is a life threatening condition. Early detection and prompt treatment of aneurysms can prevent further complications. The management of patient with subarachnoid hemorrhage (SAH) is challenging one as internal bleeding into subarachnoid space can lead for serious complications and sudden death. The hunt and Hess scale is useful in clinical practice to detect the severity of a subarachnoid hemorrhage based on the patient's clinical condition and management of patients accordingly.

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REVIEW ARTICLE

Modified Early Warning Score (MEWS): Review

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ABSTRACT

The patients who are critically sick are those recovering from potentially fatal injuries or other serious medical illness. These patients require intensive care medicine for essential life support, Techniques of intrusive monitoring and care at the end of life. The physicians are often called as intensivist. The nurses who are working in this area are called critical care nurses. The nurses are continuously engaged in managing the critically sick or unsteady patients due to severe injuries, fatal diseases. Hence the assessment, Monitoring, Treatment & their outcome prediction is complex and challenging for ICU nurses. Early Warning Score (Modified) (MEWS) is a system of grading which can use in surgical and medical ICU to detect early deterioration of patients and initiation of prompt action. This article reviews Modified Early Warning Score (MEWS) system of scoring; it's possible use in clinical settings.

Keywords-- Critically ill, ICU, Clinical deterioration, MEWS

INTRODUCTION

Patients' catastrophic deterioration in hospitals is typically preceded by recorded physiological parameter degradation. Patients are at risk of cardiopulmonary failure if hospital team fails to identification and initiation of prompt action on early impairment of respiration ability or brain activities and increased levels of treatment protocols [1].

The Modified Early Warning Score is a basic physiological grading system that can be used in hospitals to assess the patients who are critically sick and on the verge of clinical deterioration. This scoring system based on crucial indicators (rate of respiration, Saturation of oxygen, temperature, BP (blood pressure), heartbeats, AVPU response: alert, voice responsive, pain responsive, and unresponsive) [2].

The first EWS was created by a team of experts at Norfolk's James Paget University Hospital, United Kingdom, and is presented at the Intensive Care Society's annual meeting on May 1997 [3]. The Modified Early Warning Score (MEWS) was proposed as a way to alert healthcare professionals regarding the possibility of major adverse outcomes, such as unnecessary escalation of care. The results of these measurements are scored and ranked, and when specified threshold scores are exceeded, the prompt clinical intervention should be initiated immediately [4].

Table 1: Modified Early Warning Score System (MEWS)

Parameters/ Gradings	3	2	1	0	1	2	3
Systolic BP (mmHg)	<70	71-80	81-100	101-199		>200	
Heartbeat (bpm)		<40	41-50	51-100	101-110	111-129	>130
Rate of Respiration		<9		9-14	15-20	21-29	>30

O$_2$ Saturation Rate	<90						
Temperature		≤ 35	35.1–36	36.1–38	38.1–38.5	≥ 38.6	
AVPU response				Alert +3 to 0	voice responsive -1 to -3	pain responsive -4	Unresponsive -5

The sum of the scores for blood pressure, Heartbeat, respiration rate, body temperature, consciousness, and any worry about a patient's health was calculated. In grading system each score is given in between 0-3. A higher score suggests that the problem is more serious. The volume of urine per hour is also considered in MEWS which is modified by Garner-Thasorpe et al [5].

What are the purposes of assessing MEWS?

- Know the health condition of critically ill patient & prognosis of treatment.
- Identify any early deterioration & initiation of prompt treatment.
- In most of cases the early indicators of clinical instability usually precede the majority of adverse occurrences.
- The "vital indicators" could help to identify early deterioration of patients [6].

Table 2: MEWS Guided Actions for Nursing Practitioners

MEWS Score	Usual level of care	Notify			Care to be taken
		Charge RN	Primary responder	Emergency Response Team (ERT)	
1	--	--	--	--	--
2	--	--	--	--	--
3	--	--	--	--	Continue more clinical assessment & Observation.
4	--	--	--	Advised	Continue more clinical assessment & Observation.
5	--	--	--	Recommend	Continue more clinical assessment & Observation.
6	--	--	--	Recommend	Continue more clinical assessment & Observation.
≥7	--	--	--	Recommend	Continue more clinical assessment & Observation.

CONCLUSION

The clinical assessment, Monitoring, Treatment are important while managing critically ill patients. The nurses working in ICU's should have the skills of monitoring critically ill patients effectively. The early warning signs of clinical instability and deterioration can be identified and prompt action can be initiated. Modified Early Warning Score (MEWS) is helpful, can be used in and medical surgical ICU to detect early deterioration of patients which enables the nurses to identify the high-risk patients in life threatening conditions.

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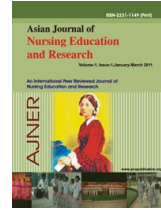
REVIEW ARTICLE

Stress, Burnout and Coping Strategies among Frontline Health Workers during Covid-19 Pandemic: Review

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ABSTRACT:
The doctors, Nurses and other health care providers are at frontline in this covid-19 pandemic, are exposed to tremendous occupational stressors that render them liable for occupational burnout due to workload, Lack of medical professionals and infrastructure. The COVID-19 pandemic had a massive impact on healthcare systems and health care workers across the globe leading to increasing the risks of psychological distress in health care professionals. Several occupational risk factors are challenging to healthcare workers who are at high risk of mental health outcomes, including Burnout Syndrome. Several studies are conducted to detect level of stress, fear, burnout experiencing by frontline health workers which shows the frontline health workers are under stress, fear. This article reviews the possible causes for burnout and strategies to cope up during covid-19 pandemic among frontline health workers.

KEYWORDS: Covid-19, Stress, Burnout, Coping Strategies, Frontline health workers.

INTRODUCTION:
On 7th January 2020, a novel coronavirus, originally abbreviated as 2019-nCoV by WHO, was identified from the throat swab sample of a patient.[1]

The present novel CoV disease also called as severe acute respiratory syndrome (SARS)-CoV-2 and coronavirus disease 2019 (COVID-19) is an emerging global health threat.[2]

Globally, as of 11:52am CEST, 20 July 2021, there have been 190,770,507 confirmed cases of COVID-19, including 4,095,924 deaths, reported to WHO.[3] India is the second country hit by Covid-19 pandemic, total cases reported in India are 3.13 Core and 4.18 Lac deaths as of 22 July 2021.[4]

Being overload at work and constantly exposed to emotional stressors for a long period of time may lead to mental collapse which known as occupational burnout. Burnout doesn't occur in a day, it's a buildup of emotions as feeling exhausted, helplessness, on the edge, losing motivation that drift you away from goal.[5,6]

Previous studies of COVID-19 pandemics have revealed that the psychological effects of infectious disease outbreaks can last long after the event, negatively impacting psychological well-being[7]

The systematic reviews on the mental health impact due to COVID-19 reported that the estimated prevalence of insomnia among the healthcare workers is 38-9%.[8] 27.4–71.5% suffered stress, the prevalence of anxiety and depression are from 23.04 to 44.6% and 8–50.4% respectively.[9] Another similar study was conducted in India to check out level of burnout, the results revealed that the prevalence of personal burnout was 44.6% (903), work-related burn-out was 26.9% (544), while greater than half of the respondents (1,069, 52.8%) had

pandemic-related burnout. Younger respondents (21–30 years) had higher personal and work-related burnout.[10]

Stress:
The word 'stress' has, of late become a fad in health and allied circles. stress can be a result of both positive and negative experiences, These include some serious issues such as financial investments, health concerns of elderly, lack of intimacy between spouses, etc. Another source of stress includes 'work- related stressors.' This source of stress encompasses all the social and environmental conditions at the work place, such as noise, co-worker relationships, salaries, job satisfaction, job security, etc.

Vulnerability:
Mental health problems affect society as a whole, and not just a small, isolated segment. No group of people is immune to mental disorders; least of all, frontline healthcare workers. These frontline healthcare workers with prior susceptibilities are more vulnerable to the double stigma of mental illness as well as the stigma due to COVID-19. For all individuals, mental, physical and social health is closely interwoven vital strands of life.

Burnout:
The commonest disabling mental health issue experienced by personnel in the front-line of any pandemic is "burnout". Described classically as a triad of emotional exhaustion, depersonalization (loss of one's empathy, caring, and compassion), and a decreased sense of accomplishment. These may exist in varying degree or one symptom can predominate. Burnout can have a significant impact on competence and can impact health care delivery. This would lead them to some or all of the following results:
1. Take undue leave of absence and not perform their duties
2. Abscond from work.
3. Become unscrupulous with work and cut corners at every step.
4. Make medical errors
5. Loose loving relationships with friends, family and neighborhoods permanently
6. Become terrible co-workers or bosses
7. Disbalance the ecosystem of the team working in the crisis situation

Stigma:
Personnel working in hospitals in times of pandemic often experience stigmatizing attitudes from the general public Most may experience hurtful social distancing at their place of residence, local groceries or place of worship. Friends and relatives may show reluctance to interact with them. There have been instances of landlords denying residential accommodation to healthcare workers.

Coping:
The responses to stressors are multidimensional that include behavioural, sensations, emotional, cognitive, biological and interpersonal responses. Folkman and Lazarus (1980) define coping as `the cognitive and behavioral efforts made to master, tolerate, or reduce external and internal demands and conflicts among them'.

Generally, there are two kinds of coping strategies used by frontline healthcare workers.
1. Problem-focused coping: These efforts are when a frontline healthcare worker attempts to change the person–environment realities behind the stress. e.g. wearing appropriate Personal Protective Equipment while working in high risk environments.
2. Emotion-focused coping: These can also relate to internal elements and try to reduce a negative emotional state, or change the appraisal of the demanding situation.

Resilience:
Resilience has been broadly defined as a dynamic process where in individuals display positive adaptation despite experiences of significant adversity or trauma. Resilience is often conceptualized as existing along a continuum with vulnerability and implies a resistance to mental illness. Resilience is seen as more than simple recovery from insult, rather it can be defined as positive growth or adaptation following periods of disruption. Resilience is the ability to bounce back after experiencing trauma or stress, to adapt to changing circumstances and respond positively to difficult situations. It is the ability to learn and grow through the positive and the negative experiences of life, turning potentially traumatic experiences into constructive ones. Being resilient involves engaging with friends and family for support, and using coping strategies and problem-solving skills effectively to work through difficulties. Being resilient means being able to overcome challenges and setbacks and help promote social and emotional wellbeing.

How does stress affect frontline health care workers?
As health care service providers, it is imperative that the frontline workers remain empathetic towards the suffering of their patients as well as stay focused on task at hand. In the context of COVID-19 it is possible that a front line Health care worker would feel anxious about having contracted the virus and the possibility of him/her infecting his/her family and loved ones as well. Independent of the current context, continuous exposure to critical work setting can instigate anxiety. This increase in anxiety may, in turn, lead to the worker finding it difficult to sleep. This is often accompanied by a deep sense of emotional exhaustion.
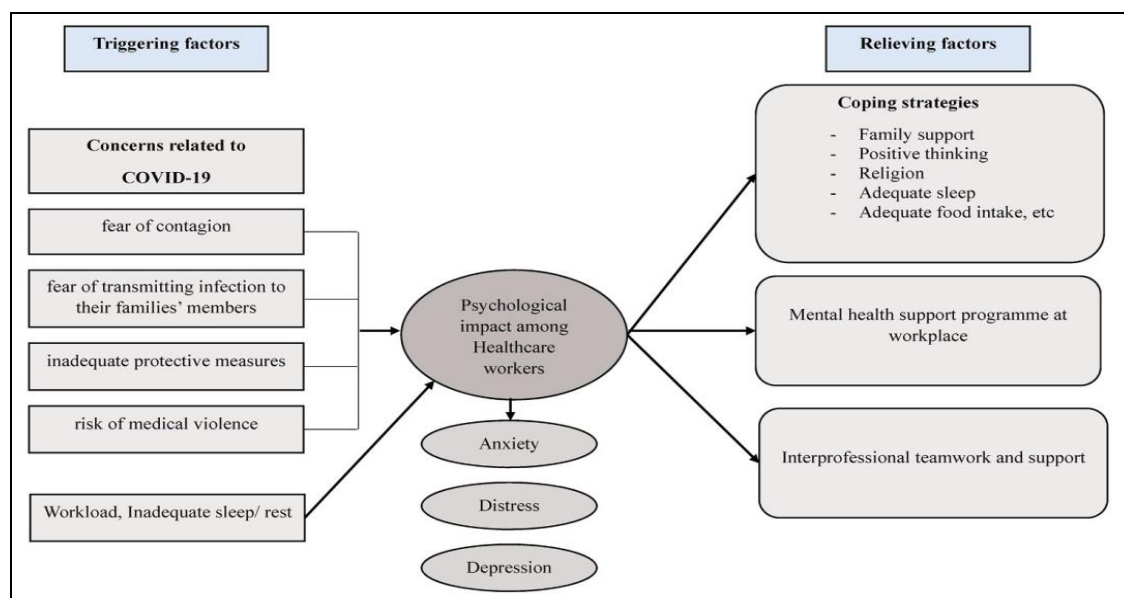
Fig. 1: Triggering and relieving factors for psychological impact among healthcare workers during COVID-19 pandemic

Generic interventions:
It can be safely assumed that all frontline health care workers have been affected adversely during the COVID-19 pandemic outbreak. The mental health of all the workers need to be kept at optimal levels in order to continue to effectively disperse their duties and responsibilities.

The following are interventions that need to be provided to all the frontline healthcare workers.

At Individual Level:
• Breathing Exercises
• Mindfulness Meditation
• Progressive muscle relaxation
• Loving Kindness Meditation
• Some tips for self-care

At the familial level:
• Taking care of Children
• Taking care of Elderly
• Quality Time with loved ones
• Nurturing Marital Relationships
• At the broader societal level:
• Dealing with stigma
• Mental health practices in the workplace.[11]

CONCLUSION:
The health workers are at frontline in this covid-19 pandemic battle. They are under tremendous pressure due to continuous duties, quarantine, lack of medical and infrastructure leading them to experience extreme stress and eventually burnout syndrome. It is essential to empower themselves to deal with stress by using certain coping strategies.

CONFLICT OF INTEREST:
Nil.

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Study to Assess the Effectiveness of Structured Teaching programme on Knowledge regarding four score (full outline of unresponsiveness) coma scale among Staff Nurses working in Intensive care units in selected Hospitals

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ABSTRACT:
A study was conducted to assess the effectiveness of structured teaching programmer on knowledge regarding four score (full outline of unresponsiveness) coma scale among staff nurses working in intensive care units in selected hospitals. The study was conducted at selected at selected hospitals Miraj, among staff nurses working in ICUs. Who were selected by using purposive sampling technique? The study results of assessment of knowledge categorized in three parameters i.e. good knowledge, average knowledge and poor knowledge. Majority 47(94%) of samples had average knowledge score, while 3(6%) of them had poor knowledge score and none 0 (0%) of them had good knowledge score regarding FOUR score coma scale.

KEYWORDS: Knowledge, Effectiveness of STP, GCS, FOUR score coma scale, Staff Nurses, ICUs.

INTRODUCTION:
Unconscious a condition of being unaware of one's surroundings, as in sleep, or of being unresponsive to stimulation as a result of hypoxia, resulting from respiratory insufficiency or shock; from metabolic or chemical brain depressants, such as drugs, poisons, ketones, or electrolyte, imbalance; or from a form of pathologic condition, such as trauma, seizures, cerebral vascular accident or brain tumor or infection.[1]

Following severe brain damage and coma, some patients may awaken (i.e., open the eyes) but remain unresponsive (i.e., only showing reflex movements). This clinical syndrome is called vegetative/unresponsive state.

Neurological assessment of comatose patients and their outcome prediction is complex due to the difficulty of capturing distinct details of the clinical examination.[2]

TITLE OF THE STUDY:
"Study to assess the effectiveness of structured teaching programme on knowledge regarding FOUR score (full outline of unresponsiveness) coma scale among staff nurses working in intensive care units in selected hospitals."

OBJECTIVES:
1. To assess the existing level of knowledge regarding FOUR score coma scale among staff nurses working ICU'S of selected hospitals.
2. To assess the effectiveness of structured teaching programme on knowledge regarding FOUR score coma scale among staff nurses working ICU'S of selected hospitals.
3. To find the association between pretest knowledge regarding FOUR score coma scale with selected

socio demographic variables among staff nurses working ICU'S of selected hospitals.

NEED FOR THE STUDY:

Government of India Ministry of Road Transport and highways (Transport Research Wing) had published recent information regarding number of accidents and number of traumatic injuries and deaths (2016). In India 2016: Accidents- 4,80,652, Deaths- 1,50,785, Person Injured- 4,94,624. In every day: 1,317 Accidents take place and 413 Persons killed on Indian Roads.In hour: 55 Accidents take place and 17 Persons killed on Indian Roads.[3]

The GCS initially intended to assess the level of consciousness after head injury in neurosurgical intensive care units. Over the years, considerable limitations have been identified for this scale: the inconsistent inter-observer reliability, the impossibility to test the verbal component in intubated patients, the exclusion of the brainstem reflexes, the incapacity to detect subtle changes in neurological examination, and the lack of correlation between outcome and GCS scores. Wijdicks et al. recently presented a new coma scale named the Full Outline of Unresponsiveness as an alternative to GCS at the mayo clinic in Rochester, in the year 2005. The literature review shows that FOUR score coma scale is most reliable than GCS. The investigator felt to explore the knowledge of nurses and improve knowledge about new FOUR score coma scale as there were no studies conducted till now.[4]

HYPOTHESIS:

H0: There will be no significant difference between pre and post-test knowledge score regarding FOUR score coma scale among staff nurses working in ICU's of selected hospitals

H1: There will be significant difference between pre and post-test knowledge score regarding FOUR score among ICU staff nurses in selected hospitals.

H2: There will be significant association between pretest knowledge scores with selected demographic variables among ICU staff nurses in selected hospitals

METHEDOLOGY:

Evaluative approach was adopted to assess the knowledge and determine the effectiveness of structured teaching program on knowledge regarding FOUR score coma scale among staff nurses working in ICUs. Ethical clearance was obtained from institution. Formal administrative permission was obtained from Aditya super specialty hospital sangli and Wanless hospital miraj. A total 50 ICU staff nurses were selected through purposive sampling technique. The data was gathered in pre test through questionnaires, after that STP was administered and again post test was conducted by same questionnaires and scores are recorded. The collected data was analyzed by using descriptive and inferential statistics.

RESULTS:

Section I: Demographic data of ICU staff nurses:

According to gender majority of subjects 38(76%) were females, minimum 12(24%) were males, According to professional qualification majority of the subjects 22(44%) were RGNM, minimum 11(22%) were B.B.Sc.(N) and remaining 17(34%) were P.B. BSc. (N), According to years of experience majority of the subjects 19(38%) had 1-5 years of experience, minimum 9(18%) subjects had 6-10 years and >10 years of experience respectively and remaining 13 (26) subjects had < 1 year of experience.

Table 1: Distribution of subjects with regards to demographic variables in terms of frequency and percentage   n= 50

Demographic Variable	F	%
Gender		
Male	12	24
Female	38	76
Professional Qualification		
RGNM	22	44
Post Basic B.Sc. Nursing	17	34
Basic B.Sc. Nursing	11	22
Years of Experience		
Below 1 year	13	26
1-5 years	19	38
6-10 years	9	18
>10 years	9	18

Section II: Assessment of existing level of knowledge

Table No 2: Existing level of knowledge of staff nurses on FOUR score coma scale   n=50

Level of Knowledge	Pretest	
	F	%
Poor (Score 0-10)	3	6%
Average (Score 11-20)	47	94%
Good (Score >20)	0	0%

Table No 2 revealed that in pretest, majority of subjects 47 (94%) had average knowledge score, 3 (6%) of them had poor knowledge score and none of them 0 (0%) had good knowledge score regarding FOUR score coma scale.

Section III: Paired t-test for evaluating effectiveness of structured teaching on section wise knowledge of staff nurses.

Table No 3: Paired t-test n=50

Section	Admin	Mean	SD	t	d.f	P-value
Anatomy of brain	Pretest	2.4	0.9		49	
	Posttest	3.8	0.7	16.3	49	0.000
Neurological examination	Pretest	5.4	1.6		49	
	Posttest	7.9	1.1	11.7	49	0.000
Assessment and interpretation of FOUR score coma scale	Pretest	6.2	1.9		49	
	Posttest	14.1	2.9	18.9	49	0.000

SECTION IV: Association between pretest knowledge score and selected demographic variables.

Table no. 4: Chi-square test for association between pretest knowledge score and selected demographic variables

Demographic Variables		Pretest Knowledge			Chi-square value X^2	df	p	Significance
		Poor	Average	Good				
Gender	Male	0	12	0				
	Female	7	31	0	17.1	12	0.14	Not significant
Professional qualification	RGNM	5	17	0				
	Post Basic B.Sc. Nursing	1	16	0	25.5	36	0.35	Not significant
	Basic B.Sc. Nursing	1	10	0				
Years of experience	Below 1 year	3	10	0				
	1-5 years	0	19	0	38.6	24	0.37	Not significant
	6-10 years	1	8	0				
	>10 years	3	6	0				

Table no. 3. Reveals that t-Values for this comparison were 16.3, 11.7 and 18.9 with 49 df and p value for this comparison were 0.000 respectively, which was less than 0.05. Structured teaching programme proved significantly effective in improving the knowledge of staff nurses regarding FOUR score coma scale.

Table no. 4. Reveals that x^2 value corresponding to all the demographic variables were larger (>0.05), there is no evidence against null hypothesis. None of the demographic variables were found to have significant association with pretest knowledge of staff nurses regarding FOUR score coma scale.

RECOMMENDATIONS:
1. A study can be conducted to assess knowledge and practice regarding FOUR score coma scale among staff nurses working in ICU.
2. Comparative study can be conducted between ICU Nurses and ward nurses regarding knowledge of FOUR score coma scale.
3. A similar study can be conducted to assess the knowledge regarding FOURscore coma scale on larger sample.

CONCLUSION:
The study concludes that research hypothesis **(H₁)** was accepted as structured teaching programme is proved to be significantly effective in improving the knowledge of staff nurses regarding FOUR score coma scale.

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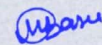# Certificate of Excellence in Reviewing

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