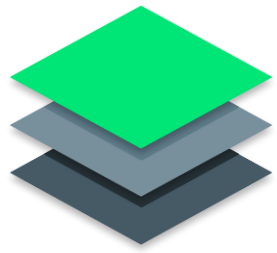




**EFFECT OF TRAINING ON MODIFIED EARLY WARNING
SCORE(MEWS) TO IN-HOUSE DOCTORS AT FORTIS
HOSPITAL, BENGALURU**

**Under Guidance of
Dr. JP Singh and Dr. Sunay Mahesh**



MEWS- Modified Early Warning Score

Also known as “Bedside score and track-and-trigger systems”

Nurses score, observations of vital signs and calculate a total score to facilitate early recognition of a patient’s deterioration.

BACKGROUND ON MEWS

- In 1997 Morgan, Williams and Wright from United kingdom were the first to develop and publish the Early Warning Score (EWS).
- The Early Warning Score is all “about “five physiological /vital parameters i.e. Heart rate, Systolic blood pressure, Respiratory rate, Temperature and Conscious level.

Each parameter had a range of cut points (score) with corresponding colour-banded trigger points.

example: a respiration rate cut point range of 25/ min is indicated as alerting point of 2 indicating the need for escalation of intervention.

- In 2006 a further EWS system has been modified and standardised, to the original EWS five physiological parameters system, arterial oxygen saturation(SpO₂) was added in the observational chart.
- In 2007 to trigger-tracker system urine as output was added to track the risk prone patients in ward.
- In 2008 UK different hospitals incorporated urine output, pallor, sweating, looking unwell in the early warning scoring chart but not scored as Clinical sign of deterioration

PARAMETER	INFORM	3	2	1	0	1	2	3	INFORM
RESPIRATORY RATE	<5	05-08	11-14		16 - 20		21 - 30	31 - 35	>35
SYSTOLIC BLOOD PRESSURE	<70	70 - 79	80 - 89	90 - 99	100 - 150	160 - 170	>180		
HEART RATE	<40	40 - 49			50 - 100	101 - 110	111 - 130	131 - 140	>140
6 HOUR URINE OUTPUT		<80	80 - 120	*	>120			,	
CONSCIOUSNESS	UNRESPONSIVE	PAIN	AGITATION /	VOICE	ALERT	.			
			CONFUSION						
			(New Onset)						
SPO2					94%	90 - 93%	85 - 89%	84% or less	
TEMPERATURE		95 For less	96F - 97F	99F - 99F	98.6F	100F - 101F	102 For more		

TOTAL EWS SCORE	ACTION TAKEN	ACTION CODE
0	Repeat MEWS at least 8 hourly intervals.	A
1 to 3	Increase MEWS to 6 hourly and inform nurse in charge.	Green Flag
3 in any one parameter	-	B
		C
	Inform RMO, Increase MEWS to 2 hourly.	D
	Inform ICU Registrar - D / W Primary Consultant. Inform concerned ICU doctor & Primary Consultant	Orange Flag
		E)
7 and above	Inform ICU doctor & Primary Consultant, Immediate call to RMO, Monitor patient every 30 mins, Consider transfer to ICU	F 1 Red Flag

RATIONALE

In this study code blue MEWS analysis was consider where non-compliance among doctors was increased and also increase in ICU returns and transfers and code blue. Generally it's a responsibility of nursing staff to calculate MEW Scores but at Fortis Hospital, Bengaluru according to new regulations this responsibility have been assigned to residents and registrar doctors to calculate MEWS to all vulnerable in-patients and hence study was taken.

RESEARCH QUESTIONS

What is the knowledge level on MEW Score calculation among in-house doctors?

What is effect of training on MEW Score calculation among in-house doctors?

HYPOTHESIS

H_0 : There is no effect after the training on MEW Score calculation among in-house doctors?

H_1 : There is an effect after the training on MEW Score calculation among in-house doctors?

OBJECTIVES OF STUDY

The objective of the study was to:

- Assess the knowledge of In-house doctors on MEW Score calculation.
- Observe the effect of training on MEW Score calculation of In- house doctors.

RESEARCH METHODOLOGY

- **Study Design:** Operational research study(analytical study) design with the help of structured case scenarios.
- **Study Area:** At Fortis Hospital – Bannerghata, Bengaluru.
- **Duration of Study:** March to May 2018.
- **Sample Size:** 97
- **Sampling Technique:** Purposive sampling.
- **Sample Collection:**
Inclusion Criteria: All the Resident Medical officer (MBBS), DNB and MD –1st year Registrar.
Exclusion Criteria: DNB and MD- 2nd, 3rd year Registrar and consultants.
- **Data collection:**A set of well defined-structured schedule with close-ended questions was developed. The schedule was focused on Healthcare provider's basic information and Case scenarios for calculation on Modified Early Warning Score, it was circulated among doctors before and after training.

Case scenarios on Modified Early warning score(MEWS):

Please answer all the scenarios, The scenarios are about recordings of vitals of a patients that would be a concern for you to calculate MEWS and for which you will summon more skilled help.

Q1 If 60 years old from ER ward with H/O fever O/E- HR 110/min, BP-170/90 mm of Hg, RR 24/min, Temp 101* F and he is conscious and alert SpO2 94%(RA), what is the MEWS?

- a. MEWS- 5 b. MEWS-4 c. MEWS- 2 d. MEWS-1

Q2 If 50 years old male underwent B/L TKR was shifted to ward. He was ambulated with physiotherapy patient complained of chest discomfort. O/E- HR 140/min, BP-70/50mm of hg, RR 40/min, Temp 99* F and he is alert, SpO2 80%(RA), what is the MEWS?

- a. MEWS- 7 b. MEWS-13 c. MEWS- 11 d. MEWS-9

Q3 If 70 years old female admitted to ward after CVA. O/E- HR 60/min, BP-200/110mm of hg, RR 24/min, Temp 98* F and she is alert, SpO2 94%, what is the MEWS?

- a. MEWS- 2 b. MEWS-4 c. MEWS- 6 d. MEWS- 1

Q4 If 40 years old male, ESRD on dialysis admitted to ward with fever and cough. O/E- HR 120/min, BP-180/90 mm of Hg, RR 24/min, Temp 102* F and he appeared confused SpO2 92%, what is the MEWS?

- a. MEWS- 9 b. MEWS- 7 c. MEWS- 11 d. MEWS-10

Q5 You are called by nurse to evaluate a patient who was complaining of dyspnoea. Patient had undergone CABG 3days ago. O/E- HR 150/min, BP-96/60 mm of hg, RR 30/min, Temp 98* F and SpO2 94% his urine output is 100ml, what is the MEWS?

- a. MEWS-9 b. MEWS-10 c. MEWS-12 d. MEWS-8

RESULTS

5 case scenarios was considered as questions, it was taken to measure the knowledge of MEWS. question 1 to question 4, correct pre-test score is 24% and after training the correct post-test score is 96.5% but in case of question 5 a special case scenario was given and raise in scores from 4% to 20%.

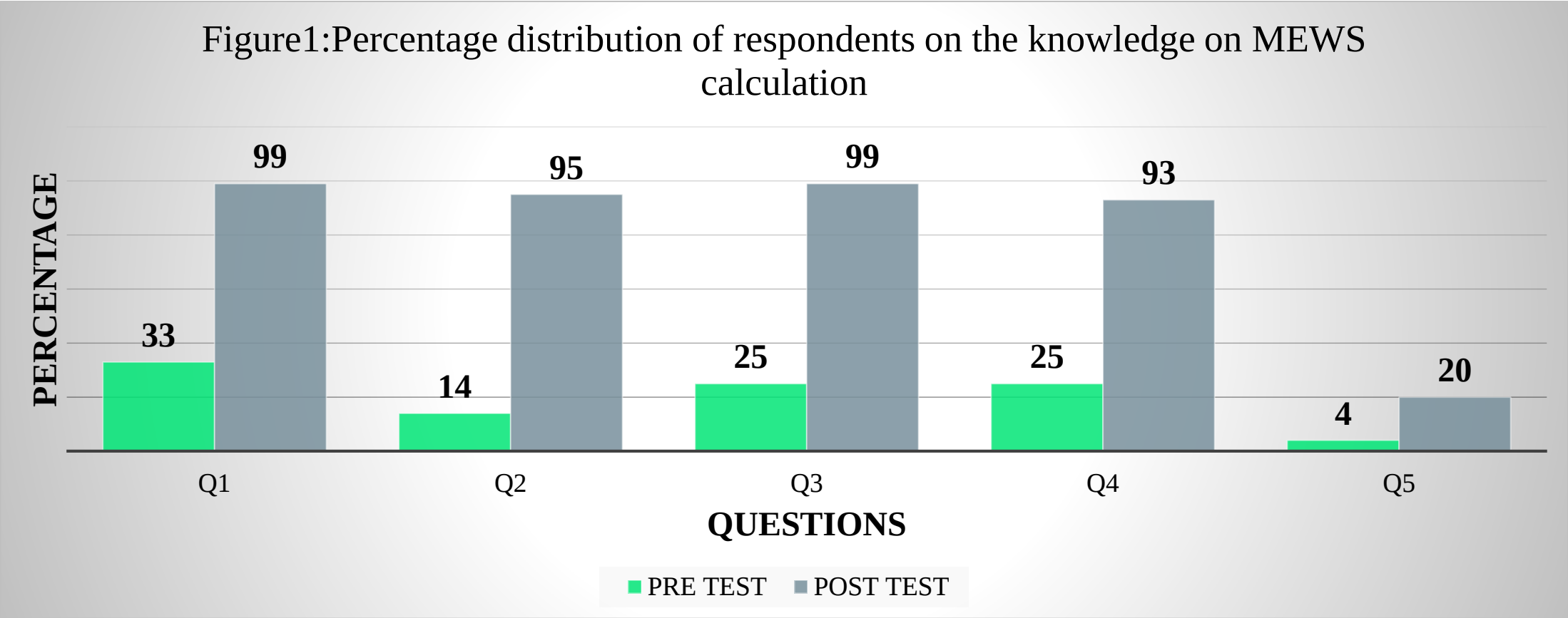


FIGURE2: MEAN AVERAGES OF PRE AND POST TEST

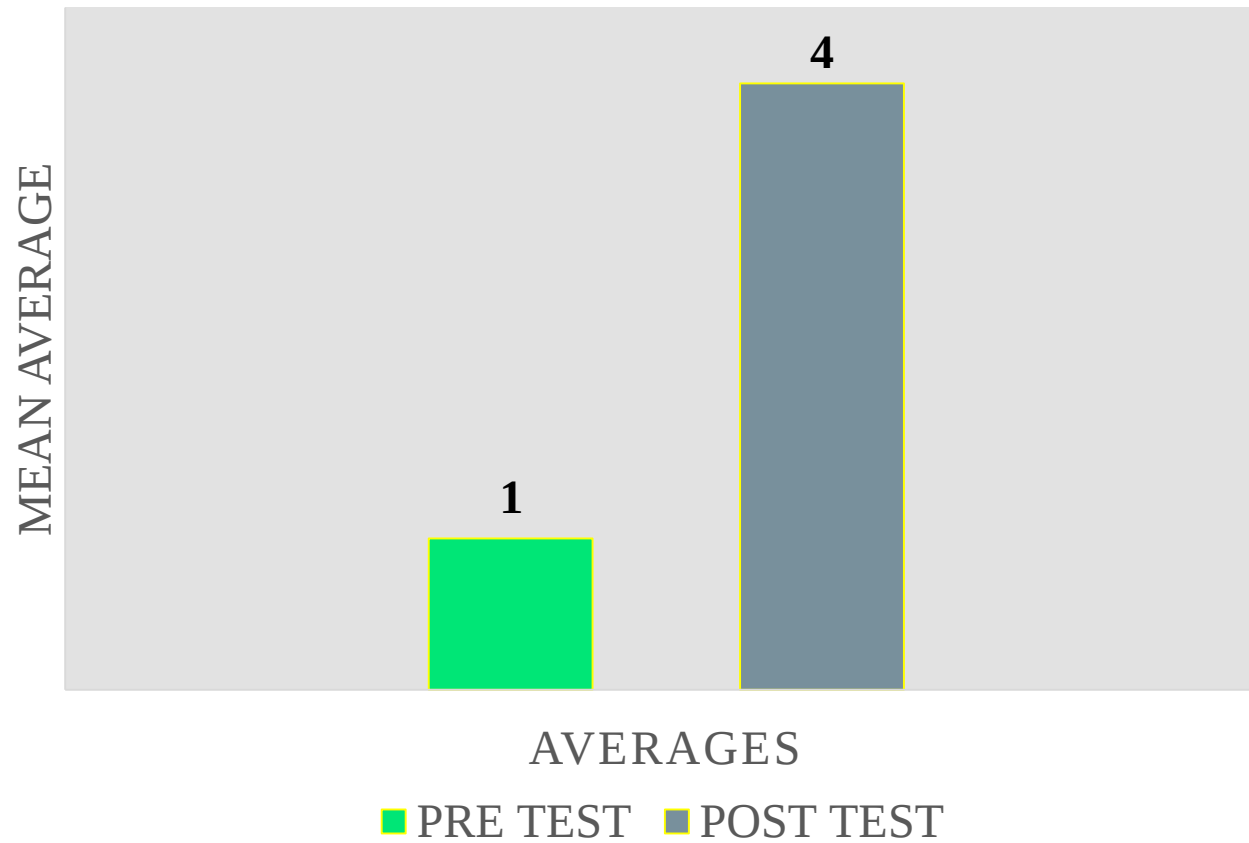


Table 2: Paired T test – comparison between post-test and pre-test

Paired t-test	t	df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
				Lower	Upper
(post test – pre test)	22.77 2	96	0.000	2.513	2.993

Paired samples t-test was used to analyse effectiveness of training . There was significant effect in the scores of post-test (Mean=4, SD=0.651) and pre-test (Mean =1, SD = 1.082) conditions; $t(96) = 22.72$, $p = 0.000$. These results suggest that training really does have an effect on MEW Score calculation among in-house doctors at Fortis Hospital, Bengaluru and hence we reject the null hypothesis and conclude that there is an effect after the training and making training effective.

CONCLUSION

The overall post-training knowledge among in-house doctors at Fortis Hospital, Bangalore was improved as shown in results. Majority of the doctors have satisfactory knowledge on action taken on MEW Score and MEW Score calculation. Further research is needed to explore the ability among doctors in calculating MEWS and its action to identify physiological and clinical deterioration.

THANK YOU