A STUDY TO ASSESS THE CLINICAL DETERIORATION AMONG POST-OPERATIVE PATIENTS IN A SELECTED HOSPITALS AT VADODARA

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Abstract

Background: The Modified Early Warning Score (MEWS) is a simple, physiological score that may allow improvement in the quality and safety of management provided to critically ill patients. Many scoring systems have been developed using various clinical parameters such as pulse rate, Blood Pressure, Respiration Rate, temperature, level of consciousness and urine output which can be appropriately interpreted and recorded by healthcare personnel. Moreover, it is an assessment tool for early detection of deterioration and timely intervention among surgical intensive care unit (SICU) admission in patients undergoing elective and emergency major surgical procedures.

Material and methods: A Non-experimental descriptive study was conducted to assess the effectiveness of the modified early warning score (MEWS) in clinical deterioration among post-operative patients of selected hospital in Vadodara. A total of 30 post-operative patients were chosen for the study through purposive sampling technique. A standardized MEWS scale was use to find out the clinical deterioration. Data was collected with prior informed consent from the participants. Descriptive analysis was done by using Excel and SPSS 20.

Result: The obtained result data revealed that, maximum participants 13(43.34%) were young; from the age group of 52 Years and Above with majority of male patient. The mean modified early warning score (MEWS) was significantly 5.90 and SD 3.880. There was significant association between mean demographic variable of Age and clinical variables of diagnosis (χ^2=16.849, p>0.05of the age and χ^2=17.135, p>0.05in the diagnosis) at 0.05 level of significant.

Conclusion: The Modified early warning score (MEWS) is an effective tool in identifying the early deterioration of the patients undergoing major surgical procedure and assessing the need for admission in critical care unit for future intervention. In addition it helps in prediction of post-operative patient, although the impact on health outcome and resource utilization remains uncertain, owing to methodological limitation. In short, the research was great learning opening for the researcher.

Keywords: modified early warning score (MEWS), clinical-deterioration, post-operative patient.

Introduction

The modified early warning score (MEWS) is a very important tool to prevent delay in intervention or transfer of critically ill patients. Many scoring systems have been developed using various clinical parameters such as pulse rate, Blood Pressure, Respiration Rate, temperature, level of consciousness and urine output which can be easily interpreted and charted down by any healthcare personnel simple, physiological score that may allow improvement in the quality and safety of management provided to critically ill patients. the primary purpose is to prevent delay in intervention or transfer of critically ill patients. There are various scoring system in detecting the post-operative mortality and morbidity in patient undergoing major invasive surgical procedures.[1]

The consensus derived local Modified Early Warning Score (MEWS) incorporated with physiological parameters and have trigger points (0=normal, upper and lower 1-3 limits) and a response algorithm. The local modified early warning score (MEWS) chart, unusually, also incorporated clinical sign of deterioration (for example pallor, sweating, looking unwell).[2] Observational studies suggest that patients often show signs of clinical deterioration up to 24 hours prior to a serious clinical event requiring intensive intervention. Modified Early warning score (MEWS) are used by hospital care teams to recognize early warning signs of clinical deterioration and trigger more intensive care, such as increased nursing attention, informing the care provider, or activation of rapid response team(RRT)or medical emergency team.[3]

Material and Methods:

A descriptive research study was conducted among 30 post operative patients were selected through the non-probability purposive sampling technique with keeping inclusion criteria's such as a Patients undergone both elective and emergency surgeries such as neuro surgery, general surgery, ENT surgery, ortho-surgery, urologic surgery, cardiothoracic surgery, Plastic surgery, those sample only included in the research study by investigator. Explained the benefits of the research for their patients from research study. Obtained written consent from the participants and their relatives. Tool consists of demographic variables and vital parameters through modified early warning score (MEWS) rating scale. The data analysed by using descriptive and inferential statistics, Fisher exact test was used to check the association of modified early warning score (MEWS) of samples with their demographic variables. The content validity of the instrument was determined by authorized skilled experts, the reliability was stetted by administrating the tool of content among 5 health care professional and experts. The reliability of tool was 0.84 accredited of using split half method spearmen brown prophecy formula reliability test, which stipulates that the tool found reliable, feasible and practicable for the research study. The data were investigated in regard to the purpose of the study by availing descriptive and inferential statistics with SPSS (version 17) software.

Results

Findings related to Socio-demographic data of the participants.

Findings revealed that only 1 (3.33%) with age 19-29 years and 9 (30%) with age 30-40 years and 07 (23.33%) with age 41-51years, and majority age is above 52 years was 13 (43.34%).

majority of the patient   22 (73.3%) Participants remained male and 8 (26.67%) are female. family income is 9(30%) earning between 1000-10000 per month, majority is 17(56.7%) respondents were having income of 11000-20000rs, 04(13.3%) respondent were21000-30000.majority of the post-operative patients in were 10(33.3%) farmer, 03(10%) were business,05(16.7%) government employee and 12(40%) others. majority of the post-operative patient in were 24 (80%) vegetarian and remaining 06(20%) were non-vegetarian.

Findings related to clinical variables of the participants.

Majority of diagnosis in post-operative patient in gastro-diseases was 10(33.3%), neuro-diseases was 8(26.70%), cardiac-diseases was 5(16.70%), and respiratory and renal diseases was 7(23.30%), Majority of surgery in post-operative patient in major -surgery 21(66.7%), and minor-surgery was 9(33.3%)., Majority of type of anesthesia in post-operative patient in general anesthesia was 23(78.7%), local anesthesia 1(3.3%), regional anesthesia 6(20%). Majority of co morbidity in post-operative patient in hypertension was 11(36.7%), diabetes was 8(26.7%), septicemia was 6(20%), and others was 5(16.7%). Majority of post of day in post-operative patient in post of day one is 08(26.6%), post of day second 8(26.7%), post of day third was 6(20%), post of day more than four 8(26.7%).

Table No. 1 Frequency and the percentage distribution of the among post-operative patients of (MEWS)

Sr. No.	Risk category/score	Frequency	Percentage	Mean score	SD
1.	Stable (0-5)	17	56.67%		
2.	Mild (6-11)	08	26.66%		
3.	Moderate (12-17)	05	16.67%	5.90	3.880
4.	Severe (18)	00	00%		

Maximum score = 18

The above table 1 depicts that; the clinical deterioration of post-operative patients with 17(56.56%), stable, 8 (26.66%), mild (6-11) and moderate was 5(16.67%). The mean score was 5.90 and Standard deviation (SD) was 3.880.

Association between clinical- deterioration and socio-demographic variables of post-operative patients.

The calculated value of chi-square is greater compared to table value. Chi-Square test reveals significant association between age of the participants and clinical deterioration (p value = 0.010).

Association between clinical- deterioration and clinical- variables of post-operative patients.

The above table 4 shows that the calculated value of chi-square is greater compared to table value. Chi-Square test reveals significant association between age of the participants and clinical deterioration (p value =0.009).

Discussion

After obtaining the data from sample, Majority of post-operative patient with the help of modified early warning score (MEWS) stable (0-5) is 17(56.67%), mild (6-11) is 8 (26.66%), moderate (12-17) is 5(16.67%), modified early warning score (MEWS)in post-operative patients. Mean score = 5.90, SD = 3.880. Chi-Square test reveals significant association between age of the participants and clinical deterioration (p value = 0.010). A Research study was conducted by Cuthbertson, Brian H**.,** Early warning scoring systems were used in clinical practice to allow early recognition of the deteriorating patient. By comparing the supporting articles to current articles; supporting articles had derived discriminated functions, which have a high predictive ability to determine differences between groups ($p < .0001$, AUC 0.86–0.90).[4]

The current study found that the significant association between age of the participants and clinical deterioration (p value = 0.010). A similar study was conducted by U. J. Christian**.,** to find the applicability of the modified early warning Score (MEWS) in predicting outcome of patients undergoing abdominal surgery found that MEWS was associated with in-hospital postoperative mortality (P=0.000). Hospital stay extended significantly in relation to increasing MEWS (P= 0.000).[5]

Conclusion

Modified early warning score (MEWS) is a platform for prediction of post-operative patient, although the impact on health outcome and resource utilization remains uncertain, owing to methodological limitation. In short, the research was great learning opening for the

researcher. Summary of the study undertaken, to evaluate the effectiveness of modified early warning score (MEWS) on clinical deterioration of post-operative patients.

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Ethical clearance: Ethical clearance was obtained from institutional ethical committee. Permission was taken from the authority of hospital and informed consent was drawn from study participants.

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