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Nurses Perception toward Using a New Eight Vital Signs Chart at ICUs

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Abstract

Background: Assessment of the traditional vital signs at ICUs as temperature, pulse, respiration, blood pressure and oxygen saturation are inadequate to determine patients' clinical condition deteriorating; however assessment of eight vital signs should be included in a routine nursing assessment to improve patients' outcomes for appropriate nursing diagnosis on proper time.

Aim: To assess nurses' perception toward using a new eight vital signs chart at ICUs

Methods: Descriptive cross-sectional study design was used in this study composed of 45 nurses from all ICUs at the Beni-Suef University Hospital from November 2015 to January 2017, data were collected using structured interview to assess nurses' perception toward using a new eight vital signs chart at ICUs.

Results: The study findings demonstrate the distribution of all nurses' perception items and found more than two third of the study sample (68.9%) were agreed to use eight vital signs, and almost all nurses had fantastic perception to eight vital signs, moreover about (84.4%) had adequate knowledge regarding assessment of pain, level of consciousness, urine output, as well as more than half of study sample reported the degree of importance is extremely important to assess additional three vital signs with basic vital signs (55.6%). However barrier may face nurses to assess pain, level of consciousness and urine output were reported high percentage (91.1%) and (97.8%) agreed to use the new eight vital signs chart at ICUs and defiantly it will help for better design of Nursing Diagnosis.

Conclusion: ICUs' nurses strongly agreed to apply new 8 vital signs chart at ICUs for meticulous designing of nursing diagnosis of patients' clinically unstable.

Recommendation: The study is recommended to consider the importance of application a new eight vital signs chart instead of traditional five vital signs and generalized it in the hospital documentation system.

Keywords: Eight vital signs; ICUs; Nurses perception; Egypt

Introduction

Basically, the nursing assessment of routine vital signs has included the measurement and recording of temperature, heart rate, respiratory rate, blood pressure and oxygen saturation. However, vital signs documentation and recording is very important to detect and determine patient deterioration [1].

Recent research studied the importance of accuracy recording of basic vital signs, for example respiratory rate, the nurses must understand the physiological changes in the respiratory rate may be reflect the patient clinical condition deterioration and instability, furthermore the nurses believe that many tasks more important for enhancing and improving patients' outcomes than accurate counting a patients' vital signs such respiratory rate [2].

Despite, nurses determine patient in critical condition through anticipation his/her expectation rather than routine measurement of important vital signs, may adding the "worry or concern or patient at risk" sign to rapid response system provides opportunities for nurses to work upon their expectation and feeling toward patients' condition deterioration [3].

However, the qualified nurse must be able to interpret and analyze the assessment findings focusing on pathophysiological changes, as long as, patients are sicker than in the past and nurses can no longer depend on the traditional five vital signs as well must work on additional vital signs when performing assessment of their patients [4].

For a number of decades, Health care providers in the health care setting have applied the recording and documenting of basic vital signs to evaluate patients' physiological status [5]. Recently, with advancing patient assessment and care technology become increasingly complex, however more attention to identify patients who may be at risk for hemodynamically instability [4].

Assessment of pain is vital and provides the only way to ensure that treatment is appropriate and effective, furthermore identifying the cause of pain and evaluating the effectiveness of pharmacological treatment is essential [6]. Moreover, regarding to evaluate level of consciousness many factors can alter a patients' level of consciousness and nurses should evaluate it routinely along with basic vital signs [7]. In addition, urine output is an indirect reflection of renal function and fluid status therefore must be monitored closely with critically care patient [4].

A clinical tool consists of eight vital signs for identifying and monitoring critically ill patient that help to provide early intervention and subsequently improves outcomes. This present study assessed the nurses' perception to utilize new designed clinical chart included eight vital signs (Figure 1) is very important to update patients' condition changes based on meticulous nursing diagnosis.

Figure 1: Eight vital signs sheet.

Aim of the Study

To assess nurses' perception toward using a new eight vital signs chart at ICUs.

Research Questions

Are eight vital signs considering important indicators for patients' condition deteriorating at ICUs?

Hypotheses

Eight vital Signs are very important indicators for early detection of patient who is deteriorating and can overall improving patient outcomes.

Significant of the Study

Measuring and recording vital signs is the mainstay of detecting patient deterioration, however accurate documentation is essential and the main reason for failure to recognize patient deterioration include incomplete vital signs, lack of knowledge of the values of normal vital signs ranges and poor design of vital sign charts [8,9]. Importantly, this study designed new eight vital signs chart to improve documentation of patients' clinical condition and identify early detection of their deterioration. Furthermore, implementing eight vital signs at one sheet very useful for prioritizing nursing diagnosis.

Methods

Setting

Intensive care units at Beni-Suef University Hospital from November 2016 to March 2017.

Sampling

All nurses were working at ICUs, all shifts, both sex and total number is 45 nurses.

Tool of data collection

Interviewing structured questionnaire was used to collect data. It designed by researcher based on the related literature, it tested for validity on ten nurses who excluded from study sample.

- Structured interview questionnaire form: This tool was used to collect demographic data of nurses (Sex, years of experience, level of education, shifts and unit of work).
- Second Part included.

  - Nurses' perception about eight vital signs (21 Questions).
  - Nurses welling to use eight vital signs (9 questions).
  - Importance of frequent assessment and documentation of pain/level of consciousness\urine output in patients able to communicate (1 question).
  - Nurses' view regarding to proper time for assessment pain, level of consciousness, urine output (8 questions).
  - Barrier facing nurses to assess pain, level of consciousness and urine output (11 Questions).
  - Approval and acceptance of developed chart to assess eight vital signs for better nursing diagnosis (2 questions).

Operational Design

Preparatory phase

During this phase, the researcher worked on explaining the new designated chart includes eight vital signs to nursing staff and explained the importance of eight vital signs so the process could be easily understood by the nurses to apply. Once the nurses were ready to start the structures questionnaire was distributed in the proper time to all nurses, the total duration was thirty minutes with each nurse.

Limitation of the study

The tools were lengthy and sometimes needed more than one meeting with the nurses to fulfill.

Administrative design and ethical considerations

Formal letters were issued from the Faculty of Nursing, Beni-Suef University to the medical director of the study settings. The researcher met with nurses and explained the aim and the process of the study. Nurses' verbal consents were obtained. Complete confidentiality of any obtained information was ensured. The researcher also assured the administration that the study would not affect the work in the study settings. The results of the study will be provided to the hospitals' authorities to maximize its benefits.

Statistical design

Statistical analysis was done using SPSS 22.0 statistical software packages. Data was presented using descriptive statistics in the form of frequencies and percentages, and means and standard deviations for quantitative variables. Quantitative continuous data was compared using t-tests in case of comparisons between two variables.

Results

The demographic characteristics of nurses in the study sample are described in Table 1. The sex distribution was reported more than half of the study sample was male (57.8%). Education level was mostly BNS degree approximately half of study sample (48.9%) and the years of experience ranged from less than 2 years to more than 10 years and about one third reported less than 2 years (33.3) and between 2 to five years reported (35.6%) As for their Employment Status full time around (51.1%) and most of them rotated between all shifts (66.7) (Table 1).

	No.	%
Gender		
Female	19	42.2
Years of Experience		
2< years	15	33.3
5<2< years	16	35.6
10<6< years	5	11.1
10> years	9	20
Total	45	100
Qualification certificate		
Diploma	11	24.4
BNS	22	48.9
MSN	4	8.9
Other specify	8	17.8
Total	45	100
Employment Status		
Full	22	48.9
Part	23	51.1
Total	45	100
Shift Time		
Day	11	24.4
Evening	1	2.2
Night	3	6.7
All Shift	30	66.7
Total	45	100

Table 1: Demographic characteristics of nurses in the study sample.

Table 2 demonstrates the distribution of all nurses' perception items that found more than two third of the study sample (68.9%) were agreed to use eight vital signs and almost all nurses had fantastic perception to 8 vital signs, moreover about (84.4%) had adequate knowledge regarding assessment of pain, level of consciousness, urine output, as well as more than half of study sample reported the degree of importance is extremely important to assess with basic vital signs (55.6%). In addition barrier may facing nurses to assess pain, level of consciousness and urine output were reported high percentage (91.1%), however (97.8%) agreed to use the new 8 vital signs chart at ICUs and defiantly it will help for better design of Nursing Diagnosis (Table 2).

	No.	%
Nurses willingness to use eight vital signs		
Disagree	1	2.2
Agree	31	68.9
Strongly agree	13	28.9
Nurses perception about eight vital signs		
Sometime	1	2.2
Yes	44	97.8
Nurses' view about when to assess pain, level of consciousness, urine output		
Yes	38	84.4
No	7	15.6
Nurses' opinion regarding the degree of importance to do frequent assessment and documentation of pain\level of consciousness/urine output in patients able to communicate		
Not Important	2	4.4
Minimally Important	6	13.3
Moderately Important	12	26.7
Extremely Important	25	55.6
Barrier facing nurses to assess pain, level of consciousness and urine output		
Yes	41	91.1
No	4	8.9
Development of new 8 vital signs chart will help to design better Nursing Diagnosis		

Yes	44	97.8
No	1	2.2
Agreement to apply a new chart and apply it in the ICUs		
Yes	44	97.8
No	1	2.2

Table 2: Nurses' perception regarding to new 8 vital signs chart.

The correlation between Barrier facing nurses to assess pain , level of consciousness, urine output scores (Item 1) and Developed of new chart eight vital signs will help to design better (Item 2), Nursing Diagnosis Nurses perception about eight vital signs(Item 3) Nurses willingness to use eight vital signs (Item 4) describes in Table 3. It points to Item (1) statistically significant with items (2, 3 and 4), P=0.000 it means the barrier support the new eight vital signs chart to apply it at ICUs (Table 3).

	Mean+SD	95% Confidence Interval of the Difference		t-test	P-Value
		Lower	Upper		
Item 1 and Item 2	0.97 + 0.14	0.93299	1.02256	44	0
Item 1 and Item 3	-0.83	-1.02256	-0.93299	-44	0
Item 1 and Item 4	-0.77	-1.41551	-1.11782	-17.151	0

Table 3: The correlation between barrier facing nurses (item 1) and developed of new chart eight vital signs will help to design better nursing diagnosis (item 2), nurses' perception (item 3) , nurses willingness to use eight vital signs (item 4).

Figure 2 illustrates the all nurses' perceptions items in the study sample and reported highest percentage indictors to use new eight vital signs chart at ICUs.
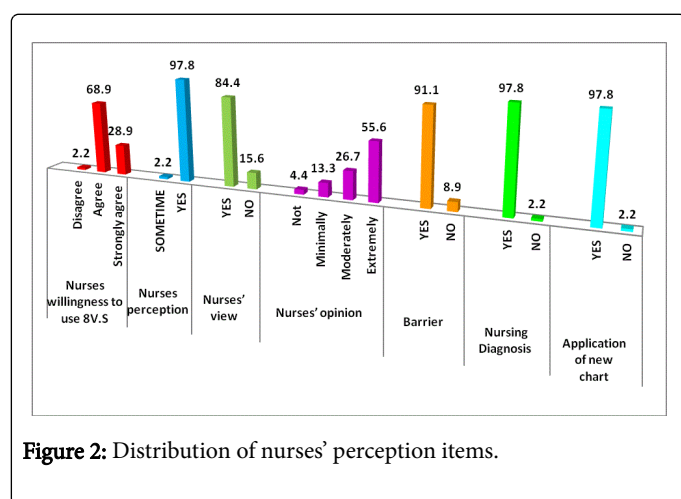

Figure 2: Distribution of nurses' perception items.

Discussion

The results of this study demonstrate the importance for documenting eight vital signs and the nurses' perception toward application at ICUs. Because of rapid physiological changes is common with critical patient [9]. Regarding the present study findings, all nurses' perception items statically significant for application of new eight vital chart considering assessment of pain, level of consciousness and urine output. This is quite conceivable, since critically ill patients' deteriorate quickly because of lack of frequent assessment.

Concerning the pain as one of eight vital signs according study of Given and Sherwood [10] have explained pain as a meaning of nurse-sensitive patient outcome that reflects successful of management or directly consider as a positive indicator of the quality of nursing care. However, aforementioned present study findings are in agreement with Klassen et al. [11] who have mentioned that nurses must make pain assessment a routine part of their care, rather than waiting for patients to express their pain, moreover research has also found that the proper methods of pain management may cause decrease length of stay at hospital and improved patient care outcomes.

Analyses of the results of the present study have shown the importance to measure routinely the level of consciousness, and the finding was confirmed through other studies were evaluated the level of consciousness in the ICUs and recommended that should be assessed routinely along other vital signs [12]. Moreover the most common tool for assessing level of consciousness is Glasgow Coma Scale, as well considering a simple tool to assess patients' neurological status deterioration [13].

The forging present study finding concerning to evaluate the measurement of urine output with basic vital signs is in agreement with Elliott and Coventry [4] who have reported that urine output is consider as the first indicator of a fluid and electrolyte imbalance, and if left without proper treatment may lead to renal failure. Moreover aforementioned study findings are in the agreement with recent research study by Saikumar Doradla and Vadivelan [14] who have mentioned that the critically ill patient at ICUs needs continuous monitoring to determine organ dysfunction and demonstrate pathway for proper treatment. Practically, measurement of renal perfusion by manual urinary output measurement comprises a simple and accurate method to measure urine amount at ICUs [15].

Regardless, the scores of eight vital signs at one chart can help to recognize actually the patients' clinical status in particular critically ill patients and provide prompt intervention to improve patients' care outcomes. Moreover early detection of prodromal signs of acute deterioration of patients' clinical condition is essential in high quality care [16].

Many studies reported that may 80 percent display clinical signs of deterioration in the hours progress the event [16-20]. Moreover, early detection of the patients' clinical deterioration will help to reduce risk of mortality and morbidity rate [21-24]. The forging present study finding concerning that additional three vital signs mush be measured frequently and accurately of course will help nurses to determine patients' critical situation for providing appropriate management on proper time.

Conclusion

Monitoring eight vital signs are very important to identify early deterioration and adverse events. As well nurses play a crucial role as a

primary responsible for vital sign documentation, and correlate the evidence with normal to provide prompt proper care. The results of the study have shown statistically supported the new chart and the nurses' perception regarding to use it at ICUs will help for meticulous design of nursing diagnosis.

Recommendation

- The developed new eight vital signs at one chart should be implemented at all ICUs.
- Further research is needed to assess the effects of new chart as a routine assessment.

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