Nurses' Performance regarding Preventive Measures of Pressure Ulcer among Critically Ill Children at Pediatric Intensive Care Units

Angham Hamdy Abd Elkhalek[1] , Faten Shafik Mahmoud[2] and Khadiga Mohamed Said[3]

(1) Member of The Nursing Development Team, Central Administration of Nursing, Ministry of Health and Population, (2) Professor of Pediatric Nursing, Faculty of Nursing - Benha University and Assistant Professor of Pediatric Nursing, Faculty of Nursing - Benha University

Abstract

Background: Critically ill children require serious consideration whether in medical, surgical or trauma- related fields. Pressure ulcer are a challenging problem in the care of medically complex children. Nurses are dedicated to the prevention and management of pressure injuries**. Aim of the study:** Was to assess nurses' performance regarding preventive measures of pressure ulcer among critically ill children at pediatric intensive care units. **Research design:** A descriptive research design was used to conduct the current study. **Settings**: The study was conducted at pediatric intensive care units of Benha University Hospital and Benha Specialized Pediatric Hospital. **Subjects**: A convenient sample of 100 nurses and a purposive sample of 50 children were selected from the previously mentioned settings. **Tools**: Data was collected by using three tools, **Tool (I):** A structured interviewing questionnaire format to assess personal characteristics of nurses and children and assess Nurses' knowledge regarding pressure ulcer prevention, **Tool (II):** Braden Q Risk Assessment Scale, It was used to predict pressure ulcer risk for critically ill children and **Tool (III):** Observational checklist to assess nurses' practice regarding pressure ulcer prevention**. Results**: Most studied nurses had poor level of knowledge regarding pressure ulcer, incompetent practices towards prevention of pressure ulcer**. Conclusion**: There was a positive statistically significant correlation between total nurses' knowledge and total practices regarding preventive measures of pressure ulcer. **Recommendations**: Pediatric nurses should update their knowledge and practice about preventive measures of pressure ulcer through training, educational program, workshops and empower nurses to apply preventive measures of pressure ulcer assessment and urgent intervention in work areas.

Key words: Nurses' Performance, Preventive measures, Pressure ulcer, Critically Ill Children.

Introduction

The Pediatric Intensive Care Unit is a unit that focuses on care and treatment for critically ill children. Critically ill children require intensive care under which the children are closely and continuously monitored because they are hemodynamically altered. These children are either partially or completely dependent on health care providers. Therefore, they are more prone for the development of pressure ulcers. The prevalence of pressure injuries among hospitals is varied. It ranges from 3 to 10% among total pediatric populations admitted in health care setting **(Powell et al, 2022)**

A pressure injury or ulcer is defined by the National Pressure Ulcer Advisory Panel (NPUAP) as localized damage to the skin and underlying soft tissue usually over a bony prominence or injury related to medical or other devices. The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear stress. The NPUAP has defined pressure ulcers based on the level

of tissue injury using a staging system with uniform terminology for consistency in reporting **(Green, 2022)**.

Main complications of pressure ulcer in critically ill children are pain, discomfort, prolonged illness, delayed rehabilitation, increasing hospital stay, infection, and may lead to disability and even death. Once pressure ulcers are recognized prevention should be done to prevent incidence and complication associated with it to promote child safety and better outcomes and existing pressure ulcer must be treated as well **(Zeydi et.al., 2022)**.

Nursing interventions should address risk factors that were identified using the risk assessment and tailored to the child's individual needs. Interventions include pressure relief, repositioning, specialized mattresses, dressing over bony prominences, monitoring devices, nutritional support and use of skin moisturizers **(Alanazi et.al, 2022)**.

Nursing strategies have been suggested to prevent pressure ulcer such as repositioning more often than every two hours has been recommended for critically ill children. Proper care for the skin includes keeping it clean with avoidance of excess moisture or dryness. Specific measures such as checking common moisture sites every 2–4 hour, using diapers with a breathable outer cover, changing diapers as soon as wet, applying protective diaper cream **(Zhang et.al, 2021)**.

Significance of the study

Children who are admitted to pediatric intensive care units are at a higher risk of developing pressure ulcer than children admitted to general care. The International Pressure Ulcer Prevalence Survey indicated that facility-acquired pressure ulcer prevalence rates were highest (12.1%) in the pediatric ICU. There are a relationship between pressure ulcer and increased morbidity and mortality rates because Pressure ulcer can also lead to serious infectious complications, like bacteremia, septicemia and wound infection. So Pressure ulcers requiring specialized nursing intervention for children in pediatric intensive care units. Although the prevention of pressure ulcer is a multidisciplinary approach, nurses have an essential role for managing pressure ulcers through regular assessment and continuous child care **(Alshahrani et.al, 2021).**

So that, this study was conducted to assess nurses' performance regarding preventive measures of pressure ulcer among critically ill children at pediatric intensive care units.

Aim of the study:

The study aimed to assess nurses' performance regarding preventive measures of pressure ulcer among critically ill children at pediatric intensive care units.

Research questions

- What is the level of nurses' knowledge regarding preventive measures of pressure ulcer among critically ill children at pediatric intensive care units?
- What is the level of nurses' practices regarding preventive measures of pressure ulcer among critically ill children at pediatric intensive care units?
- Is there is a relationship between nurses' knowledge and practices regarding preventive measures of pressure ulcer among critically ill children and their personal characteristics?

Subjects and method:

Research design:

Descriptive research design was used in this study.

Settings:

This study was conducted at pediatric intensive care units of Benha University Hospital and Benha specialized pediatric Hospital which

affiliated to Egyptian Ministry of Health and population and secretory of specialized medical centers.

Sampling:

A Convenient sample of all available nurses (100) at the time of the study who are working in the previously mentioned settings regardless their characteristics, and Purposive sample of all hospitalized critically ill children(50) was fulfilled the following :

Inclusion criteria: critically ill male and female children.

Exclusion criteria: Children who had pressure ulcer on admission.

Tools of data collection: Data was collected through the following tools:

Tool (I): A structured interviewed questionnaire. It was developed by the researcher after reviewing the relevant literatures (national and international), written in a simple Arabic language and was consisted of two parts:

Part (1):

A. Characteristics of the studied nurses as; age, gender, work place, level of education, years of experience and attendance of previous training courses regarding pressure ulcers.
B. Characteristics of the studied children at pediatric intensive care units as; age, gender, level of education, medical diagnosis, chronic disease, hospital booking.

Part (2): Nurses' knowledge regarding pressure ulcer prevention among critically ill children : after reviewing the related literature **(Qaddumi & Khawaldeh, 2014)&(Nuru et al., 2015);** it was designed to assess actual nurses' knowledge about; definition , causes , stages, sign and symptoms , the most common sites , complications , prevention , risk factors , treatment , nursing care for pressure ulcer first, second, third and fourth degree .this questionnaire was included Thirteen closed and open ended questions. Nurses' knowledge was compared with model key answer in which (2) scores for correct and complete answers, (1) score for correct and in complete answers while (0) for in correct and don't know answers. If the total score is more than 85 % (answer at least 12 questions), it is considered good knowledge. If it is between 85-75 % (answer 10 to 11 questions), it considered average knowledge.

Tool (II): Braden Q Risk Assessment Scale: It was adopted from **Quigley & Curley, (1996).** It was used to predict pressure ulcer risk for critically ill children: it was composed of seven subscales: mobility, activity, sensory perception, skin moisture, friction and sheer, nutrition, and tissue perfusion/oxygenation. All seven subscales were rated from 1 (least favorable) to 4 (most favorable) except subscale for friction and shear was rated from 1 (least favorable) to 3(most favorable).

Scoring system for Braden Q Risk Assessment Scale

- Severe risk: Total score 7- 9
- High risk: Total score 10-12
- Moderate risk: Total score 13-14
- Mild risk: Total score 15-18
- No risk: Total score 18- 27

Tool (III): to assess nurses' practices regarding pressure ulcer prevention among critically ill children: It was adopted from **Frank et al., (2017)** it was included 36 step as the following; skin assessment 8 steps, child positioning and bed elevation 6 steps, promoting skin integrity 9 steps, moisture management 7 steps and nutritional assessment 6 steps . Each item was observed as "done" score (1), and "not done or done incorrectly" score (0), (100 %) scores considered competent practices but if it is below (100 %) scores considered incompetent practices.

Tools validity & reliability:

Data collection tools were revised by a panel of three experts in the field of Pediatric Nursing Department, Benha University. The experts from Pediatric Nursing Department, Faculty of Nursing, Benha University reviewed the tools for its clarity, relevance, comprehensiveness, simplicity and applicability and minor modifications were done according to their judgment. Testing reliability of the developed tools was done using the Chronbach alpha test to measure the internal consistency of the tools. The reliability for the structured questionnaire sheet for assessment of nurse's knowledge was (0.89) and Observational checklist to assess nurses' practice was (0.94).

Ethical consideration:

Prior study conduction, ethical approval was obtained from the scientific research, ethical committee of the Faculty of Nursing Benha University. The researcher informed all nurses about nature and expected outcome for the subjects before their inclusion in order to obtain their consent, the nurses were informed that study is harmless. The researcher was secure that all gathered data were confidentially and used for the research purpose only. Optionally allowed either to participate or not in the study and they have the right to withdraw from the study at any time, oral consent was obtained from the nurses at pediatric intensive care units.

Pilot study:

A pilot study was done on 10% of the total study sample (10) nurses & (5) critically ill children to examine the validity, clarity, applicability and feasibility of the study tools and to estimate the time needed to fill each tool. No radical modifications were done according to the result of pilot study; participants involved in the pilot study were included in the study sample.

Field work:

Data was collected from the nurses in the previously mentioned settings through individual interviewing and direct observation with them. The actual filed work was carried out from the beginning of October 2021 to the end of March 2022 covering six months. The researcher was available three days per week (Saturday, Tuesday and Wednesday) at the morning shift by rotation between the previously mentioned settings. The total number of nurses was (100) nurse divided in two groups, the researcher took (70 nurse) of total sample from Benha university Hospital affiliated to university, and (30 nurse) of total sample from specialized pediatric Hospital at Benha city. The researcher interviewed each nurses individually. Firstly, the researcher introduced herself to the study subject and explained the aim of the study in order to obtain their acceptance to participate in the study prior to data collection, then the researcher assessed nurses' knowledge and Practices regarding preventive measures of pressure ulcer among critically ill children using questionnaire sheet and observational check list. The time needed to fill in the questionnaire sheet ranged from 25-35 minutes. The average numbers of the critically ill children assessed per week ranged from 2 to 3 children and the number of nurses ranged from 4-5 nurses per weak depending up on understanding and responses of nurses. Each nurse filled the questionnaire individually. Regarding Braden Q Risk Assessment Scale, it was assessed by researchers. The time needed to fill the scale ranged from 20-25 minutes.

Statistical analysis:

The collected data organized, tabulated and statistically analyzed using Statistical Package for Social Science (SPSS) version 21 for windows, running on IBM compatible computer. Data were presented using

descriptive statistics in the form of numbers and percentages for qualitative variables, and mean and standard deviation for quantitative variables. Qualitative variables were compared using Chi-square test. Whenever the expected values less than 5, Fisher exact test was used instead. Pearson correlation analysis were done for assessment of inter relationship among quantitative variables. Statistical significance was considered at p- value < 0.05 and a highly statistical significant was considered at p < 0.001.

Results:

Table (1): Revealed personal characteristics of the studied nurses, it was evident, more than one third (38.0%) of nurses were in the age group 20- <25 years with mean age 26.22±4.56 years. In relation to gender, more than three quarter (78.0%) of studied nurses were females. Also, less than half (48.0%) of them had 6- <6 years of experience with mean 5.89± 3.09 years. Meanwhile, the majority (81%) of nurses had no previous training courses regarding pressure ulcer. Regarding number of training courses obtained, more than half (55.6%) of them had only one training course regarding pressure ulcer.

Figure (1): Illustrated distribution of the studied nurses regarding educational level, it was evident that, more than one third (36%) of nurses had technical institute of nursing certificate.

Table (2): Distribution of studied children exactly two fifty children (40.0) of them the age group 1- <5 years with mean age 7.58 ± 5.41 years. Concerning educational level, slightly more than one third (34.0 %) of children were in nursery school. Regarding presence of chronic disease, the majority (82%) of children not having chronic disease. Meanwhile, (44.5%) of them suffering from renal disorders.

Figure (2): Showed that less than two third (62%) of studied children were male and more than one third (38%) of them were female.

Figure (3): Illustrated the total level of nurses' knowledge regarding pressure ulcer, it was evident that the majority (90 %) of nurses had poor level of knowledge regarding pressure ulcer.

Figure (4): Clarified that more than one third (38%) of studied children were at high risk for skin breakdown according to Braden Q Risk assessment scale followed by no risk, mild risk, sever risk and moderate risk (24%, 20%, 10% and 8 %) respectively.

Figure (5): Illustrated the total level of nurses' practice; it was evident that fast majority (96%) of nurses had incompetent practices level towards prevention of pressure ulcer.

Table (3): Indicated nurses' practices towards skin assessment, it was evident that more than half (56% & 58%) of nurses done the following: assess child degree of physical activity and check for presence of risk factors for pressure ulcer such as moist linen or improper nutrition. On the other hand, the majority (80% &82%) of nurses did assessment of the skin integrity carefully on child admission and high-risk area such as bony prominence area as buttocks and heels respectively.

Table (4): Revealed the relation between total scores of nurses' knowledge and their personal characteristics, it was evident that there was statistically significant difference between total nurses' knowledge score and their educational level, years of experience in pediatric intensive care units and attendance of training courses regarding pressure ulcer. Meanwhile, there was no statistically significant difference as regards their age, gender and workplace.

Table (5): Revealed that there was a positive statistical correlation between total scores of nurses' knowledge and practice towards pressure ulcer (r=0.312) and (P-value=0.002).

Table (1): Distribution of the studied nurses regarding their personal characteristics (n= 100)

Items	No.	%
Age/ years		
▪ **< 20**	10	10.0
▪ **20- <25**	**38**	**38.0**
▪ **25- <30**	**32**	**32.0**
▪ **≥ 30**	20	20.0
Mean ± SD	**26.22±4.56 years**	
Gender		
▪ **Male**	22	22.0
▪ **Female**	**78**	**78.0**
Work place		
▪ **Benha university hospital**	**70**	**70.0**
▪ **Benha specialized pediatric hospital**	30	30.0
Years of experience in pediatric intensive care units		
▪ **<3 year**	14	14.0
▪ **3- <6 year**	**48**	**48.0**
▪ **6- <9 year**	18	18.0
▪ **≥ 9 year**	20	20.0
Mean ± SD	**5.89± 3.09 years**	
Attendance of training courses regarding pressure ulcer		
▪ **Yes**	18	18.0
▪ **No**	**81**	**81.0**
Number of training courses obtained (n=18)		
▪ **Once**	**10**	**55.6**
▪ **Two**	6	33.0
▪ **Three - ≥ 6**	2	11.0

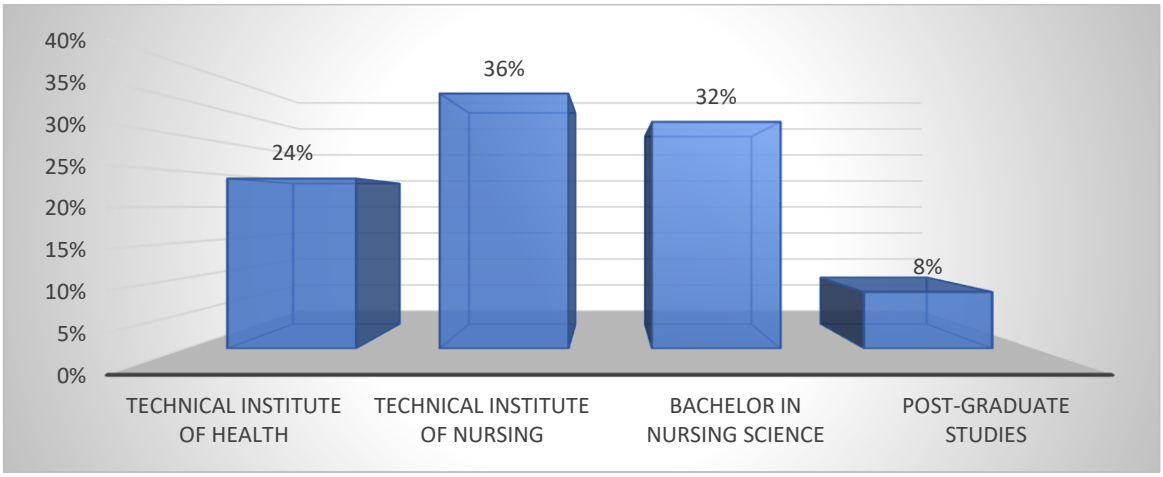

Figure (1): Distribution of the studied nurses regarding their educational level (n= 100)

Table (2): Distribution of the studied children regarding their personal characteristics (n= 50)

Items	No.	%
Age in years		
▪ **< 1 year**	7	14.0
▪ **1- <5 year**	**20**	**40.0**
▪ **5- <10 year**	14	28.0
▪ **10≤18 year**	9	18.0
Mean ± SD 7.58 ± 5.41 years		
Educational level		
▪ **Pre nursery school**	8	16.0
▪ **Nursery school**	**17**	**34.0**
▪ **Primary**	14	28.0
▪ **Preparatory**	5	10.0
▪ **Secondary**	6	12.0
Presence of chronic disease		
▪ **Yes**	9	18.0
▪ **No**	**41**	**82.0**
If yes type of chronic disease (n=9)		
▪ **Cardiac diseases**	3	33.3
▪ **Diabetes**	1	11.1
▪ **Renal disorders**	**4**	**44.5**
▪ **Immunological disorders**	1	11.1

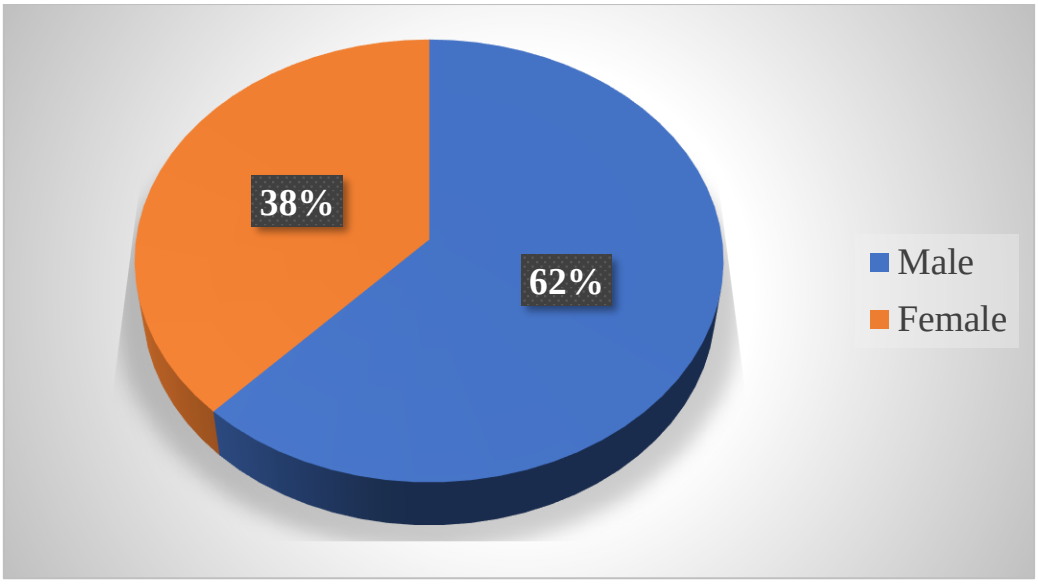

Figure (2): Distribution of the studied children regarding their gender (n=50)

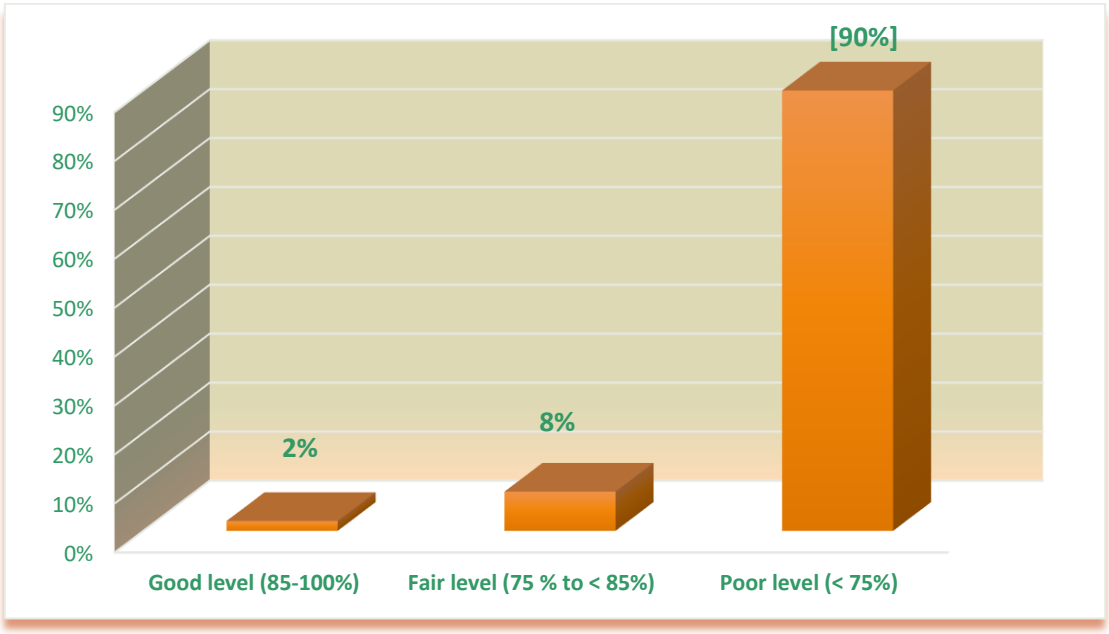

Figure (3): Distribution of the studied nurses' total knowledge regarding pressure ulcer (n=100)

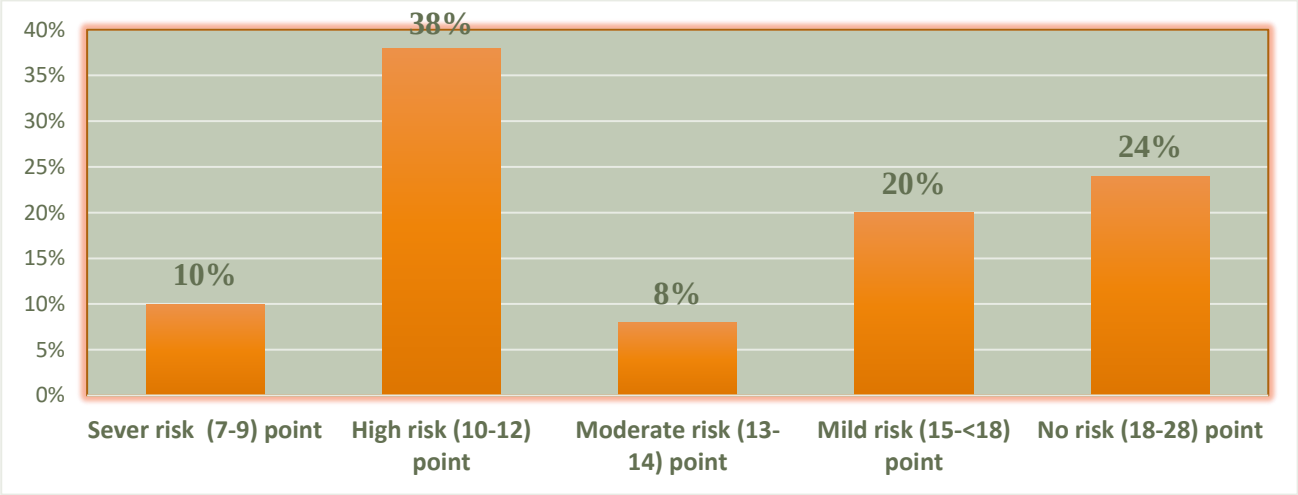

Figure (4): Distribution of the studied children regarding their total level for skin breakdown according to Braden Q Risk assessment scale (n= 50)

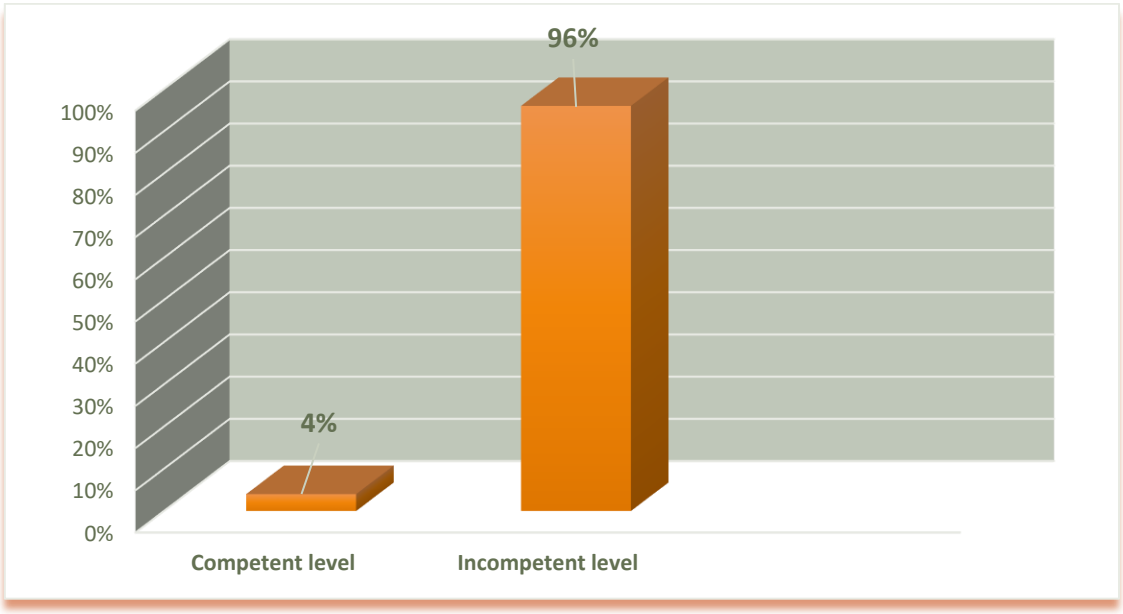

Figure (5): Distribution of total scores of nurses' practices towards prevention of pressure ulcer (n=100)

Table (3): Distribution of the studied nurses' practices towards skin assessment (n=100)

Items	Done		Not Done	
	No.	%	No.	%
1.Assess the skin integrity carefully on child admission	20	20.0	**80**	**80.0**
2. Assess high risk area such as bony prominence area as buttocks and heels	18	18.0	**82**	**82.0**
3. Assess child skin color, moisture, scars or dehydration and skin turgor	48	48.0	**52**	**52.0**
4.Assess child degree of physical activity	**56**	**56.0**	44	44.0
5.Check for presence of risk factors for pressure ulcer such as moist linen or improper nutrition.	**58**	**58.0**	42	42.0
6. Perform complete skin examination each turning or reposition of the child.	**50**	**50.0**	**50**	**50.0**
7.Document skin assessment in the child's medical record including any abnormalities such as impaired skin integrity, presence of scar or ulcer	46	46.0	**54**	**54.0**
8. Develop individualized care plan based on child skin condition	38	38.0	**62**	**62.0**

Table (4): Relation between total scores of nurses' knowledge regarding pressure ulcer and their personal characteristics (n=100)

Personal characteristics	Total Knowledge						X^2	P-value
	Good level (85-100%) (n=2)		Fair level (75 % to < 85%) (n=8)		Poor level (< 75%) (n=90)			
	No.	%	No.	%	No.	%		
Age of nurses in years								
▪ < 20 (n=10)	0	0.0	0	0.0	10	10.0	10.51	.105
▪ 20- <25 (n=38)	0	0.0	2	2.0	36	36.0		
▪ 25- <30 (n=32)	0	0.0	4	4.0	28	28.0		
▪ ≥ 30(n=20)	2	2.0	2	2.0	16	16.0		
Gender								
▪ Male (n=22)	2	2.0	2	2.0	18	18.0	7.34	.025
▪ Female (n=78)	0	0.0	6	6.0	72	72.0		
Work place								
▪ Benha university hospital (n= 70)	2	2.0	8	8.0	60	60.0	4.76	.092
▪ Benha specialized pediatric hospital (n= 30)	0	0.0	0	0.0	30	30.0		
Educational level								
▪ Technical institute of health (n= 24)	0	0.0	0	0.0	24	24.0	30.67	0.000**
▪ Technical institute of nursing (n= 36)	0	0.0	2	2.0	34	34.0		
▪ Bachelor in nursing science (n= 32)	0	0.0	4	4.0	28	28.0		
▪ Post-graduate studies (n= 8)	2	2.0	2	2.0	4	4.0		
Years of experience in pediatric intensive care units								
▪ <3 year (n=14)	0	0.0	0	0.0	14	14.0	15.51	.017*
▪ 6- <6 year (n= 48)	0	0.0	2	2.0	46	46.0		
▪ 6- <9 year (n= 18)	0	0.0	4	4.0	14	14.0		
▪ ≥ 9 years (n= 20)	2	2.0	2	2.0	16	16.0		
Attendance of training courses regarding pressure ulcer								
▪ Yes (19)	2	2.0	4	4.0	13	13.0	14.73	0.001**
▪ No (81)	0	0.0	4	4.0	77	77.0		

** Highly significant P ≤ 0.001 * Significant P ≤ 0.05

Table (5): Correlation coefficient between total scores of nurses' knowledge and practices towards caring for children pressure ulcer (n=100)

Items	Total Nurses' Knowledge	
	r	P-value
Total Nurses' Practices	0.312	0.002**

** Highly significant P ≤ 0.001 * Significant P ≤ 0.05

Discussion:

The current findings of the study illustrated that more than one third of the studied nurses' age was in aged from 20 to less than 25 years. In addition, more than three quarters of them were females and more than one third of nurses were technical nurses. At the same line, a study of **Mohamed et al, (2019)** that was carried out at the pediatric intensive care unit in Benha Specialized Pediatric Hospital, for "assess Effect of Preventive Bundle Guidelines on Nurses' Knowledge and Compliance Regarding Pressure Ulcer Among Critically Ill Children at Pediatric Intensive Care Unit". This study mentioned that the mean age of the studied nurses was 28.95±4.93 years and the majority of them were females.

As regarding to years of experience of studied nurses, less than half of them had from 3 to less than 6 years of experience. This result supported by result of **Ibrahim et al. (2022)** for "Assessment of Nurses Performance in Caring for Children at Risk and Having Decubitus Ulcer" who found that more than half of them had years of experience ranged between 5- <10 years with mean years 7.2±5.41

From the researcher point of view, nurses do not have proficient clinical skills. They are deficient of experience in managing and prioritizing child care needs, caring for critical ill children and predicting problems early. From the researchers' point of view, years of experience in pediatric intensive care unit have a great effect on nurses' knowledge and compliance which result in improving optimal performance in all nursing.

The study findings clarified that regarding the personal characteristics of studied children; that exactly two fifth of children were aged from 1 to less than 5 years, slightly more than one third of them were in nursery school, and less than two third of studied children were male. The current study findings were inversely, with **Ibrahim et al. (2022)** who stated that more than one third of the studied children aged from 9 to <12 years with mean age 11.3±8.03 years and more than half of them were female. Moreover, more than three fifth of the studied children had primary education.

In relation to nurses' knowledge about pressure ulcer and its causes, this study revealed that around four fifth of nurses had complete correct answer regarding prevention of pressure ulcer. In addition, the majority of nurses had wrong answer regarding stages of pressure ulcer and common sites for pressure ulcer in children respectively. This finding was in agreement with the study conducted by **Kielo-Viljamaa et al, (2021)** that carried among Nurses in Korea Long Term Care Facilities for described Nursing Knowledge, Attitude, and Performance towards Pressure Ulcer Prevention, mentioned that By item,

questions on the use of mattresses to prevent pressure ulcer obtained the highest score at a 95% correct rate, and the lowest score was for classification and observation of pressure ulcer (37.4).

The study findings clarified that regarding the nurses' knowledge regarding treatment and nursing care of pressure ulcer; around two third of studied nurses had in complete correct answer regarding treatment of pressure ulcer. The current study findings were inversely with **Wei et al, (2021)** study that assessed Nurses' knowledge and practice of pressure ulcer prevention and treatment: an observational study showed that 72.6% of the studied sample had good treatment knowledge of pressure ulcer but not all of them implemented it.

As revealed by this study, the majority of nurses weren't applying assessment of the skin integrity carefully on child admission and high-risk area such as bony prominence area as buttocks and heels respectively. At the same line with the study of **Berihu et al, (2020)** who conducted for assessing of Practice on pressure ulcer prevention among nurses in selected public hospitals, Tigray, Ethiopia, illustrated that identifying pressure ulcer contributing factors (59.0%) were the most practiced among studied nurses.

Concerning with applying of nurses for child positioning and bed elevation, around three fifth of nurses done practice regarding turn immobile children at least every 2 hours. As the study of **Berihu et al, (2020)** found that (71.5%) of participants turning patients every 2 h.

According to nurses' practices for promotion of skin integrity, this study findings clarified nurses' practices towards promotion of skin integrity, it was evident that the majority of studied nurses weren't apply practice regarding use suitable mattress such as air mattress or high-density foam mattress for high-risk children and use supporting pillows or foam wedges to protect bony prominence areas. Additionally, around two fourth of nurses were applied practice regarding gently cleanse skin at time of soiling and avoid friction during care with the use of a spray perineal cleanser or soft wipe In accordance, **Berihu et al, (2020)** who assessed Practice on pressure ulcer prevention among nurses in selected public hospitals, Tigray, Ethiopia, indicated that above two third of responding didn't Place pillow under patient leg, and two third were providing skin care.

The findings clarified that there was statistically significant difference between total nurses' knowledge score and their educational level, years of experience in pediatric intensive care units and attendance of training courses regarding pressure ulcer. Meanwhile, there was no statistically significant difference as regards their age, gender. Conversely, with the study of **Ghazanfari et al, (2022)** who assessed Knowledge, attitude, and practice of Iranian critical care nurses related to prevention of pressure ulcers: A multicenter cross-sectional study, found that a positive correlation between nurses' years of working experience and their knowledge regarding pressure ulcer prevention. **Persinal et al, (2022)** found a correlation between attending additional training with higher total knowledge score. For this reason, carrying out training for these nurses might be of value in increasing their knowledge of pressure ulcer prevention.

Study findings represented that there was a positive correlation between nurses' knowledge and practice regarding pressure ulcer. This result is supported by, **Awad & Hewi, (2020)** who highlighted the same

relation between knowledge and practice of the studied nurses.

These findings from the researchers point of view were answered the research questions as reflected of workload as a result of low staffing, staff qualifications and inadequate training.

Conclusion:

The majority of studied sample had poor knowledge about preventive measures of pressure ulcer. Regarding their practices, they had incompetent practices in the work setting. Finally, there was statistically significant correlation between total knowledge and practices of studied sample about preventive measures of pressure ulcer.

Recommendations:

-Urgent need for on-job training programs for nurses about application of pressure ulcer practices .

-Pediatric nurses should update their knowledge and practice through continuing training, educational program and workshops concern on preventive measures toward pressure ulcer .

-Empower nurses to apply preventive measures of pressure ulcer assessment and urgent intervention in work areas .

-Further research on preventive measures of pressure ulcer for critically ill children .

-Continuous education and training are needed to health care providers to work collaboratively to enhance quality of care.

References:

Alanazi, F. K., Sim, J., & Lapkin, S. (2022). Systematic review: Nurses' safety attitudes and their impact on patient outcomes in acute-care hospitals. Nursing open, 9(1), 30-43.

Alshahrani, B., Sim, J., & Middleton, R. (2021). Nursing interventions for pressure injury prevention among critically ill patients: A systematic review. Journal of Clinical Nursing, 30(15-16), 2151-2168.

Awad, W. H. A., & Hewi, S. A. H. (2020). Effect of pressure ulcer preventive nursing interventions on knowledge, attitudes and practices of nurses among hospitalized geriatric patients in Alexandria, Egypt. 22(1) , 1-12.

Berihu, H., Wubayehu, T., Teklu, T., Zeru, T., & Gerensea, H. (2020). Practice on pressure ulcer prevention among nurses in selected public hospitals, Tigray, Ethiopia. BMC Research Notes, 13(1), 1-7.

Frank G., Walsh K. E., Wooton S., Bost J., Dong W., Keller L., Miller M., Zieker K. & Brilli B. J., (2017): Impact of a pressure injury prevention bundle in the solutions for patient safety network, Pediatric Quality& Safety .2(2): e013.

Ghazanfari, M. J., Karkhah, S., Maroufizadeh, S., Fast, O., Jafaraghaee, F., Gholampour, M. H., & Zeydi, A. E. (2022). Knowledge, attitude, and practice of Iranian critical care nurses related to prevention of pressure ulcers: A multicenter cross-sectional study. Journal of Tissue Viability. 31(2):326-331.

Green, C. (2022). Applying the Nightingale Pledge in Reducing Health Disparities: A Hospital-Acquired Pressure Injury Case Study. Advances in Skin & Wound Care, 35(3), 180-183.

Ibrahim, N. M., Mohamed, E. A., & Hassan, S. E.(2022) Assessment of Nurses Performance in Caring for Children at Risk and Having Decubitus Ulcer. Published at: https://www.researchgate.net/publication/358505782.

Kielo-Viljamaa, E., Suhonen, R., Ahtiala, M., Kolari, T., Katajisto, J., Salminen, L., & Stolt, M. (2021). The development and testing of the C/WoundComp instrument for assessing chronic wound-care competence in student nurses and podiatrists. International Wound Journal, 18(1), 62-78.

Mohamed, R. A. E., Abd Elaziz, S. M., & Elaasar, H. N. (2019). Effect of Preventive Bundle Guidelines on Nurses' Knowledge and Compliance Regarding Pressure Ulcer Among Critically Ill Children at Pediatric Intensive Care Unit. Am J Nurs, 8(5), 249-260.

Nuru N., Zewdu F., Amsalu S., & Mehretie Y. (2015). Knowledge and practice of nurses towards prevention of pressure ulcer and associated factors in Gondar University Hospital, Northwest Ethiopia. BMC nursing, 14(1), 34.

Persinal-Medina, M., Llames, S., Chacón, M., Vázquez, N., Pevida, M., Alcalde, I., ... & Meana, Á. (2022). Polymerizable Skin Hydrogel for Full Thickness Wound Healing. International Journal of Molecular Sciences, 23(9), 4837.

Powell, L. E., Winn, E., Andersen, E. S., & Pozez, A. L. (2022). Utilizing a Comprehensive Wound Care Team to Lower Hospital-Acquired Pressure Injuries in an Academic Public Hospital: A Retrospective Cohort Study. Journal of Wound, Ostomy and Continence Nursing, 49(1), 34-50.

Qaddumi J., and Khawaldeh A. (2014). Pressure ulcer prevention knowledge among Jordanian nurses: a cross-sectional study. BMC nursing, 13(1),6.

Quigley S. M. & Curley M. A., (1996): Skin integrity in the pediatric population: Preventing and managing pressure ulcers. Journal of the Society of Pediatric Nurses. 1996; 1 (1): 7-18.

Wei, M., Yang, D., Chen, L., Wu, L., Jiang, Q., Niu, N., & Yang, T. (2021). The prevalence and prevention of pressure ulcers: A multicenter study of nine nursing homes in eastern China. Journal of Tissue Viability, 30(1), 133-136.

Zeydi, A. E., Ghazanfari, M. J., Esmaeili, S., Mobayen, M., Soltani, Y., Sigaroudi, A. E. & Karkhah, S. (2022). Knowledge, attitude, and practice of Iranian nurses towards pressure ulcer prevention: A systematic review. Journal of Tissue Viability. 31(2):326-331.

Zhang, H., Ma, Y., Wang, Q., Zhang, X., & Han, L. (2021). Incidence and prevalence of pressure injuries in children patients: A systematic review and meta-analysis. Journal of Tissue Viability. 31(1):142-151.

اداء الممرضين تجاه الاجراءات الوقائية لقرح الفراش بين أطفال الحالات الحرجة في وحدات العناية المركزة للأطفال

انغام حمدى عبدالخالق - فاتن شفيق محمود - خديجة محمد سعيد

تعد مشكلة قرح الفراش من التحديات التى تواجه العناية التمريضية لأطفال ذوى الحالات الحرجة فى العناية المركزة . لذا هدفت هذه الدراسة الى تقييم أداء الممرضين تجاه الإجراءات الوقائية لقرح الفراش بين أطفال الحالات الحرجة في وحدات العناية المركزة للأطفال . وقد اجريت هذه الدراسة فى وحدة العناية المركزة للاطفال بمستشفى بنها الجامعى وكذلك فى وحدة العناية المركزة للاطفال فى مستشفى الاطفال التخصصى ببنها التابعة لامانة المراكز الطبية المتخصصة . وقد اشتملت العينة على جميع الممرضين المتاحين العاملين في الاماكن المذكورة سابقًا (100 ممرض وممرضة الذين تواجدوا اثناء الدراسة ، والمسئولين عن توفير الرعاية المباشرة للأطفال وتم اخذ موافقتهم على المشاركة في الدراسة. وعينة غرضية لجميع أطفال الحالات الحرجة في وحدة العناية المركزة للأطفال في الأماكن المذكورة سابقاً (50 طفل وطفلة) وتتضمن : الاناث والذكور ذوى الحالات الحرجة داخل وحدات العناية المركزة للاطفال .وتم استبعاد: الأطفال المصابين بقرح فراش عند الدخول والذى لديهم مشاكل بالجلد. واظهرت النتائج ان (90%) من الممرضات أن لديهم معرفة ضعيفة بالإجراءات الوقائية تجاه قرح الفراش بين أطفال الحالات الحرجة وعدم كفاءة الممرضات في الإجراءات الوقائية تجاه قرح الفراش بين أطفال الحالات الحرجة بنسبة (96٪) و أن هناك علاقة ذات دلالة إحصائية بين معرفة الممرضات والممارسات المتعلقة الإجراءات الوقائية تجاه قرح الفراش بين أطفال الحالات الحرجة.وقد اوصت نتائج الدراسة بضرورة اقامة الدورات تدريبية الخاصة بقرح الفراش وتدريب الممرضيين على رأس العمل لتحسين جودة الرعاية التمريضية المقدمة لأطفال الحالات الحرجة وضرورة اقامة ورش العمل الخاصة بالعناية التمريضية لقرح الفراش لتحديث معلومات ومهارات وممارسات الممرضيين الذين يعملون فى وحدات العناية المركزة للاطفال وعمل المزيد من الابحاث تجاه الاجراءات الوقائية لقرح الفراش بين اطفال الحالات الحرجة .