Indexed, Abstracted and Cited: Index Copernicus International (Poland), ISRA Journal Impact Factor, Google Scholar, International Impact Factor Services (IIFS), Directory of Research Journals Indexing (DRJI), International Institute of Organized Research and Scientific Indexing Services, Cosmos Science Foundation (South-East Asia), International Innovative Journal Impact Factor, Einstein Institute for Scientific Information {EISI}, Directory of Open Access Scholarly Resources, Science Indexing Library (UAE), Swedish Scientific Publication (Sweden), citefactor.org journals indexing, Directory Indexing of International Research Journals

World Journal of Biology and Medical Sciences

Published by Society for Advancement of Science®

ISSN 2349-0063 (Online/Electronic)

Volume 4, Issue- 2, 98-103, April to June, 2017

Journal Impact Factor: 4.197

WJBMS 04/01/07/2017

www.sasjournals.com

A Double Blind Peer Reviewed Journal / Refereed Journal wjbmedsc@gmail.com/wjbms.lko@gmail.com

RESEARCH PAPER

Received: 15/02/2017 Revised: 05/04/2017 Accepted: 06/04/2017

Assessment of Nurses' Knowledge Regarding Factors Affecting Nursing Measurement of Blood Pressure in Pediatric Unit Elmak Nimer University Hospital, Shendi, Sudan 2016

Lmya Eltaib Elhadi, *Amani Zakaria Mohammed and **Shireen Abdalfatah Mohammed

Assistant Professor in Pediatric Department and Dean Faculty of Nursing Sciences in Shendi University, Sudan

***Nursing Researcher at Shendi University, Faculty of Nursing Sciences, Pediatric Nursing Department, Sudan**

****Senior Lecturer at Shendi University Faculty of Nursing, Pediatric Nursing Department, Sudan**

ABSTRACT

This is a descriptive cross sectional study aiming To assess nurses knowledge regarding factors affect nursing measurement of blood pressure , was carried out at Elmek Nimer University hospital pediatric ward, between August 2016 to December 2016. The sample composed of ninety nurses working in pediatric word. Data were collected by questionnaire and analyzed by using SPSS. The result represented Most of study group had good knowledge about factors affecting nursing measurement of blood pressure (position of cuff, position of the forearm, and cuff wrapping during the procedure) while More than half nurses had poor knowledge about sites and right position for measurement.

Regarding Accurate time of relaxation before measurement of blood pressure and optimum environment less than half and only one quarter had good knowledge respectively. The study recommended that, importance for nurses to attend work shop and training programm and proper equipment should be available for measurement of blood pressure.
Key wards: Nurses, Blood, Pressure, Measurement and Bladder cuff.

INTRODUCTION

Blood pressure monitoring is part of routine and ongoing data collection for children 3 years of age and older. Take a baseline blood pressure for a child of any Age (Nancy et al., 2010). Also blood pressure is a function of Cardiac output and systemic vascular resistance (resistance in blood vessels), is the force that blood exerts against the walls of blood vessels (Caroline Bunker Rosdahl and Mary T. Kowalski (2012).

Blood pressure measurement is indicated in any situation that requires assessment of cardiovascular health**,** including screening for hypertension and monitoring the effectiveness of treatment in patients with hypertension**,** Therefore Proper techniques are important to ensure consistent and reliable measurements (www.nejm).

When the nurses measure blood pressure, they record two points the systolic (contraction) pressure which means pressure of the blood as a result of contraction of the ventricles**,** that is the pressure of the height of the blood wave**,** and the diastolic (relaxation) pressure of the blood within the arteries [(2)] which means is the pressure when the ventricles are at rest, then is the lower pressure, present at all times within the arteries**.** The difference between the diastolic and the systolic pressures is called the pulse pressure (Audrey et al., 2016).

There are various factors that commonly cause errors when nurses measuring a patient's blood pressure. These can be to do with the patient, the nurse, or the equipment. blood pressure measurement is affected by wide factors which are the mercury is not set to zero; the glass is dirty; numbers on the manometer are not clearly visible**;** equipment may be tilted, or not correctly calibrated or positioned**;** there may be a defective control valve, or leaks due to cracked or perished rubber tubing (Barbaraa, et al., 2003).

There are different between normal blood pressure in children and normal blood pressure in adult. In adults, normal blood pressure reading is less than 120 mmHg for the systolic pressure and less than 80mmHg for the diastolic. Normal blood pressure reading in children varies depending on the age, sex and height of children (www.live). Variability of blood pressure is greater than in adults Values obtained during sucking, crying, or eating will not be representative as with adult (WWW dable education a).

MATERIAL AND METHODS

Study design: Descriptive, cross sectional, hospital based study, to assess knowledge of nurses about factors affecting nursing measurement of blood pressure, was cared about in August to December 2016.

Study area: Elmek Nimer University hospital at Shendi City, River Nile State, Sudan, which is located north of Khartoum about 176Km, and 110Km south to Eldamer, the capital of River Nile State. The hospital was established in early 2000s and stands as a landmark institution in medical education.

Study population and sample size: All nurses' work at Almak Nimer University hospital in pediatric word was included in this study (90 nurses).

Data collection tools: The Data was collected by questionnaire designed by researcher based on reviewing literature .It consist of four sections.

Data analysis: Data was analyzed by using computer through SPSS program. Scoring system was established, the data was distributed in four categories to measure the level of nurses knowledge about factors affecting nursing measurement of blood pressure.

Ethical consideration: Agree consent from Elmak Nimer hospital administers was obtaiend prior the study and verbal consent was obtained from all participants.

RESULTS

Table 1. Distribution of study group in relation to their knowledge about factors affect blood pressure range.

Factors that affect blood pressure	Frequency	Percent
Development stage	31	34.4%
Family History	28	31.1%
Exercise	29	32.2%
I do not know	2	2.2%
Total	90	100.0%

Table 2. Distribution of study group in relation to their knowledge about sites used to obtain blood pressure in children.

Level of knowledge	Frequency	Percent
Good	15	16.7%
Faire	27	30.0%
Poor	48	53.3%
Total	90	100%

Table 3. Distribution of study group in relation to their knowledge about right position for measuring blood pressure.

Level of knowledge	Frequency	Percent
Good	16	17.8%
Faire	41	45.6%
Poor	33	36.7%
Total	90	100.0%

Table 4. Distribution of study group according to their knowledge about position of (arm and fore arm) when measuring blood pressure.

Variable	Frequency	Percent
Position of arm		
Supported	61	67.8%
Unsupported	5	5.6%
Holding the child`s arm at the elbow	10	11.1%
I do not know	14	15.6%
Total	90	100.0%
Position of forearm		

At the level of the heart	75	83.3%
Above the level of the heart	2	2.2%
At lower than the level of the Heart	8	8.9%
I do not know	5	5.6%
Total	90	100.0%

Table 5. Distribution of study group according to their knowledge about Bladder cuff (width - length –position –wrapping) used in measurement of blood pressure.

Variable	Frequency	Percent
Bladder cuff (width)		
According to Developmental stage	40	44.4%
According to Mid arm circumference	29	32.2%
I do not care	5	5.6%
I do not know	16	17.8%
Total	90	100.0%
Bladder cuff (length)		
According to Developmental stage	52	57.8%
According to Length of the child	21	23.3%
I do not care	4	4.4%
I do not know	13	14.4%
Total	90	100%
Position of the cuff		
Directly on child`s skin in the part of the measurement	78	86.7%
Over clothes	3	3.3%
I do not care	6	6.7%
I do not know	3	3.3%
Total	90	100.0%
Wrapping of the cuff		
The index line should fall within the range-line limits	70	77.8%
Too tide	4	4.4%
Too loose	2	2.2%
I do not know	14	15.6%
Total	90	100.0%

Table 6. Distribution of study group according to their knowledge about accurate time of relaxation before measurement of blood pressure.

Accurate time of relaxation before measurement of blood pressure	Frequency	Percent
Less than 3 Minutes	18	20.0%
3-5 Minutes	38	42.2%
I do not care	20	22.2%
I do not know	14	15.6%
Total	90	100.0%

Table 7. Distribution of study group in relation to their knowledge about the optimum environment for measuring blood pressure.

Level of knowledge	Frequency	Percent
Good	22	24.4%
Faire	35	38.9%
Poor	33	36.7%
Total	90	100.0%

DISCUSSION

Nursing represent significant professional resource for facilitating positive changes in collecting data for investigate the patient in Elmak Nimer hospital , the sample was chosen in accordance with the requirements to meet the research objectives . The study showed that more than two third had good knowledge about position of arm and most (83.3) of them about right position of forearm during measurement of blood pressure. Also the study clarified that the nurses their knowledge was distributed between good and average knowledge regarding selection of proper bladder cuff and technique of position and warping the cuff during the procedure While two third of them have good and average knowledge about optimum environment during measurement, all this results were reflected to the percent that clarified majority of the study group in this hospital their qualification was bachelor and master degree. Because their created hours more than other nurses which their qualification was diploma certificate and blood pressure is basic fundamental in nursing science also their years of experience range between (4 to more than 6 years).

The questionnaire elicited information about nurse's level of knowledge with regard to sites used to obtain blood pressure, right position for measurement and accurate time of relaxation before measuring blood pressure. More than half nurses (53.3%) had poor knowledge about sites and (45%)of them had average knowledge about right position for measurement . and only 42.2 % of studied nurses had good knowledge about accurate time of relaxation before measuring blood pressure . the result were reflected to ; nurses did not measure blood pressure routinely as other vital signs in pediatric word.

CONCLUSION

Based on finding of the present study, it was concluded that:-

Most of studied group had good knowledge about factors affecting nursing measurement of blood pressure (position of cuff, position of the forearm, and cuff wrapping during the procedure) while More than half nurses had poor knowledge about sites and right position for measurement.

RECOMMENDATION

Based on the result of study and conclusion the following recommendation should be implementing:-

- Importance of work shop and training program for the nurses about blood pressure
- Importance of self learning about all the update knowledge regarding blood pressure.
- Proper equipment to measurement of blood pressure should be available in pediatric unit.

- ❖ Blood pressure must be measured routinely as others vital signs.

ACKNOWLEDGMENTS

We acknowledge and thanks Elmak Nimer hospital staff for their kind support for this study.

REFERENCES

Nancy, T. Hat Field, N. and Jayne Klossner (2010). Introductory Maternity and pediatric nursing, 2nd Edition, China. Page 635.

Caroline Bunker Rosdahl and Mary T. Kowalski (2012). Text book of Basic skills, 10 edition, China ,page 246.

WWW. nejm .>PDF>NE JM vcm 0800157. In 30/8 /2016 -At 3:9 AM.

Audrey Berman, Shirlee J. Snder and Geralyn Frandsen (2016). Fundamental nursing of concept –process and practice, 10 edition, Page 499, 500, 503, 504, 506.

Barbaraa, Work Man and Claae L. Bennett (2003) .Key nursing skill, UK.

WWW.LIVE Strong-com> health .30/8 /1016 at 31:14 PM.

WWW dable education a>spring07>c… in 15/8/2016 –at 3:2pm

Corresponding author: Lmya Eltaib Elhadi, Assistant Professor in Pediatric Department and Dean Faculty of Nursing Sciences in Shendi University, Sudan.
Email: slmanlma@hotmail.com