Assessment of Nurses Competency in the Management of Spinal Cord Injured Patients in Accident and Emergency/Orthopaedics Department of University of Port-Harcourt Teaching Hospital (UPTH) Nigeria

Article by Timighe, Gift Cornelius[1], Sylvester Atanga [2], J. J. Asongu[2], Okolue-Davies Miriam-Therese[3], Mohammed Ibrahim Kawu[4]
[1, 3, 4]School of Post-Basic Nursing UPTH Port-Harcourt
[2]School of Health and Human Services, SMU

Abstract

The purpose of the study was to assess Nursing Competences in the Care of Spinal Cord Injured Patients in Accident and Emergency/Orthopedics Department UPTH. Observational research design was used, Instruments for data collection was source from the primary sources using developed Spinal Cord Injured Assessment Questionnaire, using descriptive statistical tools simple averages. The results however revealed that; Nurses competences in diagnoses and assessment shows a total means of 2.3, nursing intervention 2.30, militating factors such as physical factor shows a total mean of 3.13 and Psychological factor 3.02 in the care of SCI patients. Hypothesis H_1: The emergency/orthopedic nurses at Accident and Emergency Department in UPTH are competent in the management of spinal cord injured patients. H_2: There are no mitigating factors against the care of spinal cord injured patients. It was therefore Recommended that management of the UPTH, should work on the militating factors, against the nurses for effective nursing care of spinal cord injured patients. Only Emergency/Spinal/Orthopedic specialist trained nurses should be posted to accident and emergency Department of the trauma unit for effective management. The community and insurance companies should work in the welfare and rehabilitation of the patients.

Keywords: UPTH, spinal cord, Orthopedic, Emergency, Competence, Port-Harcourt.

Introduction

Spinal cord injury is a serious life-threatening public health problem that cannot be neglected, everybody should be very careful of her/himself because anybody can be a victim at any time. Spinal cord plays a unique function in the entire systems which enable all the body structures appear together.

Martini (2013) describe the spinal cord as the livewire that determine individual's life as a connector for hope, it functions as motor and sensory. According to Spinal cord patient association and Orthopedic/ Neurosurgeons association international (2013) states that once an individual is being diagnose Spinal Cord Injured patient must care is expected from the caregivers for quick responses and preventions of complications. According to Hickey & Cook (2008) approximately 12,000 new spinal cords occur each year of these, 4000 die before reaching the hospital the ratio of males is 4:1. The peak age group affected is 20 -24years in males and 25 -29years in females, considering it functions in the body, relays information to and from brain; performs less- complex integrative functions; directs many simple involuntary activities, any deviation from its normal activities in the body, it will be a jeopardy to the entire functioning of all systems in the body (Yellow, 2011).

Spine injury (cord and/or column) must be considered a possibility in any patient with significant trauma to the head or upper, torso, in major deceleration injuries and falls (Kirshblum et al., 2011). Early acute management includes diagnosis, treatment, and prevention of complications, with the goals being to limit the extent of injury, manage acute consequences of the injury, and initiate measures to prevent predictable complications (Queens Land Spinal Cord Injuries Service, 2013). However, there are paucity of study that specifically examine nurses' competency when caring for these patients. This phenomenon has yet to be explored from the nursing perspective. This study was therefore designed to assess Nursing Competences in the Care of Spinal Cord Injured Patients in Accident & Emergency/Orthopedics Department of the UPTH

Materials and methods

This study was conducted in UPTH. The research design for this study was Observational research design as noted by Portney and Watkins (2000). Observational research design is composed of a series of questions that are posed to a group of subjects, and may be conducted as an oral interview or a written questionnaire. Sometimes the data are intended for generalization to a larger population; other times they may be intended as a description of a particular group. Surveys in clinical research are often concerned with describing attitudes and values, levels of knowledge or experience, current practices, or characteristics of specific group.

Study population

The target population for this study was about 60 nurses taking care of spinal cord injured patients that were admitted into the Accident and Emergency/Orthopaedic wards of UPTH from December 2017 – August, 2018 February.

Sampling techniques

This study was a hospital based prospective and a non-probability convenient study in which questionnaires were used to collect bio-data from the participants

Sample size

The sample size for this study was determined based on the Yaro Yamaneh's approach for finite population (Yamane, 1967). This approach takes into consideration a 5% error margin and 95% CL.

$$S = \frac{N}{1+N(e^2)}$$

Where S = sample size sought

N = Total population

e = Degree of freedom (here, 5% level of significance)

Arising from the above, the sample size is

$$S = \frac{60}{1+5(0.05)^2} = \frac{60}{1+60(0.05)^2} = \frac{60}{1+(0.125)} = \frac{60}{1.125} = 52.3$$

Approximately the sample size to be used is fifty-three (53) respondents.

Instrument for data collection

The instrument for data collection was called nurses competences in assessment of spinal cord injured patient Questionnaire (SCAQ). Kirshblum, et al., (2011), identified origin, classifications of spinal nerves. However, this study focused on nurses' competences in the classification and management of spinal cord injury. Spinal Cord Assessment Questionnaire consist of 15 items statements which were use in assessing the competence on the following criteria: Very appropriately (VA), Appropriately (A), Inappropriately (INA), and Very Inappropriately (VI) so as to test the fillings of the nurse's competence in the management of spinal cord injured patient.

Method of data collection

All Nurses (53) in accident and emergency/orthopedic wards of University of Port Harcourt Teaching Hospital were the target for this study. Observational research design on Spinal Cord Assessment Questionnaire were used to collect data from the participants

Method of data analysis

Data were keyed in on Microsoft excel and exported to SPSS (Statistical Package for Social Sciences) and were presented in tables.

Results

Socio-demographic data

Participants' socio-demographic data are presented in Table 1. Of the 53 participants, 17 (32.0%) were equally distributed between the age ranges 20-30 and 41-50 years while only a few fell in the age ranges of 31-40 years 9(17.0%) and 50 years or more 10(19.0%). More male participated in the

study 28(53.0%) as well as married women 25(47.0%). With regards to Professional Qualification, 20(38%) of the participants were registered nurse and only 5(9.4%) had a Bachelor degree in Nursing Science. 25(47.2%) of the participants had 1-10 years of working experience while, 3(5.66%) of the participants had 31 years and above working experience.

Table 1. participant's socio demographic characteristics

Parameters	No. Enrolled(N=53)	Percentage enrolled (%)
Age group (Years)		
20-30	17	32.0
31-40	9	17.0
41-50	17	32.0
≥51	10	19.0
Marital status		
Married	25	47.0
Single	19	36.0
Divorced	3	6.0
Widowed	6	11.0
Gender		
Male	28	53.0
Female	25	47.0
Professional Qualification		
Registered Nurse	20	38.0
Registered Nurse/Midwife	13	24.5
Orthopaedic Nurse	15	28.3
B. Nursing Science	5	9.4

Nurse's competence in the management of spinal cord using nursing process on assessment, diagnosis, intervention and evaluation

Nursing diagnosis and assessment

Table 2 shows Nursing diagnoses & assessment respondents on spinal cord injured patients. From the study, it was observed that Nursing Diagnoses respondents of spinal cord injured patients, items 1, 3, 4, 5and 6 were incompetent, while items 2 and 7 were competent. Nursing diagnoses however show a total mean of 2. 33 and therefore the null hypothesis is rejected at 0.05 level of significance.

Table 2. Nursing Diagnosis and assessment

Possible Nursing Diagnosis for Patient With SCI	Very Appropriate (VA)	Appropriate (AP)	Inappropriate (INA)	Very Inappropriate	Mean Score	Remark Competent or Incompetent
1. Ineffective airway clearance	10	8	20	15	2.24	Incompetent
2.Ineffective; breathing pattern	17	15	13	8	2.77	Competent
3. Impaired bladder and bowel care	3	10	19	21	1.90	Incompetent
4. Acute confusion	11	7	25	10	2.35	Incompetent
5. Impaired physical mobility	11	5	2	35	1.84	Incompetent
6. Risk for infection	10	5	30	8	2.32	Incompetent
7. Self-care deficit	7	43	2	1	2.92	Competent
Overall Mean Score					**2.33**	**Incompetent**

4

A mean score of ≥ 2.5 signifies the participants were competent in that area whiles a mean score of <2.5 indicate the participants were incompetent in that area.

Nursing intervention

Table 3 shows Nursing Interventions respondents on spinal cord injured patients.

From the study, it was observed that Emergency/Orthopaedics Nurses competences on care intervention with respect to spinal cord injured patients as shows on the result; Items 1, 2 and 5 were incompetent while Items 3, 4, 6 and 7 were competent. Total mean is 2.30, null hypothesis was therefore rejected.

Table 3. Nursing intervention

Nursing Intervention	Very Appropriate (VA)	Appropriate (AP)	Inappropriate (INA)	Very Inappropriate	Mean Score	Remark Competent or Incompetent
1. Does nursing intervention of spinal cord injured patient involve the use of cervical collar?	15	0	70	3	1.32	Incompetent
2. Is it necessary to apply maneuver jacket?	3	3	7	40	1.32	Incompetent
3. Is it necessary to care for a patient with halo tractik2on?	15	18	11	9	2.74	Competent
4. Is it necessary to monitor vital signs/pain?	33	9	7	4	3.34	Competent
5. NG tube feeding/spoon feeding is a must in spinal cord injured patient.	15	8	17	13	2.47	Incompetent
6. Does this patient need monitoring of intake and output?	11	16	19	7	2.58	Competent

7. Does a patient need log roll technique for lifting?	29	11	2	11	3.09	Competent
Overall Mean Score					**2.30**	**Incompetent**

Militating factors against spinal cord injured patients care

Table 4 shows Militating factors against competent Nursing care on spinal cord

It was observed that; Items 1, 2, 3, 4, 5, 6 and 8 were founded while Items 7 unfounded. Total X=3.13. Null hypothesis unfounded

Table 4. Militating factors against spinal cord injured patients care

S/N	Militating Factors	Very Appropriately	Appropriate	Inappropriate	Very Inappropriate	Mean $N^2= 53$	Remark
Physical Factor							
1	Number of nurses on duty	38	7	5	3	3.51	Founded
2	Supportive staff	15	20	10	8	2.79	Founded
3	Availability of equipment	29	10	4	10	3.09	Founded
	Overall Mean Score					**3.13**	**Founded**
Psychological Factors							
4	Staff motivation	33	10	5	5	3.34	Founded
5	Hours of work and rest	25	17	10	1	3.25	Founded
6	Presence of enabling working environment.	9	35	6	9	3.06	Founded
7	Cordial relationship between workers and management	10	11	15	17	2.26	Unfounded
8	Stress	30	10	7	6	3.21	Founded
Overall Mean Score						**3.02**	**Founded**

Note Criteria x = > 2.5 above is founded while < 2.5 is unfounded

Nursing evaluation

Table 5 shows Nursing Evaluation respondents on spinal cord injured patients. From the study, it was observed that; Items 1 was incompetent while Items 2, 4 and 5 were competent with a total mean of 2.30

Table 5. Nursing evaluation

Nursing evaluation on spinal cord patient includes the following:	Very Appropriate (VA)	Appropriate (AP)	Inappropriate (INA)	Very Inappropriate	Mean Score	Remark Competent or Incompetent
i. Bladder and bowel function	1	4	33	15	1.83	Incompetent
ii. Pain	22	15	9	7	2.98	Competent
iii. Patent airway	8	13	5	27	2.37	Competent
iv. Adequate appliance	10	24	7	12	2.60	Competent
vii. Nurses have competence in the care of spinal cord injured patients in orthopedic ward in UPTH	15	4	30	4	2.56	Competent
Overall Mean Score					**2.30**	**Incompetent**

Discussions

Spinal Cord Injuries (SCIs) are a significant cause of disability, with profound and in many cases devastating consequences. Most SCIs result from direct trauma to the vertebral column, affecting the spinal cords ability to send and receive messages to and from the brain. The disruption impairs the systems that control sensory, motor, and autonomic functions below the injury level (Chhabra & Batra, 2016). The purpose of this study was to assess Nursing Competences in the Care of Spinal Cord Injured Patients in Accident and Emergency/Orthopedics Department UPTH.

From our study only 15(28%) were trained professionally as orthopedic nurse. Nurses who choose to work in this field must be dedicated & passionate about the holistic care they provide to these often highly physically dependent individuals. There are very limited centers in our country that provide specialized courses, certificate or post-graduation in spine nursing care. The Government should encourage & start the same in co-ordination with private spine institutions where nurses can get enough exposure & experience dealing with spinal injured patients (Koivus et al., 2011). Concerning Working experience, 25 (47.17%) of the respondents have worked within the period of 1-10years, 15 (28.3%) 11-20years, 10 (18.87%) 21-30years, and 3 (5.66%) have worked for 30 years and above. Nurses working in SCI care need experience & knowledge around a range of rehabilitative interventions which include bladder, bowel & skin management (Emerich et al., 2012).

From our study it was observed that the Nurses were not competent in the management of spinal cord injured patient. Nurses competency theory on spinal cord injured patients states that: A rehabilitation nurse has specialized training in rehabilitative and restorative principles, works collaboratively with the entire rehabilitation team, and ascribes to a philosophy of care that takes a holistic approach to meeting a patient's functional, emotional, medical, vocational, educational, environmental, and spiritual needs. The nurse assists patients with SCI/D to adapt to an altered lifestyle; a Designs and implements treatment strategy based on scientific nursing theory and evidence-based practice related to self-care, and promotes physical, psychosocial, and spiritual health.

Conclusions

Based on our findings the following conclusions were drawn.
1. Nurses in accident and emergency/orthopaedic wards are not competent in the care of spinal cord injured patients.
2. The Nurses need to be trained and retrained as emergency/spinal/orthopaedic nurses as global standard in the care of Spinal Cord Injured patient, using Nursing process as a guide.
3. The militating factors deprive them from effective care.

Recommendations

Based on our findings the following conclusions were made
1. Nurses that are new to the spinal unit should be educated on the nature of the routine in Orthopaedic Department
2. The experiences of senior nurses should be shared as part of the orientation program for new nurses
3. Nurses should avoid feelings of guilt due to their desensitisation
4. Counselling session should be offered to nurses in order to help them ventilate their feelings and ease the guilt while caring for their patients.

References

[1]. Chhabra, H., S., & Batra, S. (2016): Spinal cord injury and its impact on the patient, family and the society. *Int J Recent Surg Med Sci 2: 1-4.*

[2]. Emerich, L., Parsons, K., C., & Stein, A. (2012): Competent care for persons with spinal cord injury and dysfunction in acute inpatient rehabilitation. *Top Spinal Cord Inj Rehabil 18: 149-166.*

[3]. Hickey, J. (2009): The clinical practice of neurological and neurosurgical Nursing. (6TH ed). Wolter Kluwer/Lippincott Williams & Wilkins. *Philadelphia.*

[4]. Kirshblum, S, Burns, S, Biering-Sorensen & Waring, W. (2011). International standards for Neurological classification of spinal cord injury (Revised 2011). *The Journal of Spinal Cord Medicine. 34(6): 535-546.*

[5]. Koivu, A., Saarinen, P., I., & Hyrkas, K. (2011): Stress relief or practice development: Varied reasons for attending clinical supervision. *J Nurs Manag 19: 644-654.*

[6]. Martini, F. (2011): Anatomy and Physiology (4th ed) *U.S.A Prentice Hall.*

[7]. Portney & Watkins (2OOO): Foundation for clinical Research Applications to practice 2 edition U.S.A. Prentice hall Inc publishers.

[8]. Spinal cord patient association and Orthopedic/ Neurosurgeons association international (2013)

[9]. The Queensland spinal cord injuries service, (2013). Management of pressure areas following Spinal cord injury: *Information for health professionals.*

[10]. Vogel, L; Hickey, K; Klaas, S; and Anderson, C. (2004). Unique issues in pediatric spinal Cord injury. *Orthopaedic Nursing. 23(5):300-308.*

[11]. Yellow, Bob. (2011): Preventive measures of spinal cord injured patient on complications, UPTH Publishers.