ORIGINAL RESEARCH ARTICLE

KNOWLEDGE ON PREVENTION OF COMPLICATIONS RELATED TO IMMOBILITY AMONG CAREGIVERS OF ORTHOPEDIC PATIENTS AT SELECTED HOSPITALS OF CHITWAN DISTRICT

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ABSTRACT

Immobility is a condition in which a person is unable to move freely or is restricted for therapeutic reasons. Immobility affects all systems of the body leading to complications. The objective of the study is to find out the knowledge on prevention of complications related to immobility among caregivers of orthopedic patients admitted on orthopedic ward of Chitwan Medical College Teaching Hospital (CMCTH), College of Medical Sciences Teaching Hospital (CMSTH) and Bharatpur Hospital, Chitwan. The study design was descriptive, cross sectional and 133 caregivers were interviewed by using semi structured interview schedule. Data was analyzed by using SPSS and various tests such as frequency distribution, chi-square and odds ratio. The study findings revealed that 45.9% of respondents were from adjacent districts of Chitwan, 45.9% were between age group 16-30 years, 56.4% were female, 84.2% were married and 70.7% were literate. The highest mean knowledge score of caregivers was in the area of joint contracture (44.4%) followed by bedsore (39.3%), hypostatic pneumonia (37.6%), urinary tract infection (32.1%) and least mean knowledge score was in the area of deep vein thrombosis (25.2%) and constipation (25.1%) respectively. The level of knowledge is statistically significant with area of residence (p=0.038), marital status (p=0.020) and educational status (p=0.001) of respondents. The study concluded that caregivers had poor knowledge regarding preventive measures. Awareness programme need to be planned and implemented.

Key Words: *Epidemiology, Health Burden, Nepal, Neurocysticercosis.*

INTRODUCTION

Immobility refers to the inability to move freely. Alteration in the level of physical mobility can result from prescribed restriction of movement in the form of bed rest, physical restriction of movement because of external device, voluntary restriction of movement or impairment of motor skeletal function. Immobility can cause major physiological, psychological and social effects. [1]

Immobility affects all systems of the body leading to complications such as pressure sore, deep vein thrombosis (DVT), hypostatic pneumonia, constipation, contracture, urinary tract infection, calculi and also psycho physiological problems.[2]

Approximately 50% of hospitalized individuals have impaired mobility. These individuals are most often found in intensive care units, trauma wards, orthopedic ward, neuro ward and geriatric wards of a hospital. [3]

A study about the incidence of complications among patients with cast immobilization was conducted in Nepal disable children hospital; Maharajgunj at orthopaedic unit found that the main complications of immobility are joint stiffness 77.5%,

muscle atrophy 30%, ulcer 25%, infection 22.5%, decrease sensation 20%, paralysis 2.5%, leg discrepancy 2.5%, cast syndrome 2.5%, malunited fraction 2.5%, and swelling 5%. [4]

It is estimated that approximately 1.2 million people are suffering from bedsores at any one time in the United States alone and almost 70% of sufferers are over 65. It is reported that there are 60,000 deaths annually from complications arising from bedsores. [5]

A study on knowledge and practice of immobilized orthopedic patients and their care givers regarding prevention of complications related to immobilization was conducted in India showed that knowledge and practice of patient and caregivers were inadequate to prevent complications of immobilization. [6]

Glajchen, (2004) reported that involvement of family caregivers is essential for optimal treatment of patients in ensuring treatment compliance, continuity of care and social support. [7] It is necessary to understand that caregivers play an important role in providing care to their patients and they should be aware about the complications and their preventive measures.

MATERIALS AND METHODS

It was a descriptive; cross sectional study. The settings of the study were orthopedic ward of Chitwan Medical College Teaching Hospital (CMCTH), College of Medical Sciences Teaching Hospital (CMSTH), and Bharatpur Hospital of Chitwan. The sample size of the study was 133 caregivers of orthopedic patients and all samples who met the inclusion criteria were included in the study between the study periods.

A semi structured interview schedule was developed by the researcher herself after reviewing of related literature. Content validity of the research instrument was established by consultation with research advisor and content expert. The research instrument was translated into Nepali version with the help of Nepali language expert and pre-test was done among 10% of total sample size on similar caregivers of orthopedic patients at Narayani polytechnic institution (NPI) in orthopedic ward. Data were collected from respondents using face to face interview method from 9th October to 12th of November, 2013 by researcher herself and informal teaching was given to each respondent in knowledge deficit areas afterwards.

The research approval was taken from the Nursing Thesis Committee of CMC, College of Nursing and CMC-IRC. Permission was taken from the concerned authority of the respective hospitals. The verbal informed consent was obtained from each respondent prior to data collection. The confidentiality of the respondents was maintained by coding the number instead of respondent's name, not disclosing the respondents' information to others and using the information for the study purpose only.

All collected data were reviewed and checked daily for its completeness, consistency and accuracy. The collected data was coded and entered in SPSS version 17. Data was analyzed using the descriptive statistics such as frequency, percentage, mean and standard deviation. Inferential statistics (chi-square test/ fisher exact test/odds ratio) was used to find out the association between the levels of knowledge on complications related to immobility and selected variables.

RESULTS

Table 1: Socio-demographic Characteristics of the Respondents (n= 133)

Variables	Frequency	Percent
Age		
16-30 years	61	45.9
31-45 years	45	33.8
46-60 years	19	14.3
Above 60 years	8	6.0
Sex		
Male	58	43.6
Female	75	56.4
Area of residence		
Chitwan	53	39.8
Adjacent district of Chitwan	61	45.9
Others	19	14.3
Educational status (n=133)		
Illiterate	39	29.3
Literate	94	70.7
If literate (n=94)		
Can read and write	21	15.8
Primary level	21	15.8
Secondary level	18	13.5
SLC pass	13	9.8
Higher secondary	14	10.5
Graduate and above	7	5.3

Mean± SD (age) = (35.9±13.5) yrs. Min=17 yrs, Max=85 yrs
Table 1 show that out of 133 respondents, 45.9% were between age group of 16-30 years and minority 6.0% were above 60 years. The mean age of the respondents was 35.9 years with 13.5 years standard deviation.

Out of 133 respondents, 56.4% were female and only 43.6% were male, 45.9% were from adjacent districts of Chitwan followed by 45.9% were from Chitwan district and minority 14.3% of respondents were from others districts (Rupendehi, Rauthat, Dang etc.).

Majority 70.7% of respondents were literate and only 29.3% were illiterate. Among the literate (94) respondents, 15.8% each respondents had no formal education and had primary level of education and minority 5.3% had graduated and above level.

Table 2: Respondents' Score of Knowledge on Prevention of Complications Related to Immobility (n=133)

Variables	Mean Score ± SD	Percent of Mean Score	Range	Maximum Possible Score
Knowledge on Bedsore	6.69 ±3.06	39.3	0-13	17
Knowledge on DVT	2.52 ±2.49	25.2	0-8	10
Knowledge on Hypostatic Pneumonia	3.76 ±2.61	37.6	0-9	10
Knowledge on Joint Contracture	3.11 ±1.65	44.4	0-6	7
Knowledge on Constipation	4.53 ±3.28	25.1	0-17	18
Knowledge on UTI	4.18 ±2.64	32.1	0-9	13
Total	**24.81 ±15.73**	**33.0**	**6-55**	**75**

Table 2 shows that the mean knowledge score of the respondents on bedsore is 6.69 and 3.06 SD, 39.3 % mean score, range 0-13 and maximum possible score is 17.

The mean knowledge score of the respondents on DVT is 2.52 and 2.49 SD, 25.2 % of mean score, range 0-8 and maximum possible score is 10.

The mean knowledge score of the respondents on hypostatic pneumonia is 3.76 and 2.61 SD, 37.6% of mean score, range 0-9 and maximum possible score is 10.

The mean knowledge score of the respondents on joint contracture is 3.11, 1.65 SD, 44.4% of mean score, range 0-6 and maximum possible score is 7.

The mean knowledge score of the respondents on constipation is 3.11 and 1.65 SD, 25.1% of mean score, range 0- and maximum possible score is 18.

The mean knowledge score of the respondents on UTI is 4.18 with 2.64 SD, 32.1% of mean score, range 0-9 and maximum possible score is 13.

The total mean knowledge score of the respondents is 24.81 with 15.73 of SD, 33.0% of mean score, range is 6-55 and maximum possible score is 75.

Table 3: Distribution of Respondents according to Level of Knowledge on Prevention of Complications Related to Immobility (n=133)

Level of knowledge	Frequency	Percent
Poor	107	80.5
Fair	26	19.5

Table 3 shows that the majority 107(80.5%) of the respondents had poor level of knowledge and minority 26 (19.5%) had fair level of knowledge.

Table 4: Association between Respondents' Level of Knowledge on Prevention of Complications Related to Immobility and Socio-demographic Variables (n=133)

Variables	Level of Knowledge		
	Poor (%)	Fair (%)	p-value
Area of residence			0.038
Chitwan	38 (71.7)	15 (28.3)	
Others than Chitwan	69 (86.3)	11 (13.8)	
Age			0.630
16-30 years	47 (77.0)	14 (23.0)	
31-45 years	37 (82.2)	8 (17.8)	
Above 46 years	23 (85.2)	4 (14.8)	
Sex			0.770
Male	46 (79.3)	12 (20.7)	
Female	61 (81.3)	14 (18.7)	
Educational status			0.001
Illiterate	38 (97.4)	1(2.6)	
Literate	69 (73.4)	25(26.6)	

Marital status			0.020
Unmarried	13 (61.9)	8 (38.1)	
Married	94 (83.9)	18 (16.1)	

Significance level at 0.05
χ^2 is computed for p-value

Table 4 shows that the level of knowledge on prevention of complications related to immobility is statistically significant with area of residence (p=0.038), educational status (p=0.001) and marital status (p=0.020) of respondents. The level of knowledge on prevention of complications related to immobility statistically not significant with age (0.630) and sex (0.770) of respondents.

Table 5: Respondents' Level of Knowledge on Prevention of Complications Related to Immobility by Marital Status and Area of Residence (n=133)

Variables	Level of Knowledge		Odds Ratio (Unadjusted)	95% CI
	Poor (%)	Fair (%)		
Marital status				
Married	94 (83.9)	18 (16.1)	1	
Unmarried	13 (61.9)	8 (38.1)	3.21	1.165-8.867
Area of residence				
Others than Chitwan	69 (86.3)	11 (13.8)	1	
Chitwan	38 (71.7)	15 (28.3)	2.47	1.034-5.928

Table 5 shows that the unmarried respondents have more likely to have fair knowledge than the married respondents (OR= 3.21, 95% CI= 1.165-8.867).

The respondents who were from Chitwan district have more likely to have fair knowledge than the respondents from others than the Chitwan district (OR= 2.476, 95% CI= 1.034-5.928).

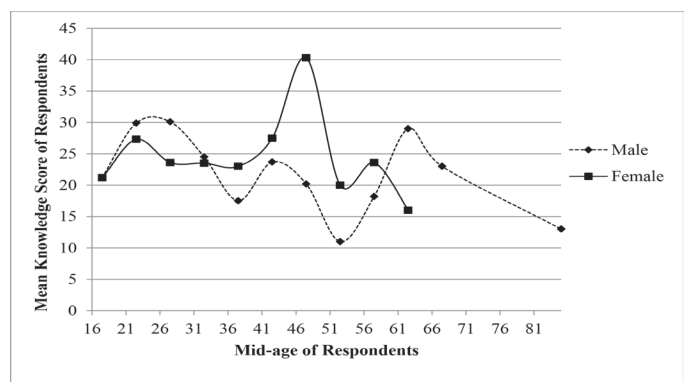**Figure 1: Mean Knowledge Score of Sex by Age**

Figure 1 shows that the female respondents from mid-age 46 to 51 had higher mean knowledge score than the male respondents

and the male respondents from mid age 51 to 61 had lower mean knowledge score. Most of the female respondents whose age lies from 31 to 61 had higher knowledge than the male respondents in same age group.

DISCUSSION

Concerning the demographic characteristics, majority 45.9% of respondents were between age group 16-30 years and 6.0% were above 60 years. The mean age of the respondents was 35.9 years. Majority of the respondents 56.4% were female and only 43.6% were male. As regards to the marital status of the respondents, the majority of the respondents 84.2% were married and minority 15.8% were unmarried. This finding is comparable with the study carried out by Kurian in which majority 67.5% were the age group of 19-39 years and 5.0% were above 60 and mean age was 34.3. Majority 62.5% of caregivers were female and majority of sample were married 72.5%. [6]

In present study, the mean knowledge score of the respondents on bedsore is 6.69 with 3.06 SD and 39.3 % mean knowledge score. This finding is not consistent with the study done by Tiwari, on "knowledge & practice of family members towards pressure sore prevention to their immobilized patient" in western regional hospital Pokhara, which showed that the mean knowledge score was 78.22 percent and standard deviation, was 1.44. [8]

Regarding the prevention from developing bedsore, 75.6% of respondents had knowledge about frequent position change and only 10.9% of the respondents had knowledge that use of pillow/rolled blanket/air mattress to relieve continue pressure from developing bedsore. Similar finding was reported by Kwiczala-Szydłowska, Skalska & Grodzicki that most of caregivers did not know basic principles of prevention including devices useful in pressure ulcer prevention, did not know about pressure reducing mattresses and the study concluded that families and caregivers of bed-ridden patients have insufficient knowledge of pressure ulcer prevention. [9]

CONCLUSION

The study concluded that education plays a significant role in providing care to prevent complications related to immobility. So, awareness programmes regarding preventive measures should be planned and implemented for caregivers of immobilized patients. Intervention study needs to be carried out in large scale in future.

REFERENCES

1. Potter PA, Perry AG. Fundamentals of Nursing. St. Louis, Missouri: Mosby, Elsevier; 2005.
2. Maher AB, Salmond SW, Pellino TA. Othopaedic Nursing. W.B. Sounder's Company, Philadelphia; 1994.
3. Oomen S. A study to assess selected factors related to pressure sores among immobilized patients of St. John's Medical College Hospital. Unpublished dissertation as a part of Master's of Nursing, St.John's College of Nursing.University of Bangalore 2000.
4. Joshi D. A study about the incidence of complications among patients with cast immobilization for Extended Time Period (Unpublished thesis). Institute of Medicine Nursing Campus, Maharajgunj 1990.
5. ProBed Medical Technologies Inc. (2008). Complication of immobility. Retrieved on 15th Aug, 2012. http://www.probed.com/products/complications.html
6. Kurian J. A study to assess the knowledge and practice of immobilized Orthopaedic Patients and their care givers regarding, prevention of complications related to immobilization. Dissertation as a requirement of master's of Nursing, St.John's College of Nursing. University of Bangalore 2005.
7. Alhosis KF, Qalawa AAS, El-Moneem DS. Effect of designed pressure ulcer prevention program on caregivers' knowledge of immobilized patients. Journal of American Science 2012; 8(12):939-948. (ISSN: 1545- 1003)
8. Tiwari G. Knowledge and practice of family members towards pressure sore prevention to their immobilized patient in western regional hospital Pokhara. Institute of Medicine Nursing Campus 2004.
9. Kwiczala-Szydlowska S, Skalska A, Grodzicki T. Pressure ulcer prevention-evaluation of awareness in families of patients at risk. Katedra Chorób Wewnetrznych iGerontologii 2005; 62(12):1393-7.