Original Research Article

Journal of College of Medical Sciences-Nepal, Vol-18, No 3, Jul-Sep 2022
ISSN: 2091-0657 (Print); 2091-0673 (Online) Open Access
DOI: 10.3126/jcmsn.v18i3.47833

Awareness on Prevention of Complication Related to Immobility among Caregivers of Bedridden Patients in Tertiary Health Care Center in Chitwan

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ABSTRACT

Introduction

Immobility is a condition in which a person is unable to move freely or movement is restricted for medical reasons. Prolonged bed rest and immobilization inevitably leads to complications. Caregivers play a vital role in preventing the complications of immobilization and avoiding discomfort for the patient. This study aims to assess awareness on prevention of complications of immobility among caregivers of bedridden patients admitted in tertiary health care center.

Methods

A descriptive cross-sectional research design was used to assess 66 caregivers of college of medical sciences by using non-probability convenience sampling technique. Data was collected by using self-administered questionnaire to assess awareness through face-to-face interview method. Obtained data were analyzed by using descriptive and inferential statistics using IBM SPSS 16.

Results

Study findings revealed that the mean age of the respondents was 18 years with mean age 18 ± 11.87 and majority (54.5%) were female with higher percentage of respondents' involvement in agriculture (28.3%). Majority (68.2%) of the respondents stayed in hospitals for 1 to 5 days and 51.5% respondents had no previous experience of hospital stays. Among the total respondents, majority (83.3%) had inadequate awareness on prevention of complication related to immobility which varied with respondent's gender (p=0.047), educational level (p=0.001), occupation (p=0.0026) and information from television (p=0.005).

Conclusions

Majority of the respondents had inadequate awareness on prevention of complication related to immobility. Findings emphasize that awareness programs should be implemented time to time in hospital settings to update the caregivers in relation to preventive measures of complications of immobilization.

Keywords: awareness; caregivers; immobilization

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INTRODUCTION

The greater the extent and longer the duration of immobility, the more pronounced the consequences.[1] In the fast-moving world of today, most physical ailments are caused by trauma and accidents.[2] Long immobilization periods lead to overall complications rates ranging from 6% to 80%.. These complications not only include complex and regional pain syndrome but a massive reduction in range of motion and with loss of movement.[3]

Prolonged bed rest and immobilization inevitably lead to complications which are easier to prevent than treat.[4] Unlike professional caregivers such as physicians and nurses, informal caregivers, typically family members or friends, provide care to individuals with a variety of conditions.[5] For the optimal treatment, involvement of family caregivers is essential to ensure treatment compliance, continuity of care and social support.[6]

The objective of the study was to assess the level of awareness on prevention of complications of immobility among caregivers of bedridden patients.

METHODS

A cross-sectional research design was adopted to assess the level of awareness regarding prevention of complication related to immobility among caregivers of bedridden patients. The study was conducted after getting approval from Institutional Review Committee of College of Medical Sciences Teaching Hospital (CMSTH-IRC/2022-077). Written consent was obtained from each respondent. All the caregivers of bedridden patients who provided care for at least 12 hours a day were included in the study.

Sample size was based on following assumption:

Sample size= z^2 σ^2/ e^2

Here, z= 1.96

Margin of error (e) = 4

Standard Deviation (σ) = 15.73 [7]

By using formula sample size is calculated as: (1.96)^2× (15.73)^2/ 4^2= 59.508

By assuming 10% not response rate: 10% of 59.508 = 5.9408 (approximately = 6)

Total sample size (n) = 59.508 +6 = 65.508 which is approximately equal to 66

So, the calculated sample size is 66

Non-probability convenience sampling technique was used to collect the data. The semi structured questionnaire was developed to collect data regarding socio-demographic, caregiver related variable and awareness level of caregivers with complications of immobility. The instrument was divided into two parts:

Part 1: Questions related to socio-demographic variables and caregiver related variables.

Part 2: Questions related to awareness on prevention of complications related to immobility among caregivers of bedridden patients.

Content validity was maintained by thoroughly reviewing of literature, consultation with subject matter experts. The tool was prepared in English, then translated from English to Nepali and was back translated into English language.

Reliability of instrument was maintained by pretesting in 10% of study sample in CMSTH and was excluded from main study. Internal consistency was measured by Cronbach's alpha which was in acceptable range (0.74).

The collected data was checked, reviewed, organized for accuracy and completeness. Then all collected data was entered in excel, analyzed in SPSS version 16 and interpreted by using descriptive statistics method in term of frequency and percent and inferential statistics (Chi square) to find out association.

RESULTS

The mean age and standard deviation was 18±11.87. Out of 66 respondents, , 34.8% of the respondents were from age group 26-35 years with. More than half (54.5%) of the respondents are female with Hinduism being the religion of majority (63.6%) of the participants. 80.3% of respondents were literate and 19.7% were illiterate. Among them majority of (28.3%) had general and secondary level education (Table 1).

Table 1. Socio- demographic Characteristics of the Respondents. n = 66

Variables	Frequency (n)	%
Age		
15-25	13	19.7
26-35	23	34.8
36-45	15	22.7
46-55	12	18.2
56-65	2	3
66-75	1	3
Gender		
Male	30	45.5
Female	36	54.5
Religion		
Hinduism	42	63.6
Buddhism	10	15.2
Christian	9	13.6
Muslim	5	7.6
Ethnicity		
Dalit	7	10.6
Janjati	19	28.8
Madhesi	6	9.1
Muslim	5	7.6
Brahmin/Chhetri	29	43.9
Education status		
Literate	53	80.3
Illiterate	13	19.7
Education level (n=53)		
General literate	15	28.3
Basic education	11	20.8
Secondary level	15	28.3
Bachelor and above	12	22.6
Duration of hospital stay		
1 to 5	45	68.2
6 to 10	13	19.7
11 to 15	5	7.6
16 to 20	3	4.5
Previous experience		
Yes	32	48.5
No	34	51.5

Out of 66 respondents, agriculture was the major occupation of the majority i.e., 27.3% and out of the total respondents majority (42.4%) had 5000-15000 salary per month. Majority of participants (68.2%) stayed in hospitals for 1 to 5 days and 51.5% respondents had no previous experience of hospital stay. Majority of respondents (86.4%) got the information through hospital (Table 2).

Table 2. Family related variables. n=66

Variables	Frequency	Percent
Occupation		
Agriculture	18	27.3
Housewife	11	16.7
Business	14	21.2
Services	7	10.6
Labor	10	15.2
Other	6	9.1
Family income		
5-15000	28	42.4
16-25000	23	34.8
26-35000	6	9
36-45000	5	7.6
46-55000	4	6.1
Marital status		
Married	52	78.8
Unmarried	14	21.2

Relationship with patient		
Husband	16	24.2
Wife	6	9.1
Son	12	18.2
Daughter	5	7.6
Others	27	40.09
Source of information		
From television	13	19.7
From other patients	34	51.5
From hospital	57	86.4
From other sources (awareness program, family)	4	6

Out of total respondents, 49 (74.2%) respondents know the meaning of immobility and 41 (62.1%) respondents knew the meaning of bedsore.

Similarly, 40 (60.6%) respondents knew regarding the materials used to prevent bed sore and 58 (87.9%) had knowledge regarding duration of changing position, 62 (93.9%) had knowledge regarding the prevention of bedsore infection, 24 (36.4%) respondent were aware about the use of saline water to clean the bedsore, 23 (34.8%) respondents were aware about the area to be assessed for bedsore regarding the effect of immobility, 56 (84.8%) respondents were aware about the prolonged bed rest effect joint function, 61 (92.4%) respondents were aware about joint of patient should be moved frequently to prevent joint stiffness. Similarly, 36 (54.5%) respondents were aware about which type of diet prevents constipation and 22 (33.3%) respondents were aware about how much amount of fluid is consumed per day. Vitamin K is taken to prevent venous thrombosis is known by 26 (39.4%) of the respondents whereas the risk of immobility and exercise to prevent pneumonia are known by 58 (87.9%) and 57 (86.4%) of the respondents respectively and the frequency of deep breathing and coughing exercise are known to 33 (50%) of the respondents (Table 3).

Table 3. Distribution of Respondents' Awareness Regarding Prevention of Complication Related to Immobility. n = 66

Awareness question	**Responses**	**Frequency (%)**
Meaning of immobility	Unable to move freely	49 (74.2)
Meaning of bedsore	Damage of skin	41 (62.1)
Materials used to prevent bedsore	Pillows	40 (60.0)
Duration of changing position	Every 2 hours	58 (87.9)
Prevention of bedsore from being infected	Cleaning and dressing	62 (93.9)
Which is used to clean bedsore	Saline water	24 (36.4)
Area to be assess for bedsore	Bony area	23 (34.8)
Prolonged bed rest affect joint function	Yes	56 (84.8)
Joint of patient should be moved frequently to prevent joint stiffness	Yes	61 (92.4)
Diet to prevent constipation	High fibrous diet	36 (54.5)
Amount of consumption of fluids	2500ml/day	22 (33.3)
Intake of vitamin to prevent venous thrombosis	Vitamin k	26 (39.4)
Bed rest and immobilized patients are at risk of developing pneumonia	Yes	58 (87.9)
Exercise to prevent pneumonia	Deep breathing exercise	57 (86.4)
How often deep breathing and coughing exercise can be done	3 times a day	33 (50)

Among the multiple responses where majority i.e., 55 (83.3%) responses was for lack of exercise for causes of immobility and vomiting for complications for immobility. Regarding the preventive measures of constipation 54(81.8%) responses were to intake of plenty foods and 35(53%) responses to keep legs elevated for the prevention of venous thrombosis. Similarly, 45(68.2%) responses were for performing deep breathing exercise for prevention of pneumonia (Table 4).

Table 4. Distribution of Respondents' Awareness Regarding Prevention of Complication Related to Immobility (multiple responses). n=66

Awareness question	Responses	Frequency (%)
Causes of immobility	Stroke	9 (13.6)
	Trauma to bone, joints, and spine	48 (72.7)
	Fall	37 (56.1)
	Lack of exercise	55 (83.3)
Complications of immobility	Hypostatic pneumonia	31 (47.0)
	Headache	48 (72.7)
	Constipation	31 (47.0)
	Vomiting	55 (83.3)
	Bed sore	34 (51.5)
	Renal calculi	10 (15.2)
Preventive measures of constipation	Rest and sleep	53 (80.3)
	Mobilization	23 (34.8)
	Intake of fibrous foods	31 (47.0)
	Intake of plenty fluids	54 (81.8)
	Intake of junk foods	66 (100.0)
Prevention of venous thrombosis	Use of anti-embolism stocking	22 (33.3)
	Keep legs elevated	35 (53.0)
	Massage leg	31 (47.0)
	Take rest with leg crossed	62 (93.9)
Prevention of pneumonia	Heavy physical exercise	59 (89.4)
	Oxygen therapy	50 (75.8)
	Maintain hydration	20 (30.3)
	Deep breathing exercise	45 (68.2)

Out of 66 respondents, 55 (83.3%) of them had inadequate and 11 (16.7%) had adequate awareness on prevention of complication related to immobility (Table 5).

Table 5. Level of awareness on Prevention of Complication Related to Immobility. n=66

Level of awareness	Frequency	Percent
Inadequate	55	83.3
Adequate	11	16.7

There is statistically significant association between level of awareness and gender (p=0.047), education level (p=0.001) whereas there is no significant association with age, religion, ethnicity and education status (Table 6).

Table 7 shows that there is statistically significant association between level of awareness and occupation (p=0.026) and information through television (p=0.005) whereas there is no significant association with income, marital status, relationship with patient, duration of hospital stays and information from other patients.

DISCUSSION

The survey shows that most study participants were between age group 26-35 (34.8%) which is contrast from a study conducted by Poudyal et al.[7] The respondents (45.9%) were aged between 16-30. The difference of age might in these two might be because of the difference of their patient's age who were bedridden. Study revealed that majority of respondents (80.3%) were literate among them highest percent (22.7%) were general literate and had secondary level education, this finding is contradictory with

Table 6. Association between Levels of Awareness with Socio-Demographic Variables.

Characteristics	Level of Awareness		Chi square	p-value
	Inadequate No. (%)	Adequate No. (%)		
Age (in years)				
Below 35	28 (77.8)	8 (22.2)	2.498	0.287**
35-55	24 (88.9)	3 (11.1)		
Above 55	3 (100.0)	0 (0.0)		
Gender				
Male	28 (93.3)	2 (6.7)	3.96	0.047*
Female	27 (75.0)	9 (25.0)		
Religion				
Hinduism	36 (85.7)	6 (14.3)	0.471	0.492***
Other then Hinduism	19 (79.2)	5 (20.8)		
Ethnicity				
Brahmin/Chhetri	24 (82.8)	5 (17.2)	0.019	0.912***
Other than Brahmin/Chhetri	31 (83.8)	6 (16.2)		
Education status				
Literate	43 (81.1)	10 (18.9)	0.939	0.333***
Illiterate	12 (92.3)	1 (7.7)		
Education level				
Below and equal to secondary	26 (100.0)	0 (0.00)	11.869	0.001***
Above secondary	17 (63.0)	10 (37.0)		

*Pearson chi- square *, likelihood ratio **, fisher exact test ****

Table 7. Association between levels of knowledge with family related variables. n=66

Characteristics	Level of Awareness		Chi square	p-value
	Inadequate No. (%)	Adequate No. (%)		
Occupation				
Agriculture	18 (100.0)	0 (0.00)	4.95	0.026***
Other than agriculture	37 (77.1)	11 (22.9)		
Income				
Below 20000	37 (88.1)	5 (11.9)	1.88	0.391**
20000-35000	11 (73.3)	4 (26.7)		
Above 35000	7 (77.8)	2 (22.2)		
Marital status				
Married	45 (86.5)	7 (13.5)	1.813	0.227***
Unmarried	10 (71.4)	4 (28.6)		
Relation with patient				
Husband	12 (75.0)	4 (25.0)	1.418	0.841**
Wife	5 (83.3)	1 (16.7)		
Son	10 (83.3)	2 (16.7)		
Daughter	4 (80.0)	1 (20.0)		
Others	24 (88.9)	3 (11.1)		
Duration of hospital stay (days)				
1 to 5	36 (80.0)	9 (20.0)	2.383	0.497**
6 to 10	12 (92.3)	1 (7.7)		
11 to 15	4 (80.0)	1 (20.0)		
16 to 20	3 (100.0)	0 (0.00)		
Previous experience with hospital stays				
No	30 (85.7)	5 (14.3)	0.304	0.581*
Yes	25 (80.6)	6 (19.4)		
Information through television				
No	48 (90.6)	5 (9.4)	10.135	0.005***
Yes	7 (53.8)	6 (46.2)		
Information from other patients				
No	27 (84.4)	5 (15.6)	0.049	1.000*
Yes	28 (82.4)	6 (17.6)		

Pearson chi- square *, likelihood ratio **, fisher exact test ***

the study conducted by Poudyal et al.[7] in which majority of respondents (70.7%) were literate among them highest percent 15.8% can read and write and had primary level education.

Study conducted by Mersal et al.[8], showed that majority of respondents (43.3%) had no job but in this study majority of respondents (27.3%) were farmer. Study conducted by Poudyal et al.[7] shows that about majority of respondents (84.21%) were married but in this study (78.8%) respondents were married. Study revealed that majority of respondents (40.09%) had other relation (brother, uncle, sister) with patient, this finding is contradictory with the study conducted by Mersal et al.[8] , in which majority of respondents (40.0%) were son of patient.

This survey shows that majority (68.2%) of study participants stayed in hospital for 1 to 5 days, whereas in the study conducted by Mersal et al.[8] shows that majority of study participants (70%) were stayed hospital for 5 to 10 days. Regarding the knowledge of complication of immobility 47.0% respondents were aware that hypostatic pneumonia and bedsore is the complication of immobility along with bedsore (51.5%) which is contrary with the study by Malarvizhi & Hemavathy (2015)[9] where 20%, 3.33% and 33.33% had adequate knowledge on pulmonary infection, constipation, and bedsore as complication of immobility respectively. Regarding the prevention from developing bedsore, 62.1% respondents had knowledge about meaning of bedsore, 60.0% respondents had knowledge about materials used to prevent bedsore, 87.9% respondents had knowledge about duration of changing position, 93.9% respondents had knowledge about prevention of bedsore, 36.4% respondents had knowledge about that saline water is used to clean bedsore and 34.8% respondents had knowledge about the area that is assess for bedsore. Similar finding was reported by Kwiczala-Szydlowska et al.[10] that the most caregivers did not know the basic principle of prevention including devices useful in pressure ulcer prevention, did not know about the pressure reducing mattress.

This study shows that out of 66 respondents, 11 (16.7%) of total respondents had adequate level of knowledge and remaining 55 (83.3%) had inadequate level of knowledge regarding the prevention of complication related to immobility among care givers of bedridden patients. The finding is comparable with the finding of the study conducted by Poudyal et al.[7] where 19.5 % had adequate knowledge and 80.5% had inadequate knowledge.

CONCLUSIONS

It is concluded that majority of the respondents had inadequate knowledge and only few had adequate knowledge regarding the prevention of complication related to immobility among care givers of bedridden patients and it varies with the gender, education level and occupation of the caregivers. Educating caregivers in providing care to prevent complications related to immobility has a huge impact on patient's health. So, awareness programs should be planned and implemented for caregivers of immobilized patients. Intervention study needs to be carried out in large scale in future.

Recommendations

Since, this study has covered only a small sample, a large – scale study can be done to generalize the study findings to different settings. Special health information can be provided to caregivers to improve their quality of care and prevent from complications related to immobility.

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Citation: Dhakal B. Awareness on Prevention of Complication Related to Immobility among Caregivers of Bedridden Patients in Tertiary Health Care Center in Chitwan. JCMS Nepal. 2022; 18(3); 288-96.