

Patients' and Care-givers' Knowledge and Practice regarding Prevention of Complications of Immobilisation with a View to Develop an Information Booklet

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Abstract

This study was conducted at a tertiary care hospital with the objectives to assess the knowledge and practice of immobilised orthopaedic patients and their care-givers regarding prevention of complications of immobilisation and to seek relationship between knowledge and practice scores with the selected demographic variables. A quantitative approach with descriptive survey design was used. A semi structured questionnaire, to assess the knowledge and a checklist to assess the practice of both patients and their care-givers were used for data collection. Purposive sampling technique was employed to select 50 patients admitted in the orthopaedic ward and their 50 care-givers. The study showed that most of the subjects (both patients and care-givers) were in the age group of 20-30 years and married and spending more than 12 hours with their patient to care for them. There was no significant relationship between the knowledge scores of study subjects (patients as well as care-givers) with their practice scores. There was a significant relationship between the knowledge scores of patient and care-givers in specific areas showing consistent knowledge deficit in both patient and care-givers in those areas. There was no significant relationship between the knowledge and practice scores with the selected demographic variables in both patients and their care-givers. An Information Booklet on prevention of complications of immobilisation was developed and disseminated.

Immobility is defined as inability to independently move or when change in positions or movement is restricted due to medical reasons (Potter & Perry, 2008). Immobilisation is a commonly used practice in orthopaedic department as a method of treatment. Immobilised patients have the highest death rate from the complications. According to Indian Orthopaedic Association, 1,27,000 people sustain serious injuries every year in road traffic accidents.

A clinic-epidemiological study by Pagadpally et al (2003) in a rural tertiary care centre, revealed that most common mode of injury was fall from height followed by road traffic accidents. Maximum injuries were the cervical spine (55.8%) followed by thoracic (25.5%), lumbar (16.2%), and thoraco-lumbar injuries (2.3%). All patients were stabilised surgically. Mortality accounted to 23.25 percent, indicating high prevalence of immobilisation among orthopaedic patients.

Kiran & Vijaya (2013) revealed that the average length of stay in the orthopaedic department was in the range of 9-13 days. This may be due to the fact that orthopaedic cases are hospitalised for a large

period since healing of fractures takes a long time. Immobilisation leads to pneumonia due to the pooling of secretions and constipation which is the infrequent and difficult passage of stools. Immobilisation is one of the leading risk factor for pulmonary embolism (Hales et al, 2007). The degree of physical inactivity is related with the risk of constipation. Prolonged swelling, scar formation and shortening of soft tissue after prolonged period of immobilisation end in joint stiffness and contracture (Liu et al, 2008).

A prospective study on incidence of deep vein thrombosis (DVT) among medically ill hospitalised patients in AIIMS, New-Delhi, Sharma et al (2009) recorded the presence of clinical factors for DVT and laboratory evaluation was done. Of the 163 patients, 77 (47%) had more than one risk factor for DVT, 5 (3%) patients developed DVT, none of them had symptomatic DVT. None of these patients received anti-coagulation prior to the development of DVT. The incidence rate of DVT was 2.7 per 1000 person-days of hospital stay.

In a study in Yeungnam University College of Medicine, Daegu, Korea on 506 consecutive patients with hip fracture surgery, 30-day post-operative complications were reviewed and cardiac complications, pulmonary complications, delirium, and death were

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recorded. It was found that atelectasis was associated with post-operative pulmonary complications (Kim & Park, 2013).

Kollef & Kollef (1991) reported that constipation can be fatal in some patients with deep venous thrombosis. Straining to pass a stool has produced pressure that can embolise a thrombosis leading to pulmonary embolism. Kudsk (1989) showed that 60 percent of trauma patients immobilised for at least 10 days had stenographically proven DVT, with proximal thrombi extension occurring in 50 percent.

A study on evaluation of awareness in families of patients at risk related to pressure ulcer prevention showed that only 11 percent of questioned care-givers knew what pressure ulcer was; 42 percent of care-givers were not aware of possible pressure ulcers causes and 54.8 percent were unable to mention any pressure ulcer risk factor (Skalska & Grodzicki, 2005).

Sage & Gee (2008) found that 74.2 percent of patients have heard of immobility as a risk factor of DVT but had limited knowledge of symptoms and prevention modalities. Orthopaedic patients are more vulnerable to immobilisation due to health and disease condition and long-term immobilisation is most common among orthopaedic patients.

Objectives

The study aimed: (1) to assess the knowledge and practice of immobilised orthopaedic patients and their care-givers regarding prevention of complications related to immobilisation; (2) To seek relationship between different knowledge areas of complications of immobilisation between patients and their care-givers; and (3) To develop and disseminate an information booklet on prevention of complications of immobilisation in orthopaedic patients.

Methodology

A quantitative approach with descriptive survey design was utilised to meet the objectives of the study. Purposive sampling technique was employed to select 50 patients admitted in the orthopaedic ward and their 50 care-givers of Ram Manohar Lohia Hospital, New Delhi. A semi structured questionnaire, to assess the knowledge and a checklist to assess the practice of both patients and their care-givers were used for the purpose of data collection. Based on the conceptual framework and objectives of the study, the following tool was developed to generate data:

Ethical consideration: Ethical permission for conducting the study was obtained from the Institutional Review Board of Jamia Hamdard, Hamdard Nagar, New Delhi.

Inclusion criteria (for patients): (a) admitted for minimum 5 days; (b) above the age of 19 years; (c) able to read and write in Hindi or English or both.

Inclusion criteria (for care-givers): (a) remain with the patient for a period of minimum 6 hours; (b) above the age of 19 years; (c) able to read and write in Hindi or English or both.

Consent was taken from the participants. This was done to check for their clarity, relevance and the nature of responses from them. The average time taken by the samples to complete the questionnaire and checklist was 30-35 minutes.

Data Analysis: Table 1 profiles the distribution of patients and care-givers in terms of demographic parameters. The data in Table 2 indicates that most of the patients i.e. 32 (64%) had inadequate knowledge. Only 18 (36%) had adequate knowledge regarding prevention of complications of immobilisation.

Results & Discussion

Data in Table 2 shows that most of the patients i.e. 27 (54%) were in the age group of 20 – 30 years, 18 (36%) were in 31 – 40 years of age, followed by 5 (10%) who were above 41 years. Similarly most of the caregivers i.e. 38 (76%) were in the age group of 20 – 30 years of age, 8 (16%) were in 31 – 40 years of age followed by 4 (8%) who were above 41 years. Majority of the pa-

Table 1: Frequency and distribution of the patients admitted to orthopaedic ward and their care-givers by their demographic characteristics (age, gender, education, occupation and marital status) n=n₁ + n₂ =100

S.No.	Demographic characteristics	Patient (n ₁)=50		Care-giver (n ₂)=50	
		f	%	f	%
1	Age (In years)				
	a. 20- 30	27	54	38	76
	b. 31- 40	18	36	8	16
	c. 41 above	5	10	4	8
2	Gender				
	a. Male	32	64	15	30
	b. Female	18	36	35	70
3	Education				
	a Primary school	4	8	8	16
	b Secondary school	14	28	10	20
	c Higher secondary school	22	44	26	52
	d Graduate	7	14	4	8
	e Postgraduate and above	3	6	2	4
4	Occupation				
	a. Unemployed	15	30	20	40
	b. Labourer	8	16	6	12
	c. Private job	26	52	19	38
	d. Government job	1	2	5	10
5	Marital status				
	a. Single	8	16	3	6
	b. Married	36	72	42	84
	c. Widow/widower	5	10	4	8
	d. Divorcee	1	2	1	2

Table 2 (Objective 1): Frequency and percentage distribution of the patients on the basis of their level of knowledge (n1 = 50)

Knowledge level	Frequency	Percentage (%)
Adequate knowledge (14-32)	18	36
Inadequate knowledge (0-13)	32	64

Table 3 (Objective 2): Frequency and percentage distribution of the care-givers on the basis of their level of knowledge (n2 = 50)

Knowledge scores	Frequency	Percentage (%)
Adequate knowledge (0-15)	21	42
Inadequate knowledge (16-32)	29	58

tients i.e. 32 (64%) were males and remaining 18 (36%) were females. On the contrary, majority of care-givers i.e. 35 (70%) were females and 15 (30%) males.

The educational status depicts that maximum patients i.e. 22 (44%) had completed higher secondary education followed by 14 (28%) patients who had completed secondary school. The graduates include 7 (14%) of the patients followed by 4 (8%) of patients who had completed primary education and only 3 (6%) with post-graduation and above. Similarly with the care-givers, maximum i.e. 26 (52%) completed the higher secondary education followed by 10 (20%) who had completed secondary school; 8 (16%) completed only primary school followed by 4 (8%) who completed graduation with only 2 (4%) being postgraduate and above.

Figure 1: Percentage distribution of patients admitted in orthopaedic ward on the basis of their duration of immobility.

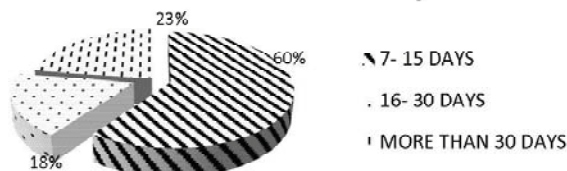


Figure 2: Percentage distribution of patients on the basis of their level of practice

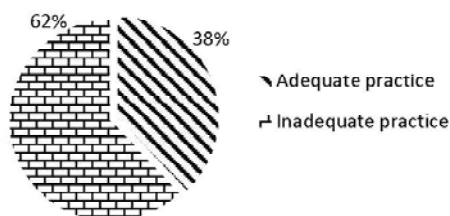
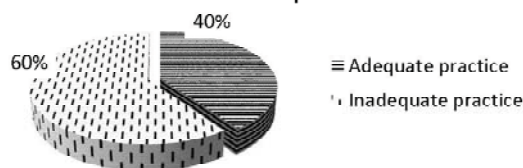


Figure 3: Percentage distribution of the care-givers on the basis of their level of practice



The occupation of the patients shows that maximum were having private jobs i.e. 26 (52%) followed by unemployed patients i.e. 15 (30%). Only 8 (16%) were labourers and 1 (2%) in a government job. Likewise, for the care-givers, maximum were unemployed i.e. 20 (40%) followed by one with the private job i.e. 19 (38%). Only 6 (12%) care-givers were labourers with 5 (10%) having a government job. As for marital status of the patients, 36 (72%) were married, 8 (16%) were single, 5 (10%) were widow/ widower and only 1 (2%) divorcee. According to the marital status of the care-givers, 42 (84%) were married, 4 (8%) were widower/ widow, 3 (6%) were single with only 1 (2%) divorcee.

Most of the patients admitted in orthopaedic ward had duration of immobility from 7-15 days i.e. 30 (60%) with 11 (22%) patients who had the duration of immobility of more than 30 days. Only 9 (18%) had duration of immobility as 16-30 days duration (Fig 1).

Table 2 indicates that most of the patients i.e. 32 (64%) had inadequate knowledge. Only 18 (36%) had adequate knowledge regarding prevention of complications of immobilisation. The data in the Fig 2 indicates that Most of the patients i.e. 31 (62%) had inadequate practice while only 19 (38%) of the patients had adequate practice regarding prevention of immobilisation.

Data in Table 3 indicates that most of care-givers i.e. 29 (58%) had inadequate knowledge. Only 21 (42%) of the care-givers had adequate knowledge related to prevention of complications of immobilisation.

Most of the care-givers i.e. 30 (60%) had inadequate practice while only 20 (40%) of the care-givers had adequate practice regarding prevention of immobilisation.

Table 4 indicates that the value of Spearman's correlation between the rank order of knowledge of patients as well as care-givers in different areas was 0.77. The calculated value of correlation coefficient (0.77) is above the critical value at 5 percent level of significance (0.45). It shows that there is a significant relationship between the knowledge of patient and care-givers in the specific areas. Both the groups have almost same level of knowledge in these six areas. There is same level of knowledge deficit found in areas like hypostatic pneumonia, deep vein thrombosis and pressure sores.

Development of Information Booklet

Information booklet based on the prevention of complications of immobilisation was prepared to enable patients admitted in the orthopaedic wards and their care-givers to take preventive measures and employ these preventive strategies relation to complications of immobilisation.

A study by Mersal on care-givers' knowledge and

Table No: 4 (Objective 3): Modified mean, Rank order and Spearman's correlation of coefficient 'r' of different knowledge areas of complications of immobilisation between patients and their care-givers

Areas of complications of immobility	Patient		Care-givers		Spearman's correlation coefficient 'r'
	Modified mean	Rank order	Modified mean	Rank order	
a. General concept of immobilisation	8.66	I	7.86	I	0.77*
b. Pressure sores	2.69	V	3.22	V	
c. Deep vein thrombosis	2.22	VI	3.69	IV	
d. Hypostatic pneumonia	3.16	IV	0.62	VI	
e. Constipation	3.40	III	3.87	III	
f. Contractures	5.08	II	5	II	

*r(4) = 0.45 ≤ 0.05, *significant at 0.05 level of significance

practice regarding prevention of immobilisation complications in El-demerdash Hospital, Cairo (Egypt) showed that knowledge of 66.6 percent of the care-givers was satisfactory and 53.3 percent of them had unsatisfactory knowledge regarding definition and causes of immobility while 63.3 percent of them had unsatisfactory knowledge regarding factors affecting immobility. It also revealed that the practice of 80 percent of care-givers was inadequate regarding the prevention of pressure ulcers and in more than half of them (56.6%, 56.6% and 53.3%) their practice was inadequate regarding prevention of joint deformity, prevention of DVT and maintenance of healthy diet respectively. The present study reveals that most of care-givers i.e. 29 (58%) had inadequate knowledge. Only 21 (42%) of the care-givers had adequate knowledge related to prevention of complications of immobilisation. Half of the care-givers i.e. 30 (60%) had inadequate practice while only 20 (40%) of the care-givers had adequate practice regarding prevention of immobilisation.

The investigation about knowledge and practice of patients and their care-givers regarding prevention of some of the complications of immobilisation will enable to design appropriate educational and preventive interventions.

Implications

Nursing practice: Health education and demonstrations can be conducted by the nurses periodically to improve the knowledge of the patients as well as their care-givers in order to prevent complications of immobilisation.

Nursing research: As the complications of immobilisation are a major challenge for orthopaedic patients, more and more research can be carried out on the complications to support the preventive aspect of health. A study on each complication can be more helpful for drawing specific conclusions. Evaluation of teaching strategy can be done by conducting research in above areas.

Nursing education: Nursing education must focus on preventive rather than curative aspect of health. The syllabus should emphasise more on the complications

of immobilisation such that the students can detect such complications early.

Conclusion

The study showed that there was no significant relationship between the knowledge scores of study subjects (patients as well as care-givers) with the practice scores. There was a significant relationship between the knowledge scores of patients and care-givers in specific areas showing consistent knowledge deficit in both patients and care-givers in those areas. There was no significant relationship between the knowledge and practice scores with the selected demographic variables in both patients and their care-givers.

Recommendations: (1) A similar study may be replicated on a larger sample covering orthopaedic wards of other hospitals; (2) Follow-up study can be conducted to evaluate the effectiveness of the information booklet; (3) An experimental study can be conducted with the structural teaching programme based on knowledge and practice.

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