

## A study on Patient Fall Risk Assessment in a Multi-specialty Hospital

**Dr. Bhupinder Chaudhary**

Assistant Professor, Department of Hospital Management

H.N.G. University, Patan- 384265 (Gujarat)

Mob: +91-9727767700, E-mail: dr.bhupinder82@gmail.com

### Abstract

*Healthcare Industry has evolved since the last 100 years at an unprecedented pace. Hospitals of the 21<sup>st</sup> century are well equipped to handle most of the emergencies arising out of the healthcare facility. But there are incidents, which occur within the healthcare facility and some of these may be life threatening to the patient. These incidents which are avoidable (but their occurrence can be fatal) are known as sentinel events. One of these sentinel events is the Patient fall. This problem is quite common in geriatric (elderly) patients. According to the recent population trend, it has been estimated that by 2050, India will be home to the largest proportional elderly population in the world. Our hospitals have to be equipped to handle this situation. This study highlights some of the reasons and probable solutions to address the issue of Patient fall in the hospital. The study was conducted in a renowned multi specialty hospital in Pune.*

**Key words:** Healthcare- emergencies- proportional- hospitals- specialty- Patient

### Introduction:

The risk of falls is especially high among stroke patients, Carpet flooring, vertigo, being an amputee, confusion, cognitive impairment, stroke, sleep disturbance, anticonvulsants, tranquilizers and antihypertensive medications, age between 71 and 80, previous falls, and need for transfer assistance are risk factors for geriatric patient falls in rehabilitation hospital settings.

Unsteady gait is a condition in which a person having poor balance has an unsteady walk. This occurs when there is a problem in maintaining postural control as well as coordination. It is generally a symptom of instability and posture control problems. It could be due to alcohol, drugs, medications or it could be caused by a metabolic disorder, stroke or any other brain disorder. This could also occur due to a disease or an injury to the legs or it could be the result of an injury or disease of the inner ear.

Osteoporosis is a disease in which bones become less dense, resulting in weak bones that are more likely to break. Without prevention or treatment, osteoporosis can progress without pain or symptoms until a bone breaks (fractures). Fractures associated with osteoporosis can take a long time to heal and can cause permanent disability and even death.

Falling is a common and serious problem for the elderly. 1 in 3 adults over the age of 65 falls each year. Among those 65 and older, fall

The death rates from falls among older men and women have risen sharply since admission to nursing homes, and even early death.

Common factors leading to falls include:

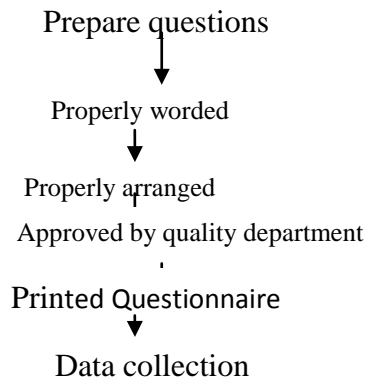
1. Decreased balance and strength of the legs;
2. Uneven ground or poor lighting;
3. Diseases: Parkinson's, seizures, diabetes, arthritis, orthostatic hypotension;
4. Taking more than four medications; especially sedatives, antidepressants;
5. Any conditions that impairs safe judgment; fear, anxiety, depression

### Methodology:

- This FALL RISK ASSESSMENT survey was conducted at a Multi specialty hospital, Pune.
- 1. The manual of FALL RISK ASSESSMENT survey having 9 questions and 2 points yes and no is used for the responses
- 2. The language of survey questionnaire is in English.

### Data collection:

Primary data collection through Questionnaire & direct communication with patients and patient's relatives.

**Process of primary data collection:**

**Secondary data:** -Collection from patient file, past reports.

**Design:-** Descriptive & Diagnostic research design.

**Sample:-** Simple random sampling method is chosen for the selection of samples from various clinical wards.

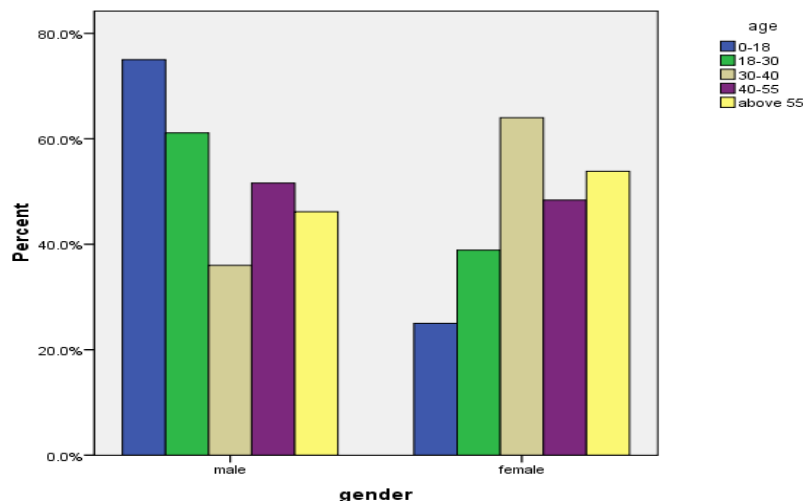
1. General wards
2. Deluxe rooms
3. Semi-private rooms
4. Private rooms
5. Luxury rooms

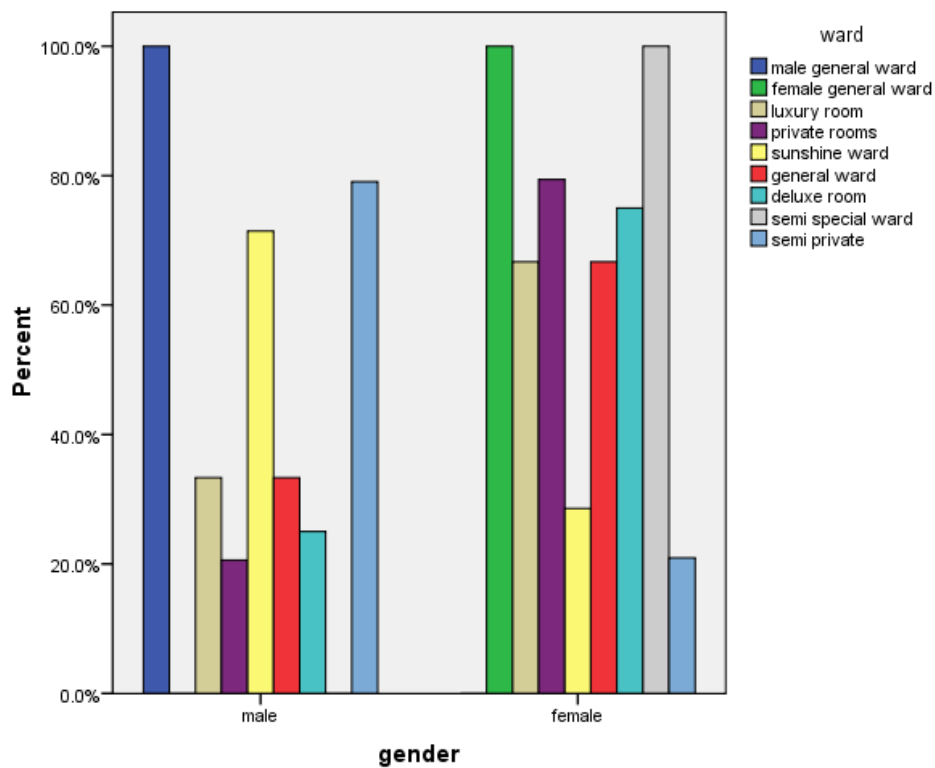
**Sample size:-** samples of 138 patients were taken.

**Population size:-** 175 patients in hospital.

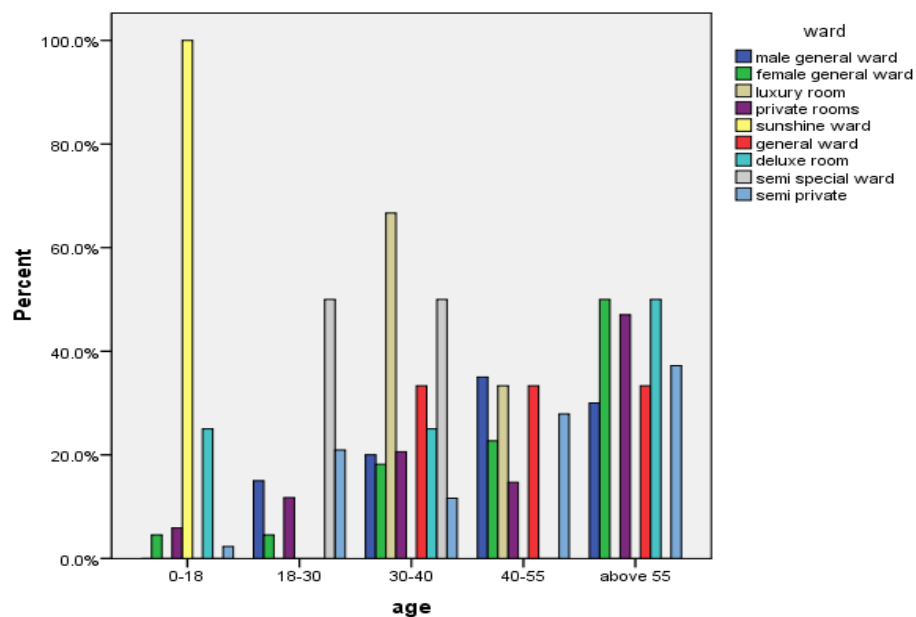
**Analysis**

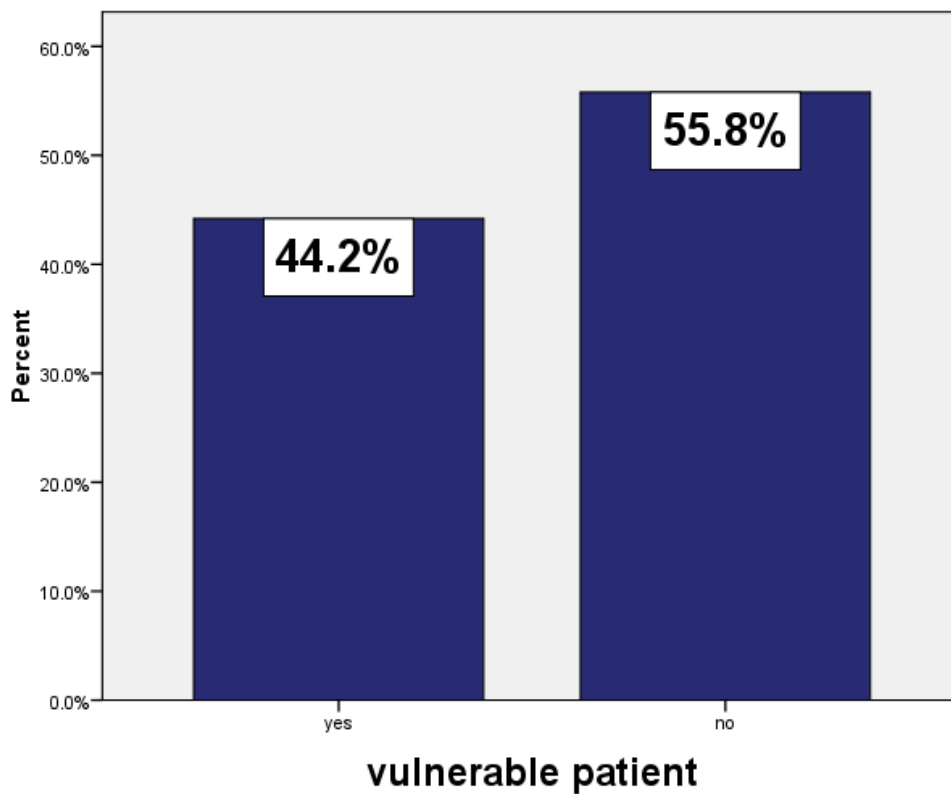
- SPSS statistical software was used for the analysis of the questionnaire.

**Age v/s gender****Ward v/s gender**



Age v/s ward

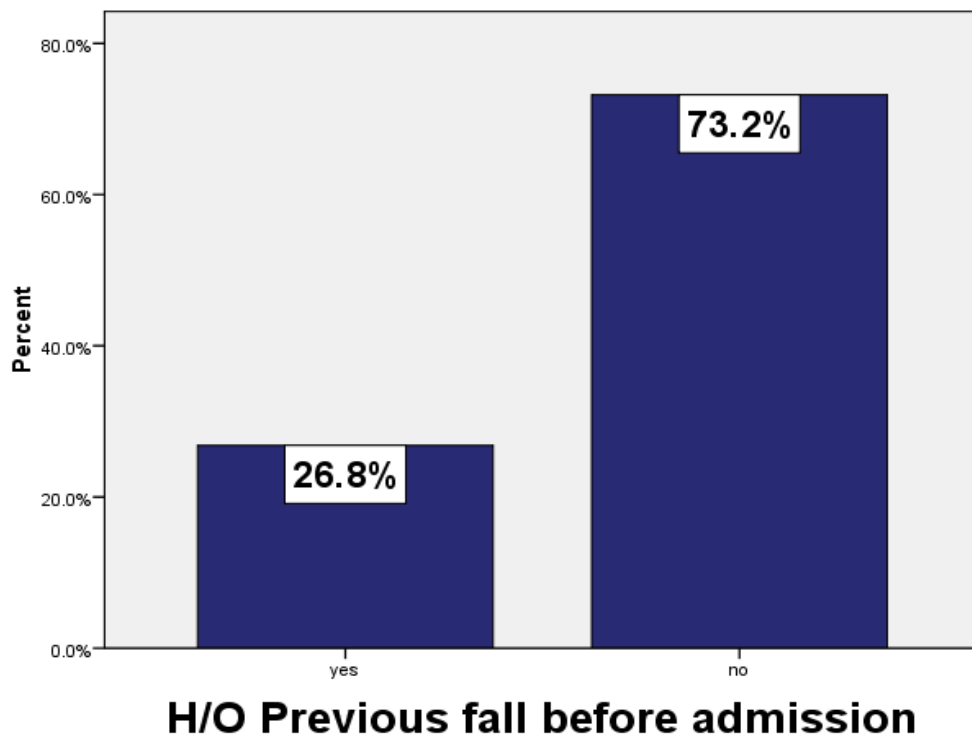


**POINT NO 1 Vulnerable patient .****vulnerable patient**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid yes	61	44.2	44.2	44.2
no	77	55.8	55.8	100.0
Total	138	100.0	100.0	

From the above data, it appears that 44.2 % patients of hospital are vulnerable.  
55.8 % patients of hospital are not vulnerable

**POINT NO 2(a) H/O previous fall before admission.****A study on Patient Fall Risk Assessment in a Multi-specialty Hospital**

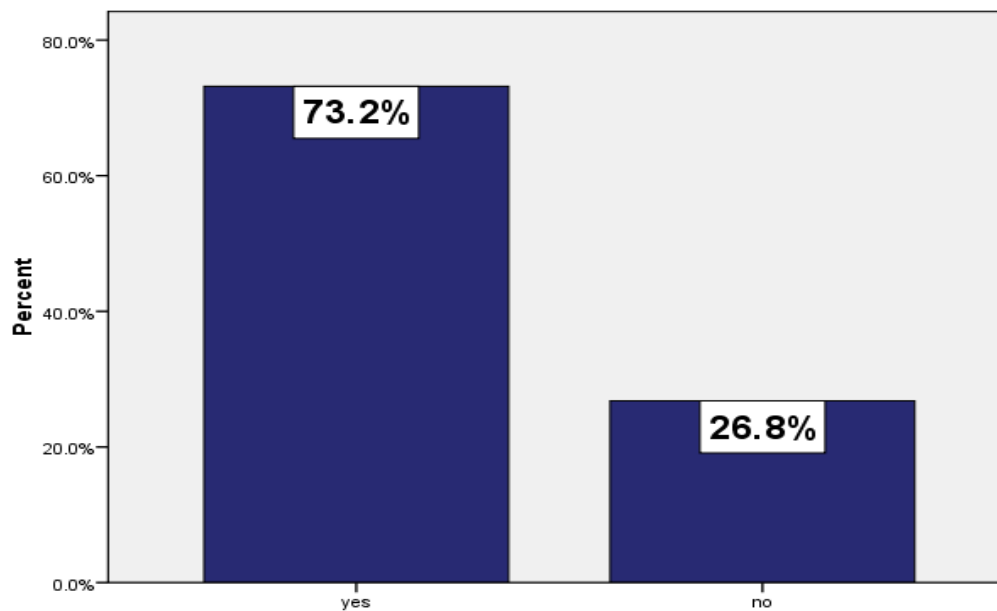
**H/O Previous fall before admission**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	37	26.8	26.8	26.8
	no	101	73.2	73.2	100.0
	Total	138	100.0	100.0	

From the above data, it appears that 26.8 % patients had history of previous fall before admission in hospital.

73.2 % patients had no history of previous fall before admission in hospital.

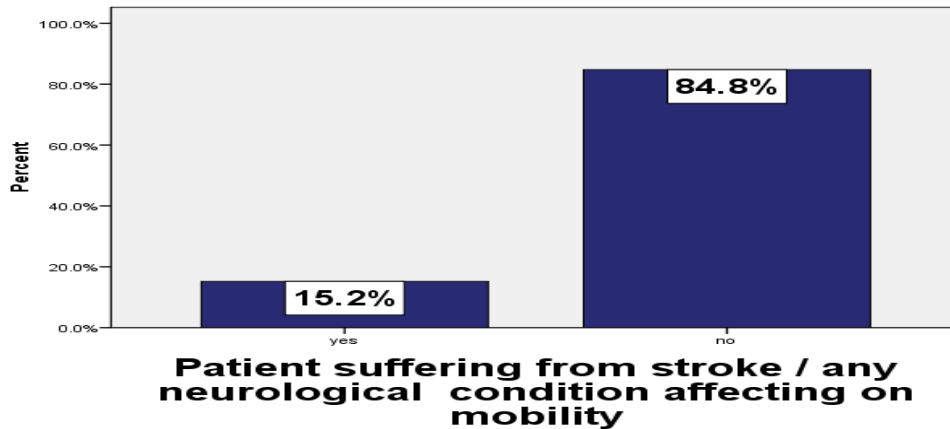
**POINT NO 2(a) No falls.**

**No falls****No falls**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	101	73.2	73.2	73.2
	no	37	26.8	26.8	100.0
	Total	138	100.0	100.0	

From the above data, it appears that 73.2 % patients had falls history.  
26.8 % patients had no falls.

**POINT NO 3(a) Patient suffering from stroke / any neurological condition affecting on mobility.**

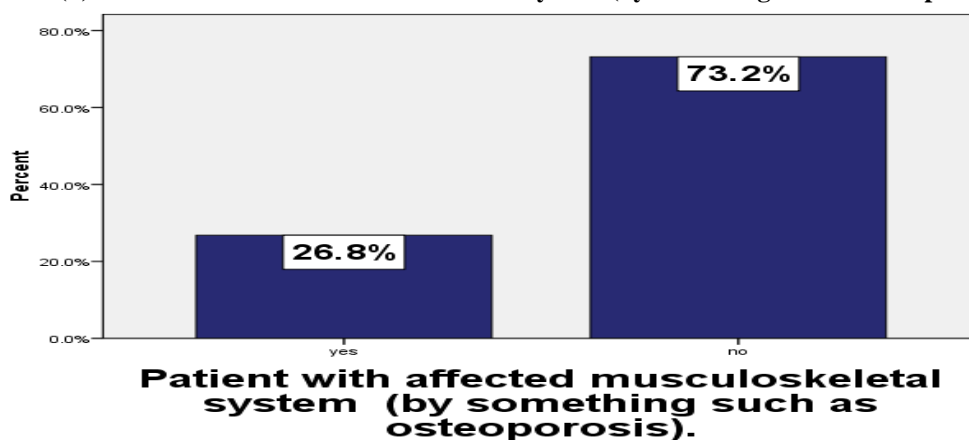


Patient suffering from stroke / any neurological condition affecting on mobility

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	21	15.2	15.2	15.2
	no	117	84.8	84.8	100.0
	Total	138	100.0	100.0	

From the above data, it appears that 15.2 % patients suffering from stroke / any neurological condition affecting on mobility. 84.8% patients not suffering from stroke / any neurological condition affecting on mobility.

**POINT NO 3(b) Patient with affected musculoskeletal system (by something such as osteoporosis).**



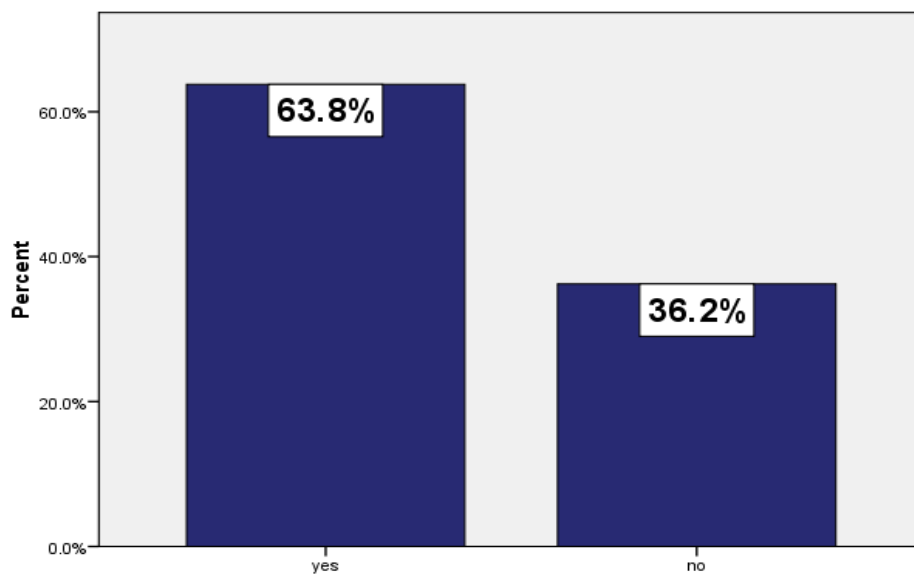
Patient with affected musculoskeletal system (by something such as osteoporosis).

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid yes	37	26.8	26.8	26.8
no	101	73.2	73.2	100.0
Total	138	100.0	100.0	

From the above data 26.8% Patient with affected musculoskeletal system (by something such as osteoporosis).

73.2% Patients were not affected with musculoskeletal system (by something such as osteoporosis).

#### POINT NO 4(a) Patient under any Sedation medication/ Anesthesia/analgesia



#### Patient under any Sedation medication/ Anesthesia/analgesia.

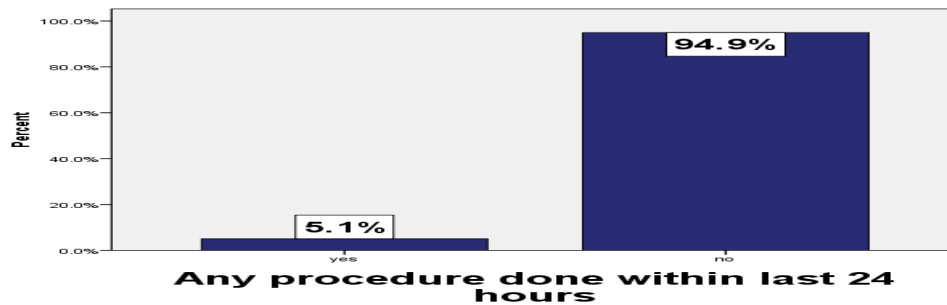
##### Patient under any Sedation medication/ Anesthesia/analgesia.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid yes	88	63.8	63.8	63.8
no	50	36.2	36.2	100.0
Total	138	100.0	100.0	



From the above data 63.8% Patient under any Sedation medication/ Anesthesia/analgesia.  
73.2% Patient were not under any Sedation medication/ Anesthesia/analgesia .

**POINT NO 4(b) Any procedure done within last 24 hours**

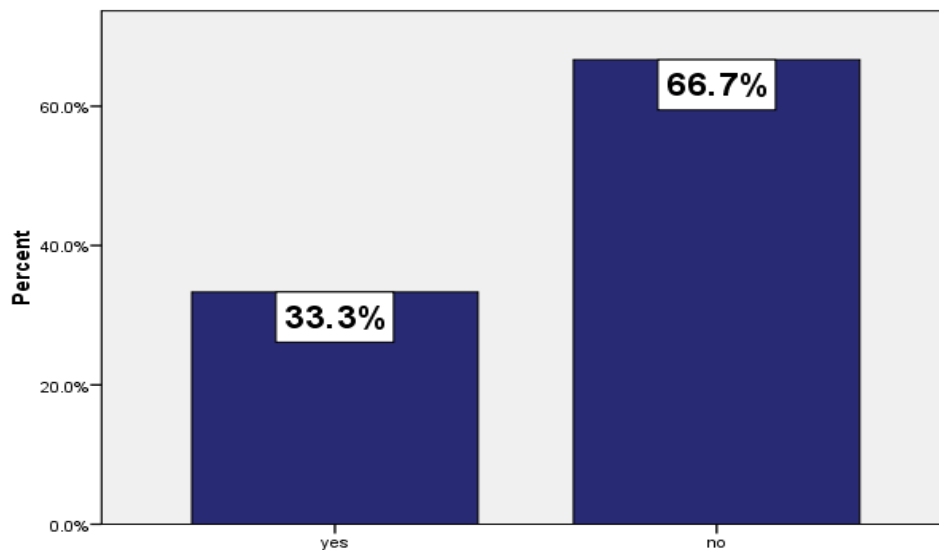


**Any procedure done within last 24 hours**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	7	5.1	5.1	5.1
	no	131	94.9	94.9	100.0
	Total	138	100.0	100.0	

From above data 5.1 % patients under any procedure done within last 24 hours.  
94.9% patients were not under any procedure done within last 24 hours.

**POINT NO 4(c) Patient on Anti-convulsants / Anti-hypertensive**



**Patient on Anti-convulsants / Anti-hypertensives**

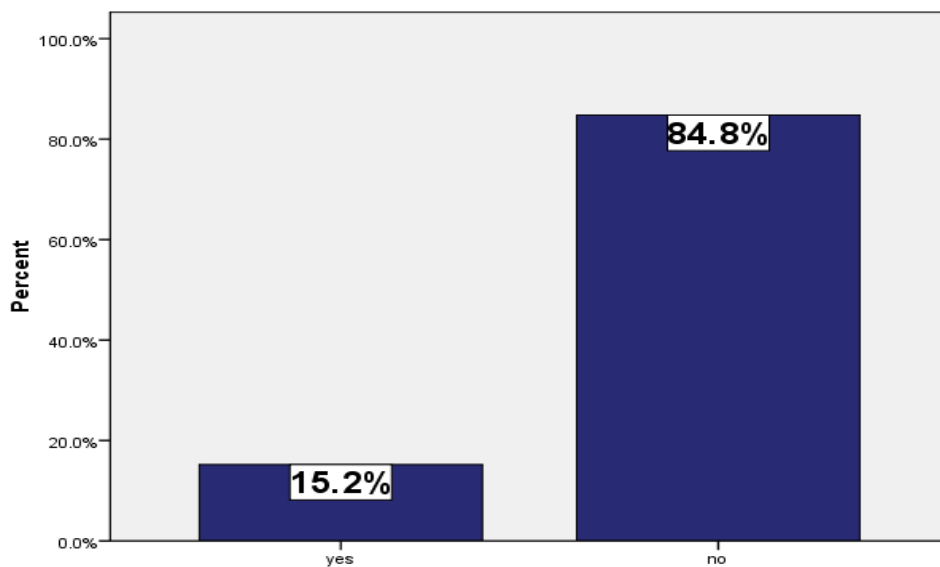
**Patient on Anti-convulsants / Anti-hypertensives**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	46	33.3	33.3	33.3
	no	92	66.7	66.7	100.0
	Total	138	100.0	100.0	

From above data, 33.3% patients were under any anti-convulsants/ anti-hypertensives.

66.7% patients were not under any anti-convulsants/ anti-hypertensives

**Point 4(d) Patient on Diuretics, Hypnotics.**



**Patient on Diuretics, Hypnotics**

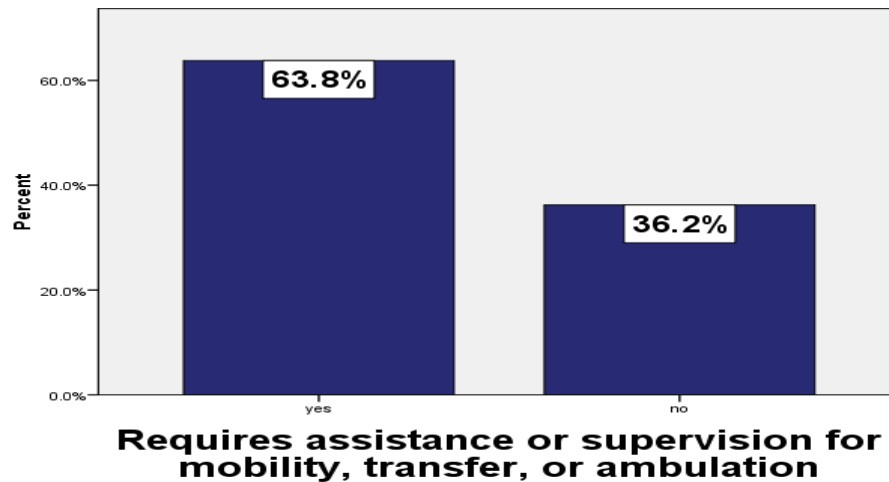
**Patient on Diuretics, Hypnotics**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	21	15.2	15.2	15.2
	no	117	84.8	84.8	100.0
	Total	138	100.0	100.0	

From above data, 15.2% patients were under on diuretics,hypnotics.

84.8% patients were not under any diuretics,hypnotics.

**Point 5(a) Requires assistance or supervision for mobility, transfer, or ambulation**

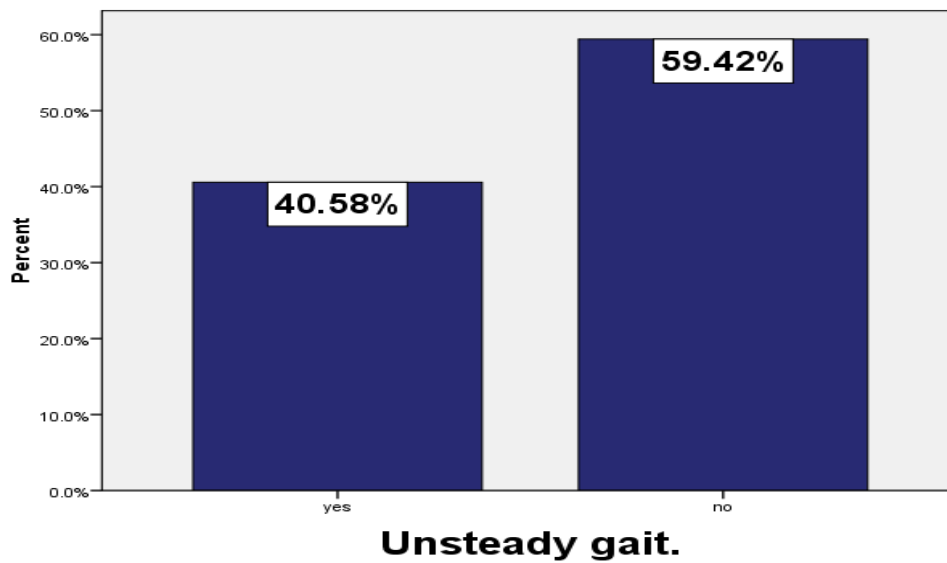


**Requires assistance or supervision for mobility, transfer, or ambulation**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	88	63.8	63.8	63.8
	no	50	36.2	36.2	100.0
	Total	138	100.0	100.0	

From above data, 63.8% patients require assistance or supervision for mobility, transfer, or ambulation. 36.2% patients no required assistance or supervision for mobility, transfer, or ambulation.

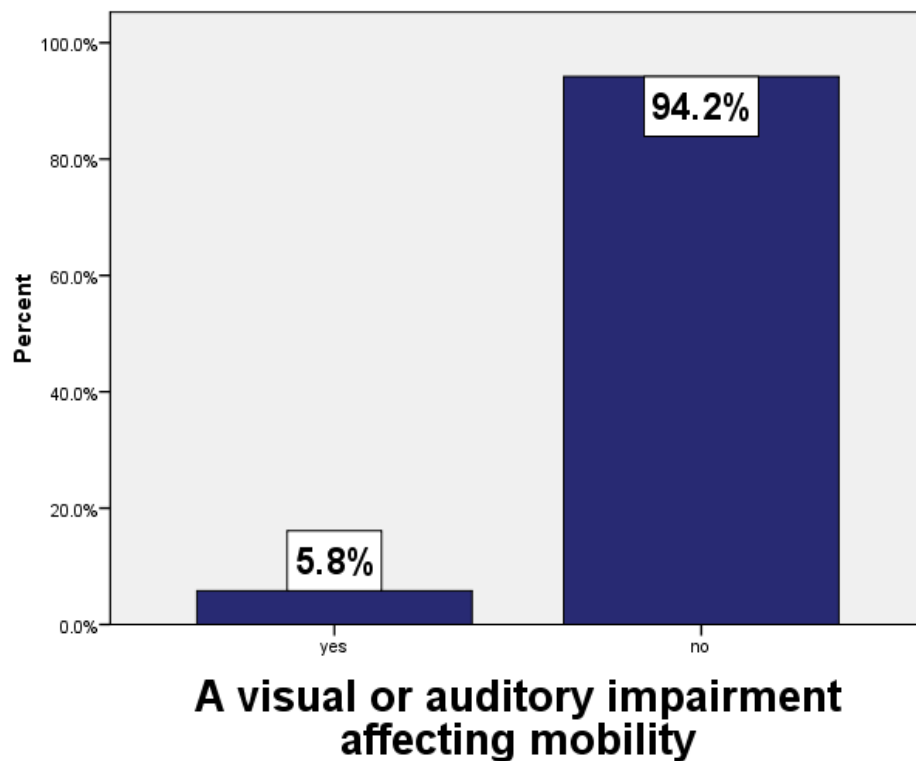
**Point5 (b) Unsteady gait.**

**Unsteady gait.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	56	40.6	40.6	40.6
	no	82	59.4	59.4	100.0
	Total	138	100.0	100.0	

From above data, 40.6% patients had unsteady gait.  
59.4 patients had steady gait.

**Point5 (c) A visual or auditory impairment affecting mobility.**



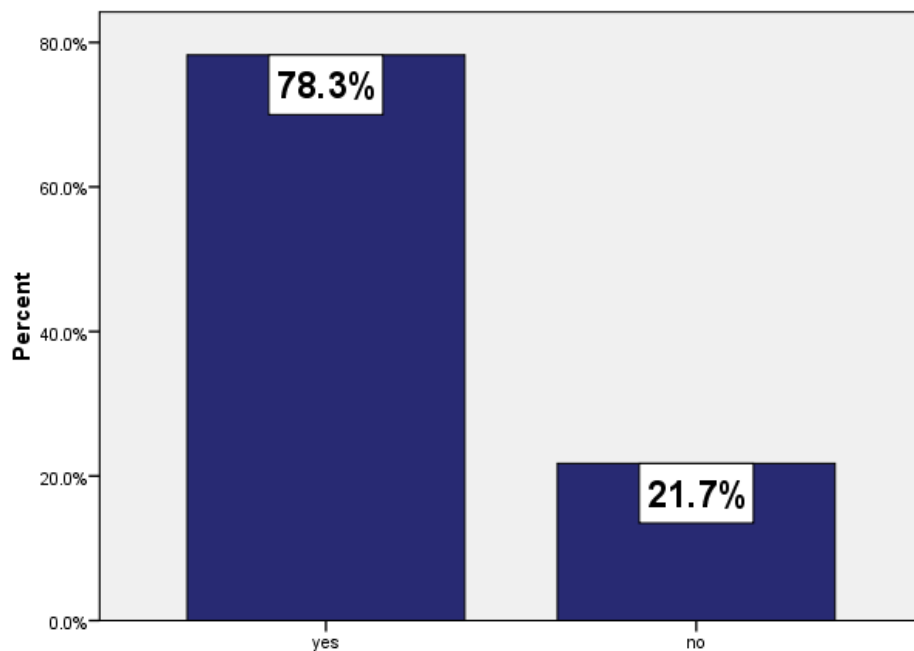
A visual or auditory impairment affecting mobility

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid yes	8	5.8	5.8	5.8
no	130	94.2	94.2	100.0
Total	138	100.0	100.0	

From above data, 5.8% patients had visual impairment affecting mobility.

94.2% patients had not visual impairment affecting mobility.

**Point 6(a) Informed by the nursing staff for ask Assistance during night time?**

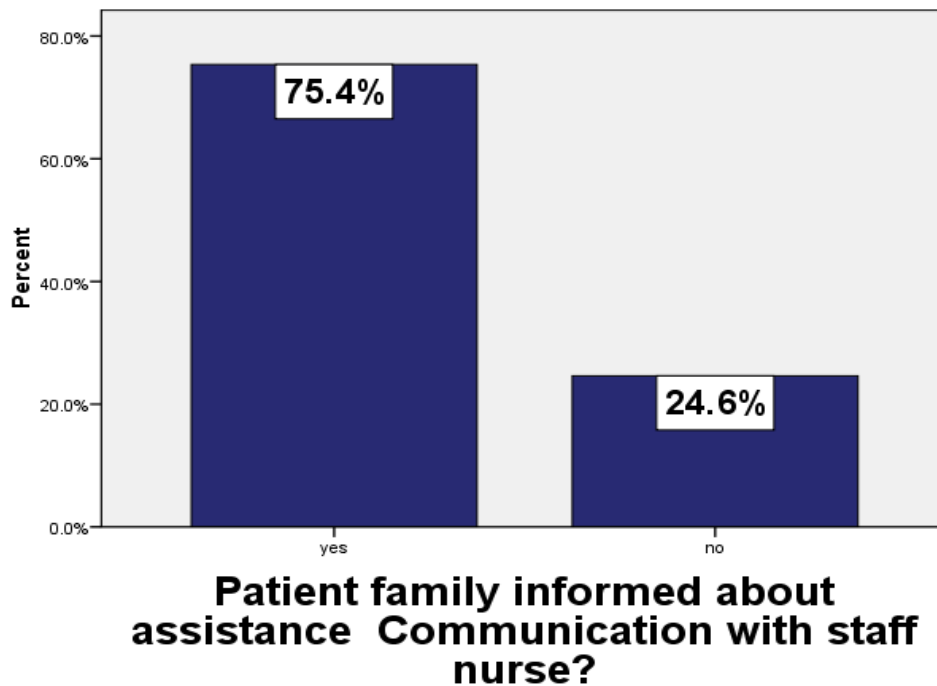


### Informed by the nursing staff for ask Assistance during night time?

Informed by the nursing staff for ask Assistance during night time?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	108	78.3	78.3	78.3
	no	30	21.7	21.7	100.0
	Total	138	100.0	100.0	

From above data, 78.3% patients were informed by nursing staff for ask Assistance during night time. 21.7% patients were not informed by nursing staff for ask Assistance during night time.

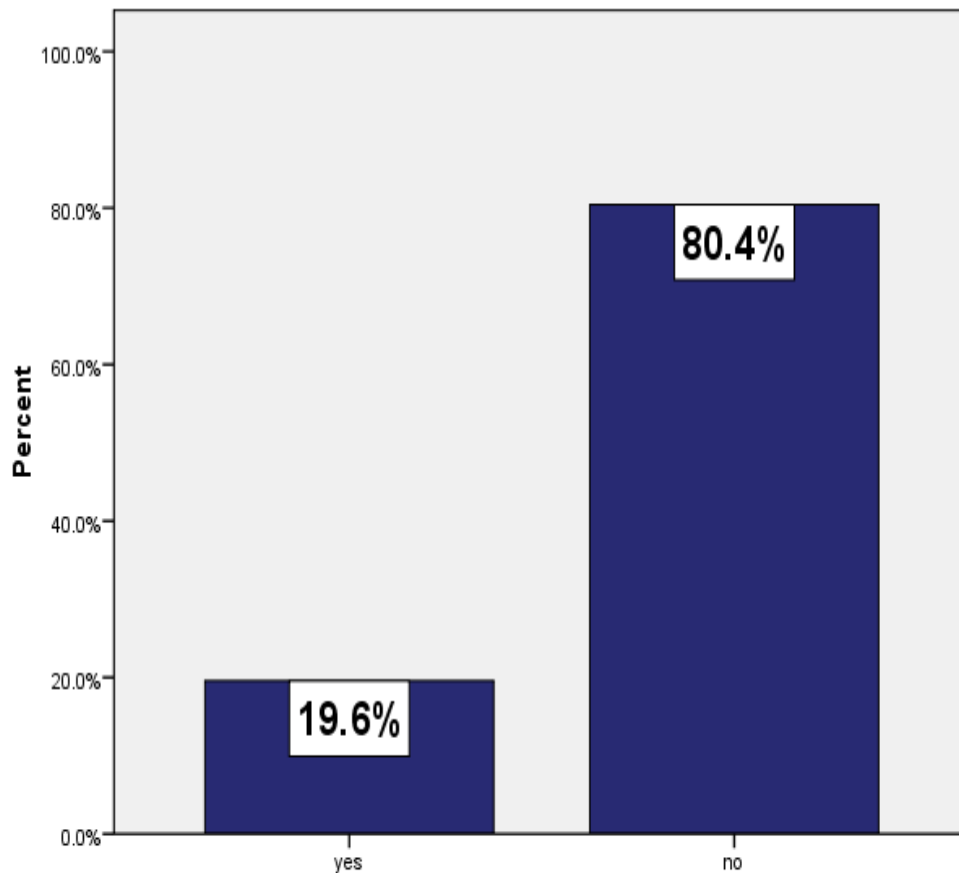
**Point 6(b) Patient family informed about assistance Communication with staff nurse?****Patient family informed about assistance Communication with staff nurse?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	104	75.4	75.4	75.4
	no	34	24.6	24.6	100.0
	Total	138	100.0	100.0	

From above data, 75.4% patients were informed by assistance communication with staff .  
21.7% patients were not informed by assistance communication with staff .

**Point 7 Patient care equipment?**





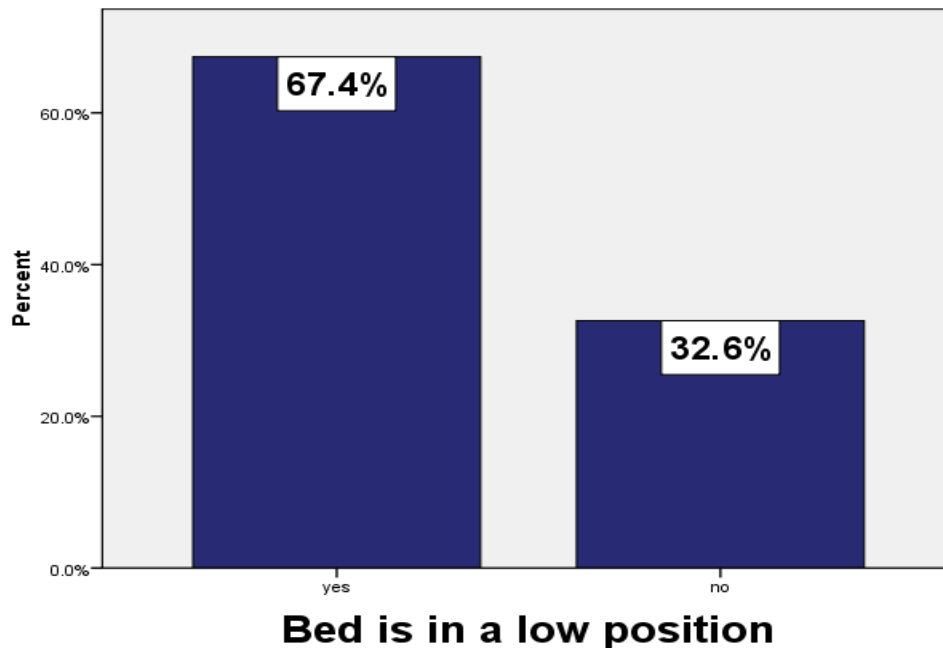
### Patient care equipment?

Patient care equipment?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	27	19.6	19.6	19.6
	no	111	80.4	80.4	100.0
	Total	138	100.0	100.0	

From above data, 19.6% patients were used patient care equipments.

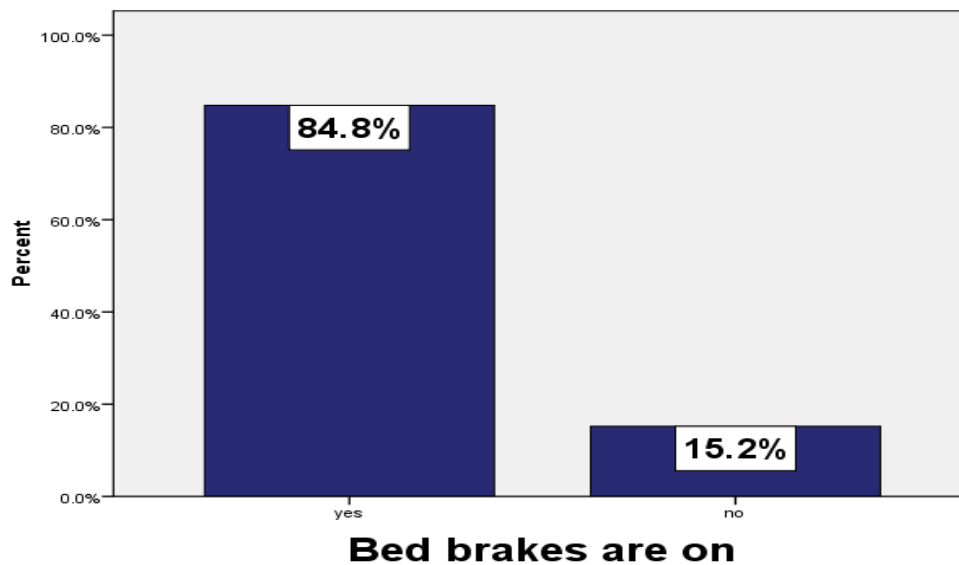
80.4% patients were not used any patient care equipment.

**Point 7 Patient care equipment?****Bed is in a low position**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	93	67.4	67.4	67.4
	no	45	32.6	32.6	100.0
	Total	138	100.0	100.0	

From above data, 67.4% patients bed were in a low position.  
32.6% patients were not in a low position.

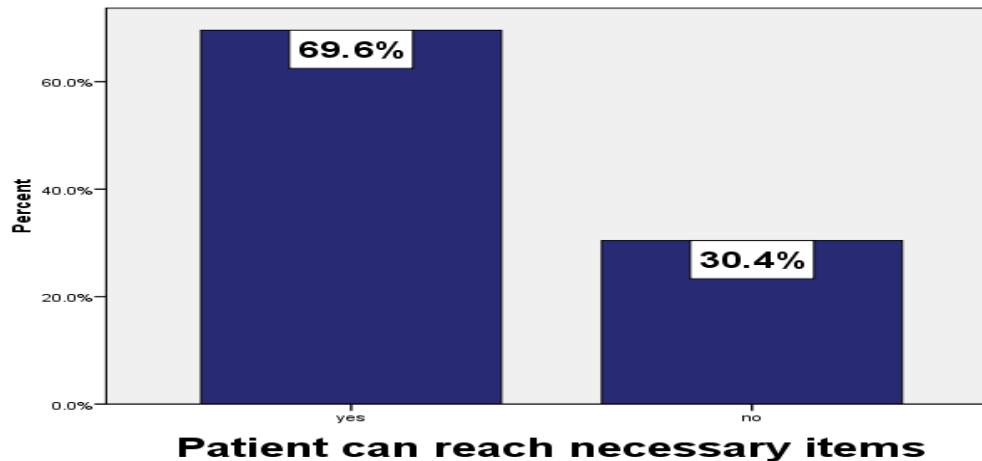
**Point 8(a) Bed brakes are on.**

**Bed brakes are on**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	117	84.8	84.8	84.8
	no	21	15.2	15.2	100.0
	Total	138	100.0	100.0	

From above data, 84.8% patient's bed breaks were on.  
 15.2% patient's bed breaks were not on.

**Point 8(c) patient can reach necessary items.**

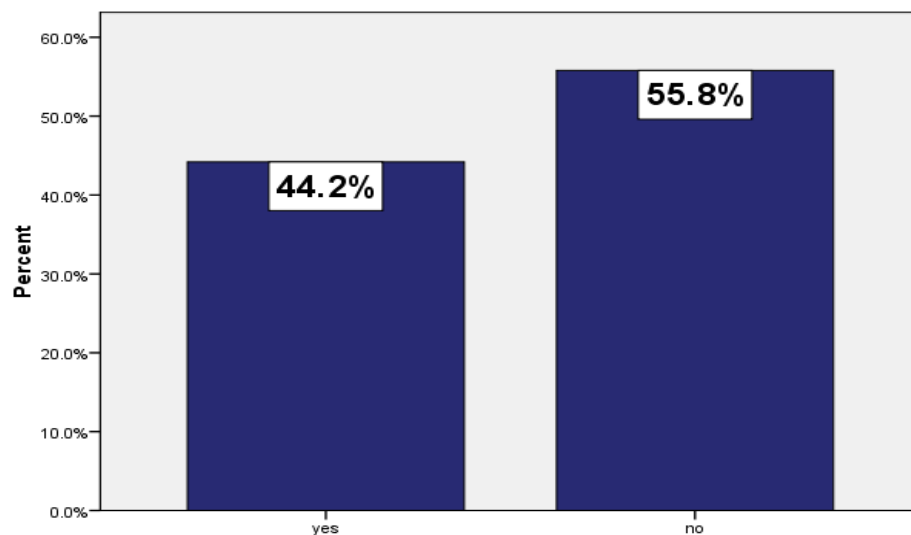


Patient can reach necessary items

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	96	69.6	69.6	69.6
no	42	30.4	30.4	100.0
Total	138	100.0	100.0	

From above data, 69.6% patients can reach necessary items.  
30.4% patients cannot reach necessary items.

#### Point 9(a) Using safety straps or seat belts in chairs and wheelchairs



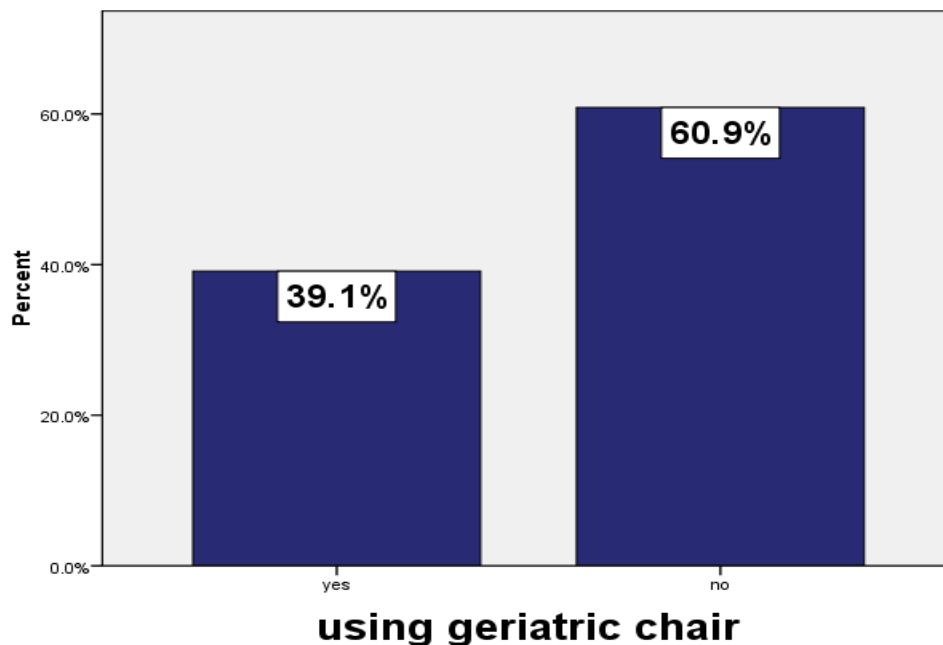
### Using safety straps or seat belts in chairs and wheelchairs

Using safety straps or seat belts in chairs and wheelchairs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	61	44.2	44.2	44.2
	no	77	55.8	55.8	100.0
	Total	138	100.0	100.0	

From above data, 44.2% safety straps or seat belts in chairs and wheelchairs used.  
55.8% safety straps or seat belts in chairs and wheelchairs not used.

**Point 9(b) using geriatric chair**



using geriatric chair

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	54	39.1	39.1	39.1
	no	84	60.9	60.9	100.0
	Total	138	100.0	100.0	

From above data in 39.1% cases geriatric chairs were used.

60.9% cases geriatric chairs were not used.

### Conclusion

This study is an attempt to highlight various factors associated with patient fall in the hospital. It also highlights certain precautions which can help the hospitals to reduce these incidents. Safety of all the patients is a prime concern for all the healthcare Institutions.

### References:

1. Brown JS, Vittinghoff E, Wyman JF, Stone KL, Nevitt MC, Ensrud KE, et al. Urinary incontinence: does it increase risk for falls and fractures? Study of Osteoporotic Fractures Research Group. J Am Geriatr Soc. Jul 2000;48(7):721-5.
2. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.
3. DeVicenzo DK, Watkins S. Accidental falls in a rehabilitation center. Rehabil Nurs. 1987;12:248-252.
4. Division of Clinical Epidemiology and Biostatistics, Institute of Social and Preventive Medicine, University of Bern, Finkenhubelweg, Switzerland

5. Ensrud KE, Blackwell TL, Mangione CM, et al. Central nervous system: Active medications and risk for falls in older women. *J Am Geriatr Soc* 2002;50:1629-1637
6. Hausdorff JM, Rios DA, Edelber HK. Gait variability and fall risk in community-living older adults: a 1-year prospective study. *Archives of Physical Medicine and Rehabilitation* 2001;82(8):1050-6.
7. Hornbrook MC, Stevens VJ, Wingfield DJ, Hollis JF, Greenlick MR, Ory MG. Preventing falls among community-dwelling older persons: results from a randomized trial. *The Gerontologist* 1994;34(1):16-23.
8. <http://cre.sagepub.com/content/early/2011/04/15/0269215511400639.abstract>
9. <http://jama.ama-assn.org/content/303/3/258.abstract>
10. <http://proactivesportspt.com/fall-prevention>
11. <http://www.ehow.com/parkinsons-disease/>
12. [http://www.emedicinehealth.com/fall\\_prevention\\_and\\_osteoporosis/article\\_em.htm](http://www.emedicinehealth.com/fall_prevention_and_osteoporosis/article_em.htm)
13. [http://www.kosmix.com/topic/unsteady\\_gait](http://www.kosmix.com/topic/unsteady_gait)
14. <http://www.ptcommunity.com/ptjournal/fulltext/28/11/PTJ2811724.pdf>.
15. Mayo NE, Korner-Bitensky N, Becker R, Georges P. Predicting falls among patients in a rehabilitation hospital. *Am J Phys Med Rehabil.* 1989;68:139-146.
16. Vlahov D, Myers AH, Al-Ibrahim MS. Epidemiology of falls among patients in a rehabilitation hospital. *Arch Phys Med Rehabil.* 1990;71:8-12.