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EVALUATION OF MEDICAL BENEFITS OF ELECTRIC HOSPITAL BEDS IN DISABILITY ASSOCIATED WITH DISEASES, MEDICAL CONDITIONS AND BIRTH DEFECTS IN A RANDOMIZED STUDY IN KUWAIT.

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ABSTRACT:

Objective: To analyze the medical advantages of using Electric Hospital Bed in disabilities caused due to different diseases, medical conditions or genetic defects. **Subjects and Methods:** A total of 130 patients who were using Electric Hospital Bed were included in the study group. All the patients had disability due to their diseased conditions, or birth defects. The study comprised of 17 category of groups.

Results: The mean value and standard deviation of the number of patients in 17 study groups were found to be (22.235 ± 31.346) ($p < 0.0001$) while the mean and standard deviation of the age was found to be (67.18 ± 20.36) and the difference in the age were found to be significant ($p < 0.0001$). The correlation of Disability Vs Obstructive Sleep Apnea (OSA) ($r = 0.5673$) was found to be positively significant. While the correlation of Disability Vs birth defects ($r = - 0.3475$). The correlation of Disability Vs Spinal Cord Injury (SCI) ($r = - 0.5635$), the correlation of Disability Vs Osteoporosis ($r = - 0.5923$) were found to be negatively significant. **Conclusion:** Raising the foot of the home care bed takes pressure off of the lower back, easing aching back pain in Cerebral Palsy (CP) and inclined position helps in control of Acid Reflux in CP. Fowler's position helps in improve in breathing by increasing maximum lung expansion. In diabetic patients the use of Electric Hospital bed increases the blood circulation. Electric Bed provides wide range of positions for immobile patients.

Key words: birth defects, cerebral palsy, chronic respiratory diseases, diabetes, obstructive sleep apnea, spinal cord injury

Significance of the Study: To study the medical advantages of using electric hospital bed in different medical conditions like respiratory disease, heart diseases, arthritis, birth defects, spinal cord injury, diabetes, Renal diseases, and establish its importance in decreasing chronic pain, increasing oxygenation, reducing edema, improving poor circulation, sleep apnea, acid reflux and prevention of bed sores.

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INTRODUCTION

Disability is an umbrella term, covering impairments, activity limitations, and participation restrictions, referring to the negative aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors) (Leonardi M et al, 2006). Developmental disabilities result in social, emotional, behavioral, cognitive, and motor impairments and include conditions such as cerebral palsy, mental retardation, sensory impairments, autism, and attention deficit hyperactivity disorder (Coleen A et al, 2005).

Chronic conditions including diseases such as diabetes and congestive heart failure, and impairments, such as cognitive and visual impairment, are common precursors for developing disability (Verbrugge LM, Jette AM, 1994, Nagi SZ, 1979, Grimby G, 1988). Prior research has shown that certain diseases may increase the likelihood of developing certain disabilities, for example arthritis may lead to the disability due to difficulties in mobility (Verbrugge LM, 1991) and stroke may lead to disability through different mechanisms (Zhu L et al, 1998). For diabetes, disability may arise from secondary consequences of diabetes such as diabetic retinopathy and other complications of diabetes (Siobhan M et al, 2004, Volpato S, 2002). Disability is thus not just a health problem. It is a complex phenomenon, reflecting the interaction between features of a person's body and features of the society in which he or she lives.

Epidemiology, genetic disorders, birth defects and disability

Kuwait has a cosmopolitan population of 1.7 million, mostly Arabs. This population is a mosaic of large and small minorities representing most Arab communities. In general, Kuwait's population is characterized by a rapid rate of growth, large family size, high rates of consanguineous marriages within the Arab communities with low frequency of intermarriage between them, and the presence of genetic isolates and semi-isolates in some extended families and Bedouin tribes (Ahmad S Teebi, 1994). At birth, the incidence of major defects is slightly higher than the 2 to 3% found in the world's major surveys (Ahmad S Teebi, 1994).

About one in 10 people in the UAE is a carrier, Centre for Arab Genomic Studies (CAGS) informed. Saudi Arabia has the highest rate of birth defects in the Gulf, with around 80 babies out of every 1,000 born with a disorder. In the UAE, Kuwait and Oman, 70 to 79 children in every 1,000 are born with a birth defect. Birth defects are still the leading cause of perinatal mortality and childhood disability in developed countries (Tadmouri, G.O. et al, 2009). In contrast, in some developing countries where infant mortality remains very high, the leading causes of death are related to malnutrition and infection (WHO 1998). However, birth defects in the developing world are largely underreported by deficiencies in diagnostic capabilities and lack of reliability of medical records and health statistics (Hamamy, H. et al, 2011). Thus, an increase in birth defects rate should be handled with caution as this could only be attributed to use of more reliable diagnostic facilities or an improvement in medical records. The causes of most birth defects remain unknown, but the growing literature indicates that environmental factors may cause genetic mutations and interact with genetic factors predisposing to birth defects (Sawardekar, K.P 2005). Thus, most birth defects can be considered to be of multifactorial causation that is due to a combination of environmental and genetic factors. Prevalence studies of birth defects are useful to establish baseline rates, to document changes over time and to identify clues to etiology. They are also important for planning and evaluating antenatal screening for birth defects, particularly for high risk population (Christianson, A et al, 2006).

Disability epidemiology can promote improved health status among people with disabilities by quantifying the prevalence of disability in given populations, recognizing factors that decrease quality of life among those with disabilities, and designing interventions to address these factors. A total of 70 countries were surveyed, of which 59 countries, representing 64% of the world population, had weighted data sets that were used for estimating the prevalence of disability of the world's adult population aged 18 years and older (Kaasa T et al, 1995).

The statistics of the Public Authority for Disabled Affairs (PADA) states that person with disabilities in Kuwait hit 41,330 till first quarter of 2016. Cancer is the second cause of death in Kuwaiti people after cardiovascular diseases. Cancer survivors are at risk for disability because they are more vulnerable to other cancers, cardiovascular diseases, osteoporosis, diabetes mellitus, and accelerated functional decline (Demark-Wahnefried W et al, 2009).

Disability associated effects and development:

Disability is a development issue, because of its bidirectional link to poverty: disability may increase the risk of poverty, and poverty may increase the risk of disability (Sen A 2009). The onset of disability may lead to the worsening of social and economic well-being and poverty through a multitude of channels including the adverse impact on education, employment, earnings, and increased expenditures related to disability (Jenkins SP, Rigg JA 2003). Children with disabilities are less likely to attend school, thus experiencing limited opportunities for human capital formation and facing reduced employment opportunities and decreased productivity in adulthood (Filmer D 2008, Mete C, ed 2008, Burchardt T 2005).

Electric Hospital Beds

Generally, hospital beds have a bad rap for being terribly uncomfortable to sleep on. In some cases, however, having a hospital bed at home can be very useful for adult children who are taking care of their parents at home. Hospital beds, with the addition of those designed specifically for use at home, can give great benefits for care givers and patients.

Electric Hospital Bed is a large, specially designed hospital bed built on a sturdy, metal and motorized adjustable height bed frame that allows the head, knee and foot segments to be adjusted, as well as enabling the entire bed to be lowered or raised by the touch of an easy to use handheld electronic control, which results in an anatomically correct sleep surface for each unique user. Today, while a fully electric bed has many features that are electronic, a semi-electric bed has two motors, one to raise the head, and the other to raise the foot (Leonardi M et al, 2006).

Important Features of Electric Hospital Bed for patients or caregivers

Electric Hospital Beds can be raised and lowered at the head, feet, and their entire height. This feature is electronic. There are several types of Fowler's positions: Low, Semi, Standard, and High Fowler's. Low Fowler's position is when the head of bed is elevated 15-30 degrees, Semi-Fowler's position is 30-45 degrees, Standard Fowler's is 45-60 degrees, and High Fowler's position is 80-90 degrees. The Fowler's position is used for sitting the patient upright for feeding or certain other activities, or in some patients, can ease breathing, or may be beneficial to the patient for other reasons (Leonardi M et al, 2006). Having the capability to adjust the head gives the patient the ability to eat meals, read, and watch TV. It is an intervention used to promote oxygenation via maximum chest expansion and is implemented during events of respiratory distress. Fowler's position facilitates the relaxing of tension of the abdominal muscles, allowing for improved breathing. In immobile patients and infants, the Fowler's position alleviates compression of the chest that occurs due to gravity.

The Half Length Hospital Bed Rail provides safety for elderly patients or individuals suffering from mental disabilities. It is ideal for raised beds, and offers great patient protection without the sense of entrapment full-length bed rail may cause. The Half Length Hospital Bed Rail is designed particularly for raised beds that present more of a risk for patients. It is ideal for patients with limited cognizance or memory loss conditions, such as Alzheimer's, as it prevents them from getting out of bed and wandering during the night. It is also ideal for individuals with partial paralysis or muscular dystrophy, as they could potentially roll out of bed and not be able to get back in.

Electric Hospital / Homecare Bed's frame is made of steel and the mattress platform is made of ABS plastic which has ventilation holes. It has great strength, large air – bleed hole design, well ventilated. Head and Foot Board are Removable. The boards are made of ABS plastic, allowing for easy removal when in an emergency. There are stoppers around the mattress platform and I.V pole holders are available in the electric bed. For patients who have trouble sitting down from a standing position, being able to adjust the bed to the desired height is a great benefit. For care givers, raising the bed to a height that is comfortable to work can alleviate backaches. Because electric hospital beds are on wheels, it makes it much more easier to move the bed to different locations if needed. Regular beds require much more effort to be moved. The Nursing Control Panel (NCP) gives nursing staff direct control over critical positioning functions, while giving the patient a limited degree of adjustment. This high degree of selective control is vital with cases such as spinal injuries and other similar conditions where backrest positioning must be carefully supervised. The NCP is mounted out of reach of the patient (at the foot of the bed) and serves to block the handset functions that may be inappropriate or even dangerous for the patient. The bed end is detachable providing convenience to the care giver to assist the patients.

SUBJECTS AND METHODS

Since there are less studies in Hospital Beds the study was conducted to analyze the benefits of Electric Hospital Beds in different diseased groups. A randomized study of 130 patients were the total number of patients included in the study. All the patients were referred from the Hospital, Ministry of Kuwait from various Clinical and Outpatient unit for the usage of Electric Hospital Bed.

The study comprised of 17 groups, which comprised of Respiratory Diseases, Hip/Knee replacement surgery, chronic Renal Diseases (CRD), Diabetes Mellitus, Hypertension, Cardio Vascular Accidents (CVA), Heart Diseases, Obstructive Sleep Apnea (OSA), Birth Defects, Spinal Cord Injury (SCI), Osteoporosis, Osteo Arthritis, Dementia, Metastatic Cancer, Fracture, Morbid Obesity. All this Groups had patients having disability (inability to walk) due to various Diseases, conditions, and genetic causes and were supplied with Electric Hospital Bed. The aims and objectives of the study was to the analysis the different features in the Electric Hospital Bed to relate with different diseased conditions and the medical benefits of using these features in different study group. Secondly to study the medical advantages of using Electric Hospital Beds for different diseased groups, conditions and birth defects in the patients.

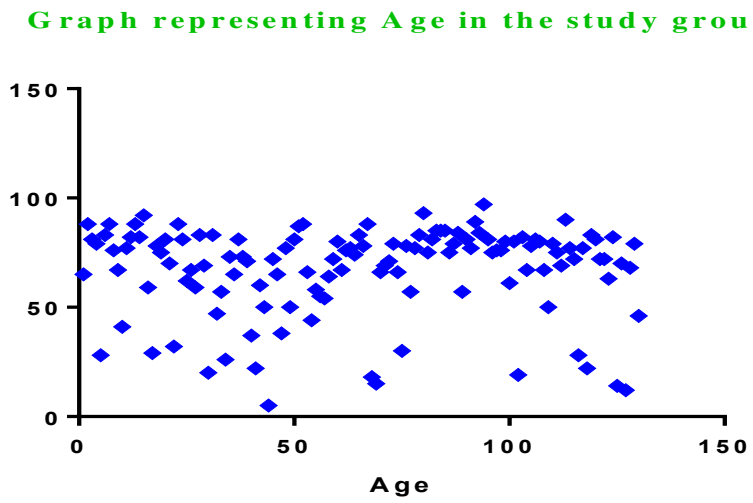
RESULTS

Statistical Analysis: The D'Agostino & Pearson normality test, Kolmogorov – Smirnov and Shapiro – Wilk Normality tests were used to test for normality of distribution of the data. Continuous variables were compared with the Student *t* test (while comparing normally distributed variables) or Mann-Whitney U test (while comparing nonnormally distributed variables). The χ^2 test was used to compare groups regarding categorical variables. Variables with $p < 0.10$ in univariate analysis were identified as potential risk markers and included in the full multivariate logistic regression model as covariates. Frequencies (percentages), mean, Standard Deviation were calculated as descriptive statistics. Statistical Analyses were performed by Graph Pad prism Version 7 and $p < 0.05$ was considered as statistically significant.

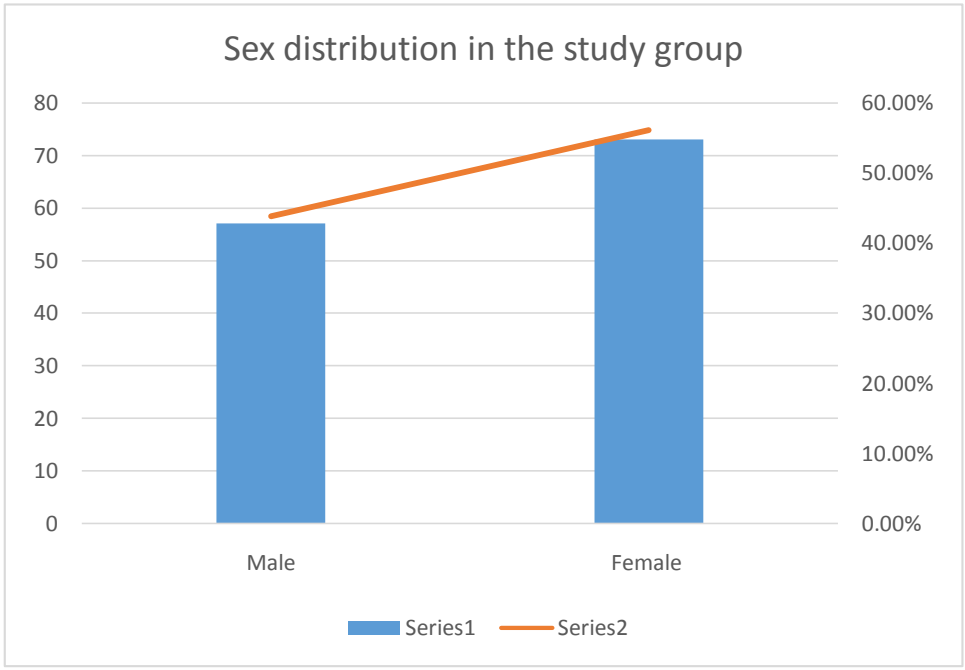
Table 1 also represents the mean value of the age in the study group was found to be (67.18 ± 20.36) and the difference in the age in different study groups were found to be significant ($p < 0.0001$).
Table 1 represents the total number of patients were 130 in the study group with different multiple disease conditions. The mean value and standard deviation of the number of patients in 17 study groups were found to be (22.235 ± 31.346) and the difference between the number of patients in study groups were found to be significant ($p < 0.0001$). Graph 2 shows the sex distribution in the study group. The number of males in the study group having disability associated with medical conditions were 57 (43.84%) while the number of females in the study group having disability associated with multiple disease conditions were 73 (56.15%) which is more than as compared to the number of males in the study group. Graph 3 represents the distribution of number of patients in different study groups. The number of patients with Hypertension 50 (38.46%) was more than as compared to patients with Diabetes 44 (33.85%), CVA 39 (22.31%), Heart Diseases 26 (19.23%) and birth defects 27 (20%).The number of patients having disability associated with leg amputation 3 (2.31%), fracture 4 (3.07%), Replacement therapy 4(3.07%), obesity 4(3.07%), Renal Diseases 9 (6.92%), SCI 8 (6.15%), Osteoporosis 6 (4.60%), Osteoarthritis 5 (3.84%), metastatic Cancer 12 (9.2%) were less when compared with respiratory diseases 15 (11.54%).Table 2 shows the correlation Analysis of Age associated with Disability versus age associated with different medical disease and conditions using electric Hospital bed. The correlation of Disability Vs respiratory Diseases (r = - 0.006781) in the study group is insignificant. While the correlation of Disability Vs Replacement therapy (r = 0.1608) was also found to be insignificant. The correlation of Disability Vs Chronic Renal Disease (r = 0.4472) was found to be having weak positive significance. The correlation of Disability Vs Diabetes Mellitus (r = - 0.1363), the correlation of Disability Vs Hypertension (r = - 0.1743), the correlation of Disability Vs CVA (r = 0.221), and the correlation Disability Vs Heart Diseases (r = 0.1235) was found to be insignificant. The correlation of Disability Vs Obstructive Sleep Apnea (OSA) (r = 0.5673) was found to be positively significant. While the correlation of Disability Vs birth defects (r = - 0.3475). The correlation of Disability Vs Spinal Cord Injury (SCI) (r = - 0.5635), the correlation of Disability Vs Osteoporosis (r = - 0.5923) were found to be negatively Significant. The correlation of Disability versus Osteoarthritis (r = - 0.08703) was found to be insignificant. The correlation of Disability Versus Leg Amputaion (r = - 1) and the correlation of Disability Vs Morbid Obesity (r = - 0.8791) are found to be having negative high significance. While the correlation of Disability Vs Metastatic Cancer (r = -0.3667) are also found to be negatively less significant. The correlation of Disability Vs fracture (r = 0.0153) is found to be insignificant.

Table 1: Mean and standard deviation of total number of patients and their age in the Study group having multiple medical conditions.

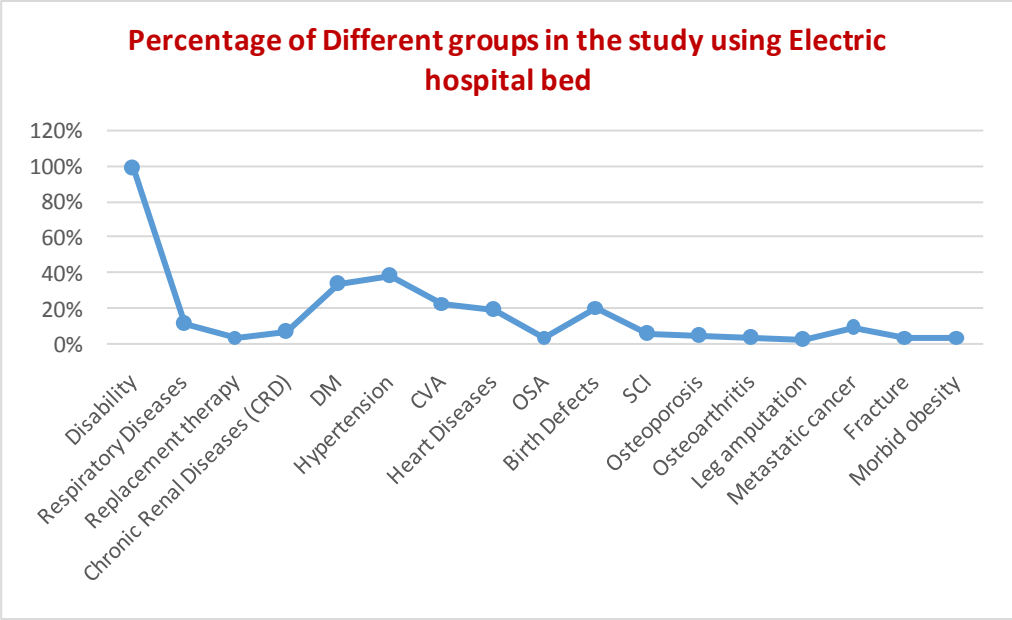
Variables	Mean ± SD	SEM	P Value	N
Total no. of patients	22.235 ± 31.346	7.603	< 0.0001****	130
Age	67.18 ± 20.36	1.786	< 0.0001****	130



Graph 1: Graph representing age of the patients in the study group using Electric Hospital Beds.



Graph 2: Graph showing distribution of Males and Females in the study group.



Graph 3: Distribution of number of patients in Different study groups associated with diseased conditions using Electric Hospital Beds.

Table 2: Correlation Analysis of age associated with Disability Versus age associated with different medical conditions.

Variables	No. of Patients having multiple disease conditions	P value	r value
Disablility Vs Respiratory Diseases	**15 (11.54%)**	0.9809*	-0.006781*
Disablility Vs Replacement therapy	4 **(3.08%)**	0.8392*	0.1608*
Disablility Vs Chronic Renal Diseases	**9 (6.92%)**	0.2275*	0.4472**
Disablility Vs Diabetes Mellitus	**44 (33.85%)**	0.01857*	-0.1363*
Disability Vs Hypertension	**50 (38.46%)**	0.2261*	-0.1743*
Disablility Vs CVA	**39 (22.31%)**	0.1763*	0.221*
Disablility Vs Heart Diseases	**26 (19.23%)**	0.5477*	0.1235*
Disablility Vs OSA	**4 (3.08%)**	0.4327*	0.5673**
Disablility Vs birth defects	**27 (20%)**	0.0757*	-0.3475***
Disablility Vs SCI	**8 (6.15%)**	0.1458*	-0.5635***
Disablility Vs Osteoporosis	**6 (4.60%)**	0.2155*	-0.5923***
Disablility Vs Osteoarthritis	**5 (3.84%)**	0.8893*	-0.08703*
Disablility Vs Leg Amputation	**3 (2.31%)**	0.0030**	-1***
Disablility Vs Metastatic Cancer	**12 (9.2%)**	0.2410*	-0.3667***
Disablility Vs fracture	**4 (3.07%)**	0.9847*	0.0153*
Disablility Vs Morbid Obesity	**4 (3.07%)**	0.1209*	-0.8791***

***Insignificant , ** Significant positive correlation, *** Significant negative correlation**

DISCUSSION

The association of Medical Benefits of Electric Hospital beds in (Musculo Skeletal Disorder) MSDs:

Electric Beds can help people with chronic pains in MSDs. The electric bed helps by easing the patient in and out of bed every day. Electrically adjustable beds also help by providing a range of positions to sleep in, depending on the ailment. Elevation of back or legs, realign the vertebrae and the pressure place on nerves and muscles are reduced. The soreness in lower back can be eliminated by elevating legs, creating a pelvic tilt which can relieve strain on the affected muscles. The soreness upper back can be eliminated by raising and supporting the torso.

The association of Medical benefits of Electric hospital bed in Cerebral palsy (CP):

Chronic pain in Cerebral Palsy: Patients with CP may have symptoms like, headache, periodic pain and other commonly encountered causes of pain. Pain emerging from muscles, joints and the skeleton are common. For some individuals increased muscle tone, spasticity or dystonia can be an important contributing factor for pain. This type of pain, often referred to as musculoskeletal pain can be localized in the back, neck, foot/ankle, shoulder, knee, hip and arm. **Benefits in chronic pain:** Raising the foot of the home care bed takes pressure off of the lower back, easing aching back pain. It also may ease hip and knee pain. An electric bed can be moved to any position that takes the stress off of the affected vertebrae, and can be changed to react to the pain location of the moment. Whether the patient need to keep legs elevated to reduce pressure on your spine or you want to keep your head elevated to reduce neck aches, Electric Hospital / home care bed to suit needs of the patient.

Acid reflux in Cerebral Palsy: Gastro-intestinal pain in Cerebral Palsy often caused by gastro-esophageal reflux secondary to changed muscular function in the esophagus or lower oesophageal sphincter and spinal deformity (scoliosis) is another source to chronic pain. In addition problems with gastrostomy (PEGS) can cause pain. Procedural pain, procedures identified as being potentially painful and often encountered by individuals with CP include needle injections. **Benefits:** An inclined position can be adjusted by using electric hospital beds decreasing stomach contents from leaking into the esophagus. Thus reducing the acid reflux in CP.

Many children with CP suffer from sleep apnea: Obstructive sleep apnea occurs when the muscles in the back of the throat relax. These muscles support the soft palate, the triangular piece of tissue hanging from the soft palate (uvula), the tonsils, the side walls of the throat and the tongue. When the muscles relax, the airway narrows or closes as we inhale and you can't get an adequate breath in.

This may lower the level of oxygen in the blood. The brain senses this inability to breathe and briefly rouses the patient from sleep so that he/she can reopen the airway. This condition is characterized by stopping and starting breathing throughout the night while asleep. It is a dangerous condition and is often accompanied by snoring. **Benefits:** It is possible to alter the direction of gravity by using Manual or Electric best so that the windpipe is not obstructed by elevation of head (Fowler's Position). Hence the quality of sleep is improved as well as the snoring is reduced.

The association of Medical Benefits of Electric Hospital bed in Heart Diseases:

Cardiovascular diseases (CVDs) are the leading cause of mortality and morbidity all over the world. CVD encompasses coronary heart disease (CHD), as well as congestive heart failure, stroke, peripheral artery disease, carotid artery disease, and aortoiliac disease (R. Gupta et al, 2008).

Improve Breathing for Maximum Lung Expansion: Patients are able to improve breathing, which delivers more oxygen to the body. This prevents the heart from working harder to deliver oxygen and blood to vital organs. **Benefits:** Sleeping in an elevated position by using manual or electric bed can help increase oxygen flow during the sleep.

Edema Pain Due to Fluid Retention: Patients suffering from swollen feet and legs experience an enormous amount of pain and discomfort. By raising their knees, legs and feet provide maximum relief. Sleeping with legs elevated helps prevent fluid buildup and reduces pain. Those who have pulmonary edema should sleep with their head and chest elevated. The angle encourages the fluid to travel through the body without gathering in the legs, preventing weight gain and extreme pain. **Benefits:** Therapeutic inclination is frequently utilized to aid in circulation for persons suffering from edema in the lower extremities. Elevating the feet above the level of the heart will generally lessen the amount of swelling in the legs and feet experienced by heart patients. Mobility impaired individuals may sit in the same position for hours.

The association of Medical Benefits of Electric Hospital bed in Diabetes:

Many people with diabetes experience discomfort in their legs and feet, with symptoms such as cramping, numbness, tingling, and pain. The culprits may be poor circulation, nerve damage, or both, and the underlying causes are referred to as peripheral arterial disease (PAD) and peripheral neuropathy. Diabetic peripheral neuropathy is a common complication of diabetes in which nerves in the feet and legs (and sometimes hands and arms) are damaged, resulting in pain and/or loss of sensation.

Weakened nerve fibers may give off false sensations in the extremities, often experienced as pain or burning; cramps and extreme sensitivity to touch may also result. The loss of nerve fibers can result in muscle weakness, numbness, loss of reflexes, foot deformities, change in gait, and impaired balance and coordination. Loss of sensitivity to pain or temperature can also occur, leading in turn to blisters and sores from foot injuries that go unfelt. If circulation is poor (as a result of PAD, for instance), such wounds may be slow to heal, leading to foot ulcers. Eventually, gangrene may result and amputations may be necessary. **Benefits:** While Hospital / Home care bed cannot cure diabetes, it can provide relief from some of the side effects of this disease. For example, diabetes can cause poor circulation, particularly in the legs. Elevating the legs during sleep can alleviate this condition.

The association of Medical Benefits of Electric Hospital bed in Cancer

Chronic pain in cancer: Most cancer pain is caused by the tumour pressing on bones, nerves or other organs in the body. Sometimes pain is due to your cancer treatment. For example, some chemotherapy drugs can cause numbness and tingling in your hands and feet. Or they might cause a burning sensation at the spot where you have the drug injection. Radiotherapy can cause skin redness and irritation. **Benefits:** Electric Beds can help cancer patients with chronic pains in various ways. They help by easing the patient in and out of bed every day. Each time the patient elevate back or legs, they are realigning their vertebrae and adjusting the pressure they place on your nerves and muscles , that is if lower back is sore, it is recommended that to elevate the legs, creating a pelvic tilt which can relieve strain on the affected muscles. If the upper back is sore of the patient, it helps to raise and support his / her torso.

Pressure ulcers in cancer: Pressure ulcers may lead to lengthy periods of hospitalization (Donovan WH et al 1986). Terminally ill cancer patients are also known to be at risk for this problem. A report from St. Christopher's Hospice revealed a prevalence of 19% among 7,000 terminally ill patients (Guggisberg E et al, 1992). Kaasa et al found a higher incidence (33%) of pressure ulcers on reviewing consecutive patients in a palliative care unit. However, this rate was reduced to 7% after an interdisciplinary wound management committee was created. **Benefits:** Home care / Hospital beds help in increase of mobility in patients with cancer who are bed ridden along with Air Mattresses or overlays made of one or two layers of parallel air sacs.

Alternate sacs are inflated and deflated, which provides alternating pressure and release for each area of skin. *Acid reflux in Cancer***:** One of the side effects of Chemotherapy is the treatment that most commonly causes nausea and vomiting. Heartburn resulting from acid reflux gastroesophageal reflux disease (GERD).**Benefits:** May sometimes be relieved from sleeping with the head inclined. An inclined position can be adjusted by using electric hospital beds/ manual bed decreasing stomach contents from leaking into the esophagus. Thus reducing the acid reflux.

The association of Medical Benefits of Electric Hospital Beds in pregnancy:

Benefits in pregnancy and in infants: Fowler's position is used in postpartum women to improve uterine drainage, and in infants when signs of respiratory distress present the Fowler's position alleviates compression of the chest that occurs due to gravity.

CONCLUSION

Electric Hospital Beds are used in especially for patients that have back problems, difficulty breathing, or problems with mobility, being able to change the elevation of head or feet can make the patient feel more comfortable. Having the capability to adjust the head gives the patient the ability to eat meals, read, and watch TV.It is an intervention used to promote oxygenation via maximum chest expansion and is implemented during events of respiratory distress. Fowler's position facilitates the relaxing of tension of the abdominal muscles, allowing for improved breathing. Sleeping with legs elevated helps prevent fluid buildup and reduces pain.An inclined position can be adjusted by using electric hospital beds decreasing stomach contents from leaking into the esophagus thus reducing the acid reflux.

REFERENCES

Ahmad S Teebi, (1994). Autosomal recessive disorders among Arabs: an overview from Kuwait. J Med Genet 31: 224-233.

Burchardt T. (2005). The education and employment of disabled young people: frustrated ambition. Bristol, Policy Press,

Christianson, A., Howson, C. & Modell, B. (2006). Global Report on Birth Defects. The Hidden Toll of Dying and Disabled Children. March of Dimes Birth Defects Foundation: White Plains, New York

Coleen A. Boyle, Jose F. Cordero. (2005). Birth Defects and Disabilities: A Public Health Issue for the 21st Century; Am J Public Health. November 95 (11): 1884–1886.

Demark-Wahnefried W, Morey MC, Sloane R, Snyder DC, Cohen HJ. (2009). Promoting healthy lifestyles in older cancer survivors to improve health and preserve function. J Am Geriatr Soc. 57 Suppl 2:S262–S264.

Donovan WH, Garber SL, Hamilton SM, (1986). Pressure ulcers, in: Delisa JA (ed): Rehabilitation Medicine Principles and Practice, pp 476-491. Philadelphia, JB Lippincott.

Filmer D. (2008). Disability, poverty and schooling in developing countries: results from 14 household surveys. The World Bank Economic Review, 22: 141-163.

Grimby G, Finnstam J, Jette A. (1988). On the Application of the WHO handicap classification in rehabilitation. Scand J Rehab Med. 20:93–98.

Guggisberg E, Terumalui K, Carron JM, (1992). New perspectives in the treatment of decubitus ulcers. J Palliat Care 8:5-10

Gupta R. P. Joshi, V. Mohan, K.S. Reddy, S. (2008). Yusuf Epidemiology and causation of coronary heart disease and stroke in India Heart, 94 pp. 16-26.

Hamamy, H. (2011). Consanguineous marriages, pearls and perils: Geneva International Consanguinity Workshop Report. Genet. Med. 13, 841-847

Jenkins SP, Rigg JA. (2003). Disability and disadvantage: selection, onset and duration effects. London, London School of Economics, Centre for Analysis of Social Exclusion, (CASEpaper 74).

Kaasa T, MacMillan K, Bruera E: (1995). Reducing the incidence of skin breakdown in the palliative care setting (abstract). J Palliat Care 11:65-66

Mete C, ed. (2008). Economic implications of chronic illness and disability in Eastern Europe and the Former Soviet Union. Washington, World Bank.

Nagi SZ. (1979). The concept and measurement of disability. In: Berkowiez ED, editor. Disability Policies and Government Programs. New York: Praeger; pp. 1–15.

Sawardekar, K.P. (2005). Profile of major congenital malformations at Nizwa Hospital, Oman: 10-year review.J. Paediatr. Child Health 41, 323-330

Sen A. (2009). The idea of justice. Cambridge, The Belknap Press of Harvard University Press

Siobhan M, Fried LP, Volpato S, Williamson J, Brancati FL, Blaum CS. (2004). Patterns of disability related to diabetes mellitus in older women. Journal of Gerontology: Medical Sciences. 59A(2):148–153.

Tadmouri, G.O. (2009). Consanguinity and reproductive health among Arabs. Reprod. Health **6**, 17

Volpato S, Ferrucci L, Blaum C, Fried LP, Resnick H, Guralnik JM. (2002). Comorbidities and impairments explaining the association between diabetes and lower extremity disability. Diabetes Care. 25(4):678–683.

Verbrugge LM, Jette AM. (1994). The disablement process. Soc Sci Med. (1):38. 1–14.

Verbrugge LM, Lepkowski JM, Konkol LL. (1991). Levels of Disability Among U.S. Adults With Arthritis. J Gerontol. (2):46. S71–S83.

World health report (1998). WHO, Geneva.

Zhu L, Fratiglioni L, Guo Z, Agüero-Torres H, (1998). Association of Stroke With Dementia, Cognitive Impairment, and Functional Disability in the Very Old. Stroke. 29:2094–2099.

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