Identify the work related musculoskeletal disorders among the surgeon.

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Abstract:

Aim: *To identify the work related musculoskeletal disorders among surgeon.* ***Methodology:*** *A quantitative research model in the form of a prospective type survey in design is carried out in this study. Conveniently 35 participants among the surgeons were collected from various hospitals and private chamber. The investigator used a questionnaire. Each Participant was given a questionnaire to identify the work related musculoskeletal disorders among them. Data were numerically coded and captured in Excel, using an SPSS 12.0 version software program. The researcher used descriptive statistics in his research.* ***Results:*** *In percentage 49% participants suffered from WRMD and 51% have not suffered from WRMD. Male and female who suffered from WRMD was 82% male and 18% female. The participants who were from dental, neurology and eye department most commonly suffered by the WRMD (17%). the participants who's job experience was in between 11-15 years were more experienced WRMD (47.06%). Most of the participants suffered from WRMD in their first 5 years of work (58.82 %). Most common symptom was pain (94.11%) among the participants. the most affected body part was shoulders (47.05%). Most common risk factor was working in same position over and over (52.94%) and repetitive movement of upper limb (52.94%).* ***Conclusion:*** *Work related musculoskeletal disorders have great impact causing severe long term pain, physical disability and give rise to huge costs for the society. In the work place, the health care professionals are vulnerable to sustaining musculoskeletal disorders during the course of their work routine.*

Key words: *Musuloskeleta disorder, Work related musuloskeletal disorder (WRMD).*

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Introduction:

Musculoskeletal disorders have become most common problem worldwide during the past decades and increasing day by day. It is a common cause of work-related disability among workers with substantial financial consequences due to workers' compensation and medical expenses (Andersson, 1996). Musculoskeletal disorders, which are often soft-tissue injuries, occur when there is a mismatch between the physical requirements of the job and the physical capacity of the human body (Safe Computing Tips, 2005-2008). Being physically active is beneficial for musculoskeletal system but an overload of physically strenuous tasks may pose a threat to it. Awkward postures, repetitive work or handling heavy materials may damage the system and leading to musculoskeletal fatigue, pain or disorders. MSDs are caused when the physical capacity of the muscles, joints, ligaments etc. is not in balance with the external forces that act upon the body (European Agency for Safety and Health at Work 1993).

Background of the study:

Work-related musculoskeletal disorders are common and increasing in the United States (Bureau of Labor Statistics, 1993). Between 1982 and 1992, the reported number of musculoskeletal disorders of the upper extremity has steadily increased, accounting in 1992 for more than 60% of all occupational illnesses (Bureau of Labor Statistics, 1993). Depending on the job, these disorders may cause pain, restricted motion and weakness in the hands, arms, shoulders, neck, back, and lower limbs. Coupled with the human costs in suffering and lost wages, work-related musculoskeletal disorders are responsible for growing costs as evidenced by increases in worker's compensation costs, as well as escalating costs of diagnosis and treatment. Total compensable costs to the nation for these disorders are estimated to exceed $20 billion annually (Webster and Snook 1994).

Literature review:

Work related musculoskeletal disorder:

Work-related musculoskeletal disorders (WMSD) are syndromes characterized by discomfort, impairment, disability, or persistent pains in joints, muscles, tendons or other soft tissues. They are the most common self-reported, work-related illness in many workplaces (Putz-Anderson, 1988).

Factors that contribute to WRMDs:

Four different groups of factors may potentially contribute to MSDs:

--Physical or biomechanical work-related factors
--Organizational or psychosocial work-related factors
--Individual or personal factors
--Factors relating to social content (European Agency for Safety and Health at Work)

Individual risk factor that may influence in work related musculoskeletal disorder: Diabetes Mellitus., Thyroid problems, Kidney problems (Renal insufficiency, failure, stones, etc.), Arthritis, High Blood Pressure, Gout, Reynaud's phenomenon, Physical capacity, Age, Obesity, Smoking (European Agency for Safety and Health at Work 1993)

Common work related musculoskeletal disorder: Chronic low back pain,Tension neck syndrome,

Trapezius myalgia,Rotator cuff impingement, Tendinitis, Tensoynovitis, Carpal Tunnel syndrome, Thoracic Outlet Syndrome,DeQuervain's Disease,Rotator Cuff Tendinitis,Trigger Finger: (United Food and Commercial Workers International Union 2008)

Role of physiotherapy to decrease work related musculoskeletal disorder:

Physical Therapist assesses an individual's physical ability to do a specific job or activity and aids in developing a safe return to work program (Occupational health solution). All exercises should be performed slowly and comfortably to avoid injury. When performing strengthening and flexibility exercises, remember to breathe naturally and do NOT hold your breath; exhale during exertion and inhale during relaxation. A program of strengthening, stretching, and aerobic exercises will improve your overall fitness level. Research has shown that people who are physically fit are more resistant to back injuries and pain and recover quicker when they do have injuries than those who are less physically fit (Joel & Press, 2008).

Methodology of the study:

Design of the study

The investigator used a quantitative research model in the form of a prospective type survey in design. The investigator chose the design in quantitative research method. The purpose of quantitative research is theory testing to establish facts, show causal explanations and relationships between variables, allow prediction. Quantitative research designs are predetermined and structured and do not change during the study. Quantitative research studies answered specific research questions by producing statistical evidence to prove a point (Bailey 1997, pp49-51).The study was prospective survey in design. The reason behind doing the survey in prospective design was because this design involves identifying the group of people which the investigator wants to study and then collecting information when the workers use the particular service. Prospective research design was particularly appropriate to obtain a great deal of useful detailed information performing an in depth data analysis (Hicks 2000, p23).

Study settings:

As this is a survey on work related musculoskeletal disorders among the surgeon in Bangladesh, so study site was all private and government hospitals of Bangladesh. Samples were selected according to the inclusion criteria.

Sample of the study: 35 samples were selected from the population for this study-

- Neurology surgeon-5
- Cardiac surgeon-5
- Orthopedic surgeon-5
- Dental surgeon-5
- ENT surgeon-5
- Eye surgeon-5
- Gynecological surgeon-5

Sampling procedure of the study:

Samples were selected conveniently from all private and government hospital of Dhaka. There are a lot of surgeon in Bangladesh, from this population it was selected 35 samples for his study according to the inclusion and exclusion criteria.

Method of data collection

In this study data were collected by both structured and semi structured mixed type questionnaire. Mixed type questionnaire include both open and close ended questions.

Questionnaire:

Data was collected using a questionnaire on paper and the questions types were a mix of both structured and semi-structured questions. These questions were used to collect nominal and ordinal data for research findings and were setup sequentially. There were questions relating to work related musculoskeletal disorders among the surgeon.

Data analysis

The result of this survey was consisted of quantitative data. The collected data was illustrated with bar graphs. By this survey a lot of information was collected. All these results gave a basic idea about the work related musculoskeletal disorders among the surgeon in Bangladesh. The result were calculated in percentages and descriptive statistics were presented, Other statistical tests could not be used, as samples were small in number.

Results and discussion:

Prevalence of WRMD:

Among the 35 participant 49% participants suffered from WRMD and 51% have not suffered from WRMD.

Male and female ratio:

Among the 35 participants 25 were male and 10 were female. And among the 17 participants who were suffered from WRMD 14 were male and 3 were female. So the percentage of male and female who suffered from WRMD is 82% male and 18% female.

Age & WRMD relationship:

Among the 17 participants who have suffered from WRMD lowest age was 27 and highest age was 61 years. And frequency is 0 participants in between 25-35 years, 4 participants in between 36-45 years, 8 participants in between 46-55 years and 5 participants in between 56-65 years. The percentage are 25-35 years: 0%, 36-45 years: 23.53%, 46-55 years: 47.03% and 56-65 years: 17.64%

Weight & WRMD relationship:

The percentage of weight of the participants who suffered from WRMD is 40-50kg: 0%, 51-60kg: 17.64%, 71-80kg: 41.18% and 81-90kg: 17.64%.

Department & WRMD:

The percentages were neurology department: 17%, orthopedic: 12%, cardiology department: 12%,

gynecology department: 12%, dental department; 17%, eye department: 17% and ENT department: 12%. So most surgeon suffered from WRMD were from dental, neurology and eye department.

Job experience & WRMD:
The percentages were 1-5 years: 0%, 6-10 years: 17.645, 11-15 years: 47.06%, 15-20 years: 29.41% and 21-25 years: 5.88%. so the participants who's job experience was in between 11-15 years were more experienced WRMD and the lowest percentage were the participant who's job experience is in 21-25 years.

First experience of WRMD:
The percentages were in the first year of wotk:0%, in the first 5 years of work: 58.82 %, in 5- 15 years of work: 35.29% and in >15 years of work: 5.88%. **Warren Glover (**2005) found in his research that 32% people were affected by WRMD within first 5 years of his work.

Symptoms:
The percentages were aching; 5.88%, cramp: 11.76%, numbness: 35.29%, tingling: 11.76%, pain: 94.11%, parasthesia: 11.76%, swelling: 17.64%, stiffness: 5.88%, weakness: 29.41%, change in normal colour: 0%, change in normal temperature: 0%. So most common cause is pain (94.11%) and less common is change in normal colour (0%) and change in normal temperature (0%).

Affected body part:
The percentages were neck: 23.53%, shoulders: 47.05%, elbows: 0%, wrists: 41.17%, upper back:0%, lower back: 29.41%, hip/thigh/buttock: 5.88%, knees: 11.765 and ankle/feet: 0%. So the most affected body part is shoulders: 47.05% followed by wrists: 41.17%.

Risk factor:
The percentages were performing same task over and over: 35.29%, performing excessive surgery in one day: 17.65%, performing manual techniques:11.76%, working in awkward or cramped position: 29.41%, working in the same position for a long periods: 52.94%, bending or twisting back: 23.53%, repetitive movement of upper limb: 52.94%, not enough rest in a day:11.76%, continuing to work when injured or hurt: 47.05%, work scheduling:11.76%, inadequate training for injury prevention:0% and any off work activities:0%. So most common risk factor were working in same position for a long period (52.94%) and repetitive movement of upper limb (52.94%).

Diagnosis of condition:
The percentage were participants who have diagnosed was 82.35% and who have not diagnosed was 17.65%

Disease condition:
The percentages were CTS 43.75%, tendinitis 31.25%, PLID 12.5% and spodylosis 6.25% and osteoarthritis 12.5%.

Receiving physiotherapy treatment:
The percentages were 35.29% for the participants who have taken physiotherapy treatment and 64.70% for the participants who have not taken physiotherapy treatment for their condition.

Prognosis:
Among the 6 participants who have taken physiotherapy for their condition all of the participants have a good prognosis. The percentages of prognosis were good: 100%, worse: 0%, no result: 0%

Conclusion:
Work related musculoskeletal disorders have great impact causing severe long term pain, physical disability and give rise to huge costs for the society. In the work place, the health care professionals are vulnerable to sustaining musculoskeletal disorders during the course of their work routine.

The investigator has tried to show the ratio of WRMD among the surgeon and the possible risk factor for the WRMD according to participants view. But due to time limitation the investigator was not able to gather huge amount of participant and for this result cannot be generalized in all over the Bangladesh. So for further study it is strongly recommended to increase sample size to generalize the result in all of the surgeons in Bangladesh.

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