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Faculty of Medicine



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Occupational Hazards

Yesterday we started talking about occupational health, and we defined **OSHA** (occupational safety and health agency).

- The problem of occupational health cause or contribute to premature death of millions of people worldwide and result in the ill health or disablement of hundreds of millions each year.

Disease burden: how much it affects or costs.

The burden of disease from selected occupational risk factors amount to 1.5% risks of the global burden in terms of DALY.

DALYs [disability-adjusted life years]: is a measurement of burden of diseases, we will discuss it later, but here it gives you an impression if burden of disease can cause a problem.

Extra note: DALY quantifies the number of years lost due to disease.

- The World Health Record in 2002 placed occupational risk (hazard) as the 10th leading cause of morbidity and mortality worldwide. Almost 22.5 million DALY and 699,000 deaths are attributable to these risk factors.
According to the report, work related injuries cause nearly 310,000 deaths each year, and nearly 146,000 deaths are attributable from the region remains largely uncharacterized.

This gives you impression about the size of problem caused by occupational exposures.

- South East Asia Region have witnessed major occupational health problems, (what's happening there is similar to what we talked about in industrial revolution 1870), highlighted by **Bhopal disaster** in India and **Kader Toy factory fire** in Thailand.

- **Bhopal disaster in India:** during night time there was a major factory manufacturing pesticides, one of the items used in that factory was cyanide which one of the most dangerous toxic materials. What happened that there was a leakage of this CN- from this factory during night and because the factory was between residential areas, people were exposed to this CN- while they were sleeping and many people died and some of them lost their vision.

This is a mistake by itself; to have the factory inside populated areas; it should be far away from people. So as we said before in industrial revolution that who helped the workers was people living nearby the factories, so in Bhopal it was close to people, so exposure was not limited to people inside the work place but again it hurt people surrounding that area.

- **Kader Toy factory fire in Thailand**, a major fire erupted in that place and again because it was badly located between people, then this spread to the nearby houses and burn the whole area.

This mean that occupational problems not limited to the occupational place itself but again it become a threat for the neighboring people.

However, workers in the region are exposed to wider range of occupational hazards including chemical, physical and biological hazards as well as inadequate ergonomics practice and high psychological stresses .This statement has classified the type of workplace hazards that we will talk about it later.

- Nowadays, because there are new and more advanced industries, there are more sophisticated chemicals and materials that are used, and it become more and more hazardous, and even the simple materials that were used have replaced with more and more complex materials.
- Most of the countries are in process of rapid economical development, eg. China, and in the same time they don't have good laws and regulations to protect workers. And the outcome is a disaster for workers. They have to take action and improve their occupational laws and regulations, to protect these workers.
- Major concern for **WHO** is south East Asia region because it has 500 million workers, there should be something to be done to protect them because there are no enough regulations.
- **ILO**: International Labour Organization (responsible for the health of workers worldwide).
ILO and WHO have shared common definitions of occupational health.
- Why WHO put definition to what so called "health" (the state of wellbeing)?

Because different people might have different perspective for the same thing, some people will say (absence of disease), others define it as (if each organ is doing its' job then I am healthy). To be able to talk to each other in different part of worlds, we should have common definition.

So any international organization aims to unite the understanding of people wherever they are.

- **OHS [Occupational Health and Safety]**: is a discipline with a broad scope involving a team of people of many specialties fields i.e. multidisciplinary (physician, nurse, engineer, lawyer ...Etc) responsible for taking care of workers in their workplace.

Aims to:

1- Promoting and maintaining the highest degree of physical, mental and social wellbeing of workers in all occupations. (It is a part of the WHO definition of health).

2- Preventing adverse effect on workers health caused by their working conditions.

3- Protect workers from risks resulting from factors adverse to health.

4- Placing and maintaining occupational environment adapted to physical and mental needs.

Our concern as doctors is to do medical examination to a person before he is hired; to be sure that he fits this job (disease-free certification).

- When the professor was hired in the university he had to go to a doctor and do examinations and bring a medical certificate in his profile that indicates that he fits this job. Eg: He had PhD but maybe he doesn't know how to speak, in this case he doesn't fit as a lecturer although he got a degree.
- If somebody is going to lift objects and if he's a tiny person with no muscles on him, and his job is to lift 50 kg objects, will he do it ?!
If you allow him to do it, then he will come back after 3 days with a severe disk. So you have to place people in the right place.
- Someone who is susceptible to allergies and you let him work in perfume industries, he will end up with a severe asthma and he might die from this because you didn't know what to examine in this person or what kind of jobs he cannot handle.

5- Adapting work environment to be suitable for humans, it means that the environment should be suitable and ready, too.

- **Bernardino Ramazzini:**

- He is the father of the occupational medicine.
- He was the first doctor to recommend that you have to do something with your work life.
- One thing he mentioned was that the doctor should ask his patients about his occupation. **Why?**
 - Because the problems the patient is coming with might be related to his job and you as a doctor, you have to link between his job and his problems as much as you can.
 - If someone comes with a severe headache and you give him paracetamol derivatives. He might not be cured if the reason of his headache is due to his job. As if he's working in an office job, he might have headache because of his neck is not being straight while he's doing his job and he has to bend his neck in a wrong way and this causes his problems.

Now he might spend his life taking pills for his headache, and he might never be cured, but if you are a good doctor you can advise him to be aware while he's working and this might solve his problems.

The mental physical and social well-being of workers

- Occupational health and safety practices require the cooperation of both the employer and the employees. And this is a problem, **why?**
 - Because the employer won't feel that it's his responsibility to take care of his workers and he thinks that that the workers should take care of themselves.
 - Many employers think that by supplying the personal protection devices their jobs have done, and it's up to workers whether to use them or not.
 - In many parts the employee himself is not concerned about the occupation because he's ignorant and he doesn't follow the rules. eg: if he was given headphones to protect his ears, he put it on and as soon as there is no observer around him he take it off.
 - The occupational health and safety is important because it has a central role in people lives, since most workers spend **at least 8 hours** in their jobs. Some workers spend more than 8 hours either to be more paid or the nature of work needs to stay for a longer period (like physicians & nurses)
 - **Everyday**, workers all over the world are faced with multitude of health hazards (such as gases, noises, vibrations and so on), so these things are everywhere.

Occupational health and safety officer :

- is someone who is responsible for the workers' health and safety procedures in an organization and he recognizes hazards , measures health and safety risk, sets suitable safety controls in a place and gives recommendation to avoid accidents.
- His name used to be "**factory inspector**".
- Example: What kind hazards can the safety officer observe if the worker was the professor? What kinds of hazards do lecturers face?
 - They might face problems with their throats, with their voices or with their vocal cords because they have to talk too much.
 - There is some electricity that they have to face because there are wires everywhere.
 - The light may cause a hazard, if it's not good enough for the lecturer.

If the officer recognizes these problems, then he can help the lecturer out to do something about these problems.

- As one of the helps to the lecturers, they give them the mike so the lecturers don't have to shout and by this they reduce their throat problems. But at the same time these mikes contain some electricity that might cause another hazard.

- The officers have to take each job individually and that make us go back to Ramazzini when he did his monograph on 12 types of jobs and he recognized that each job might have its own problem.
- Is there anything wrong with occupational health?

Unfortunately, some workers assume that the work is safe .

*employers might not have morals (nobody is observing me) ,so there should be legal responsibility for workers' protection , but as a result the hazard and the lack of attention given to health and safety work-related accident and diseases are common in all part of the world.

- The Prof. mentioned a situation that he has been gone through while he was studying

Once upon a time:

“ My lecturer was an officer in the university , he was responsible for the health of 3-5 industries, one of them was very huge ,the bill of electricity of that place was almost more than all Jordanians spent at that year (petrochemical industry) and since he was responsible he decided (without announcement) to take us with a small bus and go to visit his factory to show us real life story ,and how he was working , and once we have arrived, we were shocked, because in the part that the workers should be wearing masks , no one was wearing it “

- So the moral of the story, that the workers should be followed and observed, otherwise they will not follow recommendations.

- Why they did not wear the mask? Because it has a negative side (he will sweat and will not able to talk to his friend). So unless the worker understand that he have to tolerate this bad effect for his own benefit, he will never use it.

- So having rules is something and applying them something else.

-At last, hazard and lack of attention to safety of worker is still a problem.

Thanks to Dmour for being very helpful ... sorry for any mistake :D

Done by: Laith Al-Omouh

"Education is the most powerful weapon which you can use to change the world."

-Nelson Mandela