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EPIDEMIOLOGY & BIOSTATISTICS

Slides Sheet Handout other.....

Lecture # 1

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This sheet will be easy, it is just a long story. I couldn't find any past paper questions about it.

Occupational health.

- What is occupational health?

-People like governments discovered the relationship between workplace and health. That's why even at the time of old Egyptians, anybody like a slave or a criminal they send them to work in mines. In that time, working in mines was very hazardous job, you might die there, but, who cares, there's a reason why they sent them there. Old Greek did the same.

-Now, workers themselves started to recognize the relation at early times. And one of the things to show this recognition is the drawings (hand drawing) at the entry of those mines showing a person with a piece of cloth (handkerchief or leather) in his arms putting it around his nose and mouth, what does this mean?

-If I am doing such a thing then: 1- I am in hazard

2- This thing whatever it is can get in my body through my nose or mouth (route of entry).

3- I can protect myself using such a primitive thing.

*Anyway, to this moment, part of the protection for workers from hazards in the workplace, for example for physicians and you are dealing with corona virus, then they have to use a certain kind of masks. And this concept has been recognized very early.

-Then later, during the time of Europeans, and that what we call era of the middle ages, that time was very bad in Europe, and people used to be sold as workers with the workplace (ex: if you like the farm you buy it with the farmers) so, nobody cares about anything belongs to workers and when you buy these workers, you have to examine them (like good fitness, good teeth, good power and so on.) And if you don't like somebody, then you don't have to buy him as if he is a machine- you like to buy certain machine to do a certain job for you- rather than being a human being.

-Even though, at that time, there was a person, a doctor, a professor from one of the Italian universities "Bernardino Ramazzini" he started -for the first time- to do something about it. He started to visit the work places, recognized the hazards of those places. This person was the first one to write a monograph about diseases related to different jobs. He called it trade diseases because, at that time, you don't have much industries. Actually this person we call him the father of occupational health and he is the one, to this moment, you as doctors later, once you train in the hospital, he recommended that you as physicians should ask the patient about his occupation (in addition to patient history). So we ask the patient about the workplace to link his situation to his work, not just to ask him because they told you so. However, why is the majority of doctors stop at this level? Because they lack of knowledge.

-Example: if the patient works at asbestos mine, then if you are not familiar with: 1-What is asbestos?

2-What kind of disease it cause?

3-Signs and symptoms and trying to link them together.

-So, if you don't have such information, you won't be able to do anything about him. So, you just stop that level and majority of doctors do so.

-Later, came something called industrial revolution. The major event that labeled this stage was the creation of textile machine. And instead of weaving the cloth manually at home, now we have a huge instrument, a huge machine that can do this job (something was done in home now can be done using machine outside home. So, what do you think? Is it good or bad for workers? It is one of the worst times for workers, because workers before were doing their job at home with their family. Now, they have to leave their families and follow their factories so this is one thing (separation and social problems). Then wages were low, they didn't give them enough and they have to save money for themselves in order to survive in the new place and send back home some money. So, they became very poor people and that's why 5, 6 or 7 of them lived in one room. Moreover, these new machines, they don't know much about it, and these machines are primitive, they don't have much safety in them. So, new kinds of accidents started to occur among those workers.

-Now, when you do your job at home, you might use 3, 4 or 7 dyes to color your clothes. In the factory, you need more than this. So, you start to create new kinds of dyes and chemicals that people don't know much about them

and their effects on health. So, you start to see new kinds of chemical exposures and health problems.

-Now, around those places and factories, the situation was so bad that these places became a focus of infections and disease and also a focus of crimes because it is so crowded and we call these places *slum areas*. Very bad environmental conditions were in these places.

So, severe deterioration, new health problems came out from work places. People are allowed to work as early as 5 years of age up to 70 or 80 of age. As far as you start to be able to do the job you can start work, even a pregnant woman would do some work.

-Now, at that time, we started to have certain moves trying to help these workers, and, one of them were the unions. Unions were more concerned with wages rather than health conditions.

-Some physicians, doctors in Wales, Britain, they show that cities nearby those factories started to be affected by pollutions created by these factories. Some humanitarians didn't like to see that much of people suffering in these problems so they started to talk about it and make moves.

-People nearby were very concerned about these places being a focus of infections toward them because they might get ill from these places. All these moves pushed the British parliament at that time to come up with something called * factory inspector *; a person with authority to get inside the factories inspecting and do something about it. So, here was the

beginning of something should be done for these workers. Although, these factory inspectors were not well-trained, they don't know much about it. Their concern was just to be sure that the sanitary condition in that place was okay, there is water, there are bathrooms, and this was as much as they can do at that time. This was the beginning.

-When we talk about Great Britain at that time, it means that majority of the world will listen since the British at that time were everywhere from China to USA, all those were conquered under the control of that major empire.

-Now, in World War I, something happened that we need workers to produce more, so there was a lot of researches trying to find a formula by which it can push the people to produce more (by money). And in that time, the kind of research done can't be repeated now, because people won't allow to do it. In one of the places, they surround the place by glass that you can see through outside but the workers won't see you, as if you are trying certain things on a mouse and study his responses. And from that time, there was a lot of new theories about how to manage work. One way you'll see it in the future; the X and Y theories in management.

-The X manager will look at people as being lazy, and they don't like to do their jobs. So, if I am a manager I have to keep asking, following, and shouting to be sure that these people are doing their jobs. You'll see some of these managers to this moment.

-The Y manager believes that people like to do their jobs, and if you gave them certain targets, they will do it. So, with a little help from you, things

will be alright. Also, you will see some of these pleasant managers (smiling, happy, and make people better and relax)

-In another way, there are some kinds of managers that are between X and Y; some day he is shouting, the other day, he is a pleasant person. So those people don't have enough confidence about what way to go, so, they do it in both ways.

-In the Japanese school (one of the most successful schools in management) they share every person in the workplace with any decision taken in that place.

-Suppose that in car industry, someone liked to change one of the lights in the cars, what they do is they bring in everybody (even somebody who is cleaning the place) and the engineer will present for these people what is the wrong with these lights and why the factory has to change it. So, when the decision is taken, the next day if it happened and you have visited the factory, whomever you are meeting will speak the same language, they will tell you " today we are changing the lights of the car ". So, everybody will feel that he is part of that decision. We don't see this much done in many parts of the world.

-Anyway, at that time, Harvard school was the first university to offer an occupational health course like what we are telling about now. And from that moment on, many people were interested in this. Actually it's one of doctor Madi's degrees.

He said that when he was specializing in occupational health, a friend of his nearby in America – he is internist- in medicine and he is coming back to this degree to improve his work, because he is saying that (if I have this degree, then one of the major companies will hire me as a part timer – for example – to look after their workers. And this company might have thousands of workers. So, they do it for different purposes.

-At the same time, there was a lawyer studying the occupational health, why is that? Because he will handle certain situations where a worker sues his company because he had certain illness and this lawyer is knowledgeable, he knows that if you are working in certain places, there is a possibility to have certain illness. So, he will bring physicians specializing in this field and he will win in front of the judges. So, a lot of lawyers have specialized in this. Engineers also, some of them, have specialized in the occupational health in order to be hired to take care of work places to avoid certain possible injuries. So you will see different people (nurses, engineers, doctors and lawyers) specialized in this field now.

- At that time, an American doctor started to work hard to bring the attention of people to the occupational health (Doctor Ann) and she's become * mother of occupational health *

-During World War II, a lot of men were lost in the war and if there is somebody who has skills in any job, he can have good money from these skills. So, a lot of regulations were trying to protect this person, he is a valuable person for them, and that is why people looked at USA as the land

of opportunities (you don't have to be a physician or an engineer, you just have to have some skills. So, you started to see a lot of laws that protect workers. To the extent, sometimes, we might look at it going to the other way round (it became over in some places). For example, if there is a successful surgeon who had cut his finger during a surgery, he is not any more surgeon. And if he sues his workplace, he will gain a large sum of money (he is 50 and he could work until 70 so each year will be compensated by 100k\$ in addition to the depression and sad feelings of his family because their father is not surgeon anymore. So, he will get much money from that). So, if I am a factory owner, it is better for me to hire a good team of nurses and doctors so that I won't let this happen, otherwise I am losing money for those people. So, that's why we started to have good regulations related to this. Although, in the 3rd world countries, a lot of people didn't hear about occupational health. If a family in the 3rd world countries had a father who died doing his job, they will be given little bit of money and they will become poor people because they lost their father in this job and it wasn't his mistake. So when you are doing a certain job you have to do it right because not always when you have an accident you will be compensated, sometimes it's your mistake.

-After World War II for the 1st time in USA as the president Ford was the first to sign first and largest act that took place in USA related to occupational health and safety and they called it OSHA (occupational safety and health act). This act is the major one and was followed by having an agency (OSHA) which became the major reference worldwide. So, if you –

at any time – need an information about a given material (like if you are sitting in the clinic and someone came to you and told you that he is working in oil industries, in the laboratory. So, you found that he has a cancer of the urinary bladder and he is a young person. Now here you can let it go and start to focus on that problem as a problem of cancer and you prescribe him treatment and that's it. And he might die from illness.

Or you can look further trying to know why. Now, suppose that he told you that he was doing tests in the laboratory using toluene (you don't know anything but it and what it may do). So, you might refer to OSHA or in the literature and you realize that toluene causes that type of cancer and it wasn't his mistake, it was the mistake of that company that they didn't tell him about this hazards.

-Friend of doctor Madi saw a 60 year old person with cancer and sent him to the doctor to find out how he's got this cancer and what material, and the doctor figured out from the literature that only there are two other cases in Russia in workers were similar to this case and instead of paying treatment cost from his pocket, he (the patient) found someone who will take care after him.

-Now, after this, in USA, we started to see other countries doing their job but at different bases (like China for example, it has become one of the industry leaders, but if you looked at their occupational health system, you will see that they are lagging behind, so they need a lot of work to be done, and now they are working on it).

-Also UK has good occupational health laws that are similar to USA, and European Union has good laws and regulation similar to OSHA. So we feel that by time, many countries will be able to produce such a thing and more and more rights will be given to workers.

-the doctor said:

“When we were visiting a certain factory whom their workers were exposed to mercury (mercury can affect the brain) and I’ve never seen a classical intoxication of mercury like the one was there (damaged gum, damaged teeth, kidneys and damaged brain). I thought at that time that when we tell the workers about the damage they have, they will do something about it, in contrast, they asked us not to tell their bosses because if their managers knew that their workers are sick, they will let them go home and bring others to do the job. And for this person to work for 10-years, it is difficult to find another work. So, he is accepting whatever coming from his job as long as he is staying in that job. “

-So, unless you have really enough regulation, then people will try to hide what is coming instead of doing something about it.

-Malaysia, they have started good regulation as well as Taiwan and Indonesia. It is not an easy thing that you can do overnight. You need work, effort and, man power.

-The doctor used to send one of his students to visit the ministry of health in Jordan and see the branch of occupational health, and they started to do some work. But if you calculate the amount of man power there and compare it to the number of industries in the country you will find out that they won't be able to do it, they are not enough, which leaves the workplace owners do whatever they want to do.

So you need man power, as well as certain tools. For example, if you went to a workplace that is manufacturing certain kinds of breaks using asbestos and you wanted to measure the level of asbestos fibers in the air, can you do it?

Absolutely you can, but only if you have the right instrument and by sending an air sample to the laboratory to measure amount of asbestos fibers by something called (X-ray diffraction machine). So we need people, instruments and, laboratories to follow and complete the job.

Thanks for Ahmad almasri and
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sheet

Dedication to fareeg elkora

Glory MAN UTD