Managing Occupational Health Risks

Lecture Title: The Importance of Occupational Health

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Undergraduate Diploma in
Occupational Health and Safety

What Is Occupational Health?

- Occupational health aims to prevent work-related illness and promote workers' physical and mental wellbeing.

Occupational Health vs Occupational Safety

- Occupational health focuses on long-term illness, while safety focuses on immediate injury.

Link

- https://www.youtube.com/watch?v=gArZMSAnVDw

Why Occupational Health Is Important?

- Many occupational diseases develop slowly and may not be detected until years later.

- Prevents work-related illnesses and long-term health damage, Protects workers' physical and mental well-being, Improves productivity and reduces absenteeism, Ensures compliance with occupational health legislation, Reduces costs related to sick leave and compensation, Supports a safe, healthy, and sustainable workplace

Global Impact of Occupational Disease

- Occupational diseases affect millions of workers worldwide every year.
- Leads to long-term disability and reduced quality of life
- Results in major economic losses due to lost productivity
- Increases healthcare and social security costs globally
- Disproportionately affects vulnerable and high-risk workers

Examples of Occupational Diseases

- Occupational asthma
- Noise-induced hearing loss
- Silicosis
- Asbestosis
- Contact dermatitis
- Work-related musculoskeletal disorders (e.g. back pain, carpal tunnel syndrome)
- Occupational cancers
- Stress, anxiety, and work-related mental ill-health

Link

- https://www.youtube.com/watch?v=TUbisdQVh3o

Legal and Moral Responsibilities

- Employers have legal and moral duties to protect workers from health risks.

- Act 646, Art. 12 states: *It shall be the duty of an employer to ensure the physical and psychological wellbeing of his workers at all times and of all personswho may be affected by the work being carried out for such employer at their workplace.*

Examples of Legal & Moral Responsibilities

Legal	Moral
Provide a safe and healthy workplace	Care for employees' physical and mental well-being
Identify hazards and carry out risk assessments	Prevent harm even where no specific law exists
Implement control measures to reduce risks	Treat workers fairly and with respect
Provide information, instruction, training, and supervision	Promote a positive safety and health culture
Supply and maintain safe equipment and PPE	Support workers affected by illness or injury
Comply with occupational health and safety legislation	

Occupational Hygiene Framework

Occupational health risks are managed using anticipation, recognition, evaluation, and control.

Anticipation

Anticipation is the process of predicting potential health hazards in the workplace before exposure occurs.

- It involves: Identifying possible hazards during design, planning, or changes to work processes
- Considering materials, equipment, and work methods to foresee risks
- Using knowledge of similar workplaces and past incidents
- Preventing hazards rather than reacting to harm

- Main Purpose: To eliminate or control risks at the earliest stage, reducing the likelihood of occupational disease.

Recognition

Recognition is the process of identifying existing health hazards in the workplace and understanding who may be exposed and how.

It involves:

Identifying chemical, physical, biological, ergonomic, and psychosocial hazards

Observing work activities and processes

Reviewing safety data sheets (SDS), records, and incident reports

Identifying exposed workers, tasks, and exposure routes

Purpose: To clearly understand what hazards are present and who is at risk, forming the basis for evaluation and control.

Evaluation

- Evaluation is the process of measuring and assessing workers' exposure to workplace hazards in order to determine the level of risk to health. It involves:
- Monitoring exposure to chemical, physical, biological, and ergonomic hazards
- Comparing results with occupational exposure limits (OELs) or standards
- Identifying workers or tasks at higher risk
- Determining whether existing control measures are effective
  Purpose: To provide evidence-based information that supports decisions on risk control and health protection.

Control

- Control is the process of eliminating or reducing workers' exposure to health hazards to an acceptable level.

It involves applying the hierarchy of control, such as:

- Elimination – removing the hazard completely
- Substitution – replacing with a less hazardous material or process
- Engineering controls – enclosure, ventilation, isolation
- Administrative controls – procedures, training, job rotation
- Personal Protective Equipment (PPE) – last line of defence

Purpose: To prevent occupational disease by keeping exposure as low as reasonably practicable.

Confirmation

- Confirmation is the process of verifying that control measures are effective and that workers' exposure to health hazards remains within acceptable limits.
  It involves:
- Follow-up monitoring and measurements
- Reviewing health surveillance resultsInspecting and testing control systems (e.g. ventilation)
- Ensuring controls continue to work over time
  Purpose: To confirm that implemented controls are effective, maintained, and adequate in preventing occupational disease.

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Categories of Occupational Health Hazards

Health hazards are grouped into chemical, physical, biological, ergonomic, and psychosocial categories.

Chemical Health Hazards

- A chemical health hazard is any chemical substance that can cause illness or adverse health effects when workers are exposed to it through inhalation, skin contact, ingestion, or injection.

Examples of health effects:

- Irritation or burns to skin, eyes, or lungs
- Poisoning or toxic effects
- Occupational asthma or respiratory disease
- Long-term effects such as cancer or organ damage
- Examples of chemical hazards:
- Solvents, acids, pesticides Dusts, fumes, vapours, gases

Examples of Chemical Hazards

Physical Health Hazards

- A physical health hazard is a workplace factor of physical origin that can cause injury or long-term health effects without necessarily involving a chemical substance.

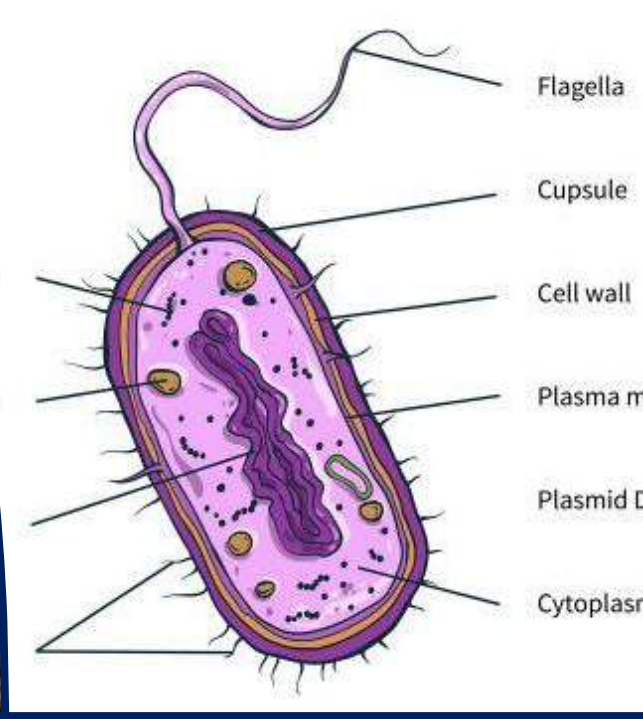
- Noise
- Vibration
- Radiation (ionising and non-ionising)
- Extreme temperatures (heat or cold)
- Poor lighting
- Pressure (e.g. compressed air,)

Examples of Health Hazard

Biological Health Hazards

- A biological health hazard is exposure to living organisms or biological materials that can cause infection, allergy, or toxicity in workers.
  Examples of biological health hazards:
- Bacteria, viruses, fungi
- Blood and other body fluids
- Moulds and spores
- Animal or insect bites
- Biological waste

Example of Biological Hazard



Ergonomic Health Hazards

An ergonomic health hazard arises from poor workplace or task design that places excessive strain on the body over time.

- Examples of ergonomic health hazards:
- Manual handling of heavy or awkward loads
- Repetitive movements
- Awkward or sustained postures
- Poor workstation or tool design
- Prolonged sitting or standing

Examples of Ergonomic Health Hazard

Psychosocial Health Hazards

A psychosocial health hazard arises from work organisation, job design, and social factors that can negatively affect a worker's mental and emotional well-being.

Examples of psychosocial health hazards:

- Work-related stress
- Excessive workload or long working hours
- Poor work–life balance
- Bullying or harassment
- Lack of control or support at work
- Job insecurity

Examples of Psychosocial Hazards

Workplace Example – Manufacturing

- Manufacturing workplaces may expose workers to multiple health hazards.
- Mention some

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Workplace Example – Office

- Office work can still involve significant occupational health risks.

  Mention some

Worker Consultation

- Workers are a key source of information about health hazards.

Case Study 1

- A medium-sized manufacturing company produces metal components. Workers operate cutting machines, welding equipment, and packing lines during 8–10 hour shifts.
- Over time, several workers report:
- Ringing in the ears
- Lower back and shoulder pain
- Skin irritation on hands and forearms
- Fatigue and increased stress due to production targets
- Management focuses mainly on accident prevention and believes that health issues are “part of the job”. No formal occupational health risk assessment has been carried out, and worker complaints are handled informally.

- Identify the different categories of occupational health hazards
- Explain how anticipation, recognition, evaluation, and control could be applied
- Discuss why early prevention is critical for long-term worker health

Case Study 2

- An office-based company employs administrative staff who spend most of their working day using computers. The workplace appears “safe” because there are no machines or chemicals involved.
- Over several months:
- Employees report neck pain, wrist discomfort, headaches, and eye strain
- Stress levels increase due to tight deadlines and limited staff support
- Absenteeism gradually rises, but no clear cause is identified
- Workstations were never assessed, and workers have not received guidance on posture, breaks, or stress management. Management assumes office work does not present serious occupational health risks

- Identify ergonomic and psychosocial health hazards
- Explain why occupational health risks are often overlooked in offices
- Discuss the importance of worker consultation and early intervention

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