Psychosocial Ergonomics

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Presentation Overview

- What is Psychosocial Ergonomics
- Psychosocial Risk Factors
- Statistics
- Workplace Implications
- Legislation
- MSDs & Psychosocial Ergonomics
- Literature
- Prevention, Assessing & Interventions
- CWHS Programs
- Questions
Ergonomic Risk Factors

- FORCE
- REPETITION
- POSTURE
- POOR WORK PRACTICES
- POOR PHYSICAL AND MENTAL HEALTH

PSYCHOSOCIAL RISK FACTORS
- WORK PACE
- TASK DEMANDS
- AUTONOMY
- MONOTONY
- SOCIAL SUPPORT
- WORK/REST CYCLE
- JOB UNCERTAINTY

What is Psychosocial Ergonomics

- Non-physical aspects of the workplace developed through culture, policies, expectations and social attitude
- The way workers interact with the job demands and their work environment

Stimulus ➔ Response ➔ Outcome

- Workers perception of the demand; Can I deal with it?; if not they will experience stress

Source: Canadian Centre for Occupational Health & Safety
Source: Taylor & Green, 2015
What is Psychosocial Ergonomics

Three areas to consider:
1. Factors associated with the job and work environment
2. Factors associated with demands outside of work (i.e. children, spouse)
3. Characteristics of the individual
   • Genetic (i.e. gender, intelligence)
   • Acquired (i.e. social class, education)
   • Dispositional (i.e. personality, attitude)

Source: NIOSH, 1997

Examples of Psychosocial Factors

• **Job demands**: time pressure, work pace, workload, rest breaks
• **Job control**: lack of participation in decisions, level of influence on work and work outcomes
• **Job satisfaction**: variability vs. monotony, opportunities for development, challenges vs. poor skill utilization
• **Support**: social and emotional support from co-workers and family

Source: Canadian Centre for Occupational Health & Safety
Psychosocial Factors

- Work-related stressors that negatively affect the workers mental and physical health:

  - Demands
  - Low control
  - Poor support
  - Poorly managed change
  - Lack of role clarity
  - Low levels of recognition & reward
  - Lack of fairness
  - Poorly managed relationships

Management capability and support

- Stress from organisation of work
- Stress from personal situation

Organisational culture and support

- Personal supports, capabilities, resilience
- Risk of injury or illness
- Morale
- Job satisfaction
- Discretionary performance, task performance, work behaviours

Statistics

Chart 2: Percentage reporting most days "quite a bit" or "extremely stressful", by age group and sex, household population aged 15 or older, Canada, 2014

Source: Canadian Community Health Survey, 2014.
Statistics

• Over ¼ of working adults say their lives are very stressful


3.7 million working adults feel high stress levels
3.69 million highly stressed
6.3 million (46%) say they are a “bit” stressed
6 in 10 highly stressed workers identify WORK as their main source of stress
¾ of employees believe that workers have more on the job stress than a generation ago (NIOSH, 2014)

Source: Statistics Canada
Statistics

Percentage of highly stressed employed population aged 20 to 64


20 billion of which results from work related causes

Source: CCOHS

Poor mental health not only hurts the individual, it also impacts an organization's bottom line and ability to thrive. Having the support of their workplace can make a world of difference for workers with mental health issues.

Source: CCOHS
Statistics

- 47% of working Canadians consider their work to be the most stressful part of their day
- Affect mid-career workers the most. Lowering the productivity of the Canadian workforce
- Only 23% of Canadian workers would feel comfortable talking to their employers about a psychological health issue

Demographics

- Report more stress if:
  - Management, professional and clerical occupations
  - Having children
  - Divorced or in a common law relationship
  - Self-employed
  - Earning less that $40,000 or more than $80,000 annually
  - Sex and level of education was NOT a predictor of increase stress
Demographics

- Those who report **work** as their main source of stress:
  - 55% were men
  - 43% were age 35-49
  - ¾ lived in metropolitan area
  - 43% lived with spouse and kids
  - Household income over $100,000
  - ¾ had a college or university education

Statistics/Info - AIS

- Job stress is the major source of stress for American adults
- Increased levels of job stress is associated with having little control over work but lots of demands
- Difficult to determine the most stressful jobs because it depends on the person-environment fit. We all thrive in different environments
  - Example: A survey showed that having to complete paperwork was more stressful for many police officers than the dangers associated with pursuing criminals
Why are Psychosocial Risk Factors Important

- 19% of individuals have quit a previous position because of job stress
- 12% of employees have called in sick because of stress
- Over half of American employees often spend 12 hour days on work related duties
- 62% routinely find that they end the day with work-related neck pain, 44% reported stressed-out eyes, 38% complained of hurting hands and 34% reported difficulty in sleeping because they were too stressed-out

Workplace Implications

1. Decrease in productivity due to absenteeism, reduced work output
   - In a survey of 800,000 workers from 300 companies the number of sick calls due to stress has tripled between 1996 and 2000 (AIS)
2. Decrease in quality
3. Increase in injuries, leading to increase in WSIB costs
4. Decrease in morale

Source: Statistics Canada & American Institute of Stress
Legislation

• Changes in legislation to allow for entitlement for chronic mental stress
• Bill 127, Stronger, Healthier Ontario Act
• Schedule 33, Workplace Safety & Insurance Act, 1997
  • Worker is entitled to benefits for chronic or traumatic mental stress arising out of and in the course of the worker’s employment
  • Came into effect January 2018

Source: WSIB, 2017

WSIB

Generally, the distinction between traumatic and chronic mental stress is the nature of the stressor(s)

**Traumatic Mental Stress**
- Involves work-related events that are generally accepted as traumatic in nature
- **Example:** A grocery store clerk is held up at gunpoint

**Chronic Mental Stress**
- Involves work-related events that are non-traumatic in nature
- **Example:** A grocery store clerk is subjected to humiliating jokes, demeaning conduct, and persistent criticism by a co-worker over several years

Source: WSIB, 2017
• Chronic mental stress is caused by a substantial work-related stressor or series of stressors
• Considered substantial if it is excessive in intensity and/or duration compared with the normal pressures and tensions experienced by people in similar circumstances
• Examples of chronic mental stress: harassment, bullying, persistent criticism
• Terminations, demotions, transfers, discipline, productivity changes and change in working hours DO NOT constitute chronic stress

Source: WSIB, 2017

The New CSA Standard Z1003-13

Coding of Work Injury or Disease Information
• Occupational Disease is defined as a disease associated with exposure to chemical, physical, biological, ergonomic or psychosocial hazard in the workplace
• Required to identify these hazards; implement a plan to control, assess, evaluate, educate and prevent these hazards

Vision
A workplace that promotes workers' psychological well-being and allows no harm to workers mental health...

Key Drivers
Risk Management  Cost Effectiveness  Recruitment & Retention  Excellence & sustainability

Strategic pillars
Prevention (1°)  Promotion (2°)  Resolution (3°)

Psychological & social support  Organizational culture  Clear leadership & expectations  Civility and respect  Psychological demands
Growth and development  Recognition and reward  Involvement and influence  Workload management  Engagement
Balance  Psychological protection  Protection of physical safety

CSA NEW “Office Ergonomics” Standard

- Standard released in December of 2017; replacing the previous “guideline”
- Standards are “enforceable”
- The standard provides ergonomic requirements specific to the office workspace
CSA NEW “Office Ergonomics” Standard

The standard includes requirements for:

- Psychosocial workplace factors and psychological health factors

Organizations shall establish, implement, and maintain a procedure to identify psychosocial workplace factors, which, if not addressed, are hazards in an office environment. These factors include:

- Expectations that are not clearly expressed
- High cognitive job demands
- Lack of involvement and influence
- Ineffective opportunities for workload management
- Poor employee engagement
- Lack of protection of physical safety

Ergonomic Process

Needs to be implemented in the occupational health and safety management system

Continual Improvement
- Management Review
- Review current control strategies, technologies

Evaluating the Process
- Documents and records
- Monitoring and measurement
- Reporting, investigation, and analysis
- Internal Audits

Planning
- Legal and other requirements
- Objectives and targets
- Recognize and manage change

Implementation
- Identify and eliminate hazards and risk control
- Monitor and follow-up of preventative and protective measures

Application of Ergonomic Design
- Planning and anticipation
- Detailed design
- Installation and training
- Operation and maintenance
- Decommissioning and Disposal
MSD’s and Psychosocial Ergonomics

How do Psychosocial factors contribute to MSD development?

- **Stress** creates a wide variety of behavioural, psychological and physiological responses within a person which can facilitate in the development of MSDs

Source: CCOHS, 2017

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MSD’s and Psychosocial Ergonomics

High Work Demands & Mental Load:

- Direct impact on forces applied
- Increase muscle activity and tension
- Reduce muscle relaxation/increase muscle fatigue
- Increase sensitivity to pain (changes in central nervous system)
- Decrease frequency of breaks and micropauses
- Physiological changes
- Change perceptions of work situations

Source: Taylor & Green, 2015
Behavioural Responses

**Behavioural Responses**
- Responses taken by a person that they are unaware of, or that they perceive may help them cope with the stress placed upon them

**Examples:**
1. Individual avoids the workplace to avoid pain
2. Tasks become frustrating and the individual may use excessive force when performing tasks
3. Psychosocial factors that cause negative stress may cause the worker to develop a sedentary and dependent lifestyle

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Psychological Responses

**Psychological Responses**
- How stress is perceived by the individual
- Positive stress vs. **Negative** stress

**Examples:**
- Feelings of uncertainty, disinterest, boredom and anxiety
- Directly relate to psychosocial risk factors:
  - lack of job control, excessive job demands, low job satisfaction and lack of social support

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Source: CCOHS, 2017

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Occupational Health Clinics for Ontario Workers Inc.
Prevention Through Intervention
Physiological Responses

**Physiological Responses**
- Changes that people experience due to stress are intended to prepare a person to physically resolve dangers, problems or challenges in the short-term time range

**Examples:**
1. Increase in muscle tension which can lead to pressure on and around joints, ligaments, nerves and may cause excessive force
2. Body remains at a heightened state of sensitivity which may cause a person to lift more, work harder etc. (stuck in “stress mode”)

Source: CCOHS, 2017

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Physiological Responses

- Responses occur unconsciously
- Initial stages of a stress response are characterized by:
  - High levels of hormone production
  - Energy release
  - Muscle tension
  - Increased Heart rate

Source: CCOHS, 2017
Psychophysiologial Explanation

**Cinderella Hypothesis (Hagg, 1991)**

- Low threshold motor units turn on first and shut off last
- When the muscle is activated for a long time these motor units become exhausted and overloaded leading to the degenerative process and pain development
- Research shows that this “physical activation” only accounts for 33% of the development of MSDs

Source: Tomaschek, Lanfer, Melzer, Debitz & Buruck, 2018

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Psychophysiologial Explanation

**Expanded Cinderella Hypothesis:**

- Merlin & Lundberg, 1997 included psychosocial aspects as additional risk factors for MSDs
- Same motor units activated by physical demands and mental stress
- So even at rest stress could be causing low threshold motor units to be active
- A study of German pension fund found that the relative risk of early retirement increased by 67% as a result of both physical and psychosocial risk factors compared to the exposure of physical risks only (Sigrist & Dragano, 2007)

Source: Tomaschek, Lanfer, Melzer, Debitz & Buruck, 2018
Extended Cinderella Hypothesis

Research

Experiment to see if the same motor units activated by mental stress as by physical demands

- 14 people exposed to mental stress (math arithmetic, stroop colour word) and physical demands (standard referenced contraction) in a lab
- Measured muscle activity of the upper back, neck and shoulder through EMG
- Mental stress induced a significant increase in muscle activity and heart rate
- In 12 out of the 14 participants one or more motor units were found to be active in mentally as well as physically induced muscle contraction
- Concluded that lack of mental rest is an important risk factor for development of muscular pain
Research: Upper Extremity Disorders

NIOSH reviewed 17 studies from 1983-1994 relating to upper extremity disorders and psychosocial factors

- Psychosocial factors that have a positive association:
  - Intensified workload
  - Monotonous work
  - Low levels of social support
  - Lack of control
  - Job dissatisfaction

Source: NIOSH, 1997

Research: Back Disorders

NIOSH reviewed 13 studies from 1973-1994 which examined back disorders and psychosocial factors

- Psychosocial factors with a positive relationship
  - Intensified Workload (perceived pressure and workload)
  - Job dissatisfaction
  - Monotonous Work (mixed relationship)

Source: NIOSH, 1997
Occupation Specific Research

Automobile Repair Garages (24)
• Low decision authority and job control (breaks, speed, decisions, etc.) predicted neck pain and low back pain

Healthcare Workers (25)
• Low job control was found to put workers at an increased risk for low back and lower extremity injuries

Occupational Specific Research

Computer Users
• High mental load increases muscle tension and may negatively affect an individual’s immune system
• High work demands may have a direct impact on forces applied and postures
  • ex: striking keys harder and slouching when trying to work fast
Occupational Specific Research

Investigated the interaction between physical and psychosocial risk factors and development of MSDs

- Study looked at delivery drivers, MMHs, technicians, customer service operators and general office support
- 4 exposure groups: high physical/high psychosocial, high physical/low psychosocial, low physical/high psychosocial, low physical/low psychosocial
- Concluded that workers highly exposed to both physical and psychosocial workplace risk factors were more likely to report symptoms of musculoskeletal disorders than workers highly exposed to one or the other

Source: Devereaux, Vlachonikolis & Buckle, 2002

Positive Relationship, Now What?

So now what?

Statistics and research support there is a relationship between psychosocial workplace factors and MSDs BUT how do we know if this is an issue in our organization??
Prevention Levels

- **Primary Prevention**
  - Tries to eliminate or reduce sources of stress in the workplace (e.g. job design, flex time, organizational structure)

- **Secondary Prevention**
  - Tries to identify and make people aware of stressors and how to deal with them (e.g. wellness programs, stress and time management)

- **Tertiary Prevention**
  - Focus is on recovery from stress and strain (e.g. employee assistance program, counselling, rehabilitation classes)

Source: IRSST, 2006

Assessing Psychosocial Hazards

It is important to identify the STRESSORS in the workplace prior to proposing an intervention

Checklists
- List factors that can be used to review workplace conditions
- Effective if the reviewers have a good understanding of the relationships in the workplace and are trusted by the workers

Source: OHCOW, MIT, 2012
Assessing Psychosocial Hazards

Questionnaire

• Objective, allows anonymity, confidential
• There are several questionnaires available however one of the most widely accepted is the Copenhagen Psychosocial Questionnaire (COPSOQ)
• COPSOQ includes symptoms associated with psychosocial factors; therefore can distinguish between risk factors that are associated with symptoms from those that are not; therefore you can link the exposures with health effects

Mental Injury Toolkit (MIT)

Developed by OHCOW as a guide and resource kit to provide workers with a basic understanding and place to start when learning about workplace stress

• Includes: definitions, common causes of mental distress, legal frameworks, possible actions to take, and resources available
• StressAssess link which is a web-app allows for both personal and organizational version of the questionnaire
• Provide results
• Uses the COPSOQ
Measure workplace stress

- 25 screening questions about work demands, organizational factors, relationships, workplace values, H&S concerns, stress symptoms and offensive behaviours
- Scored in comparison to a reference population
- App is for individual use
- Provides recommendations for improvements

Effective Interventions

Prioritize stressors and focus interventions
- Have a purpose and goal
- Low-hanging fruit

Participation
- Participation at all levels is the key for buy in, support and commitment

Systematic Risk Assessments
- Assessing the psychosocial hazards in the workplace in order to identify and address key stressors in the workplace
Effective Interventions

Models for Intervention
• Have a process model for planning interventions
• Needs to be understandable, representative of the workplace

Intervention must be Ongoing
• As current stressors are resolved; new stressors will likely emerge
• Stress management is ongoing and imperative for good business

Educating Employers
• Increase employers awareness of stressors in the work place and educate them on strategies to resolve them

Source: IRSST, 2006

Interventions

Interventions have shown to be successful in suppressing psychosocial risk factors and reducing MSDs. Studies have found that:

• Supervisor awareness of MSD problems linked to decrease in pain
• Participation in ergonomics training associated with an increase in perceived job control; decrease in work disability

Source: Wellnomics, 2015
Interventions Con’t

Found that:

• Group based interventions improve an individual’s response to the demands of their work (i.e. good postures, optimal workstation adjustments)
• Interventions led to an increase use of breaks, exercise software, and less working hours without breaks
• Increased perceived social support

Source: Wellnomics, 2015

Workplace Programs

Implement a Comprehensive Workplace Health & Safety Program
• Components include:
  • Occupational health and safety
  • Psychosocial work environment
  • Workplace health promotion
  • Organizational community involvement

Includes, strategies, initiatives and policies developed collectively by the employer and employees to continually improve or maintain the quality of life, health and well-being of the workforce

Source: CCOHS, 1997-2017
Workplace Programs

- These 4 components overlap and must be integrated within a CWHS program

To develop and maintain a CWHS program and continual improvement process you must:
- Lead (management leadership and commitment)
- Plan (organize)
- Do (implement)
- Check (evaluate)
- Act (improve)

Source: CCOHS, 1997-2017

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**Benefits of a Psychologically Healthy Workplace**

- engagement
- morale
- satisfaction
- retention and recruitment
- productivity

- absenteeism
- grievances
- health costs
- medical leave/disability
- workplace injuries

Source: Canada.ca/workplace-health-safety
Employers

Top 8 Practices
What Can You Do to Help?

1. Support employee participation and decision making
2. Define employees’ duties and responsibilities
3. Promote work-life balance
4. Encourage respectful behaviours
5. Manage workloads
6. Provide training and learning opportunities
7. Have conflict resolution practices in place
8. Recognize employees’ contributions effectively

Ways for employees to practice mental fitness:

• Schedule “me time” daily
• Reward yourself
• Play to your strengths
• Ask for and offer help
• De-stress your diet
• Press pause once in a while- downtime is good
• Get regular physical activity
• Set goals and stay on target with a journal
• Practice relaxation techniques and get enough sleep
• Choose a positive attitude

Source: CCOHS, 1997-2017