CRE-MSD Centre of Research Expertise for the Prevention of Musculoskeletal Disorders

Musculoskeletal Disorders (MSD) and Mental Health: The Role of Psychosocial Factors in Optimizing Prevention

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Nearing the end of your work shift, your boss tells you to hurry up, work quicker, meet the day's deadlines. You feel overwhelmed, tense, unsupported, and physically exhausted from the stress you're under. Consumed by your workload and work pace, your risk of an MSD or mental health injury may have just increased. This scenario is common across many workplaces and sectors. Traditional physical risk factors for MSD like force, repetition, or posture are combined with psychosocial factors. Such psychosocial factors, recently, have gained greater attention due to the focus on workplace mental health and wellness. In the scenario above, a pathway of psychological considerations (time demands, pressure, stress), may influence physiological changes in the body (increased heart rate, muscle tension), in turn resulting in increased biomechanical demands to complete the task.[1] This pathway suggests an overlap in MSD and mental health outcomes reflected in current trends of work-related injury including continued high rates of MSD and rising rates of mental stress injuries. This raises the question of how are psychosocial factors related to common workplace injuries like MSD and mental health injuries and what can we do about them to optimize prevention?

Key Messages

- Relationships between psychosocial factors, MSD, and mental health outcomes are multi-directional.
- Psychosocial factors can act to both increase or decrease risk of injury.
- Few of the widely used MSD risk assessment tools incorporate psychosocial factors, highlighting an area for improvement in assessment.

What are Psychosocial Factors?

Psychosocial factors are not a new topic for workplace injury prevention. Defined by the International Labour Organization (ILO) in 1986, psychosocial factors include the "interactions between and among work environment, job content, organizational conditions and workers' capacities, needs, culture, personal extra-job considerations that may, through perceptions and experience, influence health, work performance and job satisfaction."[2] Dating back to the early 1960s, over 1000 articles have reported on the relationship between psychosocial factors and MSD outcomes,[3] many of which were highlighted in epidemiological reviews of upper extremity and back MSD.[4,5] At the same time, many studies surrounding work-related stress and mental health outcomes like operational stress injuries, burnout, and post-traumatic stress disorder were conducted.[6,7] As a result, in 2013, the CSA Z1003 Standard for Psychological Health and Safety was developed along with resources such as *Guarding Minds at Work*, which highlighted 13 primary psychosocial factors to support workplace mental health and wellness. Many of these factors overlapped with early models of psychosocial factors for MSD like job-demand-control-resources,[8] job satisfaction,[9] and effort-reward imbalance.[9] Over time, it appears that many of the same psychosocial factors were related to MSD, mental health, and other health outcomes in the workplace.

Assessment of Psychosocial Factors for MSD

As technology has advanced, MSD risk assessment tools have moved from pen and paper to being included in digital models (i.e., through mobile applications), allowing more ways to capture and assess risk factors.[10] However, despite a variety of new ways to assess risk factors, many Occupational Health and Safety (OHS) practitioners rely on tools they find easy to use and have used previously.[11] A potential limitation to many of the "well-known" MSD risk assessment tools used by practitioners and workplaces is that few of these tools incorporate psychosocial factors. Given that many psychosocial factors may relate to both MSD and mental health outcomes, it seems important that tools embed psychosocial factors within them. Challenges for both physical and psychosocial risk assessment include the lack of consistent measurement properties of the tools,

techniques, and analyses available that rarely address the relationships between modifiable and non-modifiable factors, and the inability to quantify the contribution of the work environment to injury risk.[12]

Despite these challenges, there are concepts that may be adopted to optimize MSD prevention. One major consideration is that many psychosocial factors are experienced along a continuum, where they can both potentially increase the risk of injury (hazards that increase strain) or reduce the risk of injury (protective factors).[8] The continuum is based on how they are experienced by a worker within their work environment. Therefore, capturing worker perceptions and expectations is a place to start. Also, just like for physical risk factors, it may be important to capture things that influence work, such as magnitude or intensity, and temporal considerations like duration, frequency and rest breaks. The ability to interpret psychosocial factors at the individual (worker), job (task), and organization (environment and management) levels may help customize prevention strategies toward both MSD and mental health outcomes.

Implications for the Prevention of MSD

- Incorporating psychosocial factors in current risk assessments may optimize prevention strategies to address both MSD and mental health outcomes.
- Capturing magnitude and temporal considerations may be helpful for interpreting psychosocial factors.
- The provided resources may highlight some helpful items for risk assessment toolkits.

Since many psychosocial factors may relate to both MSD and mental health outcomes, there are several self-report tools that aim to capture psychosocial factors that may be useful for interpreting risk. Questionnaire examples of self-report tools include Job-Demand-Control-Resource, Effort-Reward-Imbalance, Job Content Questionnaire, Copenhagen Psychosocial Questionnaire (COPSOQ), ILO Stress Checkpoints, StressAssess, Guarding Minds at Work among many others. The cognitive area of ergonomics helps us evaluate the additional psychological and emotional demands of a job. Some challenges that may arise due to the self-report nature of psychosocial factor screening include gathering employee and employer input,[13] interpreting the worker-task-environment interaction, the number of survey items, addressing time commitments, and the difficulty to complete regular workplace screening.

Conclusion

Common components with both work-related MSD and mental health injuries include a wide range of challenges such as: difficulty in diagnoses, measurement and assessment, work accommodations, and complex return to work practices. With claims related to mental health/psychological injuries on the rise and the persistent burden of MSD, workplaces need practical solutions. This paper highlights some considerations when thinking about psychosocial factors in the workplace and how to expand the identification of risks as well as some assessment tools that can be used. Development of improved methods to identify and measure risk factors related to both MSD and psychological injury, will assist workplaces by streamlining prevention strategies, interventions, and reducing injury rates of both types.

Resources

CSA Standard Z1003 – https://www.csagroup.org/article/cancsa-z1003-13-bnq-9700-803-2013-r2018/
COPSOQ – https://www.copsoq-network.org/
Guarding Minds at Work – https://www.guardingmindsatwork.ca/
Job Content Questionnaire – https://www.jcqcenter.com/questionnaires-jcq-jcq2/
StressAssess – https://stressassess.ca/
NASA TLX - https://ntrs.nasa.gov/api/citations/20000021488/downloads/20000021488.pdf
Effort-Reward Imbalance Questionnaire - https://www.uniklinik-duesseldorf.de/fileadmin/Fuer-Patienten-und-Besucher/Kliniken-Zentren-Institute/Institute/Institut_fuer_Medizinische_Soziologie/Forschung/PsychometricProperties.pdf
Psychosocial Factors, MSD, Mental Health - https://www.msdprevention.com/resource-library/view/psychosocial-factors-msd-and-mental-health.htm
ILO Stress Checkpoints - https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_168053.pdf

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Position papers are funded by the Centre of Research Expertise for the Prevention of Musculoskeletal Disorders, which receives funding through a grant provided by the Ontario Ministry of Labour, Immigration, Training and Skills Development. The views expressed are those of the authors and do not necessarily reflect those of the Centre nor of the Province.

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