Prediction of Occupational Disability
Models, Factors, and Outcomes

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INTRODUCTION

Safe and timely return to work (RTW) reduces the risk of development of chronicity of work disability. By 6 months post-injury, if a worker has not yet returned to work, the likelihood of developing chronic disability is substantial (Abenhaim & Suissa, 1987). Returning to work when one is ready can reduce the risk of entering a cycle of deconditioning, decreased self-efficacy about RTW, and increased habituation to being work disabled. Conversely, it should be noted that returning to work too early or in inappropriate conditions can also have deleterious effects (Pransky et al., 2001). Consequently, it is important to identify the factors facilitating safe RTW in the early phases of recovery.

This chapter will first provide a brief overview of the operative conceptual models of occupational disability, as they apply to predictive factors of occupational disability. We wish to distinguish conceptual models from statistical models—the conceptual models we will discuss may or may not be supported by statistical modeling, however they all involve constructs which provide a framework with which to organize the relationships between various predictive factors, interpret statistical results, and lead to hypotheses testing. An overview of predictive factors of occupational disability will be presented, which will not involve a review of clinical interventions for occupational injuries, as such a task would need to be overly detailed and remain beyond the intended scope of the chapter. This will be followed by a discussion of the challenges associated with measuring RTW outcomes.

The main focus of this chapter is on physical conditions as the primary condition resulting from occupational injury. This does not reflect the view that work conditions can not cause or magnify mental conditions. However, addressing the issue of work disability associated with mental conditions would require enlarging the discussion to additional conceptual frameworks, as mental conditions encompass a new set of
issues and social circumstances. Our literature review reflects the fact that most of the current research on work disability involves the study of musculoskeletal (MSK) conditions since they represent the majority of worker’s compensation claims for lost-time.

THE DEPARTURE FROM THE MEDICAL MODEL

The essential and necessary initiating element of occupational disability is an occupational injury. For that reason, it is only natural that the first conceptual model applied to what is initially understood as a physical event was the biomedical model. The biomedical model espoused etiological and treatment approaches heavily laden with illness and physical factors. While it remains important in the area of occupational disability to not lose sight of the physical realities of disability, the biomedical model, due to its narrow focus, soon became insufficient to explain occupational disability, a phenomenon involving complex social and psychological elements. As Krause and Ragland described: “It is impossible to adequately describe disability exclusively in medical categories. Although a medical condition is necessary for a disability to develop, disability (especially of long duration) is never solely the result of pathology or functional limitation; it is essentially a social phenomenon” (Krause & Ragland, 1994).

In an initial response to a growing dissatisfaction with the medical model, researchers began to identify the multiple players involved in the process of occupational disability (Frank et al., 1998; Krause et al., 1994; Schultz, Crook, Fraser, & Joy, 2000). This descriptive approach was critical in mapping out the components which led to a recognition of the multifactorial nature of occupational disability, and went beyond the narrow biomedical focus. Krause and Ragland (1994) identified seven major systems which interact with each other and affect disability outcomes: 1) the individual 2) the non-occupational social environment 3) the occupational environment 4) the compensation and disability insurance systems 5) the social security and welfare system 6) the healthcare or medical system 7) the legal, political and economic context. Frank and colleagues (Frank et al., 1998) characterize the main players involved in the RTW process as being the employer/workplace, the healthcare provider, the insurer, and the employee. They highlight how coordination of these main players (Frank et al., 1996; Frank et al., 1998) is of critical importance to achieve optimal RTW and to decrease risk of chronicity. Similarly, in their review of the main operating models in the area of occupational disability, Schultz and colleagues (Schultz et al., 2000) describe the strengths, limitations, fundamental principles and practical implications of the biomedical, the psychiatric, the insurance, and the labor relations models, again highlighting the various stakeholders’ view on occupational disability. The descriptive model of occupational disability was further specified by Friesen and colleagues (2001) who structured factors associated with RTW by situating them in the micro-system (worker factors) and meso-systems (workplace, health, and insurer factors) and who added the macro-system of economic, social and legislative factors, such as physician reimbursement policies, and downsizing (Friesen, Yassi, & Cooper, 2001).

In parallel to the structural description of occupational disability, the temporal aspect of occupational disability has also been incorporated in models of disability.