



Time for Me to Move On

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It was the mid 1980's and I was the Director of a Multidisciplinary Pain Treatment Center (PTC) at the University of Rochester Medical Center. I was also involved in conducting site visits of pain programs across the United States of America for the Committee for Accreditation of Rehabilitation Facilities (CARF). While at the PTC, I frequently met various rehabilitation nurses to discuss the outcomes on patients they referred to us. They specifically referred patients who needed to return to work. These patients experienced chronic or recurrent pain, especially related to occupational musculoskeletal disorders. Pain management and improved physical function was just not sufficient. Return to work was the primary outcome as per these nurses.

At that time, “independent” medical examiners (IMEs) were conducting evaluations at the request of employers and rehabilitation nurses. They often concluded that these workers had no biological reason or conventional pathology to justify the pain they reported and for the prolonged work disability or sick leave. These medical evaluations typically recommended that these employees simply needed to return to work immediately. However, despite these recommendations, many employees receiving these medical examinations did not return to work. The evaluations were often completed by contractors for the insurance companies. Employers often expressed bewilderment and frustration over the long-term indemnity and medical costs that characterized many of these cases. Time and time again, administrative data from workers' compensation organizations indicated that a relatively small number of cases tended to account for the majority of the medical and indemnity costs [1, 2], nevertheless both economic and psychosocial costs for all were high. The friction among the patients, nurses, IMEs, employers, and rehabilitation specialists continued to accelerate over the years, as these players often had differing goals.

Tom Mayer (spine surgeon), Bob Gatchel (psychologist) and others published a seminal paper indicating that an active or “sports medicine approach” to pain and disability in patients not likely to return to work actually improved work outcomes [3]. Also, at the time a diverse group of physical therapists, occupational therapists and vocational psychologists were working on ways to determine how to measure an individual worker's work tolerance or physical capacity for work [4]. It was argued that by emphasizing measurable or “objective” indices of physical function it was possible to predict whether a worker reporting pain and experiencing work disability had the physical ability to return to work and perform work tasks of various workloads. It was often argued these approaches were more successful at predicting return to work. However, research from many groups began showing that tests involving physical function were also related to non-physical factors such as the fear of pain and workers' expectations, thus they were not exclusive “objective” measures of work function [5].

Despite these demonstrable “psychosocial” influences on dimensions of physical function, it was still deemed possible to improve strength, flexibility and aerobic capacity in these patients. This was most often accomplished through some form of active exercise and specific work conditioning or work hardening, thought to enable these deconditioned workers to return to work despite pain. This approach provided injured workers with the option to increase their aerobic capacity, generic strength and flexibility, and practice or “harden” their physical/work capabilities. All these characteristics were assumed to be related to the physical demands of their work tasks.

As both functional capacity testing and work hardening were being included in the field of work rehabilitation, a group of industrial engineers were publishing evidence suggesting that many work-related musculoskeletal disorders were the consequence of physical exposures at work and associated biomechanical strain [6]. These so called “risk factors” included abnormally high levels of repetition, force, awkward posture, and other loads at work and their impact on biomechanics and work physiology of the worker. In other

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words, as with other exposures in the workplace (e.g., toxic or carcinogenic chemicals) that formed the basis of occupational toxicology that saved millions of lives, this public health model was also applied to musculoskeletal disorders, pain and discomfort in the workplace. The argument was that surveillance and assessment of exposures to occupational load were needed to prevent exposure to various risk factors for musculoskeletal symptoms or injuries in order to eradicate these problems from work [7]. The focus of this public health approach was referred to as “primary prevention” in contrast to secondary or tertiary prevention approaches with a greater focus on acute medical management or rehabilitating the worker after such exposures exerted their effects. At the time, there was tension between those supporting an exclusive “primary prevention” approach and the more traditional “medical management”, which was theoretically and operationally endorsed by the medical community.

Work rehabilitation and pain management professions (primarily physical therapists) began learning about these “ergonomic” approaches in the late 1980’s and early 1990’s, reporting that such reduced workplace exposures were able to reduce discomfort, fatigue and prolonged pain in workers involved in various types of “high risk” work. Rehabilitation and pain specialists began actively treating many complex cases of work-related musculoskeletal pain with this approach. The field of “occupational ergonomics” was evolving at the time and the impact of occupational risk factors on persistent or recurrent pain was intriguing for those of us interested in helping patients sustain a return to work. We were not interested in rehabilitation that simply returned these patients to unacceptable work conditions that could soon trigger reinjury, symptoms and work disability, but rather to sustain work ability and remain at work safely. Consequently, we integrated the area of ergonomics into our focus on secondary prevention of occupational musculoskeletal disorders [8]. We were not focusing on primary prevention, but rather using principles and practices of occupational ergonomics to reduce the likelihood of reinjury or recurrence of pain and longer term work ability.

About a decade prior to the ergonomic revolution, pain research and practice were experiencing a classic paradigm shift. The field moved from viewing pain as exclusively modulated through nociceptors at peripheral locations to pain modulated more centrally from the brain and other parts of the central nervous system (CNS) to the periphery. It became apparent, as argued by such investigators as Ron Melzack and Pat Wall [9] and other pain researchers throughout the world, that CNS based pain pathways also played a role in pain transmission. Therefore, it was reasoned that biopsychosocial factors such as attention, memory, modeling, learning, stress, and even factors related to the social environment (e.g., job stress) could play a role in the experience of pain and consequent behavior (e.g., work disability) [10].

I thought that by pulling these diverse areas together (active rehabilitation, ergonomics, central control of pain/pain management) and focusing on clinically addressing the evidence-based factors associated with pain and work disability in workers with occupational musculoskeletal disorders, we might be better able help providers, workers and employers address the challenges related to this complex problem. We could also use this thinking to influence future research in the area. Therefore, a group of us at the University of Rochester Medical Center proposed the creation of the Center for Occupational Rehabilitation (COR) for helping those with chronic pain and work disability. The multidisciplinary center included medical expertise (occupational physiatrist), occupational health and nursing, physical and occupational therapy, along with expertise in exercise physiology, clinical health psychology and vocational counseling. Vocational counseling was particularly helpful when a patient was unable to return to their former work. COR was created with the full support of senior management and the Board of Strong Memorial Hospital in Rochester, New York.

As development of COR progressed, I thought that some type of model or conceptual framework might help guide us and provide direction for a more comprehensive clinical evaluation to assesses the many aspects impacting workplace disability in a given patient. I thought such a framework could help us not only select the various professionals to evaluate these factors, but also guide the clinical management of these patients with such complex multidimensional problems. This simple model/framework was referred to as the “Rochester Model” and is illustrated in Fig. 1 [11]. We had a physician addressing the potential medical barriers to return-to-work, the PTs/OTs focusing on the improving physical and occupational factors that may impact work, an exercise physiologist with background in ergonomics, and psychologists dealing with management of pain and attitude/beliefs related to readiness to work.

While we were developing the COR, I realized that although there were many single discipline journals that periodically published papers on aspects of work disability, there was no peer-reviewed, international, or multidisciplinary journal that solely addressed the complex nature of the problem of work disability arising from occupational musculoskeletal disorders. So 30 years ago in 1991, with the support of Plenum publishing (now Springer Nature) I launched the *Journal of Occupational Rehabilitation (JOOR)*. Over the years, we have expanded widely beyond occupational musculoskeletal disorders to focus on several chronic health problems and other related causes of work disability. As the field has progressed and we have learned more about the complex nature of work disability, our models have expanded as well and new interventions have arisen to address this complex global problem.

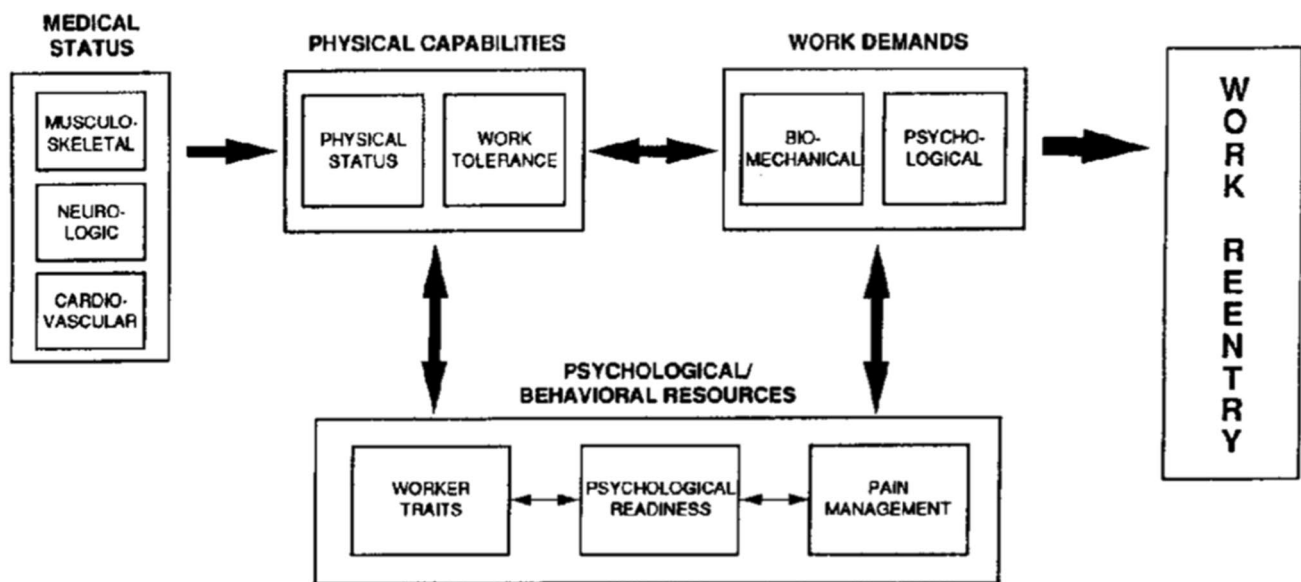


Fig. 1 The original Rochester Model (1991) [11]

There were several people who contributed to the success of this effort over the years. I would like to mention a few who clearly without their involvement none of this would have been possible. The people responsible for the development of the Center include: Tony Papciak, PhD., Susan Callen-Harris, PT, MS, Paul Hickey, MS, Bob Jones, MD, Patti Lynne, RN, Jeff Lackner, PsyD, and many more. The collateral journal outlived COR and was greatly influenced by Glenn Pransky, MD., Patrick Loisel, MD. Ellen MacEachen, PhD., Han Anema, MD, Ron Melzack, PhD, Gunnar Andersen, MD, PhD, Tom Armstrong PhD, and others at the Center for Ergonomics at the University of Michigan who took me under their wing and helped me better understand the field of human factors and ergonomics. Dennis Turk, PhD., Bob Gatchel, PhD, Steve Linton, PhD, Frank Keefe, PhD, Don Chan, MD and later Chris Main, PhD provided very important perspectives when it came to pain and orthopedics. Patricia Findley, DrPH, Bill Shaw, PhD and recently Doug Gross, PT, PhD have all contributed to the operational and scholarly aspects of running this journal. None of the success of this journal could have happened without their involvement. Of course, I can't mention everyone (editorial board, reviewers, staff over the years at Plenum and Springer) who helped make this journal what it is today. I'm hoping you all know who you are, as there are too many to name. Specialists in qualitative methods, law and policy, ergonomics, physical and occupational therapy, pain, behavioral medicine, epidemiology, occupational health and medicine, rehabilitation medicine, health economics, journal administration, and many other areas were represented.

So now it's time to say farewell. I wish to say thank you to all those who have contributed over the years, both to the

journal and the field of occupational rehabilitation. I wish you all the very best in the future. In preparation for this editorial, I decided to review the most recent framework my students and I generated a few years ago for work and cancer survivorship that in many ways was inspired by the original Rochester model. I wanted to use this exercise to acknowledge how far all of us have come. It is interesting to me that information that has accumulated over the years has allowed us to provide a more complete framework of work disability and chronic illness [12]. I know there are concerns that some of this work remains speculative. There is no intent to argue otherwise. The framework is simply presented as a tool to help facilitate research and practice. As you can see, the focus was on cancer. There were many more variables associated with work outcome than in the original framework. This model may prove to be more widely applicable to many chronic illnesses and work disability.

In Fig. 2, we provided a more detailed framework including expanding consideration of work outcomes. The field has evolved beyond return to work as the only outcome of interest. Many investigators have told us that the revised framework is actually not specific to cancer survivorship, but also related to chronic illness and work in general. Due to the rapid evolution of knowledge in this area we are now able to add several additional factors observed to be related to work disability. This updated framework illustrates the evolution of not only our group's thinking, but the integration of many contributions to JOOR by several investigators over the years. However, just as the initial framework has evolved to the more comprehensive conceptual framework, I would expect as knowledge continues to improve, more comprehensive evidence-based frameworks will emerge.

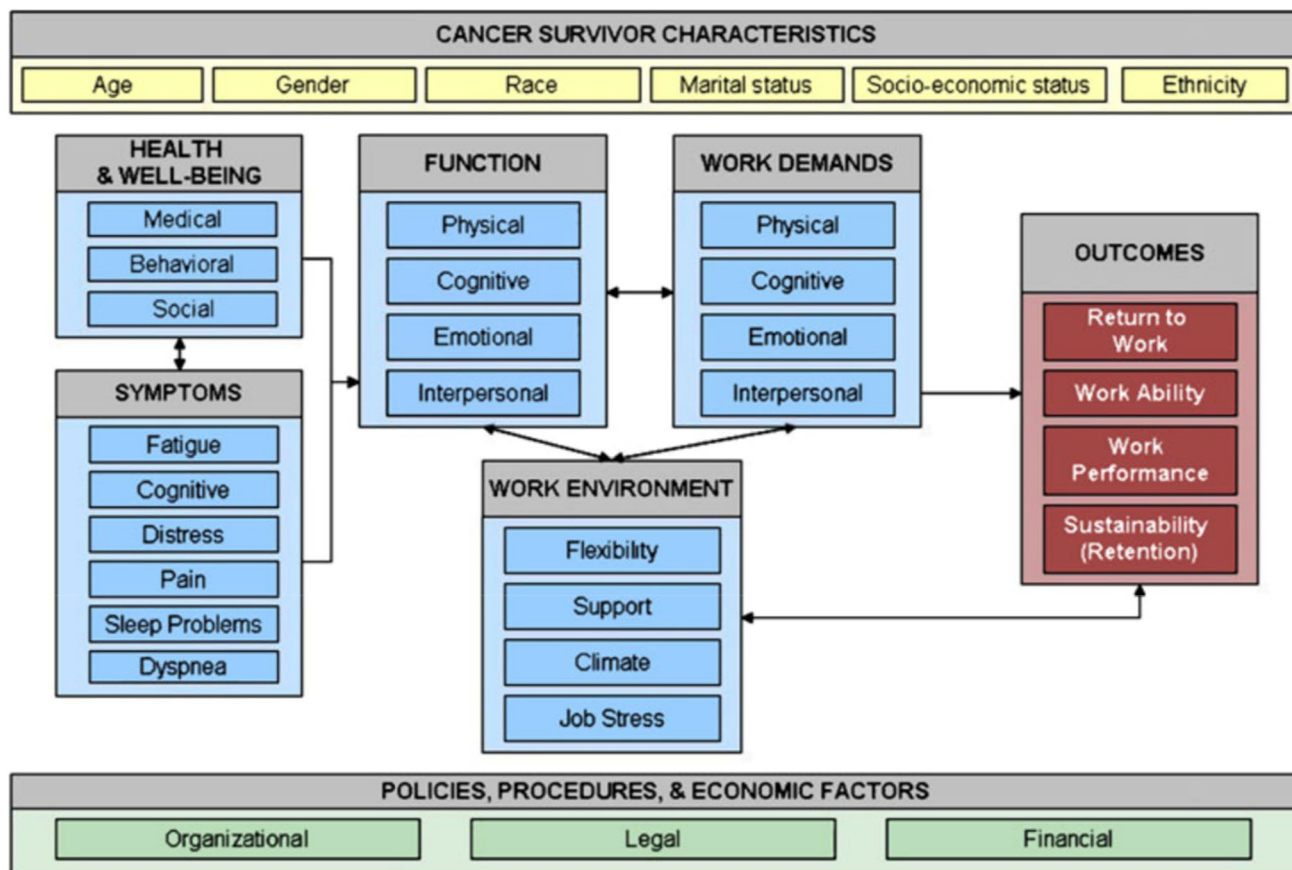


Fig. 2 Cancer survivorship (example of chronic health) and work disability framework [12]

I feel as though I am saying good-bye to one of my children. I'm leaving something that I nurtured and loved for years. I have been very fortunate to see this journal mature to a young adult. The only consolation related to this departure is that I'm leaving JOOR in very competent hands and expect the next 30 years to be even more exciting as the field continues to mature.

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