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on Pain and Disability

The Newsletter of the University Centre for Research on Pain and Disability

Message from the Scientific Director :

Nine months have passed since the last Newsletter from the University Centre for Research on Pain and Disability. During this time, we have continued our research on the psychological determinants of pain and disability. We have also recently launched a program of research examining the consequences of long wait times for joint replacement surgery. In addition, we have been engaged in a number of clinical trials examining the effectiveness of the

Progressive Goal Attainment Program (PGAP) with different client populations. In this issue of the Newsletter, we report on a recent clinical trial where we examined the impact of PGAP on return-to-work in a sample of clients who had recently been disabled due to a work injury.

In this issue, we also describe the results of a study that was conducted examining whether

clinicians can accurately predict who will and will not return to work following rehabilitation treatment for whiplash injury. In addition, we review recent studies that have attempted to explore the meaning of pain behaviour and its relevance to clinical practice.

A calendar of activities of our Centre is provided at the end of this Newsletter.

MICHAEL J.L. SULLIVAN, PhD

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Can Clinicians Make Valid Predictions about Return to Work Potential?

Rehabilitation clinicians are frequently called upon to make judgments about a client's ability to return to work. What do we know about the validity of these judgments? Although these judgments can have significant impact on a client's continued access to insured services, very little is currently known about the validity of these judgments. A handful of studies have been published suggesting that

clinicians can predict a client's ability to return to work with accuracy rates slightly above chance. In a recent study, we were interested in examining whether clinicians could accurately predict who would return to work following whiplash injury. We were also interested in examining the type of information that clinicians considered when making these judgments. The study was

led by Ms. Whitney Scott, a graduate student of Dr. Sullivan in the Clinical Psychology Program at McGill University and will be published in an upcoming issue of the journal *Psychological Injury and Law* (Scott, W., Sullivan, M.J.L. Validity and determinants of clinicians' return to work judgments for individuals following whiplash injury. *Psychological Injury and Law*, in press).



The participants in the study included 104 individuals who had recently sustained whiplash injuries and had been referred to a multi-disciplinary rehabilitation clinic. During the last week of the program, clinicians were asked to estimate the number of hours that the clients would be able to work. One year following termination of the treatment program, clients were contacted and interviewed about their occupational involvement. Analyses were conducted to examine the predictive value of clinicians' judgments. These analyses also considered the predictive value of demographic variables (e.g., age, sex), crash characteristics (e.g., vehicle speed), functional limitations (e.g., neck range of motion) and several psychosocial variables. When considered individually, the variables with significant predictive value included duration of work absence, pain severity, neck range of motion, pain catastrophizing, fear of pain, depression and clinicians' judgments. Surprisingly, clinicians' judgments emerged as the best predictor of return to

work. Analyses also revealed that clinicians' judgments were significantly correlated with pain severity, neck range of motion and psychosocial variables. In other words, clinicians appeared to base their return to work predictions on physical and psychological variables; clinicians' judgments were likely influenced by the information conveyed in the assessment. Of interest is that clinicians did not appear to consider duration of work absence as a basis for their return to work predictions.

Although clinicians' judgments emerged as the strongest predictor of return to work outcomes, it is important to note that all variables included in the predictive analyses accounted for only 40% of the variance in return to work outcomes. In other words, while clinicians' judgments (in addition of physical and psychosocial variables) predict return to work better than chance, the bulk of the variance in return to work outcomes

remained unexplained.

So why did clinicians outperform standardized measures of physical function and psychosocial variables? It is possible that clinicians were able to consider workplace-related variables that are not captured by physical function or psychosocial measures. For example, the probability of return to work is known to be determined, at least in part, by the status of the employment market, the client's employment-related skill set and the availability of modified workplace activities. These variables are not captured by standardized measures of physical and psychosocial variables.

In summary, it appears that clinicians' judgments of return to work can be (cautiously) considered as having predictive validity for clients' return to work potential following treatment for whiplash injury. The accuracy of clinicians' judgments should be encouraged to consider duration of work absence in the reflections about a client's ability to return to work.

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The Meaning of Pain Behaviour

The past decade has witnessed a resurgence of interest in the study of pain behaviour. Pain behaviour generally refers to the

movement alterations that are associated with pain experience. These might include facial grimacing, holding or rubbing affected

areas of the body or slow or halting ambulation. In the past, most considered pain behaviour to provide a 'behavioural window' into

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the experience of pain. In other words, pain behaviour was regarded as another type of pain measurement. Questions began to arise however, when research revealed that the relation between self-reports of pain severity and pain behaviour were not that strong. Initially, proponents of the view that pain behaviour was another way of assessing pain suggested that the weak relationship between self-reported pain severity and behavioural expressions of pain was because many people intentionally suppress the expression of their pain. In other words, if people did not intentionally suppress pain behaviour, the observed relation between pain reports and pain behaviour would be stronger.

Recent research suggests that we need to look beyond intentional suppression to explain the link (or lack thereof) between pain reports and pain behaviour. It is becoming clearer that certain psychosocial variables influence the degree to which pain experience is expressed as pain behaviour. There are also indications that treatment outcomes for individuals with persistent pain conditions might be enhanced if pain behaviour was included as a target of treatment.

What do we know about pain behaviour? We know that under clinical or experimental conditions, only a minority of persistent pain sufferers display pain behaviour.

Research by Dr. Francis Keefe from Duke University showed that individuals who display pain behaviour are more likely to be depressed. Research conducted by Drs. Kenneth Prkachin and Isabela Schultz from British Columbia showed that individuals who displayed high levels of pain behaviour were less likely to return to work following an occupational injury. Pain behaviour has also been associated with higher consumption of analgesic medication. Thus, there appear to be some rather negative consequences associated with the display of pain behaviour.

There are more and more indications that pain behaviour likely serves a communicative function. Some of the first indications that pain behaviour served a communication function emerged more than 30 years ago in a study conducted at the Dartmouth Medical School. The researchers showed that chronic patients exhibited more pain behaviour when they believed they were being observed by their spouse as opposed to being observed by a lab technician. A few years ago, we examined the expression of pain behaviour in response to lifting weighted canisters where chronic pain patients were asked to either estimate the weight of the canister or to rate the intensity of their pain. Instructions to rate the intensity of their pain

resulted in significant increases in expression of pain behaviour. In other words, simply changing the communication goals of the task led to changes in the expression of pain behaviour. We have also completed a number of studies showing that individuals who score high on measures of catastrophic thinking are particularly likely to display pain behaviour when experiencing pain. Catastrophizing has been discussed as being part of an interpersonal orientation to coping where individuals might use displays of distress or suffering to increase the proximity of potential caregivers. In other words, individuals who catastrophize might use the display of pain behaviour as a strategy for soliciting attention or care from others in their social environment.

In a recent study, we showed that individuals with whiplash injuries who scored high on a measure of perceived injustice showed more pain behaviour than individuals with low scores on perceived injustice. It is possible that individuals with high levels of perceived injustice feel compelled to 'prove' to others that they have suffered severe losses as a function of their injury. Since pain is not visible, these individuals might choose

to use pain behaviour as their strategy for communicating the magnitude of their suffering and disability. Marc-Olivier Martel is a graduate student of Dr. Sullivan in the Clinical Psychology Program at McGill University who recently conducted a study examining the stability of pain behaviour in patients with chronic pain. His findings revealed that the display of pain behaviour remained essentially stable over time, in spite of changes in pain severity and emotional distress. He suggested that over time, pain behaviours of chronic pain patients might come to be controlled by interpersonal contingencies that are independent of the individual's level of pain or distress. The findings suggest that treatments that are focused only on the reduction of pain severity or emotional distress might have little impact on pain behaviour.

Copies of the papers previously described are available from our research website (<http://sullivan-painresearch.mcgill.ca/publications.php#>)

What does this mean for the clinician? First, it is important to recognize pain behaviour as a prognostic indicator for poor outcomes. It is also important to consider that a client's pain behaviour may be driven by factors that are independent of pain experience, and that pain-reduction interventions might have little or no effect on pain behaviour. If psychological variables associated with communication goals are primary determinants of pain behaviour, then psychosocial interventions that address communication goals might be needed to yield meaningful reductions in pain behaviour. Preliminary results from

a recent study showed that when disclosure and validation techniques were used to assist the client in telling his or her 'pain story', the client subsequently displayed less pain behaviour during a physical performance task.

These data suggest that disclosure and validation techniques might be usefully incorporated in the rehabilitation treatment of individuals with persistent pain as a means of reducing the expression of pain behaviour. In the absence of feeling that their pain story has been heard and understood, chronic pain patients might continue to rely on the display of pain behaviour as their means of communicating their distress and disability.

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Examining the Impact of PGAP for Recently Work-Disabled Clients

Over that past decade, we have conducted a number of studies examining the impact of interventions that specifically target psychosocial risk factors for prolonged pain-related disability. One intervention that has been the focus of a number of studies has been the Progressive Goal Attainment Program (PGAP). In the past, we have shown that PGAP and medical management was more effective than medical management alone in

helping injured workers return to work. We also showed that PGAP and physiotherapy was more effective than physiotherapy alone in helping chronic whiplash clients return to work. While these studies were important in showing that PGAP can lead to important reductions in pain-related disability, whether PGAP was also effective at earlier stages of recovery was a question that remained unanswered.

In our most recent study, we compared return to work in recently injured workers who received PGAP and physiotherapy or physiotherapy alone. The results yielded a number of interesting findings. First, the mean number of PGAP sessions was only 5.5, indicating that individuals who are referred early to PGAP do not require 10 weeks of treatment. The two groups did not differ in terms of their pain severity at 12-month follow-up suggesting that

PGAP™ does not prevent the development of chronic pain symptoms. However, individuals who received PGAP, used less pain medication, and used fewer additional rehabilitation services during the 12-month follow-up period. Individuals who received PGAP showed greater reductions on psychosocial risk factors and were more likely to return to work.

The results of the study suggest that PGAP can play an important role in reducing health care utilization and

promoting return to work in recently injured workers.

On average, individuals were enrolled in PGAP for only 5 weeks. In most cases, the 4-week assessment revealed significant reductions in psychosocial risk factors and significant increases in activity involvement. Such assessment profiles are indicative of readiness to return to work, and little would be gained by keeping the client in treatment for an additional 5 weeks. Process analyses revealed that the difference in return to work outcomes

for the PGAP and physiotherapy group (87%) and the physiotherapy alone group (62%) was entirely accounted for by reductions in psychosocial risk factors.

This study joins a growing literature indicating that intervention techniques that specifically target psychosocial risk factors for pain and disability can have an important impact on rehabilitation treatment outcomes.

Website updates

- 1) There have been a number of changes to our website over the past year. As mentioned in our last newsletter, with the recent modifications of PGAP™ to address a wider range of populations with disabilities, we are committed to providing information in as accessible fashion as possible. Over the past number of years, we have received many comments about the usefulness of the PGAP™ presentations that were downloadable with accompanying text. Trained providers can now access this PGAP™ presentation. This presentation can be used as an effective demonstration tool for referral sources to learn about the potential benefits of PGAP™ and the outcomes that can be obtained with PGAP™.
- 2) We have provided a series of videos for individuals who have been trained by our Centre. Over the coming months additional videos will be uploaded onto our site. Our trained providers are encouraged to visit the website for more information.
- 3) As you are aware, our website Provider Directory was developed to assist referral agents to identify clinicians who might be available to offer PGAP™ to their clients. Since clinicians might have changed their employment or contact information since their initial inscription on the website, we are making efforts to ensure that your contact information is correct. If your email information is identified by a referral source as out-of-date we have been removing your listing from our site to ensure we have an efficient mechanism for those whom the directory was designed to serve. In order to ensure that we have your correct contact information listed on the website directory, please communicate with our Centre as soon as possible to inform us on any changes at : info@pdp-pgap.com
It is the responsibility of the PGAP™ Provider to keep their PGAP™ website information up-to-date. Information changes submitted by email before the end of 2010 will be changed at no fee and Providers who have been removed may also be re-instated without a fee. Please note we will not accept changes to your information by telephone.

Selected activities and publications since our last Newsletter

Published Refereed Papers

- Sullivan, M.J.L., Adams, H. (2010). Psychosocial treatment techniques to augment the impact of physical therapy interventions for low back pain. *Physiotherapy Canada*, 62:180 - 189.
- Sullivan, M.J.L., Davidson, N., Garfinkel, B., Scott, W. (2010). Perceived injustice is associated with heightened pain behavior and disability in individuals with whiplash injuries. *Psychological Injury and Law*, 2: 238 - 247.
- Butler, H., Lariviere, C., Sullivan, M.J.L. (2010). Directed attention alters the temporal activation patterns of back extensors during trunk flexion-extension in individuals with chronic low back pain. *European Spine Journal*, 19 (9):1508 - 1516.
- Hsieh, A.Y., Tripp, D., Ji, L.J., Sullivan, M.J.L. (2010). Comparisons of catastrophizing, pain attitudes, and cold pressor pain experience between Chinese and European Canadian young adults. *Journal of Pain*, 15: 1 - 8.
- Tremblay, I., Sullivan, M.J.L. (2010). Attachment and pain outcomes in adolescents: The mediation role of pain catastrophizing and anxiety. *Journal of Pain*, 11(2): 160 - 171.

Scientific and Invited Plenary Presentations:

- Sullivan, M.J.L. Perceptions of Injustice as a Determinant of Chronic Pain and Disability following Whiplash Injury. Satellite Symposium on Pain, Mind and Movement. World Congress of Pain, Montreal, QC, August, 2010.
- Sullivan, M.J.L. Improving health outcomes by reducing pain catastrophizing. 13th World Congress of Pain, Montreal, QC, August, 2010.
- Sullivan, M.J.L. Catastrophizing and perceived injustice as determinants of problematic outcome following musculoskeletal injury. 13th World Congress of Pain, Montreal, QC, August, 2010.
- Adams, H., Stanish, W., Dunbar, M., Tanzer, M., Sullivan, M.J.L. Pre-surgical pain and catastrophizing contribute to the persistence of depression following total knee arthroplasty. 13th World Congress of Pain, Montreal, QC, August, 2010.
- Ellis, T., Adams, H., Sullivan, M.J.L. A comparison of clinical improvement and return-to-work outcomes in clients with chronic musculoskeletal pain and fibromyalgia following participation in a life-role re-integration program. 13th World Congress of Pain, Montreal, QC, August, 2010.
- Scott, W., Sullivan, M.J.L. Determinants and predictive utility of clinicians' return to work judgments for individuals with whiplash injuries. 13th World Congress of Pain, Montreal, QC, August, 2010.
- Mankovsky, T.D., Wideman, T., H., Butler, H., Garfinkel, B., Sullivan, M.J.L. An Experimental Investigation of the Effects of TENS on Delayed Onset Muscle Soreness (DOMS: The Moderating Role of Catastrophizing). 13th World Congress of Pain, Montreal, QC, August, 2010.
- Wideman T.H., Sullivan M.J.L. Differential predictors of chronic pain, work disability and health care utilisation following musculoskeletal injury. 13th World Congress of Pain, Montreal, QC, August, 2010.
- Martel MO., Thibault P., Sullivan M.J.L. The influence of pain and psychological factors on the persistence of pain behaviors in patients with chronic back pain. 13th World Congress of Pain, Montreal, QC, August, 2010.
- Butler, H.L., Lariviere, C., Hubley-Kozey, C.L., Sullivan, M.J.L. Temporal activation patterns during trunk flexion-extension: Effect of attention, sex and pain severity in low back pain (LBP) patients. 13th World Congress of Pain, Montreal, QC, August, 2010.
- Sullivan, M.J.L. Managing Persistent Pain and Disability: Best Practices. 30th Annual National Workers' Compensation and Occupational Medicine Conference. SEAK Inc. Hyannis, MA, July, 2010.
- Sullivan, M.J.L. Perceived Injustice as a Barrier to Recovery. Vocational Rehabilitation Association of Canada Annual Conference. Niagara Falls, ON, June, 2010.
- Sullivan, M.J.L. Catastrophic Thinking and Health Outcomes: Mechanisms of Action and Treatment Implications. Eighth Conference on Psychology and Health. Lunteren, The Netherlands. May, 2010.

- Sullivan, M.J.L. What is the Contextual Basis of Catastrophizing in Chronic Pain? A Road to Optimal Interdisciplinary Patient Care: 25 years of Pain and Palliative Care. Nijmegen, The Netherlands. April, 2010.
- Sullivan, M.J.L. Cogito Ergo Ouch: Meditations on the Psychology of Pain. The 8th Palliative Care Congress. Bournemouth, UK, March, 2010.

Colloquia and Invited Clinical Presentations

- Psychosocial risk factors for pain and disability: Detection and intervention.
WorkSafeBC, Nanamio, BC, October 2010.
- Psychosocial risk-factors for pain-related disability: Detection and intervention.
11th Canadian Conference on Collaborative Mental Health Care. Winnipeg, MB, May 2010.
- Perceptions of injustice and recovery trajectories following musculoskeletal injury.
Saskatchewan Workers' Compensation Board. Saskatoon, SK, May 2010.
- Pain, mental health and rehabilitation.
Saskatchewan Workers' Compensation Board. Saskatoon, SK, May 2010.
- Psychosocial risk factors for pain and disability: Detection and intervention.
WorkSafeBC, Richmond, BC, May 2010.
- PTSD, pain and rehabilitation.
WorkSafeBC, Richmond, BC, May 2010.
- La psychologie de la douleur: facteurs de risque, problèmes de santé mentale et interventions.
Boehringer-Ingelheim Canada Ltée. Trois Rivières, QC, April 2009.
- Catastrophizing and pain: Mechanisms of action.
Department of Exercise Science. Concordia University. Montreal, QC, February 2010.
- Les facteurs de risque psychosociaux pour la douleur et l'incapacité.
CSST. St. Jerome, QC, January 2010.

TRAINING WORKSHOPS (Knowledge Exchange)

*Formation: Détection et intervention auprès des facteurs de risques psychosociaux.
Commission de la santé et de la sécurité du travail (CSST).*

- Montreal, Quebec, February 24, 2010
- Montreal, Quebec, February 23, 2010
- Montreal, Quebec, February 4, 2010
- Montreal, Quebec, February 3, 2010

The Progressive Goal Attainment Program (PGAP): Training Workshop

- Galway, Ireland, November, 2010
- Montreal, Quebec, October, 2010
- Uppsala, Sweden, October, 2010
- Wellington, New Zealand, September, 2010
- Christchurch, New Zealand, September, 2010
- Auckland, New Zealand, September, 2010
- Washington, DC, June, 2010
- Toronto, Ontario, June, 2010

Information Updates

PGAP™ Workshops Scheduled for 2011

The following is a list of PGAP™ Workshops that have been scheduled 2011.

The language of instruction for these workshops is English. Unfortunately, simultaneous translation is not available.

April 01 & 02, 2011 – Toronto, Ontario, Canada

May 01 & 02, 2011 – Cape Town, South Africa

May 07 & 08, 2011 – Johannesburg, South Africa

October 21 & 22, 2011 – St. John's, Newfoundland, Canada

November 04 & 05, 2011 – Winnipeg, Manitoba, Canada

The information and registration forms are available to download from our website: www.pdp-pgap.com

Please note that there have been more expressions of interest than our workshops can accommodate, so we encourage those who would like to have the opportunity for training in 2011 to register early. You will also benefit from an “early-bird” registration fee if you register by the early deadline. If you would like to be notified about upcoming workshops, please send an email to info@pdp-pgap.com and request to be placed on the distribution list.

