VEWAA

Vocational Evaluation

& Work Adjustment Association

JOURNAL

Volume 37 Number 1 2010

Vocational Evaluation and Work Adjustment Association Journal

Editor: Michael J. Millington, Ph.D., CRC; 6524 Old Main Hill, Utah State University, Logan, UT 84322-6524; (435) 797-3488 (office); (435) 797-7537 (Fax); michael.millington@usu.edu
Guest Editor: Joseph E Keferl, Rh.D.; M080 Creative Arts Center, Wright State University, 3640 Colonel Glenn Hwy., Dayton, Ohio 45435-0001; (937) 775-2076 (office); joseph.keferl@wright.edu
Editorial Assistant & Journal Designer: Chenyong (Jessie) Zhu, M.S.; 6524 Old Main Hill, Utah State University, Logan, UT 84322-6524; (435) 797-3445 (office); (435) 797-7537 (Fax); jessie.zhu@usu.edu

Mission
The Vocational Evaluation and Work Adjustment Association (VEWAA) Journal advocates for the advancement of an evidence based practice for the disciplines of vocational evaluation and work adjustment, specifically as applied to the field of vocational rehabilitation. Our primary audiences are the practitioners of these crafts. We seek a knowledge and skill base that will improve service delivery, improve VR client access to employment and career outcomes, define and legitimate evaluation and adjustment roles, and encourage a community that recognizes the unique value of vocational evaluation and work adjustment in the spectrum of VR service.

Guidelines for Authors
The VEWAA Journal accepts unsolicited manuscripts for review by email (michael.millington@usu.edu). Electronic submittals must be made in rich text format (.rtf). MicroSoft Word, Word Perfect, or Open Office files are acceptable. Send the manuscript as an attachment to an email that includes your personal contact information. Please refer to "VEWAA" in the subject line. The VEWAA Journal accepts unsolicited manuscripts for review by mail. Send manuscripts (4 copies) to: Michael J. Millington, 6524 Old Main Hill, Utah State University, Logan, UT 84322-6524.

Review Policy
The VEWAA Journal is a refereed journal and uses a double blind review process. All submissions include a detachable cover (title) page for each copy that indicates running head, title, authors, and affiliations. There should be nothing in the body of the manuscript that identifies the authors directly. Every effort should be taken to ensure that the authors' identities are not revealed indirectly through the style or content of the manuscript. Our strategy is to work with the authors in an iterative review process until an acceptable manuscript is produced. Unfortunately, this is not always possible. The editors reserve the right to reject any article at any point during the process and terminate further development. While providing a justification for termination is standard operating procedure, it is not required of the editors.

Manuscript Preparation
The final manuscript must be submitted as an electronic file, either as an attachment to an email, or on a disk. MicroSoft Word, Word Perfect, or Open Office rich text files are acceptable. Authors should prepare manuscripts in accordance with the Publication Manual of the American Psychological Association (APA; 6th ed.). A very concise two to three sentence biographical sketch for each author should be included on the bottom of the title page under "Author Note". All manuscripts include an abstract no larger than 150 words submitted on a separate page (numbered page 2). Use 12 point Times New Roman typeface, double spaced, with 1 inch margins. Figures should be provided as separate, high quality, graphic files in a popular format (e.g., .jpg, TIFF). There is no page limit on manuscripts. Manuscripts that do not comply with minimal standards will not be reviewed.

Publication Policy
The VEWAA Journal publishes original manuscripts only. APA policy prohibits republishing manuscripts, whole or in part, without permission for, or acknowledgment of, reprint. APA policy also prohibits concurrent submissions of a manuscript for review in two or more publications. Authors are responsible for the accuracy of their data, references, tables, quotations, figures, and content. Data analyzed for studies in review must be made available to VEWAA editors upon demand for verification. Authors, not the VEWAA Journal, are responsible for the views expressed in their manuscript. Once an original manuscript has been accepted for publication, it becomes the sole property of the Vocational Evaluation and Work Adjustment Association Journal for the purpose of copyright.

Cover photo: Dori Ashton

VEWAA Journal

Volume 37 Number 1 2010

1 **Editorial: Are You Going to Cowboy Up, or Just Lie There and Bleed?**
Michael J. Millington

3 **Workplace Stress Management: Theory and Recommendations**
Joanna Noonan and Shannon L. Wagner

Special Topic
Vocational Evaluation and Addictions: Emerging Evidence and Practice

17 **Guest Editorial: Vocational Evaluation and Addictions: Emerging Evidence and Practice**
Joseph E. Keferl and Margaret Glenn

18 **Use of the Addiction Severity Index in Vocational Evaluation for Persons with Substance Use Disorders**
W. Leigh Atherton, Paul J. Toriello, Steven R. Sligar, and Tracie E. Campbell

26 **Motivational Interviewing by Rehabilitation Professionals: Enhancing Contemporary Attitudes Towards Consumers with Substance Abuse Issues**
Paul J. Toriello, W. Leigh Atherton, Tracie E. Campbell, and Steven R. Sligar

37 **The Influence of Post-Acute Withdrawal Syndrome on Instruments Used in Vocational Evaluation**
Steven R. Sligar, Paul J. Toriello, W. Leigh Atherton, and Sterling Schwiebert

45 **Behavioral Addictions Screening During the Vocational Evaluation Process**
Mary K. Crozier and Steven R. Silgar

Editorial: Are You Going to Cowboy Up, or Just Lie There and Bleed?

Michael J. Millington

Our professional identity is in existential crisis. We have lost certification and with it a degree of legitimacy. Organizational structures fragment over petty politics. Resources are lost due to bad investments. Our relevance in practice diminishes as our membership dwindles. Two journals compete for meaningful content in a barren niche market. We have very little evidence to defend our practice. As an evaluator, and the editor of the VEWAA journal, I cannot ethically ignore these diagnostic signs and pretend that pluck and luck will see us through. No. If we do not apply our skills (evaluation and adjustment) to our own circumstance, we will not survive.

We must confront the cause behind these consequences. As Pogo said, "We have met the enemy, and he is us." There is nothing functionally wrong with vocational evaluation. Work adjustment is as relevant today as ever. The source of our present predicament has been our stewardship. We have not effectively evolved practice through our science. We subjugated the purpose of professional organizations to our personal issues. We have become estranged from the scientist-practitioner model and eschewed the responsibility of community. It is no surprise that we find ourselves professionally adrift and on the precipice of extinction.

Atonement at this late date will not be easy. But the tasks ahead of us are self evident:

- *We must unify*. The reasons for fragmentation are irrelevant. There must be one organization representing us. There must be one journal. I don't care if we all have to go to group therapy…we must rediscover and celebrate our common identity as well as our diversity.
- *We must activate*. Community is not a thing, it is a relationship that emanates from collaborative action. Every person who cares about our field, who wants to be counted in our number, is responsible for getting involved. It is incumbent upon the leadership to facilitate that involvement.
- *We must network*. It is not enough for us to value our professional identity, we must, as individuals and as a group, spread the message throughout the field…every member, a missionary. Finally,
- *We must build something new, together*. We know from experience what does not work. We can learn from community what can work. In a community everyone is an expert of their own experience. Every experience has lessons to be shared; every voice deserves to be heard. Every practitioner becomes a scientist, every scientist a practitioner. Vocational Evaluation and Work Adjustment will be functionally defined and redefined by the empirical evidence arising from the shared effort of clients, practitioners, teachers, researchers, policy makers, employers, family members, and any other stakeholder in the good work of full community inclusion.

And so we begin, again. Utahns have a curiously appropriate saying, in the form of a question, "Are you going to cowboy up, or just lie there and bleed?" I can only speak for myself, as I knock the dust off my hat, and tell you what I am doing as Editor of the VEWAA Journal. This issue is the first under my watch. When I started, there were no manuscripts in process, the editorial board was essentially disbanded, and the journal had published only sporadically in the last few years. My goal is to build a new journal, one that is aimed at practitioners rather than academics. To do this, I am starting with a different set of assumptions.

- Vocational Evaluation and Work Adjustment are broadly defined. Articles about Vocational Evaluation focus on how we know what we know about our clients, and how we use this information to serve our clients. Articles about Work Adjustment focus on any aspect of improving employment or career outcomes for people with disabilities.
- The Journal is the centerpiece of a larger, interactive, educational resource. The Journal is primarily available as a free, online, publication. It will be housed on a webpage that offers opportunities for training and networking

in a variety of formats. All resources will be universally accessible.

- We are a practitioner-centered publication. We will actively recruit and support practitioners as authors. We will seek ideas for publications from practitioners, involve them in every aspect of Journal and site development, and base our success upon their satisfaction.
- All published manuscripts will go through a peer review process, but the process will focus on formative, not summative evaluations. If you have a good idea that is worthy of publication, the editorial board will work with you through a series of iterations and interventions until the idea is fully realized and appropriate for publication.
- We are driven by continuous improvement towards an evidence-based practice. If you put science in service of practice in pursuit of excellence, you will move stepwise towards an evidence-based practice and practitioners will by necessity become scientist-practitioners.
- If we do these things on behalf of the practice, we can expect the practitioner to advocate on behalf of the profession.

I am not in competition with the other journals of our field. I don't expect, or even want to be on a list of the venerable. All I care to do is provide the legitimate forum for Vocational Evaluators and Work Adjustment Specialists to find themselves again and to re-realize the importance of their work in the field. I do not own this idea, I do not want to keep it to myself. I desire to partner with my colleagues at VECAP. I will share every resource at my disposal with anyone or any group who shares this vision.

All that remains is to see if this initiative can grow. Early signs look good. What follows in this issue is the product of a partnership with our guest editors, Joe Keferl and Margaret Glenn. I thank them profusely. There are more partnerships in progress for the future, enough to sustain at least one more issue. The webpage is in development. The VEWAA Journal may rise again…but it will require one more thing. It will require you. Our crisis of identity is a call for community. However dire things might look, it is nothing but a wake up call. If we answer the call together the crisis ends. The work, however, remains.

Workplace Stress Management: Theory and Recommendations

Joanna Noonan
Shannon L. Wagner
University of Northern British Columbia

Although there is an abundance of research in the area of stress and a heightened awareness of the detrimental effects of stress on both employee and organizational health, responsibility for the management of occupational stress has predominantly remained with the individual worker. Through neglect of the bigger picture of stress as well as the organizational drivers of stress, an important opportunity to improve upon human potential and capability is over-looked. Therefore, the aim of this article is to provide a comprehensive overview of workplace stress for rehabilitation professionals. Specifically, it begins by reviewing the outcomes and/or costs of workplace stress. The major theories of occupational stress are also covered, and each theory's respective strengths and weaknesses are discussed within the context of managing and preventing stress-induced disability. Workplace stress prevention/treatment is reviewed using the disease model of disability and this review results in the conclusion that in order to be effective, stress-management initiatives must be both multi-dimensional and long-term. As a conclusion, the article provides several key recommendations for rehabilitation professionals and organizations with respect to best-practices for stress-management interventions.

Key words: *disability; workplace; stress; prevention; intervention; management; occupation*
Author note: Correspondence may be addressed to the second author at Health Sciences Program, University of Northern British Columbia, Prince George, British Columbia, Canada, V2N 4Z9, wagners@unbc.ca.

Economic, social, and technological developments over the past several decades have resulted in profound effects on the labor market and the workplace. Given privatization, mass mergers, and automation in the 1980's, to recession, restructuring, and downsizing in the 1990's (Cooper, Dewe, & Driscoll, 2001), the focus of today's organizations is on maximizing efficiency, reducing costs, and enhancing product quality to remain competitive in a global market. New organizational structures, rapid implementation of information technology, and the application of new production concepts such as high performance work systems and 'just in time' manufacturing, have led to more flexible, but perhaps increasingly stressful work environments. Although there is an abundance of research in the area of stress (e.g., Bakker, Emerouti & Euwema, 2005; Ingledew, Hardy & Cooper, 1997) and a heightened awareness of the detrimental effects of stress on both employee and organizational health, responsibility for the management of occupational stress has predominantly remained with the individual worker. Through neglect of the bigger picture of stress as well as the organizational drivers of stress, occupational stakeholders forgo the opportunity to improve upon human potential and capability. By understanding the impact of stress on organizations and people, and the models of occupational stress and factors that may mediate or moderate the effects of occupational stress, vocational rehabilitation professionals (VRPs) will be better equipped to proactively prevent and manage stress-related injury as well as to advise organizations regarding the potential to eliminate losses associated with ill health, disability, absenteeism, and reduced productivity. Additionally, rehabilitation professionals will be better equipped to provide assistance to, and manage the accommodation of, employees experiencing stress-related mental health disability.

To better understand the scope of occupational stress, it is important to first put the magnitude of this problem into context. Stress has become a pervasive and costly phenomenon in today's workplace. One quarter of employees surveyed by Northernwestern National Life (1991) in the U.S. indicated that the number one source of stress in their lives was their job and, according to St. Paul Fire and Marine Insurance Company, there is a stronger association between health complaints and workplace stressors than between health complaints and non-work related sources of stress, such

as financial or family stressors (National Institute for Occupational Health and Safety, 1999). Moreover, in a recent international survey of key stakeholders in the European Union, nearly 90% of respondents reported that stress is considered a cause of disease in their country (Iavicoli et al., as cited in World Health Organization, 2004). Although there is an abundance of research in the area of occupational stress and results of these studies demonstrate at least the perception that workplace stress levels are high (e.g., Briner, 1997; Sikora, Beaty, & Forward, 2004), perhaps higher than they have ever been, there has been some difficulty in establishing strong causal associations. This difficulty is due, in part, to methodological limitations in the study of workplace stress, disagreement on the terms and constructs relative to stress (Beehr & Bhagat, 1985), and the multifaceted nature and overall complexity of the stress response itself. Increasingly however, we are seeing more convincing evidence supporting a connection between occupational stress and absenteeism, employee turnover, impaired performance and productivity, accident rates, unsafe work practices, and disciplinary problems (World Health Organization 2004; DeFrank & Ivancevich, 1998). In fact, the impact of stress on workplace performance and physical, psychological and behavioral health has been estimated to cost $20-30 billion annually (Tillmann & Beard, 2001) and according to Canadian organizations, stress is the most significant drain on employee productivity (Coyle, 2005). Elkin and Rosch (1990) have predicted that 54% of workplace absenteeism is related to occupational stress. In addition, stress-related Workers' Compensation claims are increasing at such alarming rates that they may soon become the prevailing occupational disease (Warshaw, 1988). Examination of the impact of occupational stress on the use of health care has found that workplace stressors account for 16% of the variance in health care costs and 21.5 % of the variance in the number of health claims (Manning, Jackson & Fusilier, 1996) with 75-90% of physician visits estimated to be related to stress (Sutherland, 1991). The strong association between mental health disorders and stress has significant implications on absenteeism and productivity in the workplace. Depressed employees take 1.5-3.2 more short-term sick days per year and are about 20% less productive than their non-depressed coworkers (World Health Organization, 2004). With regard to disability in the workplace, mental health claims are the fastest growing category with 30% of short term disability claims being related to depression and 50% of long term disability claims having depression as either the primary or secondary diagnosis (Linton, 2005). Workplace stress is subject to no geographical boundaries, with similar findings being echoed around the globe. In Germany, 98% of work councils have reported increased work pressure in recent years and 85% have cited working longer hours (World Health Organization, 2004). Stress has evidently become a serious concern with considerable human and economic costs to the organization, the employee, and society in general.

In addressing the immeasurable costs, both human and financial, related to occupational stress and related mental health disorders, effective disability management and vocational rehabilitation efforts can provide a useful avenue for protecting all stakeholders. First and foremost, the employee will benefit from the maintenance of an occupational relationship, whether that relationship is in the context of a previous position or an alternate position that uses transferable skills. By continuing or returning an employee with a disability to the workplace via appropriate accommodation efforts, the employee is provided with an opportunity to benefit from the physical and psychological advantages of meaningful employment, maintain occupational self-identity and self-esteem, remain current in the field and continue workplace social relationships. Furthermore, employers benefit by supporting a current employee in returning to and/or continuing present employment through the avoidance of the direct costs of disability, such as disability benefits and the cost of replacement employees. The employer will also avoid the indirect costs of losing an employee to disability, such as the loss of experience and related knowledge skills and competencies, loss of workplace morale, and lost production due to lack of experience.

Models of Stress

There continues to be considerable discrepancy in the concept of stress, both in how it is defined as well as how it is operationalized (Cooper, et al., 2001). From an occupational perspective, stress can be defined as a

physical and psychological response that occurs when the requirements and/or conditions of the workplace are not aligned with the worker's capabilities, resources, or needs (National Institute for Occupational Health and Safety, 1999). In an attempt to better understand the complex phenomenon of workplace stress and provide theoretical constructs to guide research, many occupational stress models have been proposed. Many of these models attempt to identify the work characteristics that are associated with increased occupational stress.

The Stress-Strain Paradigm

Perhaps one of the most influential models to dominate contemporary stress research has been Karasek's (1979) Demand-Control Model. This model postulates that the environmental conditions of high job demand and low job control, where job control refers to decision latitude, results in negative health outcomes. It is important to emphasize that it is the synergistic interaction between these two variables that produces strain at a level greater than the simple additive effects of either variable alone (Jones, Bright, Searle & Cooper, 1998). This *psychological strain hypothesis* has important implications. First, high job demands do not result in negative outcomes when partnered with a high level of control over one's work. In fact, high demand/high control work environments can result in challenging situations for workers, fostering the development of confidence, skills, and well being (Dollard & Winefield, 1998; Morrison, Payne & Wall, 2003). Second, the Demand-Control Theory of stress has important implications for job re-design as well; by improving a worker's autonomy and decision-making ability, psychological strain can theoretically be reduced, without a need to make changes to the demands of the job (Jones, et al., 1998). Job control is evidently a critical factor in the worker's experience of strain. Even in the case of passive jobs, where job demands and decision latitude are low, psychological strain has been found to be higher (Dollard & Winefield, 1998).

Although Karasek's model has facilitated a deeper understanding of the work-strain relationship, it presents several limitations. First, it has been criticized for only incorporating a limited number of variables, at the exclusion of other workplace factors that perhaps have a more significant impact on worker health. Consequently, several authors (e.g. Fletcher & Jones, 1993; Sparks & Cooper, 1999) suggest that this model may offer little guidance for the effective management of occupational stress. In an effort to more accurately define and understand the stress-strain paradigm, there has been an expansion of the Demand Control Model to include a third element, social support. Commonly referred to as the *iso-strain hypothesis*, the premise in this model is that jobs involving high demands, low control, and social isolation result in the highest levels of strain and consequently, the highest potential for workplace illness and/or injury (House, 1981; Theorell & Karasek, 1996). Second, the construct of control in the Demand-Control Model has also been criticized for being too vague, leading to inconsistencies in interpretation and application. While Karasek's intention was presumably for the control dimension to include decision authority and skill discretion, others suggest that variety, skill utilization, and overall job complexity should be incorporated under the umbrella of control (Jones et al, 1998; Ganster & Fusilier, 1989; Mausner-Dorsch & Eaton, 2000). The third concern with the Demand-Control Model, and any model that takes a restrictive approach in defining the work-strain relationship, is that important factors unique to specific jobs and work environments can be overlooked when a situation-specific approach is not taken (Sparks & Cooper, 1999). By identifying the job stressors that are inherent to specific jobs and organizations, stress management initiatives designed to address specific individual and organizational needs can be implemented. This identified limitation has resulted in the development of expanded models of stress which address both job and environment specific factors. While the Job Demand-Control Model has been primarily applied to a traditional manufacturing economy, today's shift toward a service-oriented industry has prompted the development of the Job Demand-Service Model. It is the contention of this model that the rewards derived from assisting others positively impact health by moderating the association between job demands and psychological strain (Marshall, Barnett & Sayer, 1997). In a comparison between the Job Demand - Control Theory and the Job Demand - Service Model, the former accurately predicted psychological strain in manufacturing employees, while the latter was a better predictor of psychological strain among employees

working in the service industry (Marshall et al, 1997). Interestingly, rewards from helping others were found to be important regardless of the job demand level.

Person Environment Fit

The Person Environment Fit Model (PE-Fit) is another framework that has been used extensively to describe the relationship between work and stress. Unlike the Demand-Control Model which takes an ecological approach to identifying stressors in the work environment, the PE Fit Model is advantageous in that it considers the impact of individual worker characteristics on the stress experience. The basic tenet of this model is that strain is caused by disequilibrium between the interaction of the person and their environment. Incongruence between a person's individual values, needs, or abilities, and the environmental demands and/or supplies, can result in unmet needs on the part of the person and/or the organization (Cooper et al, 2001). Despite the conceptual advantage of incorporating cognitive appraisal into the stress-strain relationship (Edwards, 1996), this model also presents several theoretical and methodological problems including the fact that there are two distinct versions of the PE- Fit Model, creating confusion as to which version should guide empirical investigations. The Supplies-Values (S-V) Fit version looks to the match, or lack thereof, between an individual's values including his/her conscious desires, and the subjective and objective supplies available in the environment, including the amount, frequency, and quality of environmental attributes (French, et al., 1982). The Demands-Abilities (D-A) Fit version on the other hand, depicts whether or not the environmental demands as perceived by the individual, exceed the individual's abilities, skills, knowledge, time, and/or energy (Edwards, 1996). In both versions, the key underlying process is cognitive appraisal; that is, whether or not there appears to be a fit between the person and their environment. To date, there have been insufficient comparisons to determine the relative usefulness of each version (Edwards, 1996) and inadequate distinction between the two versions has caused confusion in application, poor measurement, and inappropriate analysis (Edwards & Cooper, 1990). Despite the PE-Fit model's recognition of the expanded role that both environmental and individual factors play in the stress response, the variety of factors that have been associated with a wide array of outcomes in various studies, has led to difficulty in understanding which stressors are of greatest significance (Schwartz, Pickering, & Landsbergis, 1996). By classifying factors strictly according to person or environment, the PE-Fit framework also ignores the important role of social context and fails to recognize the complexity of the stress-strain relationship (Cooper, et al., 2001).

An extension of the PE-Fit Model is the *Isomorphic Theory of Stress*. Isomorphism has been defined as the 'one for one' fit between the person and their environment along the three dimensions of control, uncertainty, and interpersonal relations (Quick, Nelson, Quick & Orman, 2001). High strain will result in situations where there exists a poor fit along any dimension, whereas low strain will occur if there is a good fit along each dimension (Quick et al, 2001). This isomorphic conceptualization of stress has important implications for stress management given that while it acknowledges the role the individual can play in learning skills to adapt to and cope with their work environment, it also confers a degree of responsibility onto organizations to consider environmental interventions that align the work to the specific needs of the individual worker.

Transactional Model

An occupational stress model aimed at uncovering the dynamics of the stress response in terms of cognitive appraisal and coping is Lazarus' (1966) Transactional Theory. As discussed earlier, stress from a transactional perspective is viewed as a dynamic cognitive evaluation of the transactions that occurs between an individual and their environment. What differentiates this stress model from others is that it goes beyond the examination of objective stressors that predict strain, to emphasize process; that is, the appraisal of the situation and the coping mechanisms available to assist in restoring balance (Cooper et al, 2001). Lazarus proposes three levels of cognitive appraisal - primary appraisal, secondary appraisal, and reappraisal. In primary appraisal, the individual determines the significance of the encounter, whether it is irrelevant, benign, or stressful. Should an encounter be perceived to present a degree of harm, threat, or potential for gain or benefit, it would be deemed

'stressful' prompting a secondary appraisal (Lyon, 2000). In secondary appraisal, the individual assesses whether current coping abilities are sufficient to mitigate and/or manage the threat. Reappraisal, or re-evaluation of the initial threat and coping resources, occurs as a situation evolves and, as Lyon (2000) points out, can result in cognitive elimination of a threat. Appraisal is central to the stress-strain relationship since it ultimately determines the emotional response (anxiety, fear, anger) and coping behaviors used (problem focused or emotion focused coping) (Lyon, 2000; Perrewe & Zellars, 1999). The Transactional Model has undoubtedly made significant contributions to stress research, resulting in a deeper understanding of the stress response. Not only does it recognize the inseparability of stressors and consequences from the context within which they occur (Cooper, et al., 2001), but it also explains why individual responses to identical situations vary. It is the cognitive appraisal that in fact mediates the stressor-strain relationship (Haslam, Jetten, O'Brien & Jacobs, 2004) resulting in a stressor being quite manageable for one person yet stressful for another. One of the main criticisms of this model however, is that by focusing on the individual's subjective appraisal of a stressor, organizational stressors that could quite possibly impact whole groups of workers may be overlooked (Brief & George, 1991).

Asynchronous Multiple Overlapping Change Model

One of the main limitations of traditional occupational stress models is their tendency to conceptualize stress in terms of a single acute or chronic event where equilibrium is achieved only after the stressor has been fully processed and/or the change has occurred. While some models have expanded our understanding of the stress response by incorporating the role of important mechanisms such as cognitive appraisal, coping, and emotions, the question remains as to whether these relatively simple and linear models adequately reflect the dynamics and complexity of the stress phenomenon in today's work environment. Multiple and competing priorities, chronic and conflicting demands, limited resources, organizational changes such as downsizing, restructuring, and strategic new organizational work designs, and a "doing more with less" mentality, on top of the many cumulative and simultaneous day to day workplace stressors, have become a way of life for the 21st century worker. A framework that attempts to better recognize this reality is the Asynchronous Multiple Overlapping Change (AMOC) Model of Workplace Stress as proposed by Sikora, Beaty, and Forward (2004). As its name implies, the focus of this model is on the cumulative response to compounding workplace stressors that occur concurrently and/or continuously. Presented in the context of Seyle's General Adaptation Model and Allostasis, the latter referring to an adaptive response to environmental demands, this framework explains how continual workplace stressors, through sustained activation of the allostatic system, result in maladaptive responses (Sikora, et al., 2004). As posited by the Transactional Model of Stress, being confronted with a stressor will evoke a primary appraisal response. In the case of the AMOC Model however, the appraisal process is more encompassing, considering all demands produced by overlapping stressors, rather than just one. In this model, being inundated with such multiple and overlapping stressors will result in a distorted primary appraisal of the stressor (threat instead of challenge) and based on the total demands of the numerous presenting stressors, the perceived ability to cope with the stressors (secondary appraisal) will be low (Sikora, et al., 2004) - essentially the worker will feel overwhelmed. The second manner in which multiple and overlapping stressors will impact the worker is in terms of cognitive demands. Constant bombardment of stressors, with attempts by the worker to evaluate the threat and demands of these stressors, will result in a state of "hyper-vigilance", leaving little cognitive energy for the processing of other incoming information (Sikora, et al., 2004). This can result in cognitive inflexibility (Fiske, 1998) and the inability to effectively appraise acute and seemingly minor stressors in the future.

Predictors of Workplace Stress

While theoretical models of occupational stress provide us with various conceptual frameworks on the stress-strain connection, there has been much attention directed toward identifying the direct and indirect determinants of strain and the specific outcomes that result. Despite the fact that individual differences

will impact the perception of stress, common factors have been identified as being "stressful" to most individuals. Cooper et al (2001) have categorized the determinants of stress into three categories: job-specific, organizational, and individual. Job specific stressors refer to such factors as job control (Bond & Bunce, 2001; Bosma, Stansfeld, & Marmot, 1998; Theorell & Karasek, 1996; Verhaeghe, Mak, Van Maele, Kornitzer, & De Backer, 2003; Wang & Patten, 2001), job strain (Albright, Winkleby, Ragland, Fisher, & Syme, 1992), job complexity, lack of variety in work (Kivimaki & Kalimo, 1996), lack of use for employee skills, amount of control/decision latitude (Mackie, Holahan, & Gottlieb, 2001; Wiesner, Windel, & Freeman, 2005), physical work environment, workload and pace (Cooper, Dewe, and O'Driscoll, 2001), role ambiguity (Cooper et al, 2001), social support (Beehr, Jex, Stacy, & Murray, 2000; Bellman, Forster, Still, & Cooper, 2003; Schat & Kelloway, 2003; Verhaeghe et al, 2003;), hours of work (Cooper, 1996) and shift-work (Parkes, 2003).

Two organizational factors, resources and clarity of organizational goals, have also been identified as other important moderators in the stress-strain relationship. Based on the speed at which organizational change evolves, it is critical to identify change management strategies that minimize stress reactions and enhance acceptance of change initiatives. In a recent study examining the impact of organizational goals on the stress response, clarity of goals was clearly a moderator of such responses (Arnetz, 2005). Those working in areas where organizational goals were ambiguous experienced uncertainty, a perception of increased threat, and in the end, higher levels of strain. In addition to ensuring goals are explicitly clear to all workers, it is important for organizations to ensure that adequate and appropriate resources are available to assist workers in meeting these goals. While too many resources can undermine the worker, insufficient resources can lead to disengagement, demoralization, and absenteeism (Bakker, Demerouti & Euwema, 2005). Examination of the effects of resources on high job demands found that high demands, in combination with low resources, was predictive of burnout in terms of measures related to exhaustion and cynicism (Bakker, et al., 2005).

In a modern day work environment plagued with downsizing, precipitous layoffs, and outsourcing of labor, job security has become a notion of the past. Although longitudinal studies have investigated the effects of job insecurity and job strain independently, few studies have examined their combined effects. A recent study by Strazdins, D'Souza, Lim, Broom, and Rodgers (2004), in combining job strain and job insecurity measures, found significant increases in depression, anxiety, and physical health related problems compared to the effects of each factor independently. Although it is unclear as to whether job insecurity exacerbates job strain or vice versa, what this study does highlight is the synergistic relationship between the two variables once a threshold level had been reached (Strazdins et al, 2004). From an organizational perspective, this data provides support for assessing both conditions concurrently to identify individuals and/or work groups who may be at greatest risk for adverse health effects.

In addition to job-specific and organizational factors interacting in the stressor-strain relationship, there are other individual variables that impact the stress response. Personality characteristics such as Type-A behavior pattern and negative affectivity are two of the commonly discussed traits in stress literature. Researchers believe that these individual qualities moderate the impact of the stressor on the worker through the mechanisms of appraisal and coping. Ambition, aggressiveness, high levels of motivation, and low tolerance for anything that interferes with goal attainment, characterize a Type -A behavior pattern. While Type-A behavior undoubtedly results in high levels of productivity, it has also been linked to unfavorable physical and psychological health effects, one of which is cardiovascular heart disease (CHD) (Rosenman, Brand, Sholtz, & Friedman, 1976; Schwartz et al, 1996). Negative affectivity (NA), a personality disposition resulting in a tendency to react to stress with negative emotional states (fear, anger, loneliness), has also been implicated as a moderator in the stress-strain connection. An employee with characteristics of positive affectivity (low NA) will demonstrate a lower level of distress in comparison to an individual with high NA due to an improved ability to temper the stressor-strain association. Understanding the effects of NA through research presents a significant challenge since measures related to stress and strain commonly rely on self-report. With high NA workers tending to report higher levels

of negativity in general, there is concern that results linking NA to strain could potentially be inflated (Brief, Burke, George, Robinson & Webster, 1988). While findings suggest an association between NA and health, the exact mechanism of this effect remains unclear. The final individual factor to be discussed in the stress-strain relationship is coping, a complex process conceptualized both as a static dispositional trait (Stone, Greenberg, Kennedy-Moore & Newman, 1991) and a dynamic, transactional process reflective of situational context. Given the latter definition, coping strategies are chosen based on the individual's appraisal of the event (primary appraisal) as well as the resources available to deal with the stressful event (secondary appraisal). From a stress management perspective there is value in identifying which types of coping strategies are most effective (e.g., problem-focused, emotion-focused and/or avoidance) (Parker & Endler, 1992; Tyson & Pongruengphant, 1996). For example, long-term use of avoidance coping is know to lead to negative health effects including increased emotional distress, depression, and strain (Havlovic & Keenan, 1995). Conversely, a task-oriented/problem solving approach has been identified as a beneficial coping strategy (Ingledew, Hardy & Cooper 1997) that has been reported to be particularly effective in mitigating stress associated with role ambiguity, workload, and lack of resources (Lazarus, 1995). Interestingly, the constructs of social support and sense of control improved the use of emotion-based and problem-based coping strategies respectively (Ingledew et al, 1997). There is a need to be mindful that avoidance-based stress management initiatives such as massage therapy, relaxation, cognitive restructuring, and time management, should not be encouraged as primary coping strategies. Encouraging more active approaches through improved self-control and supportive resources may be more effective in promoting adaptive problem-based and emotion-based coping behavior.

Stress Intervention

Although there are inconsistencies in stress research, as well as multiple and conflicting environmental and individual factors involved in the stressor-strain interface, several key points need to be emphasized. First, stress is a complex multi-dimensional and intricate weave of many variables. The fact that evidence proving strong causation is not transparently evident in the research should not be interpreted to mean that connections between workplace conditions and stress do not exist, nor does it relieve organizations from their responsibility in developing work conditions and environments that minimize stress. Second, the fact that the effects of stress are significant in terms of human, business, and economic implications should provide strong motivation for pursuing stress management initiatives and related rehabilitation interventions in the event of subsequent disability. In the context of a globally competitive economy, there is no reason to anticipate that stress related to technological advancements and/or organizational change will decline on its own accord. In fact, today's stress level may only be the tip of the iceberg.

In light of the fact that workers spend approximately 40% of their waking hours at work, with personal lives largely revolving around work schedules and demands, organizations must accept that occupational stress management and accommodation for workers experiencing related mental health issues are within their realm of responsibility. Furthermore, VRPs will be required to re-think their perception of disability to become consistent with a biopsychosocial approach to intervention. Workers can no longer be viewed as biological beings that exist independent of the social and psychological environment. Regardless of primary diagnosis, integrating a worker with disability into the workplace will require knowledge of all aspects of functioning. Armed with knowledge regarding the worker's physical, social and psychological functioning, knowledgeable VRPs can employ evidence-based interventions appropriate to the individual's needs, including coping with appropriate levels of occupational stress. It is commonly suggested in stress management research that organizational changes such as job re-design for example, are superior to individual based stress management interventions such as stress management training. However, as Briner and Reynolds (1999) caution, interventions at the organizational level do not represent a universal remedy for stress management. Rather, stress management initiatives should be contextual, considering the needs and sources

of stress-related problems at both the individual and organizational level. Traditionally, individual oriented approaches have been more commonly applied by organizations, owing mainly to the fact that they are easily implemented and minimally disruptive to the workplace structure (Bellarosa & Chen, 1997). As well, person-centered intervention may be most easily accessible for VRPs that may experience little influence at the organizational level.

Stress management interventions (SMI's) can be categorized as a set of integrated levels of action involving primary, secondary, and tertiary prevention (Quick, Murphy, Hurrrell, & Orman, 1992). Primary prevention aims to alter the nature of the stressor and/or reduce or eliminate the stressor. Primary interventions can include implementing changes to re-design tasks, altering the organizational structure, improving communication, or improving worker autonomy. As proposed and validated by research (Wilson, DeJoy, Vandenberg, Richardson & McGrath, 2004), the interrelated aspects of job design, organizational climate, job future, and organizational attributes are central to organizational health, and play a crucial role in the psychological adjustment and overall well-being of employees. Traditionally however, primary strategies have not been highly favored due to their obvious complexity, effort, and time commitment.

Assuming that primary interventions alter the objective aspects of the work environment that contribute to psychological strain, they would in theory, be capable of reducing stress (Briner, 1997). However, while evaluations of organizational interventions suggest that such interventions generate some positive results in terms of outcomes and measures, findings have been largely inconsistent (Bond & Bunce, 2001; Briner & Reynolds, 1999; Griffin, 1991). However, what the available research does emphasize is the need to follow a comprehensive step-by-step process in assessing the current state of knowledge, as well as the need to plan organizational interventions to address identified gaps. Haphazard implementation of pre-packaged stress management programs will lead to little sustainable change. Rehabilitation professionals and organizations need to do their homework and be realistic about the intent of the initiative and length of time it may take before improvements are seen; it may take several years to realize the benefits of organizational change on outcome measures. Additionally, rehabilitation professional are often held to an advisory role with respect to efforts at primary prevention and can exert little influence on the actual decision to implement change. Consequently, in the case of primary prevention, VRPs often best serve their client population through the sharing of knowledge and experience with administrators that hold decision making authority for their respective institutions. According to Adams (1989), goals for corporate stress management programs must be specific, measurable, realistic, attainable, and endorsed by upper management. In an analysis of ten Dutch projects aimed at stress reduction, several key factors were identified as being critical to the success of stress management initiatives: (a) the need to systematically conduct a risk analysis, (b) the need to utilize a combination of methods including a high level of worker participation, and (c) the need to have management support for the initiative (Kompier, Geurts, Grundemann, Vink & Smulders, 1998).

Successful primary prevention initiatives are highly contingent upon the ability of the organization to implement context-specific interventions that have been tailored to the needs and goals of both the organization and the worker. This aligns to a settings approach to health promotion where efforts are directed at reducing the specific sources of stress within the context of the physical, social, and organizational environment (Noblet, 2003). The preliminary undertaking of an organizational assessment is perhaps the most crucial step in this process. It should be designed to pinpoint sources of stress and identify causal links between these sources and worker well being. Although subjective assessments through such means as stress-audits, opinion surveys, questionnaires, and employee interviews will provide invaluable qualitative information, objective data should also be collected since it has been shown to predict employee health, regardless of employee perceptions (Murphy, Hurrell, & Quick, 1992). Absenteeism rates and costs, number of stress-related disability claims, and performance and productivity measures will provide important sources of quantitative data that can serve to provide baseline information regarding current status, thus allowing for future comparisons when it comes time to evaluate stress management initiatives.

It is equally important that interventions directed

at improving organizational effectiveness incorporate open communication and elicit active employee involvement. This will facilitate improved employee understanding and subsequently improved support for such initiatives (Wilson et al, 2004). Schweiger and DeNisi (1991) found that communication via telephone hotlines, meetings, and newsletters, resulted in fewer negative outcomes related to a pending merger. Clearly, an isolated approach to improvement where changes are developed and implemented by management with little or no input from employees and little information sharing, will significantly hamper employee commitment and organizational culture. On the other hand, a comprehensive approach where employees have involvement and control in the planning and implementation of multiple interventions directed at various levels of the organization (e.g., individual, work group, department, etc) is more likely to lead to long-term success (Murphy, et al., 1992). This integrated approach not only conveys respect and value for the employee and their opinion(s), but also helps to foster employee alignment and support, keys to the success of organizational stress management initiatives.

Despite the hesitancy of organizations to manage stress at the organizational level, recently efforts have been directed at reducing stressors related to work-life balance issues. With more women in the workforce and a higher prevalence of dual-income and blended families, work demands can at times conflict with family responsibilities. Flexible work arrangements such as reduced and/or compressed work weeks, flexibility in days/hours worked, and family related leaves of absence, have provided employees with increased latitude to accommodate personal, family, and work demands. The outcome of data obtained from the U.S. *National Study of the Changing Workforce* found that flexible work policies not only led to improved commitment to the employer, fewer stress-related symptoms, and reduced employer costs related to absenteeism, but the greater the number of policies, the more significant were the outcomes (DeFrank & Ivancevich, 1998; Halpern, 2005). This finding reinforces the importance of individual control and decision latitude in managing stress, regardless of its source. Although VRPs may have little influence with respect to implementing these types of initiatives, they maintain a primary responsibility for having awareness and knowledge about the types of initiatives offered within client worksites. Additionally, this responsibility encompasses the willingness to share this information and aid clients in accessing all appropriate avenues available for reducing workplace stress.

Secondary prevention is the most common workplace stress intervention implemented by organizations and accessed by VRPs. This intervention form typically takes the form of training in the areas of time management, coping, assertiveness, cognitive-restructuring, and relaxation, but can also include such activities as physical fitness and meditation. Aimed at behavior-centered interventions, secondary SMI's are designed to reduce and/or moderate the worker's response to stressors rather than address the underlying root cause(s). Although secondary interventions do not address sources of stress, they can improve employee resilience, improve coping abilities, and empower the employee to take more personal control in managing workplace stress. Often however, results of these individual-oriented approaches are short-lived (Briner, 1997) and/or inconclusive (Bellarosa & Chen, 1997). These limited and mixed results may be related to a tendency to conceptualize such interventions as treatment that will cure the problems at hand. As pointed out by Briner (1997) however, it may be unrealistic to expect improvements in psychological measures owing to the fact that these interventions are preventive rather than curative. In an evaluation of secondary interventions (e.g., relaxation, physical fitness, meditation, assertiveness training, stress inoculation, and cognitive re-structuring) by stress management subject matter experts, relaxation, while deemed to be the most practical intervention, was not viewed as the most effective (Bellarosa & Chen, 1997), whereas physical fitness was predicted to be the most effective intervention of the selected intervention types. Consequently, when attempting to integrate a worker with a disability into the workplace, encouraging the continuation of physical fitness programs, often initiated as an aspect of preliminary rehabilitation programming, may result in a secondary benefit of decreased workplace stress related to the return-to-work process.

Enhancing social support within the workplace is a secondary prevention strategy that has received

much attention. Realizing the importance of support in the dynamics of the stress-strain relationship has resulted in support being added to the Demand-Control theory. With the social domain exerting a significant influence on the organizational climate (Wilson, et al., 2004), the importance of social support networks in the organizational setting should not be underestimated. Building conflict resolution skills, identifying supportive resources available to employees, team building, formal and/or informal workplace support groups, and institution of a mentoring system, can all assist in fostering support within the work setting. VRPs can provide the worker with opportunities for increasing workplace social support by making workers aware of available worksite social activities and encouraging them to engage. The encouragement of social interaction can also extend beyond the workplace. For example, assisting an employee to research clubs and organizations within the surrounding community can provide an opportunity for increased social support outside of one's employment. Such interactions may be particularly beneficial given the opportunity for the worker to engage in social interaction with others having similar interests.

Counseling, commonly provided through an organization's Employee and Family Assistance Program (EFAP), is one of the most common tertiary prevention strategies aimed at reducing existing psychological distress. Although there is evidence to support the value of psychotherapy and counseling in reducing distress levels, there has been little evidence of benefits to attendance or performance measures (Firth & Shapiro, 1986; Firth-Cozens & Hardy, 1992; Mintz, Mintz, Arruda & Hwang, 1992). A study evaluating the effectiveness of relaxation, cognitive behavioral type interventions, organizational focused interventions, and multi-modal interventions aimed at learning coping skills, found cognitive behavioral interventions to be most effective in terms of complaints, quality of life, and psychological resources and responses (van der Klink, Blonk, Schene & van Dijk, 2001). It is important to note however, that cognitive behavioral interventions, relaxation, and multi-modal interventions are directed only at the individual. Their purpose bears "little relation to the organizational level intervention and therefore, to ask the question 'which type of intervention is more effective?' may simply be the wrong question to ask" (p. 659). This highlights the need to provide the right intervention for the right problem and stresses the importance of conducting a comprehensive analysis of the sources of strain within the workplace. While a referral to the company's Employee Assistance Program may be beneficial in helping an employee cope with the loss of a loved one, it may not be the most effective means for dealing with pervasive organizational stressors. In short, VRPs must have a strong knowledge of evidence-based recommendations for specific stress related ailments and should make appropriate referrals or provide organizational advice based upon this knowledge. Additionally, VRPs should be familiar with the EFAP provided at client worksites such that, if counseling is an appropriate referral, the VRP can provide the employee with information and assistance in accessing the services.

Conclusion

In summary, stress is a major issue in terms of its humanistic and fiduciary implications and, as such, several key recommendations for VRPs were highlighted throughout. Specifically, these recommendations are as follows:

- In every circumstance, the abilities, rather than the disabilities, of the employee must be the focus of any return to work process or workplace accommodation. All stakeholders benefit from the retention of valued employees, regardless of the existence of disability.
- It is no longer appropriate to view a worker as a primarily biological being. Even in the event of a physical disability, the worker must be viewed from a biopsychosocial perspective. Intervention and accommodation, whether temporary or permanent, must also occur from this perspective in order to be effective.
- The VRP has a responsibility to help present the workers' abilities to the employer and, in turn, familiarize the worker with available stress-related and other health-based, employer initiatives and subsequently, provide assistance in accessing these programs.
- VRPs may be in the difficult position of having little influence over organizational policy and procedure.

However, VRPs are also in the unique position of having direct experience and knowledge related to the worker - this knowledge can be an invaluable asset to an organization.

- Encouraging ongoing participation in a physical fitness program combined with providing support for increased or continued social networking may be effective methods for helping clients reduce stress.
- Research has supported several additional predictors for increased occupational stress (reviewed in this article). Helping clients engage in efforts to reduce these predictors may be beneficial in overall stress reduction.
- VRPs must place a primary focus on continuing education, including familiarization with available workplace services as well as evidence-based recommendations for intervention.

Several key recommendations for organizations were also highlighted throughout. Specifically, these recommendations are as follows:

- Managing workplace stress should be considered a fundamental aspect of managing and preventing disabling workplace illness and/or injury as well as reducing disability costs.
- Organizations need to consider return-to-work (RTW) issues within the context of job-specific, organizational and individual factors (e.g., job control, job complexity, decision latitude, resources, personality, etc.).
- From an organizational perspective, long-term, comprehensive strategies to address workplace stress are the only viable option. Short-term 'one-off' interventions are unlikely to reduce the impact of stress-related disability.
- In order to provide effective management of RTW initiatives, organizations will have to address stress management at both the individual and organizational level.
- It should be considered ineffective to provide stress-management training and/or treatment to an employee with a disability only to return the employee to the same workplace situation that resulted in the stress-related disability in the first instance.

Workplace stress creates substantial human and financial cost. Preventing and managing the untoward effects of stress related to work environment and work design, provides perhaps one of the greatest opportunities for vocational rehabilitation professionals and/or organizations to build capability, enhance efficiency, and reduce disability. All workplace stakeholders can benefit from the reduction of occupational stress and/or the retention of employees who experienced disability as a result.

References

Adams, J. D. (1989). Creating and maintaining comprehensive stress Management training. In L. R. Murphy & T. F. Schoenborn. (Eds.), *Stress Management in Work Settings,* (pp.87-100). New York: Praeger.

Albright, C. L., Winkleby, M. A., Ragland, D. R., Fisher, J., & Syme, S. L. (1992) Job strain and prevalence of hypertension in a biracial population of urban bus drivers. *American Journal of Public Health*, *82*(7), 984-989.

Arnetz, B. (2005). Subjective indicators as a gauge for improving organizational well-being. An attempt to apply the cognitive activation theory to organizations. *Psychoneuroendocrinology*, *30*, 1022-1026.

Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, *10*(2), 170-180.

Beehr, T. A., & Bhagat, R. S. (1985). Introduction to human stress and cognition in organizations. In T. A. Beehr & R. S. Bhagat (Eds.), *Human stress and cognition in organizations: An integrated perspective* (pp. 3-19). New York: Wiley.

Beehr, T. A., Jex, S. M., Stacy, B. A., & Murray, M. A. (2000). Work stressors and coworker support as predictors of individual strain and job performance. *Journal of Organizational Behavior, 21,* 391-405.

Bellarosa, C., & Chen, P. Y. (1997). The effectiveness and practicality of occupational stress management interventions: A survey of subject matter expert opinions. *Journal of Occupational Health Psychology*, *2*(3), 247-262.

Bellman, S., Forster, N., Still, L., & Cooper, C. (2003). Gender differences in the use of social support as a moderator of occupational stress. *Stress and Health*, *19*, 45-58.

Bond, F. W., & Bunce, D. (2001). Job control mediates change in a work reorganization intervention for stress reduction. *Journal of Occupational Health Psychology*, *6*(4), 290-302.

Bosma, H., Stansfeld, S. A., & Marmot, M. G. (1998). Job control, personal characteristics, and heart disease. *Journal of Occupational Health Psychology*, *3*(4), 402-409.

Brief, A. P., & George, J. M. (1991). Psychological stress in the workplace: A brief comment on Lazarus' outlook. In P. L. Perrewe (Ed.), *Handbook on job stress,* (pp 15-20). Corte Madera, CA: Select Press.

Brief, A. P., Burke, M. J., George, J. M., Robinson, B. S., & Webster,

J. (1988). Should negative affectivity remain an unmeasured variable in the study of job stress? *Journal of Applied Psychology*, *73*, 207-214.

Briner, R. B. (1997). Improving stress assessment: Toward an evidence-based approach to organizational stress interventions. *Journal of Psychosomatic Research*, *43*(1), 61-71.

Briner, R. B., & Reynolds, S. (1999). The costs, benefits, and limitations of organizational level stress interventions. *Journal of Organizational Behavior, 20*, 647-664.

Cooper, C. L. (1996). Working hours and health. *Work and Stress*, *10*, 1-4.

Cooper, C. L., Dewe, P. J., & O'Driscoll, M. P. (2001). *Organizational stress: A review and critique of theory, research, and applications*. Thousand Oaks, CA: Sage Publications.

Coyle, J. (2005, June 11). MP's flight sends wrong message on stress. *Toronto Star*. http://www.thestar.com/NASApp/cs/ContentServer?pagen...c=Article&cid=1118441412017&call_pageid=970599109774

DeFrank, R. S., & Ivancevich, J. M. (1998). Stress on the job: An executive update. *Academy of Management Executive*, *12*(3), 55-66.

Dollard, M. F., & Winefield, A. H. (1998). A test of the demand-control support model of work stress in correctional officers. *Journal of Occupational Health Psychology, 3*(3), 243-264.

Elkin, A. J., & Rosch, P. G. (1990). Promoting mental health at work. *Occupation Medicine State of the Art Review, 5,* 739-754.

Edwards, J. E. (1996). An examination of competing versions of the person-environment fit approach to stress. *Academy of Management Journal*, *39*(2), 292-339.

Edwards, J. R., & Cooper, C. L. (1990). The person-environment fit approach to stress: Recurring problems and some suggested solutions. *Journal of Organizational Behaviour, 11,* 293-307.

Fiske, S. T. (1998). Stereotyping, prejudice and discrimination. In D. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology (4th Ed.)*, 446-496. NY: McGraw-Hill.

Fletcher, B. C., & Jones, F. (1993). A refutation of Karasek's demand-discretion model of occupational stress with a range of dependent measures. *Journal of Organizational Behavior*, *14*(4). 319-330.

French, J. R. P., Jr., Caplan, R. D., & Harrison, R. V. (1982). *The mechanisms of job stress and strain.* New York: Wiley.

Ganster, D. C., & Fusilier, M. R. (1989). Control in the workplace. In C. L. Cooper & I. Robertson (Eds.), *International Review of Industrial and Organizational Psychology*. 235-280. Chishester, England: Wiley.

Griffin, R. W. (1991). Effects of work re-design on employee perceptions, attitudes, and behaviors: A long-term investigation. *Academy of Management Journal, 34*, 425-435.

Halpern, D. F. (2005). How time-flexible work policies can reduce stress, improve health, and save money. *Stress and Health*, *21*, 157-168.

Haslam, S. A., Jetten, J., O'Brien, A., & Jacobs, E. (2004). Social identity, social influence and reactions to potentially stressful tasks: support for the self-categorization model of stress. *Stress and Health*, *20*, 3-9.

Havlovic, S. J., & Keenan, J. P. (1995). Coping with work stress: The influence of individual differences. In R. Crandall & P.L. Perrewe (Eds.), *Occupational Stress* (pp. 179-206). Washington, D.C.: Taylor & Francis.

House, J. S. (1981). *Work, stress, and social support*. Reading, MA: Addison-Wesley.

Ingledew, D. K., Hardy, L., & Cooper, C. L. (1997). Do resources bolster coping and does coping buffer stress? An organizational study with longitudinal aspect and control for negative affectivity. *Journal of Occupational Health Psychology*, *2*(2), 118-133.

Jones, F., Bright, J. E., Searle, B., & Cooper, L. (1998). Modeling occupational stress and health: The impact of the demand-control model on academic research and on workplace practice. *Stress Medicine*, *14*, 231-236.

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administration Science Quarterly, 24,* 285-307.

Kivimaki, M., & Kalimo, R. (1996). Self-esteem and the occupational stress process: testing two alternative models in a sample of blue-collar workers. *Journal of Occupational Health Psychology*, *1*(2), 187-196.

Kompier, M. A., Guerts, S. A., Grundemann, R. W., Vink, P., & Smulders, P. G. (1998). Cases in Stress Prevention: The Success of a Participative and Stepwise Approach, *14*, 155-168.

Lazarus, R. S. (1995). Psychological stress in the workplace. In Crandall, R. & Perrewe, P. L. (Eds.), *Occupational Stress* (pp. 3-14). Washington, DC: Taylor & Francis.

Linton, M. (2005, Sept 14). A big business disability. *Financial Post*. http://www.canada.com/components/printstory/printstory4.aspx?id=8014a9ef-1fb2-4af9-94ce-ff38e7ec9922

Lyon, B. (2000). Stress, coping, and health. In V. Rice (Ed.), *Handbook of Stress, Coping, and Health: Implications for Nursing Research, Theory, and Practice* (pp 3-23). Thousand Oaks, CA: Sage Publications.

Mackie, K. S. Holahan, C. K., & Gottlieb, N. H. (2001). Employee involvement, management practices, and depression in employees of a human services residential care facility. *Human Relations*, *54*, 1065-1092.

Manning, M. R., Jackson, C. N., & Fusilier, M. R. (1996). Occupational stress and health care use. *Journal of Occupational Health Psychology*, *1*(1), 100-109.

Marshall, N. L., Barnett, R. C., & Sayer, A. (1997). The changing workforce, job stress, and psychological distress. *Journal of Occupational Health Psychology, 2*(2), 99-107.

Mausner-Dorsch, H., & Eaton, W. W. (2000). Psychological work environment and depression: Epidemiologic assessment of the demand-control model. *American Journal of Public Health*, *90*(11), 1765-1770.

Mintz, J., Mintz, L. I., Arruda, M. J., & Hwang, S. S. (1992). Treatments of depression and the functional capacity to work. *Archives of General Psychiatry, 49*(10), 761-768.

Morrison, D., Payne, R. L., & Wall, T. D. (2003). Is a job a viable

unit of analysis? A multilevel analysis of demand-control support models. *Journal of Occupational Health Psychology, 8*(3), 209-219.

Murphy, L., Hurrell, J., & Quick, J. C. (1992). Work and well-being: Where do we go from here? In J. C. Quick, L. R. Murphy, & J. J. Hurrell, Jr. (Eds.), *Stress and well being at work: Assessments and Interventions for occupational mental health* (pp. 331-347). Washington, DC: American Psychological Association.

National Institute for Occupational Health and Safety. (1999). Stress at Work. DHHS (NIOSH) Publication No. 99-101. Retrieved on October 10, 2005 from http://www.cdc.gov/niosh/stresswk.html

Noblet, A. (2003). Building health promoting work settings: Identifying the relationship between work characteristics and occupational stress in Australia. *Health Promotion International, 18*(4), 351-359.

Northwestern National Life. (1991). *Employee Burnout: America's Newest Epidemic*. MN: Northwestern National Life Insurance Company.

Parker, J. D. A., & Endler, N. S. (1992). Coping with coping assessment: A critical review. *European Journal of Personality, 6,* 321-344.

Parkes, K. R. (2003). Shiftwork and the environment as interactive predictors of work perceptions. *Journal of Occupational Health Psychology*, *8*(4), 266-281.

Perrewe, P. L., & Zellars, K. L. (1999). An examination of attributions and emotions in the transactional approach to organizational stress. *Journal of Organizational Behavior*, *20*, 739-752.

Quick, J. C., Nelson, D. L., Quick, J. D., & Orman, D. K. (2001). An isomorphic theory of stress: The dynamics of person-environment fit. *Stress and Health*, *17*, 147-157.

Quick, J. C., Murphy, L. R., Hurrell, J. J., Jr., & Orman, D. (1992). The value of work, the risk of distress, and the power of prevention. In J. C. Quick, L. R. Murphy, & J. J. Hurrell, Jr. (Eds.), *Stress and well being at work: Assessments and Interventions for occupational mental health,* (pp. 3-13). Washington, DC: American Psychological Association.

Rosenman, R. H., Brand, R. J., Sholtz, R. I., & Friedman, M. (1976). Multivariate prediction of coronary heart disease during 8.5 year follow-up in the Western Collaborative Group Study. *American Journal of Cardiology, 37,* 903-910.

Schat, A. C., & Kelloway, E. K. (2003). Reducing the adverse consequences of workplace aggression and violence: The buffering effects of organizational support. *Journal of Occupational Health Psychology*, *8*(2), 110-122.

Schwartz, J. E., Pickering, T. G., & Landsbergis, P. A. (1996). Work-related stress and blood pressure: Current theoretical models and considerations from a behavioral medicine perspective. *Journal of Occupational Health Psychology*, *1*(3), 287-310.

Schweiger, D. M., & DeNisi, A. S. (1991). Communication with employees following a merger: A longitudinal field experiment. *The Academy of Management Journal, 34*(1), 110-135.

Sikora, P. B., Beaty, E. D., & Forward, J. (2004). Updating theory on organizational stress: The asynchronous multiple overlapping change (AMOC) model of workplace stress. *Human Resource Development Review*, *3*(1), 3-30.

Stone, A., Greenberg, M., Kennedy-Moore, E., & Newman, M. (1991). Self-report, situation-specific coping questionnaires: What are they measuring? *Journal of Personality and Social Psychology*, *61*(4), 648-655.

Strazdins, L., D'Souza, R. M., Lim, L. L., Broom, D. H., & Rodgers, B. (2004). Job strain, job insecurity, and health: Rethinking the relationship. *Journal of Occupational Health Psychology, 9*(4), 295-305.

Sutherland, J. E. (1991). The link between stress and illness. Do our coping mechanisms influence our health? *Postgraduate Medicine, 89*(1), 159-164.

Tilmann, J. N., & Beard, M. T. (2001). Manager's Healthy Lifestyles, Coping Strategies, Job Stressors, and Performance: An Occupational Stress Model. *The Journal of Theory Construction and Testing*, 5(1), 7-11.

Theorell, T., & Karasek, R. A. (1996). Current issues relating to psychosocial strain and cardiovascular disease research. *Journal of Occupational Health Psychology, 1*, 9-26.

Tyson, P. D. & Ponguengphant, R. (1996). Avoidance as a coping strategy for nurses in Thailand. *Psychological Reports, 79,* 592-594.

Tyson, P. D., Pongruengphant, R., & Aggarwal, B. (2002). Coping with organizational stress among hospital nurses in Southern Ontario. *International Journal of Nursing Studies*, *39*(4), 453-459.

Van der Klink, J. J., Blonk, R. W., Schene, A. H., & van Dijk, F. J. (2001). The benefits of interventions for work-related stress. *American Journal of Public Health*, *91*(2), 270-276.

Verhaeghe, R., Mak, R., Van Maele, G., Kornitzer, M., & De Backer, G. (2003). Job stress among middle-aged health care workers and its relation to sickness absence. *Stress and Health*, *19*, 265-274.

Wang, J. L., & Patten, S. B. (2001). Perceived work stress and major depression in the Canadian employed population, 20-49 years old. *Journal of Occupational Health Psychology*, *6*(4), 283-289.

Warshaw, L. J. (1988). Occupational stress. *Occupational Medicine, 3,* 587-593.

Wiesner, M., Windle, M., & Freeman, A. (2005). Work stress, substance abuse, and depression among young adult workers: An examination of main and moderator effects models. *Journal of Occupational Health Psychology*, *10*(2), 83-96.

Wilson, M. G., DeJoy, D. M., Vandenberg, R. J., Richardson, H. A., & McGrath, A. L. (2004). Work characteristics and employee health and well-being: test of a model of healthy work organization. *Journal of Occupational and Organizational Psychology*, *77*, 568-588.

World Health Organization. (2004). Mental health and working life. Retrieved on October 10, 2005 from http://www.euro.who.int/document/mnh/ebrief06.pdf.

About the Authors

Joanna Noonan, OHN, MA, is a practicing Occupational Health Nurse in Ontario, Canada. She holds a Master's of Arts in Disability Management from the University of Northern British Columbia.

Shannon L. Wagner, MSc, Ph.D., R.Psyc., is an Associate Professor in the Health Science Program at the University of Northern British Columbia in British Columbia, Canada. She teaches courses in disability management, research methods and epidemiology and her research interests are focused around occupational mental health, especially as it relates to traumatic stress within the workplace.

Guest Editorial: Vocational Evaluation and Addictions: Emerging Evidence and Practice

Joseph E. Keferl
Margaret Glenn

About this Special Topic…

Over the past two decades, evidence has clearly shown that people with disabilities experience substance use disorders and other addictions (SUDAOA) at higher rates than the general population. In many cases, the problems associated with SUDAOA result in significant risk for exacerbating physical and mental health conditions, jeopardizing employment opportunities, and creating additional barriers to full inclusion and independence in the community. Of particular concern to improving the capacity of rehabilitation counseling services to respond to individuals with SUDAOA and disability is the screening to detect such vulnerabilities. Recent research has indicated that formal screening and assessment has been lacking for SUDAOA, and has thus resulted in additional challenges to confront concerns in a timely, appropriate, and truly holistic manner. Special issues on SUD are not new, with the most recent being published during the summer of 2008 in the Journal of Applied Rehabilitation Counseling (JARC). What has been missing as of late in the evaluation literature, is the recognition of how critical early and accurate detection of behavioral addictions is in the rehabilitation counseling process, and that alcohol and drugs may not be the only areas of behavioral addictions that may erode VR outcomes. In these challenging times, with outcomes being prioritized more strongly than ever, having the best-most accurate "picture" of the consumer is paramount to establishing a strong working relationship, expanding the team needed to support the consumer, and planning timely and appropriate consumer-driven services.

This special topic attempts to approach these gaps in our understanding of the vocational evaluation process and SUDAOA, and provide information designed to enhance the capacity and awareness of today's Vocational Evaluator. We hope the information in this issue provides helpful tools for you in your practice, and helps us challenge and improve how we provide Vocational Evaluation services for people with SUDAOA. Considerable effort was taken to include input and review of all content on this special topic from the perspectives of those in academia, students, and (most importantly) practitioners. Special thanks to: Russ Thelin, Tim Janikowski, Melissa Jones, Arnold Wolf, Frank Lane, Christine Anderson, Kristi Openshaw, Jay Leeming, Jared Schultz, Beth Boland, and Daniel Kelsey for their time, energy, and efforts in making this issue come to life. Additional recognition is due to VEWAA Editor, Mike Millington for agreeing to address this important topic, and for all contributing authors who spent time sharing their knowledge, research and resources. Well done!

Use of the Addiction Severity Index in Vocational Evaluation for Persons with Substance Use Disorders

W. Leigh Atherton
Paul J. Toriello
Steven R. Sligar
Tracie E. Campbell
East Carolina University

Persons with Substance Use Disorders (SUD) continue to have a higher rate of unsuccessful case closures following the receipt of Vocational Rehabilitation (VR) services, compared to those without SUD. Integration of the Addiction Severity Index (ASI) into the Vocational Evaluation (VE) process will provide an opportunity to reduce barriers persons with SUD face when receiving VR/VE services. The aim of this paper is three-fold. First, an overview of the role of employment within the recovery process for persons with SUD is provided. Second, the role of VE for persons with SUD is explored. Finally, the ASI is presented as an effective assessment tool for vocational evaluators to utilize when interacting with persons with SUD.

Author note: W. Leigh Atherton is a doctoral candidate, Paul Toriello is an associate professor and Steven Sligar is an assistant professor in the Department of Rehabilitation Studies at East Carolina University. Tracie E. Campbell is the Project Coordinator of Project Working Recovery at East Carolina University. Correspondence pertaining to this article can be sent to W. Leigh Atherton at wla0130@ecu.edu or 4425 HS Bldg., ECU, Greenville, NC 27858-4353.

For persons with substance use disorders (SUD), employment services typically focus on the transition from a chaotic drug/alcohol misusing lifestyle to a more structured, work-based mode (Platt, 1995). Making this transition involves more than gaining employment. Persons with SUD face a complex set of barriers to transition including higher levels of legal involvement (Schottenfeld, Pascale, & Sokolowski, 1992), physical disabilities and/or mental health disorders (Arella, Deren, Randell, & Brewington, 1990), and lack of motivation to seek employment (Lidz, Sorrentino, Robison, & Bunce, 2004). These barriers have limited the success of employment interventions and little has been done to systematically address them (Platt, 1995). There is a long standing need for further examination of characteristics and factors associated with successful employment outcomes of persons with SUD.

Prior studies have found employment to be related to improved psycho-social functioning of persons with SUD, such as better overall social adjustment and well being (Arella et al., 1990; Kidorf, Neufeld, & Brooner 1994), decreased involvement in illegal activities (Magura, Staines, Blankertz, & Madison, 2004), and decreased substance use (Gerra et al., 2003; Kirdorf et al., 1994). There is a consensus among professionals in the substance abuse field that employment plays an important role in the addiction recovery process (Magura et al., 2004). However, despite employment being viewed as an integral dimension to one's recovery, there remains a low level of effective employment services in most substance abuse treatment programs (Center for Substance Abuse Treatment [CSAT], 2000).

Vocational evaluators provide consumers with necessary information and resources for making informed vocational decisions that are critical to successful vocational outcomes (Ahlers et al., 2003). Vocational evaluation (VE) involves thorough assessment and evaluation of a consumer's individualized circumstances. Due to the effort to integrate vocational services into the substance abuse treatment process, vocational evaluators and rehabilitation counselors are experiencing an influx of referrals of persons with SUD (Magura et al., 2004).

This provides a unique and much needed opportunity for those seeking services. However, persons with SUD present a challenge to the VE process on a number of factors. Sligar and Toriello (2007) note three particular barriers for addressing SUD during the VE process: (a) time constraints of assessing for substance abuse due to large caseloads, (b) perceived or actual lack of expertise in appropriately serving persons with SUD, and (c) inconsistent guidelines on the evaluation and/or referral for persons with SUD.

The aim of this paper is three-fold. First, we will describe the role of employment within the recovery process for persons with SUD, including an examination of the lack of collaboration between traditional substance abuse treatment and vocational services. Second, we will explore the potential role of VE for persons with SUD in general. Finally, we will focus on the Addiction Severity Index (ASI; McLellan, Luborsky, O'Brien, & Woody, 1980) as an effective assessment VE tool for serving persons with SUD.

Employment and Persons with Substance Use Disorders

In the substance abuse field, there is a common belief that employment has a positive impact on maintaining recovery from SUD. Employment has been viewed as a "potential facilitator of recovery; as a means of relapse prevention; and as an indication that one has successfully separated from a former lifestyle" (Magura et al., 2004, p. 2167). Research has demonstrated that active employment increases retention in substance abuse treatment and lowers incidence of relapse (e.g., Platt, 1995; McLellan, Luborsky, Cacciola, & Griffith, 1985). Further, research has demonstrated a relationship between gainful employment and such factors as heightened self-esteem, self-efficacy, and self-concept (Comerford, 1999), as well as an increased sense of responsibility and structure within one's life (Magura et al., 2004). For those in recovery from SUD, being employed can also be viewed as a vehicle for re-integration into society. Goodwin and Kennedy (2005) describe the value of employment as both an improvement in one's social functioning and a means to reduce social exclusion.

Despite employment being viewed as an integral dimension in recovery from SUD, the integration of vocational services into substance abuse treatment remains minimal. Within treatment programs, employment related services are typically viewed as ancillary; the primary focus of treatment revolves around drug and alcohol abuse (Friedmann, Lemon, Durkin, & D'Aunno, 2003). Often, consumers will receive treatment for their substance abuse and then receive a referral for employment related services post discharge. Unfortunately, upon discharge, only a small percentage follow-up with such referred services (Brucker, 2007). Unemployment among this population appears to be an issue requiring attention early in the treatment process.

Substance abuse treatment professionals have attempted to integrate vocational counseling models for the past decade (e.g., Blankertz et al., 2004; Kirdorf et al., 2004), but it "remains one of the least documented and under-evaluated support services offered to this population" (Magura & Staines, 2004, p. 2159). Access to vocational services for persons with SUD has slightly increased since the mid-1990s; however, only 33% of outpatient and 58% of inpatient/residential substance abuse treatment programs reported the inclusion of vocational rehabilitation services in 2002 (Substance Abuse and Mental Health Services Administration, 2003). Vocational rehabilitation services (e.g., case-management, job placement, and job skills training and education) are typically viewed by treatment providers as ancillary. With ever-present budgetary constraints set forth by managed care, the primary modes of counseling service being offered to consumers consists of individual and group SUD-related counseling (Platt, Widman, Lidz, Rubenstein, & Thompson, 1998). Consequently, the provision of vocational counseling services comes in the form of referrals to community agencies post discharge.

To compound the issue, community based vocational rehabilitation (VR) programs tend to have rigid eligibility requirements concerning the substance abuse population, often requiring sustained periods of abstinence (Magura et al., 2004). Further, knowledge and familiarity of SUD related issues are often minimal for community VR counselors (Platt, 1995). Instead of integrating vocational related interventions within the holistic framework of treatment, traditional substance use treatment and vocational services are treated as

separate entities.

The Role of VE for Persons with SUD

Vocational evaluators seek to provide an individualized assessment that leads to a successful rehabilitation outcome (Ahlers et al, 2003). Thomas (1997) refers to the process inherent in VE as "comprehensive… so that all variables directly and indirectly affecting success are considered" (p. 3). Assessing an individual's employability and placeability goes beyond the exploration of work history and vocational skills. Indirect factors such as psychological deficits, legal history, and social temperament can affect one's ability to successfully enter or re-enter the workforce. This is particularly true for persons with SUD.

Substance abuse has important implications for employment and the VE process. Lower rates of employment, sporadic employment patterns, and lower job retention rates are consistent outcomes among persons with SUD (Platt, 1995). Problems associated with SUD include more frequent illnesses and the inability to limit the use of substances, which has been shown to negatively affect job satisfaction and stability (Galaif, Newcomb, & Carmona, 2001). High employee turnover, excessive absenteeism, poor morale, decreased productivity, and management time spent on disciplinary problems associated with substance use represent significant costs to employers and society (Hubbard, Craddock, Flynn, Anderson, & Etheridge, 1997). Unfortunately, the barriers to employability of persons with SUD do not simply disappear with the cessation of alcohol and/or drugs, nor does time play as significant of a factor in the elimination of such barriers as traditionally believed. A consumer with a felony on his or her record, for example, will continue to face difficulties gaining employment long after the substance use has stopped. Persons with SUD will often require a VR plan that encompasses the unique barriers and problem areas developed through a history of SUD.

Despite the awareness of these unique barriers and problems, persons with SUD continue to have a higher rate of unsuccessful case closures following the receipt of VR services, compared to the rate of unsuccessful case closures for all disabilities. (Hollar, 2008). Possible explanations for this phenomenon have noted that VE practitioners may lack the skill or training required to appropriately assess for SUD and related problem areas (Hollar, 2008; Sligar & Toriello, 2007), practitioners may be burdened by time constraints of assessing for substance abuse due to large caseloads, and/or face potential inconsistent guidelines on the evaluation and/or referral for persons with SUD (Sligar & Toriello, 2007). One remedy for addressing the potential barriers VE practitioners face when working with persons with SUD is the integration of a specialized assessment instrument for assessing SUD and associated consumer issues.

The Addiction Severity Index (ASI) is an exemplary instrument for considered VE applications. The ASI provides a multi-faceted overview of an individual along seven major life areas: alcohol use, drug use, psychiatric health, medical health, employment/supports, criminal behavior, and family/interpersonal relations. Use of the ASI during VE can serve to address the aforementioned barriers faced by VE practitioners. First, training required to administer the ASI would provide VE practitioners a foundational overview of SUD and related problem areas (Wicks, 2004). Practitioners will then be better equipped to navigate these areas during the VE process, providing for a better understanding of the consumers they are evaluating. Second, utilization of the ASI, as a multidimensional instrument, as part of the VE process would incorporate a screening of recent and past substance use. Lastly, the assessment across seven problem domains and the interviewer's Severity Ratings would indicate problem areas and how much there is a 'need' for services in that domain. Thus, utilization of the ASI allows the evaluator to match a consumer's services with his or her individual needs. The following section will provide a brief overview of the ASI and an evaluation of the ASI as a potential instrument in VE.

The Addiction Severity Index

The ASI (McLellan et al., 1980) is a requisite component of evaluation in more than twenty state and the Veterans administration, a recognized standard in clinical trials, and a globally accepted instrument with over twenty different language translations (McLellan, Cacciola, Alterman, Rikoon, & Carise, 2006). The ASI

is a multidimensional assessment instrument for both clinical and research purposes in the substance abuse field. As a semi-structured interview, the ASI assesses an individual's issue severity across seven domains namely alcohol use, drug use, psychiatric health, medical health, problems pertaining to employment/supports, criminal behavior, and family/interpersonal relations. Items for each of the seven domains address both current (i.e. past 30 days) and lifetime symptoms and functioning. Through decades of psychometric testing, these items have shown test-retest reliability, as well as concurrent, predictive, and discriminate validity (McLellan et al., 2006) for adult males and females from various ethnic backgrounds. The ASI generates severity scores that are derived from responses to specific items in each of the domains, yielding seven separate severity scores. ASI severity scores have been shown to be reliable and valid in a variety of clinical populations (Carise et al., 2001) and across consumers of varying demographic features and problem areas (Wertz, Cleaveland, & Stephens, 1995). The clinical aims of the ASI are to identify an individual's problem areas requiring further exploration.

Evaluation of the ASI as a VE Instrument

Instruments have an integral role within the VE process. Vocational evaluators are challenged to remain knowledgeable of the newest and most effective instruments available. Moreover, vocational evaluators are further charged with the task of choosing the instrument(s) that most appropriately meet the needs of the consumers they serve. Evaluating the utility of the ASI within the VE process requires professional consideration of professional competence and scope of practice, appropriateness, administration, scoring, interpretation, and usability (Cox, 2007).

Professionals' competence and scope of practice. The ASI is a semi-structured interview. McLellan et al. (1986) reported there being no educational or professional background characteristics of interviewers that have shown to be reliably associated with ASI interview proficiency. Thus, with appropriate training, the ASI is a potential assessment tool for a variety of service providers within multiple fields of expertise. For example, ASI training has been provided to such service providers as law enforcement officers, undergraduate students, Master's level trained clinicians, and receptionists (McLellan et al., 1985). Results disseminated from these training experiences echo the findings of Wertz et al. (1995) who reported strong inter-rater reliability of ASI interviewer trainees. In this study, interviewers' education level ranged from GED/HS diploma to Master's level clinical degree. Even though research revealed no standard requirements in terms of educational level or field of expertise to learn and delivery the ASI interview proficiently, McLellan et al., (1985) noted a number of personal characteristics that mediate ones' ability to proficiently conduct the ASI assessment.

ASI interviewers that are more likely to demonstrate proficiency demonstrate a similar set of personal qualities. Given the face–to–face nature of the interview, and the content assessed during the interview, the ability to maintain a personable, supportive, and non-judgmental approach is of utmost importance. Consumers who believe their interests are not being heard or believe they are being judged will respond with increased resistance, thus impacting the validity of responses (Barber et al., 1999). A second basic quality necessary for competent interviewing with the ASI is the ability to help consumers identify specific problem areas and understand each item in relation to the specified domain. This requires interviewers to gather information in a responsible and systematic manner (McLellan et al., 1985). A third personal quality of ASI interviewers is maintaining a working knowledge of the ASI items and their meaning to persons with SUD. For example, a vocational evaluator who is unfamiliar with persons with SUD may not know appropriate follow up or clarification questions to ask during the alcohol use and drug use sections. A potential drawback of this would be the interviewer setting an initial severity rating that does not accurately represent the 'reality' of the consumer's situation. Training in the ASI interview process coupled with continued professional development activities to keep abreast of most current information pertaining to the populations served is a way to minimize the interference of personal characteristics.

Comprehensive ASI training and administration manuals for interviewers interested in conducting an ASI assessment are public domain. These materials allow for practitioners to self-train in the procedure of conducting an ASI interview. This is convenient for

those unable to attend specific training workshops and/or organizations unable to afford to send staff to be formally trained. Because studies have shown that inter-rater reliability is dependent upon quality training (i.e., Spear, Brown & Rawson, 2005), practitioners should receive formal training from a proficient ASI interview trainer.

Appropriateness for intended population. The ASI is a valid instrument for assessing persons' with SUD problem severity across seven domains (Carise et al., 2001; McLellan et al., 2006). Persons with SUD often present a variety of concerns directly and indirectly related to their use of substances. For instance, persons with SUD have higher levels of legal involvement, as compared to general population (Schottenfeld et al., 1992), physical disabilities, and mental health disorders (Arella et al. 1990). The ASI domains' specific severity scores allow the vocational evaluator and consumer to identify high-risk areas requiring attention and services. This would help in the development of a comprehensive rehabilitation plan.

Administration. The ASI is performed as a face–to–face semi-structured interview. The estimated time to complete the assessment ranges from 45 to 60 minutes, allowing up to 15 minutes post-interview to tabulate Interviewer's Severity Rating (ISR) score. There is a total of 191 items within the eight category areas. The first category, General, has 28 items and collects basic interviewer and interviewee information. The remaining categories align with the seven domains assessed by the ASI. The Medical section contains 11 items, assessing past and current medical concerns. The Employment/Supports section contains 24 items, assessing the consumer's past and current employment situation. Financial support sources are also assessed within this section. The sections pertaining to Drug Use and Alcohol Use contain a combined 35 items. Items in this section assess past and current drug and alcohol use, treatment episodes, and clarification of problematic substance(s) for the consumer. The Legal section contains 32 items, assessing past and current criminal activity and convictions. Family/Social Relations section contains 38 items, assessing past and current relationship status with family and other supports and a brief abuse risk assessment (4 items). Finally, the Psychiatric section contains 23 items and assesses past and current symptoms of mental health disorders, treatment episodes, and a brief mental status check (6 items). All sections, with the exception of General, have items that elicit the consumer's self-report as to "how troubled or bothered are you by…" and "how important is it for you to get treatment or referral for…" which the interviewer will then use during the process of formulating the ISR score.

The ASI is also available, at cost, in a computer facilitated multimedia version know as the ASI-MV (see http://www.inflexxion.com/). This version is particularly useful when evaluators face time constraints. The ASI-MV essentially asks the same questions as the ASI but through an interactive multimedia program. The ASI-MV requires a third grade reading level and some basic computer navigation skills (e.g., use of mouse).

Scoring. The ISR and Composite Score (CS) constitute the two scales of the instrument (McLellan et al., 1980; McGahan, Griffith, Parente, & McLellan, 1986). ISRs are global ratings based on items assessing recent (i.e. past 30 days) and lifetime problems. *Severity* is defined as the need for treatment or services based on the problem frequency and intensity assessed within each specific domain. ISRs are reported on a continuum of 0 to 9, with the higher the ISR the higher the indication of need for services. Ratings of 0 – 1 denote 'no real problem, treatment not indicated'; 2 – 3 denotes 'slight problem, treatment probably not indicated'; 4 – 5 denotes 'moderate problem, some treatment indicated'; 6 – 7 denotes 'considerable problem, treatment necessary'; and 8 – 9 denotes 'extreme problem, treatment absolutely necessary' (McLellan et al., 1985). The ASI manual describes a 2-step process for arriving at an ISR. First, the interviewer considers the objective data, paying special attention to critical items (i.e. those found to be most valid estimate of Severity – noted in manual) and determines a preliminary rating range (within a 2 to 3 point range). Second, the preliminary rating is fine tuned, based on subjective items. Subjective items include the consumer's self-rating of severity and need for services (Alterman, Cacciola, & Koppenhaver, 2004). While ISRs are useful in assessing an individual's problem areas requiring services, it should be noted that several studies have reported low to moderate inter-rater reliability(Alterman et al., 2001), primarily due to subjective scoring protocols. The ASI-MV generates

severity scores from computerized algorithms. While this approach attempts to alleviate reliability concerns, a complete focus on reliability misses the point. Objective scores are secondary to the evaluator's clinical acumen in discerning idiosyncratic consumer issues. The issue of ISR inter-rater reliability is problematic for research, but has little impact on the clinical value of ISRs for recognizing problem areas and service need.

While the ISRs have clinical utility in assessing an individual's problem areas, the subjective nature of the scores do not allow for reliable follow-up tracking of change over time. Thus, McLellan et al. (1985) developed a second set of summary scores that were quantitatively derived from measures assessing current status within the seven domains – Composite Scores (CSs). Items making up the seven CSs "were based on a combination of rational and empirical methods…the product of non-standardized arithmetic combinations of selected items in each [domain]" (Alterman et al, 2007, p.119). Items are combined using a specific mathematical procedure that insures equal weighting of each variable in the total CS. The manual set forth by McGahan et al. (1986) detailed the items from each area to be used and the mathematical procedure to calculate CSs. Further, information regarding Excel based worksheets for calculating CSs, and manuals for ASI scoring is available on the web by the Treatment Research Institute, and can be accessed via http://www.tresearch.org/resources/instruments.htm. The large body of research supporting the validity of the CSs (e.g., Mäkelä, 2004; McLellan, Cacciola, &Alterman, 2004) is undermined to some extent by the questionable inter-rater reliability of the CSs (Alterman, Brown, Zaballero, & McKay, 1994; Hodgins & El-Guebaly, 1992). Although the ASI-MV provides some mitigating strategy, research efforts are underway to develop standardized and psychometrically sound alternatives to the CS summary scores (see Alterman et al., 2007).

Interpretation. The ASI produces two scores that are useful in problem recognition and treatment/service planning. ISRs are particularly useful for assessing the level of severity amongst the seven domains. Interviewers also gather a foundation of the specific needs of the consumer. CSs are utilized to perform a follow up tracking function, allowing interviewers to track the changes in the consumer's functioning over various points of evaluation. Beyond these interpretative functions, warning is made in regards to the 'over-interpretation' of the ASI results. First and foremost, remembering that the ASI is not a diagnostic tool is important. Hoffmann (2009) warns the ASI "should not be substituted for proper clinical assessment…it is not appropriate for such applications" (p. 1). Interpretation of ASI scores is used for identifying problem areas and potential need for service, not to make diagnostic assessments.

Usability factors. The ASI–5 is a public domain assessment tool that is available for download via the Treatment Research Institute website (http://www.tresearch.org/resources/instruments.htm). This site provides an array of ASI products and materials including the ASI – 5, ASI – 5 Spanish, and user and coding manuals. McLellan et al. (2002) strongly advised ASI experienced practitioners and neophytes to receive formal training. This is also the case for use of the ASI-MV. Though the assessment itself is apparently straightforward, its mastery requires significant study and practice. Wicks (2004) notes that a typical training protocol for ASI interviewers is 2-full day trainings followed by a 1-day follow-up training session. With limited staff resources, required training may present both a time and monetary challenge to ASI adoption. Further, the time for both the evaluator and consumer during the 45 – 60 minute interview may be unrealistic (Hoffmann, 2009). Aside from the potential drawbacks associated with the training and implementation of the ASI, the question will be 'do the benefits of integrating this evaluation instrument out-way the costs?' Again, the ASI-MV may be a more prudent alternative to some organizations.

Conclusion

Persons with SUD face a multitude of barriers to successful employment. Problem areas can include a consumer's inability to control substance use, concern about keeping secrets, family problems, lack of social skills, lack of work experience, unrealistic goals for employment, problems with reliable transportation, and the reluctance of employers to hire or maintain the employment of people with SUD (Shepard & Reif, 2004). Thus it is important for vocational evaluators

to identify the multiple dimensions of problem areas a consumer presents in order to make timely and appropriate service referrals. Carise, McLellan, Festinger, & Kleber (2004) reported that retention in rehabilitation services increases when a consumer's needs are identified early and services match the specified problem areas. The Addiction Severity Index is a multidimensional assessment instrument that assesses problem areas, along seven domains. Integration of the ASI into the VE process may help bridge the gap towards more effective vocational services for persons with SUD.

References

Ahlers, M., Annis, J., Ashley, J., Cusick, G., Derwart, B., Fried, J.,… Thomas, S. (2003). *A new paradigm for vocational evaluation: Empowering the VR consumer through vocational information*. Unpublished manuscript. Retrieved April 15, 2009 from http://www.rcep6.org/iri/30th/IRI30.pdf

Alterman, A. I., Brown, L. S., Zaballero, A., & McKay, J. R. (1994). Interviewer severity ratings and composite scores of the ASI: A further look. *Drug and Alcohol Dependence*, 34(3), 201-209.

Alterman, A. I., Cacciola, J. S., Habing, B., & Lynch, K. G. (2007). Addiction severity index recent and lifetime summary indexes based on nonparametric item response theory methods. *Psychological Assessment*, 19, 119-132.

Alterman, A. I., Cacciola, J. S., & Koppenhaver, J. M. (2004). Addiction Severity Index composite scores: Contribution of objective vs. subjective items to post-treatment change. *Journal of Substance Use*, 9(5), 214-223.

Alterman, A. I., Mulvaney, F. D., Cnaan, A., Cacciola, J. S., McDermott, P. A., & Brown, L. S. (2001). The validity of the interviewer severity ratings in groups of ASI interviewers with varying training. *Addiction*, 96, 1297-1305.

Arella, L.R., Deren, S., Randell, J., & Brewington, V. (1990). Vocational functioning of clients in drug treatment: Exploring some myths and realities. *Journal of Applied Rehabilitation Counseling*, 21(2), 7-18.

Barber, J. P., Luborsky, L., Crits-Christoph, P., Thase, M. E., Weiss, R., Frank, A.,…Gallop, R. (1999). Therapeutic alliance as a predictor of outcome in treatment of cocaine dependence. *Psychotherapy Research*, 9, 54-73.

Blankertz, L., Magura, S., Staines, G. L., Madison, E. M., Spinelli, M., Horowitz, E., et al. (2004). A new work placement model for unemployed methadone maintenance patients. *Substance Use and Misuse*, 39, 2165-2213.

Brucker, D. L. (2007). Substance abuse treatment participation and employment outcomes for public disability beneficiaries with substance use disorders. *The Journal of Behavioral Health Services & Research*, 34(3), 290-308.

Carise, D., McLellan, A. T., Cacciola, J., Love, M., Cook, T., Bovasso, G., Lam, V. (2001). Suggested specifications for a Standardized Addiction Severity Index database. *Journal of Substance Abuse Treatment*, 20(3), 239-244.

Carise, D., McLellan, A. T., Festinger, D. S., Kleber, H. D. (2004). Identifying United States substance abuse treatment programs: A test in one mid-sized city. *Substance Abuse*, 25(2), 21-28.

Center for Substance Abuse Treatment (2000). *Integrating substance abuse treatment and vocational services* (Treatment improvement series #38). Substance Abuse and Mental Health Services Administration: US Department of Health and Human Services.

Comerford, A. W. (1999). Work dysfunction and addiction. *Journal of Substance Abuse Treatment*, 16(3), 247–253.

Cox, A. (2007). Selecting and evaluating vocational evaluation and assessment measures: Useful resources for the evaluation professional. *Vocational Evaluation and Career Assessment Professionals Journal*, 4, 12-16.

Friedmann, P. D., Lemon, S. C., Durkin, E. M., & D'Aunno, T. A. (2003). Trends in comprehensive service availability in outpatient drug abuse treatment. *Journal of Substance Abuse Treatment*, 24, 81-88.

Galaif, E. R., Newcomb, M. D., & Carmona, J. V. (2001). Prospective relationships between drug problems and work adjustment in a community sample of adults. *Journal of Applied Psychology*, 86, 337-350.

Gerra, G., Ferri, M., Polidori, E., Santoro, G., Zaimovic, A., & Sternieri, E. (2003). Long-term methadone maintenance effectiveness: Psychosocial and pharmacological variables. *Journal of Substance Abuse Treatment*, 25, 1-8.

Goodwin, A. M. & Kennedy, A. (2005). The psychosocial benefits of work for people with severe and enduring mental health problems. *Community, Work & Family*, 8, 23-35.

Hodgins, D. C. & El-Guebaly, N. (1992). More data on the Addiction Severity Index: Reliability and validity with the mentally ill substance abuser. *Journal of Nervous and Mental Disease*, 180(3), 197-201.

Hoffmann, N. G. (2009). Proper and inappropriate use of the ASI (Addiction Severity Index). Waynesville, NC. Retrieved from Mountain Council on Alcohol and Drug Dependence website: http://www.nc-mcadd.org/articles/Proper%20and%20Inappropriate%20use%20of%20ASI.doc

Hollar, D. (2008). The relationship between substance use disorders and unsuccessful case closures in vocational rehabilitation agencies. *Journal of Applied Rehabilitation Counseling*, 39(2), 25-29.

Hubbard, R. L., Craddock, S. G., Flynn, P. M., Anderson, J., & Etheridge, R. M. (1997). Overview of 1-year follow-up outcomes in the Drug Abuse Treatment Outcome Study (DATOS). *Psychology of Addictive Behaviors*, 11, 261-278.

Kidorf, M., Neufeld, K., & Brooner, R. K. (2004). Combining stepped care approaches with behavioral reinforcement to motivate employment in opioid-dependent outpatients. *Substance Use and Misuse*, 39, 2215-2238.

Lidz, V., Sorrentino, D. M., Robison, L., & Bunce, S. (2004). Learning from disappointing outcomes: An evaluation of pre-

vocational interventions for methadone patients. *Substance Use and Misuse*, 39, 2287-2308.

Magura, S. & Staines, G. L. (2004). New directions for vocational rehabilitation in substance user treatment: Rebuilding damaged lives. *Substance Use & Misuse*, 39, 2157-2164.

Magura, S., Staines, G. L., Blankertz, L., & Madison, E. M. (2004). The effectiveness of vocational services for substance users in treatment. *Substance Use & Misuse*, 39, 2165-2213.

Mäkelä, K. (2004). Studies of the reliability and validity of the Addiction Severity Index. *Addiction*, 99(4), 398-410.

McGahan, P. L., Griffith, J. A., Parente, R., & McLellan, A. T. (1986). ASI composite score manual [Manual]. Retrieved from http://www.tresearch.org/resources/compscores/CompositeManual.pdf

McLellen, A. T., Brodey, B., Rosen, C., Brodey, I., Sheetz, B., Steinfeld, R., Gastfriend, D. (2002). Validation of the Addiction Severity Index (ASI) for internet and automated telephone self-report administration. *Journal of Substance Abuse Treatment*, 26(4), 253-259.

McLellan, A. T., Cacciola, J. S., & Alterman, A. I. (2004). Commentaries on Mäkelä: The ASI as a still developing instrument: Response to Mäkelä. *Addiction*, 99(4), 411-412.

McLellan, A. T., Cacciola, J. C., Alterman, A. I., Rikoon, S. H., & Carise, D. (2006). The addiction severity index at 25: Origins, contributions and transitions. *The America Journal on Addictions*, 15, 113-124.

McLellan, A. T., Luborsky, L., Cacciola, J., & Griffith, J. E. (1985). New data from the Addiction Severity Index: Reliability and validity in three centers. *Journal of Nervous and Mental Disease*, 173, 412-423.

McLellan, A. T., Luborsky, L., O'Brien, C. P., & Woody, G. E. (1980). New data from the Addiction Severity Index: Reliability and validity in three centers. *Journal of Nervous and Mental Disorders*, 168, 412-423.

Platt, J. J. (1995). Vocational rehabilitation of drug abusers. *Psychological Bulletin*, 117, 416-433.

Platt, J. J., Widman, M., Lidz, V., Rubenstein, D., & Thompson, R. (1998). The case for support services in substance abuse treatment. *American Behavioral Scientist*, 41, 1050-1062.

Schottenfeld, R. S., Pascale, R., & Sokolowski, S. (1992). Matching services to needs: Vocational services for substance abusers. *Journal of Substance Abuse Treatment*, 9, 3-8.

Substance Abuse and Mental Health Services Administration. (2003). *Results from the 2002 National Survey on Drug Use and Health: National Findings* (Office of Applied Studies, NHSDA Series H-22, DHHS Publication No. SMA 03-3836). Rockville, MD: Retrieved from http://oas.samhsa.gov/nhsda/2k2nsduh/2k2SoFW.pdf

Shepard, D. S. & Reif, S. (2004). The value of vocational rehabilitation in substance user treatment: A cost-effectiveness framework. *Substance Use & Misuse*, 39, 2581-2609.

Sligar, S. R. & Toriello, P. T. (2007). *Substance abuse screening in the vocational evaluation process*. Paper presented at the 13th Vocational Evaluation and Career Assessment Professionals' National Forum on Issues in Vocational Assessment, Auburn, AL.

Spear, S. E., Brown, A. H., & Rawson, R. A. (2005). "Painting a picture of the client": Implementing the Addiction Severity Index in community treatment programs. *Journal of Substance Abuse Treatment*, 29, 277-282.

Thomas, S. W. (1997). *Vocational evaluation and assessment: Philosophy and practice*. Unpublished manuscript, Department of Rehabilitation Counseling, East Carolina University, Greenville, NC.

Wertz, J. S., Cleaveland, B. L., & Stephens, R. S. (1995). Problems in the application of the Addiction Severity Index (ASI) in rural substance abuse services. *Journal of Substance Abuse*, 7(2), 175-188.

Wicks, S. J. (2004). Perspectives on staff resistance to using the ASI. *Journal of Substance Use*, 9(3), 172-175.

About the Authors

W. Leigh Atherton, MA, is a doctoral candidate in Rehabilitation Counseling and Administration, with a specialization in substance abuse counseling, at East Carolina University. He is the project coordinator at Project Working Recovery, a clinic providing job readiness training for persons in recovery.

Paul J. Toriello, Rh.D., is an associate professor of rehabilitation studies at East Carolina University. He is a member of the International Motivational Interviewing Network of Trainers and a clinic director.

Steven R. Sligar, Ed.D., CVE, is an assistant professor and director of the Graduate Program in Vocational Evaluation at East Carolina University. He has over 34 years experience in vocational rehabilitation and this includes work with special populations of persons who were deaf and/or blind, many of whom experienced a co-occurring substance use disorder.

Tracie E. Campbell, MS, CRC, is a coordinator for Project Working Recovery (PWR), a work readiness program for individuals in recovery from substance abuse.

Motivational Interviewing by Rehabilitation Professionals: Enhancing Contemporary Attitudes Towards Consumers with Substance Abuse Issues

Paul J. Toriello
W. Leigh Atherton
Traci Campbell
Steven R. Sligar
East Carolina University

The purpose of this article is to help rehabilitation professionals navigate toward contemporary attitudes and practices concerning consumers' substance abuse issues. Specifically, a brief review of research on the incidence of substance abuse issues in rehabilitation settings, and the relationship between substance abuse and employment is provided. This is accompanied by an examination of how rehabilitation professionals' attitudes towards substance abuse, as reflected in policy and practice, have or have not changed over the past two decades. Next is a description of Motivational Interviewing (MI), a contemporary, widely popular, and empirically supported substance abuse intervention. Accompanying this description are mock dialogues exemplifying the concepts of MI and how rehabilitation professionals can use MI strategies to improve their effectiveness with consumers with substance abuse issues. Finally, recommendations for MI dissemination within rehabilitation settings are offered.

***Key words*:** *substance abuse, motivational interviewing, rehabilitation professional*
Author note: Paul Toriello is an associate professor, Leigh Atherton a doctoral student, Traci Campbell a clinic coordinator, and Steve Sligar an assistant professor in the Department of rehabilitation Studies at East Carolina University. Correspondence should be sent to toriellop@ecu.edu. Research pertaining to this paper was sponsored in part by the Katherine B. Reynolds Charitable Trust grant number 2007-227.

Rehabilitation professionals can choose from a diverse and growing menu of evidence-based interventions in their service to consumers' with substance abuse issues. This growth in options is indicative of the importance of responding to substance abuse as a complex and pervasive problem that mitigates successful rehabilitation. The traditional "one-size-fits-all" etiology and treatment of substance abuse issues (Koch & Rubin, 1997) has been replaced with more sophisticated, contemporary, and empirically grounded models. An emerging emphasis on research-based practice has brought about a renaissance of continuous improvement of services for consumers with substance abuse issues (Toriello, Morse, Morse, Keferl, & Pedersen-Wasson, 2006).

Rehabilitation professionals' attitudes towards substance abuse have begun to mature along with the science. As the profession has focused on science applied to effective treatment, we have seen the start of an important maturation of attitudes in the profession. Historically, rigid and paternalistic attitudes towards substance abuse have restricted the range of interventions employed (Keferl, La Forge, & Toriello, 2004; Moyers & Miller, 1993; Toriello & Leierer, 2005a) and, consequently, the potential for successful outcomes. Contemporary attitudes have evolved into person-centered, flexible, and holistic perspectives that are more congruent with rehabilitation philosphy (Wagner & McMahon, 2004) and increase the potential for successful outcomes (Miller, Benefield, & Tonigan, 1983; Toriello & Leierer, 2005b).

Recent research has shown that rehabilitation professionals' attitudes toward substance abuse span a continuum from policy and practices regarding service eligibility and treatment based upon traditional attitudes toward substance abuse to contemporary person-centered and flexible practices within a customer service orientation (Glenn & Keferl, 2008; Moore, McAweeney,

Keferl, Glenn, & Ford, 2008). The purpose of this article is to help rehabilitation professionals improve both attitudes and practices regarding substance abuse through the discipline of Motivational Interviewing, one of the more established contemporary practices. To this end, we will provide a brief review of research on the incidence of substance abuse issues in rehabilitation settings, and the relationship between substance abuse and employment. We will examine rehabilitation professionals' attitudes towards substance abuse within this context and how they have, or have not, changed over the past two decades. Motivational Interviewing (MI), an empirically supported substance abuse intervention, will be described and illustrated through mock dialogues. We will discuss how rehabilitation professionals can use MI strategies to improve their effectiveness with consumers with substance abuse issues and conclude with recommendations for MI dissemination within rehabilitation settings are offered.

Substance Abuse and Employment

That a considerable percentage of consumers in rehabilitation settings have primary or co-occurring substance abuse issues is a well established fact. However, even with 20-plus years of research on the importance of addressing these issues, a reliable incidence rate still does not exist. The latest state rehabilitation agency incidence rates of primary or secondary substance abuse issues range from 0.9% to 28% (Glenn & Keferl, 2008). Drebing et al. (2002) reported a substance abuse incidence rate of 80% in a Veterans Administration setting. Such equivocal data is open to many interpretations. Perhaps highly variable incidence rates reflect differences in data reporting and research design. This would suggest the need for a more universal data collection, reporting, and analysis model. Unfortunately, Glenn and Keferl (2008) recently concluded that there is "no universal process… for screening [substance abuse issues] in the state-federal vocational rehabilitation system" (p.40). Perhaps state agencies are ill-equipped in terms of resources and qualified staff to consistently and systemically screen for substance abuse issues. Perhaps agencies have not fully embraced the legitimacy of substance abuse as a counseling issue. Whatever the interpretation, it is clear that the need outlined by Grissom, Eldredge, and Nelson (1990) for adapting the Vocational Evaluation (VE) process for consumers with substance abuse issues has not been comprehensively addressed.

This is disturbing considering the widely documented impact that substance abuse issues have on the rehabilitation process and employment outcomes. Of the $130 billion average annual cost of addiction to society, $100 million is due to productivity losses (Office of Drug Control Policy, 2003). The Substance Abuse and Mental Health Services Administration (SAMHSA, 2002) found that individuals who reported past month drug use were more likely to have had multiple employers in that past year, missed more work in the past month due to injury or illness, and skipped more work days in the past month than those who did not report past month drug use. Individuals with substance abuse issues are three times less likely to be employed than the general population (Center for Substance Abuse Treatment [CSAT], 2000). Substance abuse issues and unemployment are predictive of homelessness, incarceration and/or history of violent and nonviolent crimes (Greenberg & Rosenheck, 2008).

A clear relationship between substance abuse and employment not only exists in general. Research has also thoroughly documented the impact of employment on the rehabilitation of consumers with substance abuse issues. Being employed has been found to be one of the strongest predictors of sustained recovery from substance abuse issues (Blevins, 2008; CSAT, 2000; Donlin, Knealing, Needham, Wong, & Silverman, 2008; Kashner et al., 2002; Salyers, Becker, Drake, Torrey, & Wyzik, 2004; Silverman, Svikis, Stitzer, & Bigelow, 2001). Employment is also correlated with improved self-esteem, hope, and relationships (Salyers et al., 2004) of consumers with substance abuse issues, as well as decreased client illegal activity, arrests, physical problems, and homelessness (Hubbard, Craddock, & Anderson, 2003; Messina, Nemes, Wish, & Wraight, 2001). Finally, addressing the employment issues of consumers with substance abuse issues has shown to be cost-effective (Jordan, Grissom, Dietzen, & Sangsland, 2008).

Perhaps the most poignant aspect of the relationship between employment and consumers' with substance abuse issues is consumers' entry, attendance, and completion of services. Researchers have found

that employment status is a significant predictor of rehabilitation entry (Adamson, Sellman, & Frampton, 2009; Chun, Guydish, Silber, & Gleghorn, 2008). Chun et al. (2008) found that consumers with substance abuse issues who reported more severe employment problems were more likely to access rehabilitation services. Others have found that addressing employment issues of consumers with substance abuse issues during services is one of the best predictors of service participation, retention (McCaul, Svikis, & Moore, 2001; Reif, Horgan, Ritter, & Tompkins, 2004; Veach, Remley, Kippers, & Sorg, 2000), and completion (Lang & Belenko, 2000). Yet, despite the above knowledge, consumers with substance abuse issues have one of the lowest successful rehabilitation completion percentages when compared to other disability groups. Hollar (2008) recently reported that just under half of this consumer population, in state VR settings, obtains successful closure. One possible explanation is that attitudes toward consumers with substance abuse issues may account for this.

Researchers first called for rehabilitation professionals to address consumers' substance abuse issues over 20 years ago. However, the attitudes toward substance abuse issues expressed directly by the researchers or indirectly by the policies and practices they examined can be characterized, at best, as ambivalent. Grissom et al. (1990) contended that rehabilitation professionals should be aware of their evaluation bias in regard to consumers with substance abuse issues. Almost 10 years later, Saxon, Saxon, and Spitznagel (1998) echoed ongoing concern of rehabilitation professionals' negative and success-mitigating attitudes toward substance abuse. They suggested that if the whole person is the focus of rehabilitation, then "…substance abuse problems must be addressed at the beginning of the vocational rehabilitation process" (p. 36). Both Grissom et al. (1990) and Saxon et al. (1998) promoted the utilization of contemporary strategies when serving consumers with substance abuse issues. For example, using empathic, non-threatening and non-judgmental interviewing skills were recommended. However, Saxon et al. stated the importance of these strategies was specific to "gaining a more accurate report from the client" (p. 40) of their substance abuse issues so they could then make a referral to a substance abuse specialist. In essence, they suggested contemporary strategies but contextualized the purpose within the fundamental traditional attitude that consumers with substance abuse issues tend to deny their drug problems. Furthermore, Saxon et al. opened their article with "substance abuse…is a major threat to our present society…" (p. 36). While we applaud the research of Saxon et al., our concern is that rehabilitation professionals could conclude that consumers with substance abuse issues are a threat and that person-centered strategies should be used, not so much for rapport and therapeutic alliance purposes, but for navigating denial and collecting accurate information so someone else can address the issue. Nevertheless, the work of Grissom et al. (1990) and Saxon et al. (1998) began a course toward integrating more contemporary attitudes toward substance abuse issues within the provision of rehabilitation services. Unfortunately, progress on this course has been slow (see Glenn & Keferl, 2008).

State rehabilitation agencies report a wide range of substance abuse incidence rates where the upper end of the range is far below incidence rates reported in controlled research. Moore et al. (2008) suggested this disparity is due to "systemic under-reporting [of substance abuse] resulting from vocational rehabilitation policies or…attitudes toward [substance abuse] as a disability." (p. 13). Moore et al. detailed the policies that seem to reflect the range of traditional to contemporary attitudes. At the traditional end is the classic "sobriety waiting period" policy where consumers are required to achieve 60-90 days of abstaining from use prior to applying for services. This policy clearly represents a paternalistic practice (Keferl et al., 2004) with the simple message of "…you are different, therefore you must behave a certain way in order for us to help you because we know what is best for you." At the more contemporary end is the "specialized caseload" where consumers with substance abuse issues work with a rehabilitation professional with training specific to substance abuse. The most elusive policy is the "order-of-selection" practice where, when resources are limited, states will serve consumers with the most severe disabilities. Moore et al. (2008) suggested that states differ in their categorization of substance abuse as being severe or not. To compound this complexity is the fact that some states do not have a formal substance abuse

screening process (Drebing et al., 2002; Moore et al., 2008). Therefore, depending on which state in which one lives, an individual with substance abuse issues who is in need of rehabilitation may have to stay sober for two to three months before receiving services. They may or may not be accepted for services based on the perceived severity or lack of severity of their substance abuse issues. Finally, they may or may not be assigned to a specialized caseload. In other words, rehabilitation is ambivalent about addressing substance abuse issues. While rehabilitation seems far from a policy consensus toward consumers with substance abuse issues, empirically supported interventions, like Motivational Interviewing, could provide rehabilitation professionals a set of contemporary attitudes and strategies for addressing substance abuse issues in innovative ways.

Motivational Interviewing

What follows is a description of Motivational Interviewing (MI) and mock dialogues exemplifying how MI can be used by rehabilitation professionals to engage with consumers with substance abuse issues, and navigate the various policies pertaining to substance abuse. Please note that the following description is summative and based on seminal MI research (e.g., Arkowitz, Westra, Miller, & Rollnick, 2008; Hettema, Steele, & Miller, 2005; Miller & Rollnick, 2002, 1991; Rollnick, Miller, & Butler, 2008; Rosengren, 2009).

Philosophy and Principles of MI

MI is a "client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence" (Miller & Rollnick, 2002, p. 25). Examination of this definition reveals a set of attitudes and practices that are not only empirically supported but are also fundamental to rehabilitation philosophy. MI is based on a humanistic philosophy. The MI practitioner (interviewer) believes that all consumers have an innate drive toward change and growth. The MI interviewer acts upon the assumption that all consumers, regardless of disability, demographics, and circumstances, have the capacity to successfully complete rehabilitation and live a gainfully employed life. This consumer-centered attitude directs the interviewer to engage the consumer where they are in the rehabilitation process in terms of motivation (or lack thereof), as opposed to a paternalistic disregard of, or mischaracterization of, the consumers motivational state. Consumers with substance abuse issues are often stereotyped as un-motivated; a lack of motivation is presumed part of the personality of addiction (Moyers & Miller, 1993). However, no empirical evidence to support this assumption has been found (Miller & Rollnick, 1991); lack of motivation is not idiosyncratic to substance abuse. As with any population, it is the consequence of perceiving no value in change. Starting with motivation is likely to be a more, not less, effective counseling approach with this population.

In MI, the interviewers' default attitude is humanistic, but not naïve. MI is not about seeing consumers through "rose-colored glasses"; rather, the belief is that increasing the probability of consumer change is better facilitated with a humanistic or consumer-centered attitude as opposed to paternalistic or rigid, traditional attitudes. Miller and Rollnick (2002) extrapolated MI principles from research studies on the Pygmalion Effect, which refers to the effect of an interviewer's preconceived beliefs about the consumer's success potential on the consumer's actual outcome. To summarize these principles, for example, substance abuse counselors would be randomly assigned to group A or group B. Group A counselors were told that their consumers were going to be resistant, difficult, challenging, in denial, and so on. Group B counselors were only told neutral demographic information (e.g., age, gender). In terms of post intervention outcomes, consumers served by Group A were using substances more than before services; treatment made them worse. Consumers served by Group B were using substance less than baseline; treatment helped. However, there was actually no difference between the two groups of consumers; they were randomly assigned to a counselor group. The Pygmalion Effect is that the counselors' preconceived biases predicted outcome (see Miller & Rollnick, 2002). In essence, attitudes of rehabilitation professionals are predictive of service outcome. Thus, holding to a consumer-centered attitude as opposed to a paternalistic attitude would improve outcomes.

Continuing with a consumer-centered attitude, MI emphasizes interviewer empathy, unconditional positive regard, and genuineness; the essence of Roger's

Person-Centered Therapy. The MI interviewer, through attitude and skill, seeks to genuinely understand and not to judge the consumer. This facilitates a therapeutic environment and relationship where rapport and trust are fostered with an emphasis on consumer autonomy. Miller and Rollnick (2002) identified the support of consumer autonomy as a key principle of MI, another parallel to rehabilitation philosophy of consumer empowerment (Power, 2006). For this principle, they extrapolated from *Self Determination Theory* (SDT; see Deci & Ryan, 1985). In essence, SDT purports that when a consumer has a choice not to change, they are more likely to change. By reframe, the consumer is less likely to change when they feel they do not have a choice. Generally speaking, people do not like to be told what to do. Yet, rehabilitation professionals who hold paternalistic or traditional attitudes may believe that this does not apply to certain consumers (e.g., those with substance abuse issues). In fact, Toriello and Leierer (2005a) found that holding traditional attitudes were predictive of compromising consumer autonomy and holding contemporary attitudes were predictive of supporting consumer autonomy.

MI is essentially a philosophy and attitude that elicits a way of being with consumers (Miller & Rollnick, 2002). The interviewer communicates in a way that is consonant with the thoughts of, "…how can I collaborate with this consumer to evoke their choices…" as opposed to, "…the consumer needs to think, feel, and behave in a way that I see as best…". Fundamental to this communication is the genuine and non-judgmental effort to understand the consumer and his/her circumstances. With such a therapeutic environment and relationship formed, the interviewer can become more directive to strategically explore and resolve the consumer's ambivalence about change.

Contrary to traditional thinking that consumers with substance abuse issues are in denial, the MI perspective is that consumers are ambivalent about their substance use. Instead of trying to convince a consumer, through paternalistic argument and/or aggressive confrontation, that they should change; the interviewer genuinely seeks to understand what a consumer likes and dislikes about their substance use. Here, Miller and Rollnick pull from *Self Regulation Theory* (SRT; see Miller and Rollnick, 2002). SRT posits that when a person perceives their life as dysfunctional, they will self-regulate and change. Thus, the interviewer's goal is to develop this discrepancy within the consumer's perspective via the exploration of ambivalence. This is the juncture where the underpinning principles of MI coalesce: A consumer is more likely to self-regulate (i.e., choose to change) when they talk about their mixed feelings and how they want their life to be different with an interviewer who genuinely seeks to understand and will not judge them if they choose not to change. This unconditional positive regard or acceptance while exploring ambivalence ushers in a final principle of MI: rolling with resistance.

When a consumer is resistant (e.g., "I don't have a drug problem"; "I don't need help") traditional attitudes have favored a paternalistically argumentative or aggressively confrontational approach (Toriello & Strohmer, 2004). However, this approach has shown to be predictive of increased substance use (Miller et al., 1993). Moreover, this approach tends to compromise consumer autonomy. As a contemporary attitude, the MI perspective is that consumer resistance is an interpersonal issue, not an intrapersonal issue. Specifically, consumer resistance is largely a reaction to the attitude and consequent communication style of the professional. Basic physics provides clarity to this dynamic: For every force there is an equal and opposite force. A consumer is more likely to resist force, admonishments, and/or pressure to change. Contrarily, a consumer is more likely to move forward and choose to change is the presence of genuine empathy and unconditional positive regard.

Research has shown (e.g., Hettema et al., 2005) that operating through MI principles and attitude is essential for competent practice. In summary this attitude is (a) empathic and supportive of consumer choice as opposed to paternalistic, (b) collaborative as opposed to authoritative, (c) eliciting as opposed to proscriptive. This attitude is also expressed via principles of exploring ambivalence as opposed to arguing for change. The skills or strategies of MI, basic counseling skills (e.g., open-ended questions, affirmations, reflections, and summaries), are the means to exude the attitude. Miller and Rollnick often analogize that the MI attitude or "Spirit of MI" is the music of a song and the strategies are the lyrics; words without music do not

make a song. An interviewer with weak skills but strong attitude is much more effective than one with strong skills and weak attitude. What follows are examples of how to exude an MI attitude in rehabilitation settings.

MI Strategies in Rehabilitation Settings

MI is highly flexible. As long as the interviewer operates with the MI spirit, then he/she can adapt to the concerns of a given consumer within a given context. This could be particularly helpful considering how the aforementioned rehabilitation policies toward consumers with substance abuse issues may shape the parameters of the MI context. First is an example of a Vocational Evaluator using MI to navigate a consumer's positive screen for substance abuse and a non-negotiable policy of 60-days sober for service eligibility.

Interviewer: *Your results show you are drinking alcohol at an abusive level. I am concerned…how does drinking fit into your life these days?*
Consumer: *I like to drink but it's no big deal. You're gonna tell me to quit, aren't you?*
Interviewer: *That is a decision you need to make for yourself. I do need to remind you that our policy is that if you want rehab services, you will need to stay sober for 60 days first.*
Consumer: *That's a stupid policy! I just need help getting a job.*
Interviewer: *You're frustrated. On the one hand you think rehab can help you and on the other hand you are not sure you want to stop drinking, especially when you don't see it as a problem.*
Consumer: *It's very frustrating. I thought you're supposed to help me.*
Interviewer: *What do you think is in your best interest?*
Consumer: *I am about to lose benefits, so I really need help with a job.*
Interviewer: *You're just not sure you're willing to stop drinking so you can get the help with a job.*
Consumer: *Yeah, I don't know.*
Interviewer: *Would you be interested in how other consumers have dealt with this situation?*
Consumer: *Sure.*
Interviewer: *Some consumers choose to not stop drinking and we never hear from them again. Some choose to see a substance abuse counselor for help with staying sober and they become eligible for rehab after 60-days. Some consumers join a self-help group, like Alcoholics Anonymous, and then they return after 60-days.*
Consumer: *You think I am an alcoholic don't you!*
Interviewer: *Again, that is something you need to decide. It sounds like AA would not be a good option for you. What do you think about the other options?*

The conversation could continue with additional exploration of the consumer's ambivalence. When the interviewer senses the exploration is over, he/she would then move toward asking the consumer what his/her plan is (e.g., *Based on our conversation, what are you going do?*). The central theme to this example was the MI approach to informed consent in regards to the 60-day sober policy. The interviewer did not force an opinion or pressure the consumer to choose in a particular direction; the policy was stated as a matter of fact. What may make a conversation like above more effective is when the consumer has completed a thorough informed consent process a priori. Among many purposes, informed consent is the time when the interviewer can explicitly state the non-negotiable policies (e.g., 60-day sober period) of rehabilitation. Moreover, informed consent is when the interviewer can explicitly state their organization's side or position on the expectations, rules, and goals of rehabilitation (e.g., participating, getting a job, staying sober). A thorough informed consent thereby frees-up the interviewer to be more consumer-centered during subsequent interviews as opposed to defending rehabilitation policy and positions.

Contrast the MI approach with the next example in which the vocational evaluator ascribes to traditional attitudes toward substance abuse.

Evaluator: *Your results show you are drinking alcohol at an abusive level. As I told you earlier, you'll need to stay sober for 60-days in order to be eligible for rehab.*
Consumer: *But my drinking is really no big deal. I can control it.*
Evaluator: *Well, your results indicate that is not the case.*

Consumer: *Your test is wrong then.*

Evaluator: *I am sorry you feel that way, but we will still need you to stop drinking for 60-days.*

Consumer: *That's a stupid rule! I just need help getting a job!*

Evaluator: *The best way for us to help you get a job is for you to stay sober for a while. It lets us know you are serious about rehab.*

Consumer: *If I wasn't serious about rehab I wouldn't be here.*

Evaluator: *I hear you're angry, but these are some of things you could talk about with a substance abuse counselor or at Alcoholics Anonymous meetings.*

Consumer: *Oh, so now I am an alcoholic.*

Evaluator: *What I know is that until someone admits they have a problem, they are not going to change. The fact that you are arguing with me is more evidence of a problem. Again, this is why we have to 60-days sober policy.*

The Evaluator has fallen into a trap of defending rehabilitation policy and position, thereby eliciting a defensive response by the consumer. This example illustrates how traditional attitudes can communicate an adversarial paternalistic tone that is disempowering to the consumer and antithetical to a collaborative working relationship with the evaluator. Without an exploration of alternatives, the non-negotiable policy comes across purely restrictive.

In MI, the idea of exploring available alternatives is most important when facing a mutually exclusive dilemma (e.g., staying sober or not). The next example is a dialogue between an interviewer and consumer in the context of a first session. Here the interviewer is not bound by a mandatory sober policy but, consumers do have to show up sober for services.

Interviewer: *Your results show you are drinking alcohol at an abusive level. I am concerned…how does drinking fit into your life these days?*

Consumer: *I like to drink but it's no big deal. You're gonna tell me to quit, aren't you?*

Interviewer: *No, that is a decision you need to make for yourself. Help me understand though; what are the things you like about drinking?*

Consumer: *Well, it helps me relax. You know being in this chair all day is stressful and my back hurts. Having a few beers helps with that.*

Interviewer: *Okay. Well, what are the not-so-good things about drinking?*

Consumer: *Hang-overs aren't fun! Ha, ha.*

Interviewer: *So drinking is part of the day when you can un-wind and deal with the pain of your disability. You don't like feeling sick after you drink. What else is on the downside of drinking?*

Consumer: *My wife keeps nagging me about it. She says "who's going to hire a drunk in a wheel chair?!"*

Interviewer: *So your drinking causes friction with your wife, you two argue about it.*

Consumer: *Yes. I mean part of me feels bad because she has picked up the slack since my accident but I think, considering what I went through, I deserve a few beers.*

Interviewer: *So you feel two ways about drinking. On the one hand you feel entitled to drink because it helps you relax and deal with pain, and on the other hand you'd prefer to be without the hang-overs and your wife's pressure to stop.*

Consumer: *That sounds about right.*

Interviewer: *Well, I'm curious…How concerned are you about the impact of your drinking on your job potential?*

Consumer: *I don't know. I only started drinking since the accident. Are you going to kick me out of rehab because I drink?*

Interviewer: *Our rule is that when you are here, you are sober. If we think you are intoxicated, we will have you leave for that day. What do you think about this rule?*

Consumer: *It's not a problem. I'm not planning on coming here liquored-up.*

Interviewer: *Great. You seem really motivated for rehab and getting a job. How confident are you about having the same plan when you get a job?*

Consumer: *I have never thought about that…but I don't think it will be a problem.*

Interviewer: *Maybe that is something we can discuss as*

we move forward.
Consumer: *Sure. I guess. I am not going to quit though.*
Interviewer: *That is certainly your choice. It sounds like you are willing to talk about it though.*
Consumer: *Yes, that seems fair.*

The above dialogues are not intended to be examples of perfect MI. Fortunately there is more than one right way to do MI. With an attitude soundly entrenched in the MI Spirit, the interviewer can be creative in how he/she phrases questions or reflections. In fact research has shown the ratings of interviewers' MI Spirit is one of the strongest predictors of MI competence (Madson, Loignon, & Lane, 2009). Consumers' responses then provide immediate feedback if the interviewer is being facilitative or restrictive. A final point to remember is that an interviewer can perform a "textbook" motivational interview and the consumer still may choose not to change.

Dissemination of MI within Rehabilitation Settings

A fundamental purpose of empirically supported interventions is to help practitioners improve their services. This is particularly critical during difficult economic times (e.g., high unemployment, scarce resources) and when addressing complex problems (e.g., substance abuse). While researchers are developing empirically supported interventions at a quick pace (Clark, 2002), the challenge for rehabilitation professionals is to facilitate the innovation of these interventions into applied settings. Fundamentally, adopting empirically supported interventions should not be the goal of rehabilitation professionals; rather, innovation of these interventions should be the driving force (Simpson & Flynn, 2007; Sligar & Toriello, 2007). Rehabilitation professionals should not just implement interventions because they are empirically supported, such interventions should be tailored to the mission, values, and characteristics of the implementing organization (Toriello et al., 2006).

This is true with the innovation of substance abuse interventions like Motivational Interviewing. While the effectiveness of MI has been widely studied, best-practices for MI dissemination are still being researched. Early evidence points to eight particular stages for becoming competent in MI (Miller & Moyers, 2006). Stage 1 involves understanding of the MI philosophy. Stage 2 involves acquiring the basic consumer-centered skills. Stages 3 and 4 involve moving from the consumer-centeredness foundation to becoming directive via the exploration and resolution of ambivalence. Stages 5 is about learning how to roll-with-resistance. Stages 6, 7, and 8 involve moving beyond MI into action planning or other interventions. In their review, Madson et al., (2009) reported that MI training can be effective in short durations and the more effective training formats include training, observation, feedback, and coaching. However, Madson et al. (2009) concluded that much research is still needed on how to best train MI. They suggested using the eight stages as a heuristic to guide the research.

While best-practices for training are being discerned, what is clear is how to allocate organizations' resources pertaining to MI dissemination. For the best return on investment, rehabilitation organizations should focus MI dissemination on the front end of the rehabilitation process. Research has shown that MI is particularly effective as an early engagement strategy to increase retention and completion of services (Carroll et al., 2006; Hettema et al., 2005). Thus, MI should be inculcated into the evaluation and early planning processes of rehabilitation. Moreover, research has shown MI is particularly effective when accompanied by feedback (Hettema et al., 2005; Miller & Rollnick, 2002). Feedback can be in the form of assessment or tests results that an Evaluator could process with consumers using MI. The final dissemination focus is that MI is most effective when combined with or followed by other interventions (e.g., cognitive-behavior therapy, group counseling). In fact, Hettema et al. (2005) found that effect sizes almost doubled in studies that combined MI with other interventions.

Summary

Navigating the current ambivalent rehabilitation attitudes and policies pertaining to consumers with substance abuse issues is complex. Part of the navigation is moving from traditional to contemporary attitudes. Continued research in rehabilitation settings is needed to discern which attitude increases the probability of (a)

building a therapeutic relationship and (b) consumers participating in rehabilitation. Our hypothesis, based on the large amount of evidence supporting MI in other settings, is that a contemporary or MI-consistent attitude is more likely to be effective and consonant with rehabilitation philosophy. MI is not a “silver-bullet” or panacea, but thus far, the research is clear that it outperforms traditional attitudes (Hettema et al, 2005; Miller & Rollnick, 2002). MI is a widely supported and flexible intervention that can facilitate the on-going maturity of these attitudes and policies. MI has been studied in a variety of settings, with a variety of issues, and with a variety of human services professionals. Perhaps most important, MI is highly consonant with rehabilitation philosophy: consumer autonomy, and collaboration between consumer and professional (see Wagner & McMahon, 2004). Simply, MI can help rehabilitation professionals become more consonant with rehabilitation philosophy.

References

Adamson, S. J., Sellman, J. D., & Frampton, C. M. A. (2009). Patient predictors of alcohol treatment outcome: A systematic review. *Journal of Substance Abuse Treatment, 36*, 75-86.

Arkowitz, H., Westra, H. A., Miller, W. R., & Rollnick, S. (2008). *Motivational interviewing in the treatment of psychological problems*. New York, NY: The Guilford Press.

Blevins, W. M. (2008). Factors related to the outcomes of a residential substance abuse treatment program for women. *Dissertation abstracts international section A: Humanities and social sciences, 69*, 2153.

Carroll et al. (2006). Motivational interviewing to improve treatment engagement and outcome in individuals seeking treatment for substance abuse: A multisite effectiveness study. *Drug and Alcohol Dependence, 81*, 301-312.

Center for Substance Abuse Treatment (2000). *Integrating substance abuse treatment and vocational services* (Treatment improvement series #38). Substance Abuse and Mental Health Services Administration: US Department of Health and Human Services.

Chun, J., Guydish, J. R., Silber, E., & Gleghorn, A. (2008). Drug treatment outcomes for persons on waiting lists. *American Journal of Drug and Alcohol Abuse, 34*, 526-533.

Clark, H. W. (2002). Bridging the gap between substance abuse practice and research: The national treatment plan initiative. *Journal of Drug Issues, 32*, 757-768.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.

Donlin, W. D. (2008). Attendance rates in a workplace predict subsequent outcome of employment based reinforcement of cocaine abstinence in methadone patients. *Journal of Applied Behavior Analysis, 41*, 499-516.

Drebing, C. E., Fleitas, R., Moore, A., Krebs, C., Van Ormer, A., Penk. W., Seibyl, C., & Rosenheck, R. (2002). Patterns in work functioning and vocational rehabilitation associated with coexisting psychiatric and substance use disorders. *Rehabilitation Counseling Bulletin*, 46, 5-13.

Glenn, M., & Keferl, J. E (2008). An Exploratory Investigation of Rehabilitation Counselors’ Perceived Readiness to Undertake Substance Use Disorder Screening in Vocational Rehabilitation. *Journal of Applied Rehabilitation Counseling, 39*(2), 37-42.

Greenberg, G. A., & Rosenheck, R. A. (2008). Jail incarceration, homelessness, and mental health: A national study. *Psychiatric Services, 59*, 170-177.

Grissom, J. K., Eldredge, G. M., & Nelson, R. E. (1990). Adapting the vocational evaluation process for clients with a substance abuse history. *Journal of Applied Rehabilitation Counseling, 21*(3). 30-32.

Hettema, J., Steele, J., & Miller, W. R. (2005). Motivational interviewing. *Annual Review of Clinical Psychology, 1*, 91-111.

Hollar, D. (2008). The relationship between substance use disorders and unsuccessful case closures in vocational rehabilitation agencies. *Journal of Applied Rehabilitation Counseling, 39*(2), 25-29.

Hubbard, R. L., Craddock, S. G., & Anderson, J. (2003). Overview of 5-year follow-up outcomes in the drug abuse treatment outcome studies (DATOS). *Journal of Substance Abuse Treatment, 25*, 125-134.

Jordan, N., Grissom, G., Dietzen, A. G., & Sangsland, S. (2008). Economic benefit of chemical dependency treatment to employers. *Journal of Substance Abuse Treatment, 34*, 311-319.

Kashner, T. M. et al. (2002). Impact of work therapy on health status among homeless, substance-dependent veterans: A randomized controlled trial. *Archives of General Psychiatry, 59*, 938-944.

Keferl, J. E., La Forge, J., & Toriello, P. J. (2004). Who gets to choose: A primer for increasing rehabilitation counselors’ awareness for navigating “paternalistic” interventions. *Journal of Applied Rehabilitation Counseling, 35* (3), 8-13.

Koch, D. S., & Rubin, S. E. (1997). Challenges faced by rehabilitation counselors working with alcohol and other drug abuse in a “one size fits all” treatment tradition. *Journal of Applied Rehabilitation Counseling, 28*, 31-35.

Lang, M. A., & Belenko, S. (2000). Predicting retention in a residential drug treatment alternative to prison program. *Journal of Substance Abuse Treatment, 19*, 145-160.

Madson, M. B., Loignon, A. C., & Lane, C. (2009). Training in motivational interviewing: A systematic review. *Journal of Substance Abuse Treatment, 36*, 101-109.

McCaul, M. E., Svikis, D. S., & Moore, R. D. (2001). Predictors of outpatient treatment retention: Patient versus substance use characteristics. *Drug and Alcohol Dependence, 62*, 9-17.

Messina, N., Nemes, S., Wish, E., & Wraight, B. (2001), Opening

the black box: The impact of inpatient treatment services on client outcomes. *Journal of Substance Abuse Treatment, 20*, 177-183.

Miller, W. R., Benefield, R. G., & Tonigan, J. S. (1993). Enhancing motivation for change in problem drinking: A controlled comparison of two therapist styles. *Journal of Consulting and Clinical Psychology, 61*, 455-461.

Miller, W. R., & Moyers, T. B. (2006). Eight stages in learning motivational interviewing. *Journal of Teaching in the Addictions, 5*, 3-17.

Miller, W. R., & Rollnick, S. (1991). *Motivational interviewing: Preparing people to change addictive behavior*. New York, NY: The Guilford Press.

Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change* (2nd ed.). New York, NY: The Guilford Press.

Moore, D., McAweeney, M., Keferl, J. E., Glenn, M., & Ford, J. A. (2008). Policy issues in vocational rehabilitation related to consumers with substance abuse issues. *Journal of Applied Rehabilitation Counseling, 39*(2), 12-18.

Moyers, T. B., & Miller, W. R. (1993). Therapists' conceptualizations of alcoholism: Measurement and implications for treatment decisions. *Psychology of Addictive Behaviors, 7*, 238-245.

Office of Drug Control Policy (2003). *Drug data summary*. Retrieved November 8, 2005 from http://www.whitehousedrugpolicy.gov

Power, P. W. (2006). Operationalizing the concept of empowerment during the vocational assessment process. *Journal or Applied Rehabilitation Counseling, 37*(2), 21-25.

Reif, S., Horgan, C. M., Ritter, G. A., & Tompkins, C. P. (2004). The impact of employment counseling on substance user treatment participation and outcomes. *Substance Use & Misuse, 39*, 2391-2425.

Rollnick, S., Miller, W. R., & Butler, C. C. (2008). *Motivational interviewing in health care*. New York, NY: The Guilford Press.

Rosengren, D. B. (2009). *Building motivational interview skills: A practitioner workbook*. New York, NY: The Guilford Press.

Salyers, M. P., Becker, D. R., Drake, R. E., Torrey, W C., & Wyzik, P. F. (2004). A ten-year follow-up of a supported employment program. *Psychiatric Services, 55*, 302-308.

Saxon, M. S., Saxon, J. P, & Spitznagel, R. J. (1998). Identification of potential substance abuse behaviors in the rehabilitation client population. *Vocational Evaluation and Work Adjustment Journal, 31*(2), 36-41.

Silverman, K., Svikis, D., Stitzer, M. L., & Bigelow, G. E. (2001). A reinforcement-based therapeutic workplace for the treatment of drug abuse: Six-month abstinence outcomes. *Experimental and clinical psychopharmacology, 9*, 14-23.

Simpson, D. D., & Flynn, P. M. (2007). Moving innovations into treatment: A stage based approach to program change. *Journal of Substance Abuse Treatment, 33*, 111-120.

Sligar, S. R., & Toriello, P. J. (2007). Improving services to clients with addiction issues: New paradigms for vocational evaluation practice. *Vocational Evaluation and Career Assessment Professionals Journal, 12*(1), 17-29.

Substance Abuse and Mental Health Services Administration (2002). *The NHSDA report: Substance use, dependence or abuse among full-time workers*. Department of Health and Human Services.

Toriello, P. J., & Leierer, S. J. (2005). Predictors of counselors' support for the autonomy of clients with substance abuse issues. *Rehabilitation Education, 18*, 211-222.

Toriello, P. J., & Leierer, S. J. (2005). The relationship between the clinical orientation of substance abuse professionals and their clinical decisions. *Rehabilitation Counseling Bulletin, 48*, 75-85.

Toriello, P. J., Morse, P., Morse, V. E., Keferl, J. E., & Pedersen-Wasson, E. (2006). Facilitating the adoption of empirically-supported substance abuse interventions with a continuous quality improvement model: A case study. *Journal of Rehabilitation Administration, 30*, 241-252.

Toriello, P. J., & Strohmer, D. C. (2004). Addictions counselors' credibility: The impact of interactional style, recovery status, and non-verbal behavior. *Journal of Addictions & Offender Counseling, 25*, 43-57.

Veach, L. J., Remley, T. P., Kippers, S. M., & Sorg, J. D. (2000). Retention predictors related to intensive outpatient programs for substance use disorders. *The American Journal of Drug and Alcohol Abuse, 26*, 417-428.

Wagner, C. C., & McMahon, B. (2004). Motivational interviewing and rehabilitation counseling practice. *Rehabilitation Counseling Bulletin, 47*, 152-161.

About the Authors

Paul J. Toriello, Rh.D., is an associate professor of rehabilitation studies at East Carolina University. He is a member of the International Motivational Interviewing Network of Trainers and a clinic director.

W. Leigh Atherton, MA, is a doctoral candidate in Rehabilitation Counseling and Administration, with a specialization in substance abuse counseling, at East Carolina University. He is the project coordinator at Project Working Recovery, a clinic providing job readiness training for persons in recovery.

Tracie E. Campbell, MS, CRC, is a coordinator for Project Working Recovery (PWR), a work readiness program for individuals in recovery from substance abuse.

Steven R. Sligar, Ed.D., CVE, is an assistant professor and director of the Graduate Program in Vocational Evaluation at East Carolina University. He has over 34

years experience in vocational rehabilitation and this includes work with special populations of persons who were deaf and/or blind, many of whom experienced a co-occurring substance use disorder.

The Influence of Post-Acute Withdrawal Syndrome on Instruments Used in Vocational Evaluation

Steven R. Sligar
Paul J. Toriello
W. Leigh Atherton
Stirling Schwiebert
East Carolina University

Clients with post-acute withdrawal syndrome present with symptoms that vary in type, duration, and intensity and directly affect the client's physiological, cognitive, and psychological/mood domains. The interaction between the complex process that is vocational evaluation, especially testing, and the variability of post-acute withdrawal syndrome requires a vocational evaluator who is able to manage the process and the client simultaneously. In this article, we interpret the vocational evaluation tasks of selecting, administering, scoring, interpreting, and communicating the results of tests within the context of serving a client with post-acute withdrawal syndrome. In light of this synthesis, we conclude with recommendations for research in vocational evaluation on this emerging issue.

Key words: *Post-acute withdrawal syndrome, vocational evaluation, testing, substance use disorders, substance abuse*
Author note: Correspondence concerning this article should be addressed to Steven R. Sligar, Department of Rehabilitation Studies, College of Allied Health Sciences, Health Sciences Building, East Carolina University, Greenville, NC 27858. E-mail: sligars@ecu.edu

Vocational rehabilitation clients with substance use disorders (SUD) present in different stages of recovery. These stages are viewed as a developmental process that involves physiological, cognitive, and psychological domains (Gorski & Miller, 1986; Simpson, 2004). In the early recovery stage, the client often experiences sweating, confusion, depression and other symptoms of withdrawal as the body reclaims a drug-free state. Acute withdrawal occurs when this early stage is rushed (Inaba & Cohen, 2007). As the individual maintains sobriety the acute withdrawal symptoms may remain, resulting in post-acute withdrawal syndrome (PAWS; Gorski & Miller, 1986). PAWS can significantly and negatively impact the efficacy of vocational rehabilitation (VR) services, particularly if it is not recognized and addressed.

VR clients with SUD have persistently high rates of unemployment despite reductions in their drug use and the availability of resources to address employment problems (Zanis, 2004). Historically, the state VR system has had only limited success in resolving these employment problems (Magura, Staines, Blankertz, & Madison, 2004; Platt, 1997). Holler, McAweeney, & Moore (2008) found that persons with SUD experienced higher unsuccessful case closure rates when compared to other client groups and suggested that the VR system needs to target individuals with SUD and provide specific services to meet their unique needs.

To promote best practices in addiction rehabilitation the federal government developed the "Treatment Improvement Protocol (TIP) 38: Integrating Substance Abuse Treatment and Vocational Services" (Center for Substance Abuse Treatment [CSAT], 2000). The TIP 38 identified vocational assessment as a service to determine client strengths and needs, develop strategies for intervention, and identify other service needs along with the timing of services. Vocational evaluation (VE) may be viewed as a holistic process that uses different tools with a focal point of work to help a client make decisions about a career (Power, 2006a). Thomas (1997) describes the three tools used in VE as instruments, techniques, and strategies. Instruments are psychometric tests and work samples, techniques include situational or community-based assessments and job try-outs, and strategies are accommodations or modifications made during the administration of the instrument or technique. Instruments, specifically psychometric tests, are the focus of this paper. Tests

are foundational tools used in evaluation (Hayward, Wine, Thorne, Stoddard, & Wilhite, 1992; Vocational Evaluation and Work Adjustment Association, 1975), and may be conducted during early recovery (Sligar & Toriello, 2007). As part of the VE process, the evaluator uses tests to understand a client's current level of functioning and predict capabilities (Power, 2006a).

Given the importance of VE as the foundation and rationale for service planning, it is evident that the identification and evaluation of PAWS should occur here. Vocational evaluators should be knowledgeable about its impact on service, appropriate referrals, and strategic interventions. However, research on the topic is virtually non-existent. The purpose of this paper is to begin the discourse. We discuss how the vocational evaluator may consider the influences of PAWS on testing. This includes the potential implications of PAWS on selecting, administering, scoring, interpreting, and communicating the results of testing. Finally, conclusions are drawn for VE practice and future research.

Post Acute Withdrawal Syndrome

Persons with PAWS present with a serious, yet often clinically overlooked syndrome that can significantly diminish their successful rehabilitation (Inaba & Cohen, 2007). PAWS is present when persons with SUD experience a wide array of physiological, cognitive, and psychological disturbances that persist beyond the first two weeks of abstinence or the acute withdrawal phase and last up to 24 months (De Soto, O'Donnell, Allrred, & Lopes, 1985; Trevisan, Boutros, Petrakis, & Krystal, 1998). The effect of PAWS on persons with SUD has been widely examined in the literature (Brown, Irwin, & Schuckit, 1991; Martinotti, et al., 2008; Miller, 1994; O'Sullivan, Whillans, Daly, Carroll, Clare, & Cooney, 1983; Pottenger, McKernon, Patrie, Weissman, Ruben, & Newberry, 1978; Schuckit & Hesselbrock, 1994). A consistent finding is the indication that PAWS symptoms exhibit a high degree of individual variability, as well as a highly variable course in terms of severity, frequency, and duration. Predicting the short and/ or long-term effects of an individual's substance use is quite difficult. Therefore, individualized assessment and planning on the part of the rehabilitation professional is of utmost importance. Because PAWS is a bio-psycho-social phenomenon, assessments across multiple domains of an individual's functioning are necessary. Three domains typically affected by PAWS include physiological, cognitive, and psychological.

The physiological symptoms of PAWS typically present during the detoxification process and can remain for up to a month (De Soto et al., 1985). Disturbances within an individual's autonomic nervous system are the hallmark physiological symptoms such as increased blood pressure, pulse, and body temperature (Alling et al., 1982). Disturbances in respiration rate may also be present (Schuckit, Helzer, Crowley, Nathan, Woody, & Davis, 1991). Physiological disturbances have the potential to delay an individual's ability to engage in vocational services. This is a determination that can be made by either the rehabilitation professional or the client. It is important to note that these symptoms, at moderate to severe intensity, can put an individual at high risk for acute medical problems. Thus, consultation with a medical professional is highly recommended.

Cognitive functioning may also be impaired by a history of substance use, and are typical of individuals presenting with PAWS. Although general intellectual ability remains intact, individuals with more chronic SUD experience several distinct cognitive impairments (Vik, Cellucci, Jarchow, & Hedt, 2004). The most frequent cognitive deficiencies following the cessation of chronic substance use include impairment in executive functioning, non-verbal reasoning, attention and concentration, (Bates, Bowden, & Barry, 2002; Johanson et al., 2006; Lyvers & Yakimoff, 2003; Pau, Lee, & Chan, 2002), working memory (particularly verbal), and learning (Bates & Convit, 1999; Jovanovski, Erb, & Zakzanis, 2005; Rourke & Loberg, 1996; Toomey et al., 2003). Individuals with PAWS typically recover from alcohol and drug induced cognitive impairments; however, the extent, rate and pattern of recovery are highly variable (Bates, Voelbel, Buckman, Labouvie, & Barry, 2005; Di Sclafani, Tolou-Shams, Price, & Fein, 2002).

Psychological or mood disturbances are probably the most pervasive and longstanding of the effects of an individual's use of substances. In this domain, typical PAWS symptoms include anhedonia (Martinotti et al., 2008), mood instability, irritability, decreased energy,

Table 1

Symptoms of PAWS

Domain	Symptom
Physiological	Increased autonomic symptoms (breathing rate, body temperature, blood pressure, and pulse) Tremors
Cognitive Impairment	Abstract thinking and memory Attention and concentration Executive functioning Non-verbal reasoning Working memory (particularly verbal) and learning
Psychological/ Mood	Anxiety Depressive symptoms (anhedonia, dysphoria, decreased energy, lassitude, insomnia and decreased overall metabolism) Irritability Higher levels of emotionality and overreaction to stress Mood instability characterized by either dearth or excess of emotion

lassitude, and decreased overall metabolism (Satel, Kosten, Schuckit, & Fischman, 1993). Brown, et al. (1991) observed that some individuals who were alcohol-dependent undergo significant changes in depressive symptoms and disturbances in sleep, although these symptoms generally decrease and normalize over time. De Soto et al. (1985) found that affective symptoms could persist for extended periods in people with alcoholism in various stages of abstinence. Symptoms resulting from alcohol abuse may constitute secondary depression or anxiety disorder. Alcohol or drug craving or relapse may also be related to PAWS (Gorski & Miller, 1986; Litman, 1974; Ludwig & Stark, 1974; Ludwig & Wikler, 1974). Clinically, the symptoms discussed in this section are important because clients frequently cite them as relapse triggers during the early stages of recovery (Inaba & Cohen, 2007).

Another area of concern for the vocational evaluator is that a person with PAWS may mimic symptoms of another disorder, making it difficult to differentiate between the two (Johnson, Neal, Brems, & Fisher, 2006; Lykke, Hesse, Austin, & Oestrich, 2008; Wallen & Lorman, 2008). These symptoms cut across physiological, cognitive, and psychological/mood domains and have adverse effects on personal, social, and vocational functioning. For example, the behavioral impairment associated with chronic alcohol use parallel those experienced with traumatic brain injury, and share an individual variable pattern of duration and recovery of function (Bates et al., 2002). In the application of VE tools, the vocational evaluator must consider not only the symptoms of PAWS but also the possibility of a secondary disability.

The evaluation of a client with PAWS is further compounded by the paucity of screening tools. The scope of practice of evaluators precludes diagnosing PAWS but it is acceptable to screen for PAWS. The primary screening tools that an evaluator may use include a thorough review of background information, interviews with the client and others, and behavioral observation to look for symptoms as described in the preceding paragraphs. Until standardized screening protocol are developed, the evaluator will need to rely on clinical skills.

Instrument Use

Using tests is a sequential process that involves selecting, administering, scoring, interpreting and communicating the results (Hood & Johnson, 2007). One of the overriding factors in using tests is its intended purpose. According to Power (2006a), the vocational evaluation is valuable for addressing issues in job readiness (does the client have the physical, psychological and other skills to work), employability (can the client choose and find a job), and placeability (does the client have the skills needed by a specific employer). Referrals may be made to evaluation for any of the three purposes and the evaluator must consider the symptoms of PAWS throughout the process.

Selection

First, the evaluator must consider the reason(s) for referral, which is operationally defined by the referral questions. Referral questions typically ask for information to determine vocational abilities or needed

services develop a plan, identify abilities and limitations, or help the client develop self-knowledge as a worker (Thomas, 1997). These questions are used to determine the type of test to select such as achievement, aptitude, interest or other test.

The test's psychometric properties, e.g., norms, reliability and validity, must be considered. An instrument's normative group should be appropriate for the individual taking the test, but a persistent problem in rehabilitation is that most instruments were not standardized with a representative sample (Power, 2006a). For example, the Beck Depression Index-II did not include a representative sample of persons with SUD in the original normative group (Beck, Steer, & Brown, 1996). Similar to test selection for people with other disabilities, the vocational evaluator is forced to select an instrument based on norm groups that best relate to the client's needs (e.g., employment, training, independence) and/or norm groups with the largest n or sample size (Thomas, 1997). Reliability and validity are properties of the test and consequently, are not influenced by the test taker. However, there is difficulty using the published reliability and validity information on people with SUD because they were not included in the study sample.

A legal consideration is based in The Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. This legislation require instruments to be selected to ensure that the test results reflect the applicant's aptitude, achievement level, or other measured factor rather than the individual's impaired sensory, manual, or physical skills (Power, 2006a).

Other considerations in test selection are germane to any situation. These include time of administration, cost, format, utility, (Drummond & Jones, 2010) and the cultural background and involvement of the test taker (Hood & Johnson, 2007).

Administration

In order to obtain accurate and useable results the evaluator must follow specific procedures (Hood & Johnson, 2007), which may be problematic for persons with PAWS. First, the evaluator must consider if the test selected is administered individually or in a group. For persons experiencing psychological symptoms of PAWS, the evaluator may want to provide individual testing combined with counseling to help the person through the process. Similarly, those with cognitive symptoms may function best in a one to one situation to allow time for processing of the information. Speed and power tests may be influenced by PAWS. If the client has impaired short-term memory or concentration due to PAWS, then the evaluator must be sure that the test is measuring the client's true abilities and not a symptom. Tests administered via a computer must be examined. For example, the Wide Range Interest and Occupation Test 2 allows the test taker to respond in an untimed situation (Glutting & Wilkinson, 1994). This procedure may be helpful for some clients. On the other hand, the test may time out like the Wonderlic Personnel Test-Revised, which at the 12 minute limit blocks further responses (Wonderlic, 2007) and may cause frustration.

Four other factors in administration are giving instructions, timing, observing behaviors, and controlling the environment (Hood & Johnson, 2007). All of these are impacted by the complexity and variability of PAWS' symptoms, which results in functional impairments that differ in severity, frequency, and duration. These symptoms combine to produce an infinite number of possibilities that may cause random fluctuations in behavior and make test administration difficult. The wide array of physiological, cognitive, and psychological disturbances produces both short-term (weeks in duration) and longer term (perhaps up to 24 months) functional limitations. These include executive function difficulties of working memory and recall (e.g., holding facts in mind while manipulating information, accessing long-term memory); activation, arousal, and effort (e.g., getting started, paying attention and finishing work); and controlling emotions (e.g., ability to tolerate frustration). For example, poor short-term memory will impair the client's ability to retain instructions about task completion. Consequently, poor performance may be due to inability to remember instructions and not necessarily poor ability to perform the task. Memory improves shortly after initiating abstinence, however the rate and extent of improvement appears to be influenced by history and type of drug use (Allen, Gregory, Strauss, Leany & Donohue, 2008; Hannay, Howieson, Loring, Fischer, & Lezak, 2004). Individuals having trouble with attention and concentration may demonstrate

uncooperative behavior in response to a long and/or difficult test or an environment that has auditory and/or visual distractions.

Scoring

Scoring of psychometric tests is detailed in the test manual and is straightforward. A concern is self-report scoring because the evaluator must insure that the client follows the outlined procedure. For example, the *Career Occupational Preference System* or COPSystem requires the client to count responses, transfer the raw score to the appropriate place on a form to obtain a derived score, and then use the derived score to interpret the results (Knapp, Knapp & Knapp-Lee, 1995). This process may be difficult and frustrating to a client with attention or short term memory difficulties. If the test uses a behaviorally anchored rating scale, then the evaluator must consider the possible influences of PAWS, especially in the psychological/mood domain. For example, the Work Readiness Profile allows for self-report or the use of an informant (Rowe, 1995). If the former is used then anxiety may influence self-ratings or if the latter is used, then depressive symptoms or irritability may negatively affect the informant's ratings.

Interpreting

The purpose of test interpretation in VE is to translate scores and observations into a comprehensive plan for employment that optimizes the probability of the individual's successful vocational outcome (Bolton, Parker, & Brookings, 2008). There are four types of hierarchical interpretation from simplest to complex (Goldman, 1971), which may be further differentiated as test or non-test data (Pruitt, 1986). First is descriptive interpretation that involves comparison of the client's performance on specific test scores with the underlying assumption that the obtained score is true and accurate. If the client underperformed or selected the wrong responses due to PAWS and not lack of knowledge or skill, then the results are suspect and not useable. Second is genetic interpretation that attempts to explain the reasons for a client's behavior. Some results examined by the evaluator are conflicts between interest scores and work history or low aptitude scores and environmental influences. The latter includes external sources such as family or peer group and internal factors such as depression or over reaction to the stress of testing. In order to conduct a genetic interpretation the evaluator must differentiate between the person's actual behaviors and those that are influenced by PAWS, which may mimic another disability.

Next is predictive interpretation, which is especially sensitive to PAWS. For example, an evaluator may collect useable data on achievement and aptitudes that indicate a probability of success in a training program. This interpretation then factors in non-test data such as motivation, social support, and emotional readiness, which are negatively influenced by PAWS. The resulting interpretation is conflicted because the test data is favorable and the non-test data is not. The evaluator is left to sort the data and most likely will need to collect additional information in order to finish the interpretation.

The final type of interpretation is evaluative which involves both the art and science of VE. The evaluator makes objective considerations such as using the O*Net job qualifications, a local job description, or entrance requirements for a training program. The evaluator also makes value judgments (Pruitt, 1986) as shown by suggesting a plan of action or making recommendations. Given the interplay between these two tasks overlaid with the complexities presented by a client with PAWS, the evaluator must proceed with caution. Any number of variables can result in an inaccurate interpretation; the evaluator must verify both the test and non-test data for accuracy. In order to produce a useable interpretation, the evaluator needs to remove the false filter imposed by PAWS on the data. This may be done by a careful file review, extensive interviews with the client and other informants, and collaboration with rehabilitation professionals including an addictions specialist.

Communicating Results

The final step in instrument use is the communication of the results. This begins with the intake interview, continues throughout the evaluation, and ends with the final report or staffing. The evaluator must be vigilant and continually assess the readiness of the client for performance feedback throughout the process. Due to the variability of the symptoms of PAWS, the client

may experience difficulty processing information and may not understand either the individual test results or the global interpretation of the test battery. The evaluator monitors understanding through feedback and open ended questions. Power (2006b) suggests using motivational interviewing techniques as a way to facilitate client involvement and empowerment.

Another important aspect of communication is the report. The 30th Institute on Rehabilitation Issues (IRI; 2003) emphasizes a report with positive information to help the client to choose an appropriate career and develop a plan to accomplish goals. The evaluator must report the functional limitations attributed to PAWS separate from other limitations, balanced with strategies on how best to manage or overcome these barriers. Whether the report is narrative or visual in format, it should (a) focus on client interests, (b) communicate through client language, emphasize client strengths, and reflect client involvement in negotiating its content (IRI, 2003).

Conclusions

A client with PAWS presents with symptoms that vary in type, duration, and intensity and directly affect the physiological, cognitive and psychological/mood domains. The interaction between the complex process that is VE, especially the use of tests, and the variability of PAWS requires a vocational evaluator who is able to manage the process and the client simultaneously. In order to maintain stability, the evaluator must learn about PAWS and its resultant functional imitations. The learning is then applied to distinguish PAWS from other disabilities that may be present in order to provide accommodations or modifications while testing. The reason for this paper is to promote a heightened awareness of PAWS and how it affects testing may prevent the collection of misinformation due to inaccurate test results.

The scope of this paper was limited to the affects of PAWS on testing. Additional work remains to determine the affects of PAWS on behaviors and functional limitations. A need exists for further research related to persons with PAWS. Rehabilitation researchers in addiction need to identify the demographics of the population, continue identification of the symptoms of PAWS, describe the functional limitations imposed, develop a screening instrument, and identify successful intervention strategies. It would be helpful in the provision of services to understand the lived experiences of this population applying a qualitative method. Within vocational evaluation research, there is a need to identify the number of clients with PAWS who participate and complete their VE and describe their outcomes. In addition, there is a need to determine the level of readiness of vocational evaluators to serve this population, including training needs? To discern the impact of VE on the lives of persons served, a qualitative approach may be utilized to solicit their views on services.

References

Allen, D. N., Gregory, P., Strauss, G. P., D.Leany, B., & Donohue, B. (2008). Neuropsychological assessment of individuals with substance use disorders. In A. M. Horton, Jr. & D. Wedding (Eds.), *The neuropsychology handbook* (3rd ed.; pp. 705-728). New York: Springer.

Alling, C., Balldin, J., Bokstrom, K., Gottfries, C.G., Karlsson, I., Langstrom, G.(1982). Studies on duration of a late recovery period after chronic abuse of ethanol: A cross-sectional study of biochemical and psychiatric indicators. *Acta Psychiatrica Scandinavica, 66*(5), 384-397.

Bates, M. E., Bowden, S. C., & Barry, D. (2002). Neurocognitive impairment associated with alcohol use disorders: Implications for treatment. *Experimental and Clinical Psychopharmacology, 10*(3), 193-212.

Bates, M. E., & Convit, A. (1999). Neuropsychology and neuroimaging of alcohol and illicit drug abuse. In A. Calev, (Eds.), *Assessment of neuropsychological functions in psychiatric disorders.* (pp. 373-445). Washington, DC: American Psychiatric Association.

Bates, M. E., Voelbel, G. T., Buckman, J. F., Labouvie, E. W., & Barry, D. (2005). Short-term neuropsychological recovery in clients with substance use disorders. *Alcoholism: Clinical and Experimental Research, 29*(3), 367-377.

Beck, A. T., Steer, R. A., & Brown, B. K. (1996). *Beck depression inventory manual* (*2nd ed.*). San Antonio, TX: Psychological Corporation.

Bolton, B. F., Parker, R. M., & Brookings, J. B. (2008). Scores and norms. In B. F. Bolton & R. M. Parker (Eds.). *Handbook of measurement and evaluation in rehabilitation* (*4th ed.*). Austin, TX: Pro-Ed.

Brown, S. A., Irwin, M., & Schuckit, M. A. (1991). Changes in anxiety among abstinent male alcoholics. *Journal of Studies on Alcohol, 52*, 55-61.

Center for Substance Abuse Treatment (CSAT). (2000). *Integrating*

substance abuse treatment and vocational services (*Treatment improvement series #38*). Washington DC: Substance Abuse and Mental Health Services Administration, US Department of Health and Human Services.

De Soto, C. B., O'Donnell, W. E., Allrred, L. J., & Lopes, C. E. (1985). Symptomatology in alcoholics at various stages of abstinence. *Alcoholism: Clinical and Experimental Research, 9*(6), 505-512.

Di Sclafani, V., Tolou-Shams, M., Price, L. J., & Fein, G. (2002). Neuropsychological performance of individuals dependent on crack-cocaine, or crack-cocaine and alcohol, at 6 weeks and 6 months of abstinence. *Drug and Alcohol Dependence, 66*(2), 161-171.

Drummond, R. J., and Jones, K. D. (2010). *Assessment procedures for counselors and helping professionals* (7th ed.). New York: Pearson.

Glutting, J. J. & Wilkinson, G. S. (1994). *Wide Range Interest and Occupation Test 2nd Edition: Manual.* San Antonio, TX: Harcourt Assessment, Inc.

Goldman, L. (1971). *Using tests in counseling* (*2nd ed.*). Santa Monica, CA: Goodyear.

Gorski, T. T., & Miller, M. (1986). *Staying sober: A guide for relapse prevention.* Independence, MO: Herald House/Independence.

Hannay, H. J., Howieson, D. B., Loring, D. W., Fischer, J. S., & Lezak, M. D. (2004). Neuropathology for neuropsychologists. In M. D. Lezak, D. B. Howieson, & D. W. Loring. *Neuropsychological assessment* (*4th ed.*; pp. 157-285). Oxford: University Press.

Hayward, B., Wine, J., Thorne, J. Stoddard, S., & Wilhite, J. (1992). *Evaluation of vocational assessment procedures and the IWRP process used by state agencies*. Research Triangle Park, NC: Research Triangle Institute.

Holler, D., McAweeney, M., & Moore, D. (2008). The relationship between substance use disorders and unsuccessful case closures in vocational rehabilitation agencies. *Journal of Applied Rehabilitation Counseling, 39*(3), 48-52.

Hood, A. B., & Johnson, R. W., (2007). *Assessment in counseling a guide to the use of psychological assessment procedures* (4th ed.). Alexandria, VA: American Counseling Association.

Inaba, D. S., & Cohen, W. E. (2007). *Uppers, downers, all arounders* (6th ed.). Medford, OR: CNS.

Institute on Rehabilitation Issues (IRI). (2003). *A new paradigm for vocational evaluation* (30th Institute on Rehabilitation Issues). Washington, D.C.: Rehabilitation Services Administration, U.S. Department of Education.

Johanson, C., Frey, K. A., Lundahl, L. H., Keenan, P., Lockhart, N., Roll, J., et al. (2006). Cognitive function and nigrostriatal markers in abstinent methamphetamine abusers: Erratum. *Psychopharmacology, 186*(4), 620-620.

Johnson, M. E., Neal, D. B., Brems, C., & Fisher, D. G. (2006). Depression as measured by the Beck Depression Inventory-II among injecting drug users. *Assessment, 13*(2), 168-177.

Jovanovski, D., Erb, S., & Zakzanis, K. K. (2005). Neurocognitive deficits in cocaine users: A quantitative review of the evidence. *Journal of Clinical and Experimental Neuropsychology, 27*(2), 189-204.

Knapp, R. R., Knapp, L., & Knapp-Lee, L. (1995). *Career Occupational Preference System: Manual.* San Diego, CA: Educational and Industrial Testing Service.

Litman, G. K. (1974). Stress, affect and craving in alcoholics. *Quarterly Journal of Studies on Alcohol, 35*, 131-146.

Ludwig, A. M., & Stark, L. H. (1974). Alcohol craving. Subjective and situational aspects. *Quarterly Journal of Studies on Alcohol, 3,* 899-905.

Ludwig, A. M., & Wikler, A. (1974). Craving and relapse to drink. *Quarterly Journal of Studies on Alcohol, 35*, 108-130.

Lykke, J., Hesse, M., Austin, S. F., & Oestrich, I. (2008). Validity of the BPRS, the BDI and the BAI in dual diagnosis patients. *Addictive Behaviors, 33*(2), 292-300.

Lyvers, M., & Yakimoff, M. (2003). Neuropsychological correlates of opioid dependence and withdrawal. *Addictive Behaviors, 28*(3), 605-611.

Magura, S., Staines, G. L., Blankertz, L., & Madison, E. M. (2004). The effectiveness of vocational services for substance users in treatment. *Substance use & Misuse, 39*(13), 2165-2213.

Martinotti, G., DiNicola, M., Reina, D., Andreoli, S., Foca, F., Cunniff, A., et al. (2008). Alcohol protracted withdrawal syndrome: The role of anhedonia. *Substance Use & Misuse, 43*(3), 271-284.

Miller, F. T. (1994). Protracted alcohol withdrawal delirium. *Journal of Substance Abuse Treatment, 11*(2), 127-130.

O'Sullivan, K., Whillans, P., Daly, M., Carroll, B., Clare, A., & Cooney, J. (1983). A comparison of alcoholics with and without coexisting affective disorder. *British Journal of Psychiatry, 143*, 133-138.

Pau, C. W. H., Lee, T. M. C., & Chan, S. F. (2002). The impact of heroin on frontal executive functions. *Archives of Clinical Neuropsychology, 17*(7), 663-670.

Pottenger, M., McKernon, J., Patrie, L. E., Weissman, M. M., Ruben, H. L., & Newberry, P. (1978). The frequency and persistence of depressive symptoms in alcohol abusers. *The Journal of Nervous and Mental Disease, 166*, 562-570.

Power, P. W. (2006a). *A guide to vocational assessment (4th* ed.*).* Boston: Pro-Ed.

Power, P. W. (2006b). Operationalizing the concept of empowerment during the vocational assessment process. *Journal of Applied Rehabilitation Counseling, 37*(2), 21-25.

Platt, J. J. (1997). Vocational rehabilitation of drug abusers. In G. A. Marlatt& G. R. VandenBos (Eds.), *Addictive behaviors: Readings on etiology, prevention, and treatment* (pp. 759-801). Washington, DC: American Psychological Association.

Pruitt, W. A. (1986). *Vocational (work) evaluation* (2nd ed.). Menomonie, WI: Walt Pruitt Associates.

Rourke, S. B., & Loberg, T. (1996). Neurobehavioral correlates of alcoholism. In I. Grant& K. M. Adams (Eds.), *Neuropsychological assessment of neuropsychiatric disorders (2nd ed.*; pp. 423-485). New York,: Oxford University Press.

Rowe, H. A. (1995). *Work Readiness Profile: Manual.* Camberwell,

VIC: Acer.
Satel, S. L., Kosten, T. R., Schuckit, M. A., & Fischman, M. W. (1993). Should protracted withdrawal from drugs be included in DSM-IV? *American Journal of Psychiatry, 150*(5), 695-704.
Schuckit, J. B., Helzer, J., Crowley, T., Nathan, P., Woody, G., & Davis, W. (1991). Substance use disorders. *Hospital & Community Psychiatry, 42,* 471-473.
Schuckit, M. A.,& Hesselbrock, M. A. (1994). Alcohol dependence and anxiety disorders: What is the relationship? *American Journal of Psychiatry, 151*(12), 1723-1734.
Simpson, D. D. (2004). A conceptual framework for drug treatment process and outcome. *Journal of Substance Abuse Treatment, 27,* 99-121.
Sligar, S. R., & Toriello, P. J. (2007). Improving services to clients with addiction issues: New paradigms for vocational evaluation practice. *Vocational Evaluation and Career Assessment Professionals Journal,* 4(1), 17-29.
Thomas, S. (1997). *Vocational evaluation: Philosophy and practice*. Greenville, NC: East Carolina University.
Toomey, R., Lyons, M. J., Eisen, S. A., Xian, H., Chantarujikapong, S., Seidman, L. J., et al. (2003). A twin study of the neuropsychological consequences of stimulant abuse. *Archives of General Psychiatry, 60*(3), 303-310
Trevisan, L. A., Boutros, N., Petrakis, I. L., & Krystal, J. H. (1998). Complications of alcohol withdrawal: Pathophysiological insights. *Alcohol Health & Research World, 22*(1), 61-66.
Vik, P. W., Cellucci, T., Jarchow, A., & Hedt, J. (2004). Cognitive impairment in substance abuse. *Psychiatric Clinics of North America, 27*(1), 97-109.
Vocational Evaluation and Work Adjustment Association (1975). Vocational evaluation project: Final report [Special issue]. *Vocational Evaluation and Work Adjustment Bulletin, 8,* 7-165.
Wallen, M. C., & Lorman, W. J. (2008). Special issues in patients with comorbid psychiatric and chemical dependency disorders. In J. Brick (Ed.), *Handbook of the medical consequences of alcohol and drug abuse* (*2nd ed.*; pp. 527-563). Binghamton, NY: Haworth Press.
Wonderlic, E. F. (2007). *Wonderlic Personnel Test-Revised: Manual.* Los Angeles, CA: Western Psychological Services.
Zanis, D. A. (2004). The most critical unresolved issues associated with contemporary vocational rehabilitation for substance users. *Substance Use & Misuse, 39*(13-14), 2611-2614.

About the Authors

Steven R. Sligar, Ed.D., CVE, is an assistant professor and director of the Graduate Program in Vocational Evaluation at East Carolina University. He has over 34 years experience in vocational rehabilitation and this includes work with special populations of persons who were deaf and/or blind, many of whom experienced a co-occurring substance use disorder.

Paul J. Toriello, Rh.D., is an associate professor of rehabilitation studies at East Carolina University. He is a member of the International Motivational Interviewing Network of Trainers and a clinic director.

W. Leigh Atherton, MA, is a doctoral candidate in Rehabilitation Counseling and Administration, with a specialization in substance abuse counseling, at East Carolina University. He is the project coordinator at Project Working Recovery, a clinic providing job readiness training for persons in recovery.

Stirling Schwiebert, MA, was enrolled in the PhD program at East Carolina University. He worked as a counselor for persons in recovery for 3 years and has several years experience in the private sector related to rehabilitation, marketing and sales.

Author note: For additional information on test accommodations, refer to Resources for Educators and Resources for Employers at the Disabilities, Opportunities, Internetworking, and Technology (DO-IT) web site (http://www.washington.edu/doit/) or the Job Accommodation Network web site (http://www.jan.wvu.edu/).

Behavioral Addictions Screening During the Vocational Evaluation Process

Mary K. Crozier
Steven R. Sligar
East Carolina University

The purpose of this paper is to provide the vocational evaluator with basic information about screening for behavioral addictions, which include pathological gambling, eating disorders, and compulsive sex, work, and Internet use. Using the bio-psycho-social model, behavioral addictions are defined and explained. The process of vocational evaluation from referral and planning to assessment and career exploration serves as the platform in which to conduct the screening. Eight screening instruments are reviewed along with a discussion of the need for further research.

Key words: *vocational evaluation, behavioral addiction, process addiction, screening*
Author note: Correspondence concerning this article should be addressed to Mary K. Crozier, Assistant Professor, Substance Abuse, and Clinical Counseling, Department of Rehabilitations Studies, College of Allied Health Sciences, East Carolina University, Greenville, NC 27858. E-mail: crozierm@ecu.edu

Behavioral addictions (BA) have been acknowledged in the substance abuse literature but have yet to be adequately recognized in vocational evaluation (VE). This has lead to problems in evaluation and counseling since a host of potentially addictive behaviors often go unnoticed, unassessed, and untreated. The most widely researched of these potentially addicted behaviors include pathological gambling, eating disorders, compulsive sex, work, and compulsive Internet use, which are the focus of this paper. There are other addictions such as shopping and exercising that are beyond the scope of this paper.

Vocational evaluators probably encounter clients who have substance and/or BA more often than they realize. The number of individuals presenting with BA is not known or captured in the 911 data from state Vocational Rehabilitation agencies or any recognized national database. Prevalence estimates of BA in the population are cobbled together from ancillary findings in substance abuse studies. The body of research literature on addictions builds a strong and growing case for the impact of drugs and alcohol on work, independent living, various disabilities, etc. (Regier et al., 1990; Rehabilitation Research and Training Center on Drugs and Disability, 1996; Substance Abuse and Mental Health Services Administration, 2008), but work in BA is fragmentary at best. A meta-analysis of 119 studies conducted in the United States and Canada found almost 2% of the adult population to be pathological gamblers (Slutske et al., 2000). Substance abusers are six to ten times more likely to be pathological gamblers (Spunt, Lesieur, Hunt, & Cahill, 1995; Brewer, Grant, & Potenza, 2008). A national Harris poll found that adults with disabilities use the Internet twice as much as people without disabilities (Taylor, 2000); not indicative of BA but merely suggestive, and included here to illustrate the early empirical state of BA research. No research exists that considers BA in the context of VE.

The purpose of this paper is to provide the vocational evaluator with basic information about screening for BA. It is acknowledged that clients present to VE services with a variety of disabilities, including substance and BA (Chronister, et al., 2008). This paper defines and identifies indicators of BA, provides screening tools, and makes recommendations for VE and future research. In the absence of well-grounded theory, this article is intended as a guide for BA screening in VE, not as a definitive best practice. However, we see this as a first step and foundation for an emerging topic for applied research in VE and counseling.

Addiction

The term addiction may confuse clients and providers alike due to its inconsistent and evolving definition. These inconsistencies reflect geographic, social, and/or political paradigms through which addictions and scientific research is viewed. Addictive behavior has evolved from being called intemperance, a debauchery, a disease of the will, mania, a habit, a self-indulgence (Orford, 2001) to a behavioral disorder or a bad habit (Walters, 1999), and even a "troublesome habitual behavior" (Walker & Lidz, 1983, p. 30). It has been described as an obsession, dependence, pseudoaddiction (Doweiko, 2006), process addiction (Crozier & Rokutani, 2008), paradigm in progress (Smith & Seymore, 2004), disease, mental illness, and bio-psycho-social issue.

For the purposes of this paper, addiction describes physical and/or psychological dependence and is most commonly associated with substance abuse. The Diagnostic and Statistical Manual of Mental Disorders 4th edition, Text Revision (DSM4-TR; American Psychiatric Association, 2000) describes substance dependence as a combination of symptoms including compulsion, negative consequences, withdrawal, and tolerance. The DSM4-TR criteria for substance dependence can be divided into three categories that correspond to the bio-psycho-social model of addiction. Diagnosis requires that no fewer than three of the following symptoms be present and persist for a minimum of 12 months: (a) biological (tolerance, withdrawal, and ingestion of larger amounts or over a longer period of time); (b) psychological (persistent desire or unsuccessful effort to cut down or control use, a great deal of time spent engaged in use, and continued use despite problems); and (c) social (compromise to social, occupational, and familial events). Since substance dependence is the most researched and understood condition, it is used as a reference against which other potentially addictive behaviors can be compared. In addition, viewing addictions through the bio-psycho-social paradigm facilitates a comprehensive review of the literature, provides a holistic view of the client, and addresses all of the criteria for substance dependence.

Behavioral Addiction

When the term substance is omitted from the definition of abuse a new understanding of addiction emerges. At its core, addiction includes a multitude of symptoms indicating that the individual compulsively or uncontrollably engages in certain behaviors despite significant problems that are a direct result of that behavior. Individuals would thus be dependent on a behavior that generates a host of neural, biological, and psychological changes (Shaffer et al., 2004). There is a growing body of research that suggests the addiction potential of otherwise benign behaviors such as problematic relationships, excessive work behaviors, exercise, and meditation (DiClemente, 2003). Current understanding of addiction has moved beyond its early preoccupation with drug use to a broader, more holistic construct (Peele, 1985).

BA have biological variables that are parallel with and are equivalent to substance dependence. It has long been understood that the body naturally produces endogenous neurotransmitters that produce feelings of pleasure, which can be hijacked by unnatural/exogenous psychoactive substances (Holden, 2001). There is emerging research on how the brain can also be hijacked by the production of endogenous neurotransmitters that are set in motion by substances (Leshner, 2001) and by potentially addictive behaviors that, when repeated, cause similar neuroadaptations (Shaffer et al., 2004). This research contributes to a paradigm shift in our understanding of addiction. It has been accepted for several decades that the neurophysiology of certain brain regions and transmitters are responsible for the craving, intoxication, and withdrawal for psychoactive substances due to activation of the mesolimbic reward system (Doweiko, 2006). Studies on neurophysiology have found specific neurotransmitters are activated when individuals engage in different addictive behaviors such as the involvement of epinephrine in pathological gambling, serotonin in eating disorders, and epinephrine and opioid B-endorphins in compulsive sex (Brewer et al., 2008). Neurochemical changes have even been reported in compulsive shoppers who experience chemically-induced amnesia while binge shopping (Boundy, 2000). All of these findings parallel the substance abuse pattern. The biological criterion of tolerance is expressed in pathological gamblers by increased wagering and in binge eaters by continually increasing caloric intake. The equivalent

of using substances in greater amounts and at more frequent intervals can occur in pathological gamblers, compulsive sex addicts, and pathological Internet users who engage in their behavior for longer periods of time and for periods longer than intended. If the mesolimbic system in the brain perceives a rewarding, pleasurable sensation from either a psychoactive substance or a behavioral experience, the individual is motivated to repeat that behavior. Over time, repetition can lead to compulsion. Rewards can be generated by endogenous neurotransmitters as well as by external events and the results are the same (Holden) regardless of the source or whether the expressed manifestation was drinking or gambling (Shaffer et al.).

BA have psychological variables in common with substance dependence. Peele (1985) saw addiction as a way of coping with emotional and environmental influences. Further similarities include reinforcing antecedents that trigger substance use or engagement in a behavior as well as diverse affective states such as euphoria and dysphoria (Donegan, Rodin, O'Brien & Solomon, 1983). Addiction to experiences and behaviors are characterized by unhealthy attachments and compulsions (Peele). For example, pathological gamblers are characterized by preoccupation, irritability with attempting to cut down or stop gambling, and gambling to relieve a negative mood state (American Psychiatric Association [APA]; 2000). The DSM4-TR identifies psychological variables of eating disorders; anorexia nervosa presents with an intense fear of weight gain and a perception of body weight or shape and bulimia nervosa presents with a lack of control while eating during times of bingeing (APA).

There are social variables that accompany BA. Many addictive behaviors are initially met with acceptance and reciprocity from supportive peers who inadvertently enable the addictive behavior (Walker & Lidz, 1983). Any behavior can lead to legal, financial, familial, or occupational risks but if an individual becomes addicted to the behavior, then engagement in that behavior continues despite these risks and negative side effects. This phenomenon has been documented in cases of individuals who experience a home foreclosure due to gambling debt, are overlooked for occupational advancement due to an eating disorder, are fired for engaging in cybersex while at work, divorce due to work addiction, and lose personal relationships due to pathological Internet use (Walters, 1999).

Broadly speaking, addiction is the last stage of a long process that is challenging to correct (DiClemente, 2003). All addictions share structural similarities (Carnes, Murray, & Charpentier, 2004) and criteria that include compulsion, control, and consequences (Chamberlain, 2004). Potentially addictive behaviors are not inherently addictive. Indeed, they are generally common and even healthy aspects of daily life (Power, 2005). BA are the concurrence of powerful neurotransmitter rewards, psychological vulnerability, social acceptance and enablement, and the environmental availability of certain substances and behaviors over time.

Co-occurrence

In an effort to provide more effective service, rehabilitation professionals have learned to serve individuals with multiple disabilities such as a physical disability, mental illness, and substance abuse (Koch, 2002). As rehabilitation professionals begin to address the concomitant issues of substance abuse in their caseloads, new skills are required to serve clients with multiple, cross, or dual addictions. Greenberg, Lewis, and Dodd (1999) found that individuals who are addicted to substances tend to be more vulnerable to BA as well. The overlap between substance and BA is quite strong (Martin & Petry, 2005). The most frequently documented dual addiction is between pathological gamblers and substance abusers. Brewer et al., (2008) found that substance abusers are ten times more likely also to be pathological gamblers. Grant (2008) found that pathological gamblers were over twice as likely to have a substance use disorder as the general population. Grant also found even higher rates of substance abuse among persons with binge eating disorders, compulsive sexual behavior, and Internet addiction. While these findings are not predictive for dual addictions, they do suggest the pervasiveness of dual and multiple addiction problems. It is not a matter of if, but when vocational evaluators encounter clients who have underlying BA. At present, it is a virtually invisible presence among clientele with an unknown impact on VE processes and outcomes. Functional indicators are required to bring these issues to light.

Functional indicators

Each type of BA has functional indicators that are found in the literature of self-help groups. Functional indicators of pathological gambling include lifestyle changes to accommodate gambling events, an audible or visual rush of anticipation when discussing gambling events, rationalizations for the continuation of gambling, an attempt to hide debts, constant borrowing of money, extreme fluctuations in finances and mood, and the use of defense mechanisms such as denial or lying (see http://www.gamblersanonymous.org/). Functional indicators of an eating disorder include excessive talk of dieting, detailed knowledge of calories/fat grams, compensatory behavior such as extreme exercise or food avoidance, secretive binge or food purging behavior, hiding or hoarding food, denial of the risks associated with eating disorders, or a denial of changes in appearance (see http://www.nationaleatingdisorders.org/). Functional indicators of compulsive sex include changes in sleep patterns, mercurial emotions that may range from anticipation to anxiety to euphoria to exhaustion and release, boasting about sexual conquests, unplanned and/or unhealthy sexual encounters, weak personal boundaries, compulsive masturbation, inappropriate touching in public, insensitive jokes, and compromising of espoused values (see http://www.sexaa.org). Functional indicators of work addiction include perfectionism, projecting of fault to others, unrealistic standards, poor social skills, and inability to delegate tasks (see http://www.workaholics-anonymous.org/). Pathological Internet users may experience eye and back strain, carpal tunnel syndrome, unexplained changes in sleep patterns, problems with time management, decreased productivity, social withdrawal when off-line, missed appointments, and compromised espoused values (see http://www.netaddiction.com/). Refer to Table 1 for a summary of possible indicators based on information from self-help groups.

Some early research by Carnes suggested an interaction and cycling between addictions rather than

Table 1

Summary of Possible Indicators for the Five Behavioral Addictions

BA	Possible Indicators
Pathological Gambling	Sense of urgency regarding job and salary Questions about pay periods and methods of payment Talk of gambling related vacations or hobbies.
Eating Disorders	Overly thin or overly heavy physical appearance Ill-fitting clothing used to disguise shape Avoids invitation to eat with others.
Compulsive Sexual Behavior	Lack of social boundaries and discretion Insensitive remarks or sexual innuendos Fatigue without explanation.
Work Addiction	Exaggerates skill and experience Volunteers for extra duties Pride in previous work responsibilities Boasts of working extra hours.
Compulsive Internet Use	Internet savvy Need for internet availability at work Weak interpersonal skills Fatigue without explanation.

a simple coexistence of addictions (Carnes et al., 2004). Clients may also cycle from heavy engagement in their addictive behavior, such as binge drinking and eating, to a period of abstinence and anorexia. Clinicians now see addiction as a cyclical rather than linear phenomenon (Blume, 2004). This may be due in part to the availability of the addictive behavior (drugs or computer), the risks caused by engagement in that behavior, and a learned reward from switching/alternating behaviors and substances. This emerging "metamodel concept" (Carnes et al, p. 50) of addiction reinforces the need for vocational evaluators to screen for substance and behavioral addictions routinely; when initiating a case consultation and at intermittent intervals during the VE process.

BA Screening in the Vocational Evaluation ProcessScreening in the VE Process

Screening in VE has different connotations. The Vocational Evaluation and Work Adjustment Association (VEWAA) Project (1975) and Fry and Botterbush (1988) describe three levels of evaluation with screening as the first level. Their work was synthesized by the Thirtieth Institute on Rehabilitation Issues (IRI; 2003), which stated the "purpose of a Level 1 evaluation is to screen or make quick decisions about specific traits of an individual," (p. 91). Pruitt (1986) has a different perspective as he defines screening as a "preliminary process of determining appropriateness of available services" (p. 300). Screening tools include analysis of some background information, client input, and the use of formal or informal tests that require minimal interpretation (IRI). From a traditional perspective, vocational evaluators perform physical capacity and work tolerance screenings as defined in the VEWAA Glossary (Dowd, 1993). In a related context, Toriello and Sligar (2009) argue for inclusion of substance abuse screening during the VE process. It is important to differentiate between screening and assessment. The purpose of screening is to determine if the client is at risk for an addiction and assessment is the process of diagnosing the condition (Connors & Volk, 2004). Addiction screening can provide valuable information for the provider and the client alike. It is within the scope of practice of a vocational evaluator to screen for a BA: not to diagnose. Although screenings are brief, they can help detect current and potential addiction problems in clients by a variety of providers, even those with limited experience in addictions (Fleming, 2003).

The IRI (2003) describes the process of evaluation as a continuum that follows a three phase model: (1) referral and planning, (2) assessment and career exploration, and (3) follow-up and quality assurance. Screening is conducted during phases one and two with a follow-up to determine the accuracy of the screening to improve the quality of VE services. At any time during the process, if the evaluator determines there is a potential for a BA, then screening needs to be implemented. The evaluator must also bear in mind the influence of cycling, which may cause no indication for screening at the start of evaluation but a need may arise during the process or vice versa.

During the first phase, vocational evaluators conduct a pre-screening, which is the "process of reviewing all available pertinent data on a referral to determine the need for vocational evaluation or other services" (Dowd, 1993, p. 20). Just as the evaluator reads the referral information for indicators of possible physical capacity, job readiness, or other barriers to employment, the evaluator must also check for indicators of BA in the review.

The intake interview is the first step in the assessment and career exploration phase. The interview affords the evaluator an opportunity to confirm or refute indicators from the file review as well as interact with the client. Screening can be facilitated by the use of client centered and motivational interviewing strategies (Power, 2006) that have replaced confrontational interviewing techniques. If a BA is suspected, then the evaluator may include screening in vivo; for a sample dialog refer to Appendix A. If the client displays signs of a BA during the assessment, then the evaluator needs to incorporate a screening instrument to determine the client's level of risk.

Instruments

Specific screening instruments are available for pathological gambling, compulsive eating and sex, and work addiction. The CAGED is suggested for Internet addiction. A modified alcohol screening instrument

Table 2

Sample Screening Tools for Behavioral Addictions

Behavior	Screening Tool	Source
Gambling	SOGS	http://www.in.gov/judiciary/ijlap/docs/south-oaks-gambling-screen.pdf
	GA 20 Questions	http://www.gamblersanonymous.org/20questions.html
Eating	EAT-26	http://www.drshepp.com/eatingattiturestest.pdf
Work	WART	http://www.darvsmith.com/dox/workaddiction.html

Authors' note: The Lie/Bet, WASTE Time, CAGE, and CAGED are included in entirety in the body of this article.

that may be used with any BA and a broad based questionnaire are also presented. The instruments are described by name, number of items, and technical information that includes psychometric properties as available. The vocational evaluator uses the instrument in combination with clinical observations and other data (e.g. background information, reports from other professionals, and family input). The results of the screening may be used to inform the VE process and, if further inquiry is in order, to justify a referral for a full BA assessment.

Pathological gambling. There are three screening instruments for pathological gambling. The South Oaks Gambling Screen (SOGS) is widely used due to its brevity, close alignment with the DSM4-TR, availability, reliability, face validity, and utility across ages (Chamberlain, 2004). The SOGS was one of the first screening tools for gambling and it has been translated into approximately 15 languages. It has 16 items, two of which have multiple questions for a total of 20 points. A score of 5 or more indicates probable pathological gambling that warrants a referral for assessment (Chamberlain). It was normed on 1,616 individuals who were members of Gambling Anonymous (GA), gambling and substance abuse patients, college students, and hospital employees (Lesieur & Blume, 1993). Early research on the SOGS demonstrated concurrent validity with the gambling criteria in the DSM4-TR ($r = .94$, $p. < 004$) and high reliability (Cronbach's alpha .97, $p. < 001$; Lesieur & Blume, 1987).

The GA 20 Questions is used to help individuals and their families identify compulsive gambling. The questions cover the behaviors, finances, emotional reactions, and consequences of gambling. A score of 7 or more would warrant a referral for a gambling assessment. This screening instrument, while clinically popular, has not been validated in research and relies on face validity (Chamberlain, 2004).

The LIE/BET screening protocol is extremely brief. It includes two questions that relate to the criteria of pathological gambling. The questions are: "Have you ever had to Lie to people important to you about how much you gambled?" and "Have you ever felt a need to Bet more money?" (Unwin, Davis, & De Leeuw, 2000). An affirmative response to either question indicates a need for referral for BA assessment. The LIE/BET was first validated in 1997 on 191 pathological gamblers and 171control subjects demonstrating sensitivity (.99) and specificity (.91) for problem or at-risk gambling problems in adult and adolescent populations (Rossow & Molde, 2006).

Eating disorders. The Eating Attitudes Test - 26 (EAT-26) has been used for over 30 years as a screening instrument for anorexia nervosa, bulimia nervosa, and binge eating. The EAT-26 contains 26 questions about dieting, preoccupation with food and body image, self-control, and emotional reactions to eating, food, and weight. The EAT-26 was normed on a group of women with anorexia nervosa and a control group of women college students with similar demographic characteristics. It has a high degree of reliability (alpha coefficient of .94) and has been validated with this

population (r = .85, P<.001; Garner and Garfinkel, 1979). A score of 20 or above requires a referral for assessment. A score of 19 or below is also of concern if the individual reported binge eating, purging behavior, or treatment for an eating disorder.

Sex addiction. The "WASTE Time" is a quick screening instrument, the acronym of which identifies the functional indicators assessed. WASTE stands for Withdrawal, Adverse consequences, inability to Stop, Tolerance (intensity), and Escape (denying problems). The second part of the title, Time, refers to the disproportionate or unintended amount of time spent in preparation for, engagement in, or recovering from sex. Each of these terms describes a characteristic of compulsive sex addiction; see Appendix B for a copy of the instrument. One affirmative response suggests the possibility of a sex addiction. Two affirmative responses indicate a high probability of sex addiction (Hagedorn & Juhnke, 2005). At present, the WASTE Time screening instrument has neither been standardized nor validated.

Work addiction. The Work Addiction Risk Test (WART; Robinson, 1999) has 25 self-report questions based on work habit descriptions (Robinson & Flowers, 2004). It measures five functional indicators of work addiction; compulsive tendencies, control, impaired communication/self-absorption, inability to delegate, and self-worth. They are rated on a 4 point Likert-type scale ranging from never true to always true (Flowers & Robinson, 2002). Scores in the upper range (67-100) indicate a strong likelihood of work addiction, mid range (56-97) indicates a mild likelihood, and low range (25-56) indicates low probability (Robinson & Flowers). Reliability estimates range from .83 to .88 across differing measures (Robinson).

Generic Screening for BA: CAGE and CAGED. We suggest that any BA may be screened with the CAGE. This is a mnemonic for the instrument's four questions that reflect alcohol dependency; i.e., attempts to Control drinking, feelings of Anger or Annoyance when confronted about drinking, feelings of Guilt about drinking or its consequences, and drinking early in the morning as an Eye opener to deal with withdrawal. In the CAGE, these four questions are made generic to apply across addiction types (Ewing, 1984). Although the exchange of alcohol terms for BA terms may be new to providers who are screening clients, Martin and Petry (2005) contend that addicted clients realize the similarities between substances and BA because they have attached a certain value to a certain behavior or drug (Bradley, 1990). Although there is limited research on the validity of these adaptations, many providers use the following CAGE and CAGED questions as a generic screening tool.

1. Have you felt the need to Cut down on your gambling/binge eating/sex/work/Internet use;
2. Do you feel Annoyed or Angered by others' criticism of your gambling/binge eating/sexual behavior/work/Internet use;
3. Have you ever felt Guilty about your gambling/binge eating/sex/work/Internet use;
4. Do you need to gamble/binge eating/have sex/work/use the Internet soon after waking as an Eye-opener?

Two additional questions have been suggested to expand the CAGE into CAGED for screening Internet addiction (Hagedorn & Juhnke, 2005). These questions can also be adapted to include other addictive behaviors.

5. Do you feel Empty when you're not online/gambling/eating/having sex/working;
6. Does the Internet/gambling/binge eating/sex/work Disrupt your life or are you neglecting parts of your life because of it?

Ewing (1984) originally developed the CAGE on 130 white, male hospital and surgical patients. Shields and Caruso (2004) conducted a meta-analysis of studies that used the CAGE and found highly variable reliability coefficients (.52 to .90) across sample populations. Mayfield, McLeod, & Hall (1974) demonstrated the potential for criterion validity when two or more positive responses are used as the screening benchmark (r = .89; Toriello & Sligar, 2009). The CAGE's utility appears to vary across populations, although more research is needed to verify initial findings. It has demonstrated utility with white males, college students, and older individuals (Aertgeerts et al., 2000; Maisto, Connors, & Allen, 1995). It has not translated well across cultures with limited success among African American men, Mexican American men or women (Steinbauer, Cantor, Holzer, & Volk, 1998), and persons who are culturally Deaf and use American Sign Language (Alexander, DiNitto, & Tidblom, 2005). It has not been shown to be effective for persons who are mentally ill (Breakey,

Calabrese, Rosenblatt, & Crum, 1998).

Conclusions

As described in the IRI (2003), VE is an "employment outcome service" (p. 6). To help the client make informed choices about career opportunities, the vocational evaluator must identify barriers to employment, such as an undetected BA. Clients with a BA are at risk for personal, occupational, familial, financial, health, and social challenges.

There are some factors to be considered in order to make BA screening part of the VE practice. First is an attitudinal realization and acceptance on the part of vocational evaluators that BA is a real problem that deserves to be addressed. Second involves the art and science of VE. The evaluator must become knowledgeable about BA and learn to recognize subtle cues and indicators that are often hidden in an offhand remark (such as "I'm good on the computer" or "I like to work—don't have time for a hobby") or surface level acceptable behavior (e.g., flirting or not eating around others). The utility of available screening instruments is limited by a lack of standardization, questionable cross-cultural validity, and limited psychometric development. To make the most of extant utility in the instruments, the vocational evaluator needs to master the tools. The vocational evaluator should pursue training in administration, scoring, and interpretation; and practice administering the instrument with colleagues (see Appendix A for a VE interview using the CAGED screening tool). Once trained, it is critical that the evaluator incorporate multiple sources of information to insure an accurate screening combined with a willingness to engage the client in a dialog about BA. If an assessment is indicated, then the vocational evaluator may make a referral to a substance abuse counselor, preferably one who is licensed or certified in substance abuse or addictions. Third involves an administrative policy that provides a definition of BA and supports services to assist these individuals with a path to employment.

The area of screening for BA is ripe with opportunities for research. At the most basic level is a census of persons with BA who are referred to and served by VE. Information about existing policies needs to be made available and analyzed to determine if persons with BA are included in VE. An analysis of training needs of vocational evaluators needs to be conducted. For persons served by vocational evaluators, are the screenings accurate and result in treatment and improved outcomes? Does the inclusion of BA screenings improve services for clients, referring counselors and other stakeholders? Any of these questions may serve as a starting point.

References

Aertgeerts, B., Buntinx, F., Bande-Knops, J., Vanderrneulen, C., Roelants, M., Ansoms, S., et al. (January 2000). The value of CAGE, CUGE, and AUDIT for alcohol abuse and dependence in screening among college freshman. *Alcoholism: Clinical and Experimental Research, 24*(1), 53-57.

Alexander, T., DiNitto, D. & Tidblom, I. (2005). Screening for alcohol and other drug use problems among the deaf among the deaf. *Alcoholism Treatment Quarterly, 23*(1), 63-78.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed. text revision). Washington, DC: Author.

Blume, A. (2004). Understanding and diagnosing substance abuse disorders. In Coombs, R. (Ed.), *Handbook of addictive disorders: A practical guide to diagnosis and treatment* (pp. 63-93). Hoboken, NJ: Wiley and Sons.

Boundy, D. (2000). When money is the drug. In Benson (Ed.) *I shop, therefore I am: Compulsive buying and the search for self*, 3-26. Jason Aronson, Inc, Northvale, NJ.

Bradley, B. (1990). Behavioural addictions: Common features and treatment implications. *British Journal of Addiction*, 85; 1417-1419.

Breakey, W., Calabrese, L., Rosenblatt, A., & Crum, R. (1998). Detecting alcohol use disorders in the severely mentally ill. *Community Mental Health Journal, 34*(2), 165-174.

Brewer, J., Grant, J., & Potenza, M. (2008). The treatment of pathologic gambling. *Addictive Disorders and their Treatment*, 7 (1); 1-17.

Carnes, P., Murray, R., & Charpentier, L. (2004). Addiction interaction disorder. In Coombs, R. (Ed.), *Handbook of addictive disorders: A practical guide to diagnosis and treatment* (pp. 31-59). Hoboken, NJ: Wiley and Sons.

Chamberlain, L. (2004). Understanding and diagnosing compulsive gambling. In Coombs, R. (Ed.), *Handbook of addictive disorders: A practical guide to diagnosis and treatment* (pp. 129-160). Hoboken, NJ: Wiley and Sons.

Chronister, J, Chou, C., Cardoso, E., Sasson, J., Chan, F., & Tan, S. (2008). Vocational services as intervention for substance abuse rehabilitation: Implications for addiction studies education. *Journal of Teaching in the Addiction*, 7 (1), 31-56.

Connors, G., & Volk, R. (2004). *Self-report screening for alcohol*

problems among adults. In J. P. Allen, & V. B. Wilson (Eds.), *Assessing alcohol problems: A guide for clinicians and researchers* (second ed., pp. 21-37). Washington, DC: US Department of Health & Human Services, National Institute of Health, National Institute on Alcohol Abuse and Alcoholism. Retrieved March 15, 2009, from http://pubs.niaaa.nih.gov/publications/Assesing%20Alcohol/index.pdf

Crozier, M. & Rokutani, R. (2008). Broadening the counselor's view of addictions. *Rehabilitation Counselors' and Educators' Journal*, 2 (2), 60-66.

DiClemente, C. (2003) *Addiction and change: How addictions develop and addicted people recover*. NY: The Guilford Press.

Donegan, N., Rodin, J., O'Brien, C.,& Solomon, R. (1983). A learning-theory approach to commonalities. In Levison, P., Gerstein, D. & Maloff, D. (Eds.),Commonalities in substance abuse and habitual behavior (pp. 111-156). Lexington, MA: Lexington Books.

Dowd, L. (1993). VEWAA *Glossary of terminology for vocational assessment, evaluation and work adjustment*. Menomonie, WI: Materials Development center, University of Wisconsin-Stout.

Doweiko, H. (2006). *Concepts of chemical dependency* (6th ed.). Thompson Brooks/Cole, CA.

Ewing, J. (1984). Detecting alcoholism: The CAGE questionnaire. *Journal of the American Medical Association, 252*(14), 1905-1907.

Fleming, M. (2003). Screening for at-risk, problem, and dependent alcohol use. In Hester & Miller (Eds.) *Handbook of alcoholism treatment approaches: Effective alternatives* (3 ed.). (pp. 64-77). Boston: Allyn & Bacon.

Flowers, C. & Robinson B. (2002). A structural and discriminant analysis of the work addiction risk test. *Educational and Psychological Measurement*, 62, 517-526. DOI: 10.1177/00164402062003008

Fry, R. & Botterbush, K. (1988). *VEWAA Glossary: A collection of terms and definitions of special importance to evaluation and work adjustment personnel.* Menomonie, WI: Materials Development center, Stout Vocational Rehabilitation Institute, University of Wisconsin-Stout.

Garner, D. & Garfinkel, P. (1979). The eating attitudes test: An index of the symptoms of anorexia nervosa. *Psychological Medicine*, 9, 273-279.

Grant, J. (2008). *Impulse control disorders: A clinician's guide to understanding and treating behavioral addictions*. New York: Norton & Company.

Greenberg, J., Lewis, S., & Dodd, D. (1999). Overlapping addictions and self-esteem among college men and women. *Addictive Behavior*, 24:4, 565-571.

Hagedorn, W. & Juhnke, G. (2005). Treating the sexually addicted client: Establishing a need for increased counselor awareness. *Journal of Addictions & Offender Counseling*, 25, 66-86.

Holden, C. (2001). Behavioral addictions: Do they exist? *Science*, 294 (5544) 980-983.

Koch, S. (2002) Alcohol and other drug abuse: A special challenge for rehabilitation professionals. In Andrew, J & Faubion, C (Ed.), Rehabilitation services: An introduction for the human service professional (pp.113-144).Osage Beach, MO: Aspen Professional services.

Lesieur, H. & Blume, S. (1987) The south oaks gaming screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry* 144:9, September, 1184-1188.

Lesieur, H. & Blume, S. (1993) Revising the south oaks gaming screen in different settings. *Journal of Gambling Studies*, 9 (3), 213-223.Lesieur, H. & Heineman, M. (1988). Pathological gambling among multiple substance abusers in a therapeutic community. *British Journal of Addiction*. 83 (7): 765-771.

Leshner, A. (2001, spring). Addiction is a brain disease: Issues online in *Science and Technology*. Retrieved August 1, 2008, from University of Texas at Dallas, National Academy of Sciences Web site: http://www.issues.org/17.3/leshner.htm

Maisto, S., Connors, J., & Allen, J. (December, 1995). Contrasting self-report screens for alcohol problems: A review. *Alcoholism: Clinical and Experimental Research, 19*(6), 1510-1516.

Martin, P. & Petry, N. (2005). Are non-substance-related addictions really addictions? *The American Journal on Addictions*, 14: 1-7. DOI: 10.1080/10550490590899808

Mayfield, McLeod, & Hall (1974). The CAGE questionnaire: The validation of a new alcoholism screening instrument. *American Journal of Psychiatry*, 131:10, 1121-1123, October 1974.

Orford, J. (2001). *Excessive appetites: A psychological view of addictions* (2 ed.). John Wiley & Sons, Chichester.

Peele, S. (1985). *The meaning of addiction: Compulsive experience and its interpretation*. NY: Lexington Books.

Power, C. (2005). Food and sex addiction: Helping the clinician recognize and treat the interaction. *Sexual Addiction and Compulsivity*, 12:219-234. DOI: 10.1080/10720160500203773

Power, P. (2006). Operationalizing the concept of empowerment during the vocational assessment process. *Journal of Applied Rehabilitation Counseling, 37*(2), 21-25.

Pruitt, W. (1986). *Vocational evaluation* (2nd ed.). Menomonie, WI: Walt Pruitt Associates.

Regier, D., Farmer, M., Rae, D., Locke, B., Keith, S., Judd, L. & Goodwin, F. (1990). Comorbidity of mental disorders with alcohol and other drug abuse. *Journal of the American Medical Association*, 264, 2511-2518.

Rehabilitation Research and Training Center on Drugs and Disability (1996). *Substance abuse, disability, and vocational rehabilitation*. Wright State University.

Robinson, B. (1999). The work addiction risk test: Development of a tentative measure of workaholism. *Perceptual and motor skills*, 88, 119-210.

Robinson, B. & Flowers, C. (2004). Understanding and diagnosing workaholism. In Coombs, R. (Ed.), *Handbook of addictive disorders: A practical guide to diagnosis and treatment* (pp. 353-382). Hoboken, NJ: Wiley and Sons.

Rossow, I. & Molde, H. (2006). Chasing the criteria: Comparing SOGS-RA and the Lie/Bet screen to assess prevalence of

problem gambling and 'at-risk' gambling among adolescents. *Journal of Gambling Issues*: Issue 18, October 2006. Retrieved May 10, 2009 from http://www.camh.net/egambling/issue18/pdfs/rossow.pdf

Shaffer, H., LaPlante, D., LaBrie, R., Kidman, R., Donato, A., & Stanton, M. (2004). Toward a syndrome model of addiction: Multiple expressions, common etiology. *Harvard Review of Psychiatry* 2004; 12: 367-374. DOI: 10.1080/106732204905705

Shields, A., & Caruso, J. (2004). A reliability induction and reliability generalization study of the CAGE questionnaire. *Educational and Psychological Measurement, 64*(2), 254-270.

Slutske, W., Eisen, S., True, W., Lyons, M., Goldberg, J., & Tsuang, M. (2000). Common genetic vulnerability for pathological gambling and alcohol dependence in *men. Archives of General Psychiatry* 57(7), 666-673.

Smith, D. & Seymore, R. (2004). The nature of addiction. In Coombs, R. (Ed.), *Handbook of addictive disorders: A practical guide to diagnosis and treatment* (pp. 3-30). Hoboken, NJ: Wiley and Sons.

Spunt,B., Lesieur, H., Hunt, D. & Cahill, L (1995). Gambling among methadone patients. *The International Journal of the Addictions,* 30 (8), 929-962.

Steinbauer, J. R., Cantor, S. B., Holzer III, C. E., & Volk, R. (September 1998). Ethnic and sex bias in primary care screening tests for alcohol use disorders. *Annals of Internal Medicine, 129*(5), 353-362.

Substance Abuse and Mental Health Services Administration, Office of Applied Studies (2008). *Results from the 2007 National Survey on Drug Use and Health: National Findings* (NSDUH Series H-34, DHHS Publication No. SMA 08-4343). Rockville, MD.

Taylor, H. (2000). How the internet is improving the lives of Americans with disabilities. (Harris Poll No. 30). Washington, DC: Harris Poll.

Thirtieth Institute on Rehabilitation Issues. (2003). *A new paradigm for vocational evaluation: Empowering the VR consumer through vocational information*. Hot Springs, AR: University of Arkansas Rehabilitation Continuing Education Center.

Toriello, P. & Sligar, S. (2009). Substance abuse screening in the vocational evaluation process. In R. McDaniel (Ed.), The issues papers: Thirteenth national forum on issues in vocational assessment (pp. 139-144). Montgomery, AL: Davis Direct, Inc.

Vocational Evaluation and Work Adjustment Association. (1975). Vocational evaluation project final report, reprint no.12. *Vocational Evaluation and Work Adjustment Bulletin, 8 (Special Edition).*

Unwin, B., Davis, M., & De Leeuw, J. (2000). Pathologic Gambling. *American Family Physician*, 61:741-9.

Walker & Lidz (1983). Common features of troublesome habitual behaviors: A cultural approach. In Levison, Gerstein & Maloff (Eds.) *Commonalities in substance abuse and habitual behavior.* (pp. 29-44). Lexington, MA: D.C. Heath & Co.

Walters, G. (1999). *The addiction concept: Working hypothesis or self-fulfilling prophesy?* Boston: Allyn & Bacon.

About the Authors

Mary K. Crozier, Ed.D., CSAC, CPP, is an assistant professor and coordinator of the Substance Abuse Counseling Certificate Program at East Carolina University. She received her doctorate from the College of William and Mary and has been in the substance abuse field since 1979.

Steven R. Sligar, Ed.D., CVE, is an assistant professor and director of the Graduate Program in Vocational Evaluation at East Carolina University. He has over 34 years experience in vocational rehabilitation and this includes work with special populations of persons who were deaf and/or blind, many of whom experienced a co-occurring substance use disorder.

Appendix A

Vocational Evaluation Interview

The CAGED screening tool is embedded (bolded text) in this sample interview. The vocational evaluator (VE) asks questions and responds to the client's (CL) answers and comments.

VE	"Hi, good to see you again. How have you been since we last meet?"
CL	"Same old same old, nothing new to report. Still no job, no peace at home, and no money."
VE	"When we last talked, you indicated that you were upset with your parents for making you come in here. You don't want a job but they want you to get a job outside the home. Help me understand the situation at home. What upsets them?
CL	"This is a waste of your time and my time cause I don't really need to be here! The problem is that my parents don't respect my talents; they don't understand that it's not about lucky; it's about my insight/skill. I make my own money so they should leave me alone. Besides, it's hard to get to job interviews with my bad leg. Nobody wants to hire a new guy who may be an insurance liability."
VE	"I understand how you feel that way about future employers; maybe we can talk more about that issue later on. But first, tell me how you make money."
CL	"I'm an online gamer and poker player; I'm damn good at it too. But my parents aren't happy about it. They get mad at any little thing like my recyclable cans or going outside to smoke. They're too controlling. "
VE	"Ok help me get the picture here…you're a good online gamer and gambler. You're so busy making money that you're not taking the recyclable cans out but you do remember to go outside to smoke. Is that right?"
CL	"Yes."
VE	"So when you're working online does it ever cause you to neglect a responsibility?"
CL	"Sometimes I guess. I have to concentrate and so I tune them out."
VE	"Yes, I see. **Do you ever stay on the internet more than you intended?**"
CL	"Oh yeah-you've got to. I play at all times of the day which of course they don't understand. I'm not a traditional 9-5er. It takes time to play and try to win back any losses."
VE	"You sure sound dedicated to this line of work but **have you ever felt the need to control how much time you spent online gambling but were unable to do so easily?**
CL	"Well I had a girlfriend who wanted to see me more last year. I once told her I would only be online for 6 hours so we could go to a movie but then I forgot and didn't call her until 2 am. She got really mad even though I made more cash. She didn't appreciate my talent in online gaming. She was rigid like my parents."
VE	"**Have you ever tried to quit online gaming and gambling and if so how many times have you tried to stop?**"
CL	"I've tried to stop years ago but my mind kept drawing me back. It gets in your blood and you just feel so good in the game zone. I guess I'm hooked on it cause it's all I want to do now."
VE	"Does it seem to be hurting or limiting you in any way and if so how long have you known that online gambling was hurting you?"
CL	"Well I have lots of virtual friends, but I don't really have many friends in my town. I guess I live a rather quiet, reclusive life with my parents and wish I had a different living situation; you know I want to live on my own or with a girlfriend."

Conclusion: This client is at risk because there are four positive responses. The VE needs to make a referral for an assessment.

Appendix B

The WASTE Time Questions

Number	Question
1	Have you experienced any Withdrawal symptoms when you are unable to engage in sexual activities;
2	Have you experienced any negative or Adverse consequences as a result of your sexual behaviors;
3	Have you attempted to cut back, control, or Stop your sexual behaviors without success, even when you know that continuing will cause you harm;
4	Have you found it necessary to increase the amount or intensity of your sexual behaviors to achieve the same effect;
5	Do you use sexual activity as an Escape from negative mood states, such as stress, anxiety, depression, sadness, loneliness, or anger;
6	Have you found yourself spending a lot of Time preparing for, engaging in, or recovering from a sexual activity;
7	Have you been spending more Time and/or more resources on your sexual activities than you intended?

Note: from Hagedorn and Juhnke, 2005, pp. 76-77.

Vocational Evaluation and Work Adjustment Association

A Professional Division of the National Rehabilitation Association

2010 VEWAA Board

Debra Homa, Ph.D., CRC, CVE
VEWAA President 2010
Assistant Professor
Online Vocational Rehabilitation Graduate Program Director
Dept. of Rehabilitation and Counseling, 231A VR Bldg.
University of Wisconsin-Stout, P.O. Box 790
Menomonie, WI 54751-0790

Chad Betters, PhD, CRC, CDMS, CVE
VEWAA President-Elect 2011
Assistant Professor of Rehabilitation Counseling
Anderson Center, Room C024A
Winston-Salem State University
Winston-Salem, NC 27110
bettersch@wssu.edu

Shawn L. Zimmerman, MS, CRC, CVE
VEWAA Immediate Past President 2009
Department of Rehabilitative Services: Commonwealth of Virginia
Certified Vocational Evaluator
9309 Center St. Ste. #304
Courthouse Station Building
Manassas, VA 20110

John W. Lui, Ph.D., CDMS, CRC
VEWAA Treasurer
Executive Director Stout Vocational Rehabilitation Institute
221 10th Ave., Rm. 101A
Menomonie, WI 54751
www.svri.uwstout.edu

Paige Tidwell, CRC, CVE, LPC
VEWAA Secretary/Membership Chair
Rehabilitation Unit Manager
GDOL/Vocational Rehabilitation Program
226 Alcovy Street, Suite D-14
Monroe, GA

Dr. Juliet H. Fried, CRC, CVE
VEWAA Board Member at Large
Professor, Human Rehabilitative Services
University of Northern Colorado
School of Human Sciences
Gunter Hall, Room 1250
Campus Box 132
Greeley, CO 80639
juliet.fried@unco.edu

Anthony Langton
VEWAA Board Member at Large
Pathfinder Associates
712 Woodcreek Court
Suite 301
Columbia, SC 29212
Tony@PathfinderAssociates.net

Debbie Perry
VEWAA Board Member at Large
Goodwill Industries of Kentucky
Vocational Evaluator & Workforce Development Specialist
900 Indian Mound Dr.
Mt. Sterling, KY 40353
dperry@gwik.org until 1/18/10
Debbie.Perry@goodwillky.org as of 1/18/10

April Pierson
VEWAA Board Member at Large
Stout Vocational Rehabilitation Institute
221 10th Avenue East
Menomonie, WI 54751
piersona@uwstout.edu

VEWAA Journal Consulting Editors

Chad Betters
Malachy Bishop
Terry Blackwell
Daniel Boutin
Elizabeth Cardoso
Peggy Englebert
Michael Frain
Juliet Fried
Ron Fry
Sandra Hansmann
Linda Holloway
Debra Homa
Joseph Keferl
Anthony Langton
John Lui
John Lloyd
Randall McDaniel
Daryl Prust
Shawn Saladin
Paige Tidwell
Steve Zanskas

Journal Design: Chenyong (Jessie) Zhu

National
Clearinghouse
of Rehabilitation Training Materials