



Addiction in the Workplace

A problem in need of a solution

Addictive disorders are among the most prevalent, costly and least intervened problems in the workplace today. To date, most studies in organizational psychology have focused on alcohol and drug abuse, neglecting the impact of behavioral addictions such as gambling, sex, and food. This paper reviews the empirical support for the prevalence of both substance and behavioral addictions, and elucidates consequences addiction can have in the workplace. Further, internet-based addictive disorders have only recently come on the radar screen of human resources managers. Empirical support for the deleterious effects of employee web surfing are reviewed. While addictive disorders present significant threats to workplace health, mechanisms for addressing the problem have been deteriorating. The use of EAPs and their decreasing role in addressing addiction is also highlighted.

John Fitzgerald, PhD, LPC, CAS
www.addictionmanagement.org
drjohnfitz@gmail.com



Addictive Disorders in the Workplace

In the research literature it is still commonplace to talk about substance use disorders instead of addictive behavior. More than 15 years ago Orford (1985) argued that it is not just substances that people are at risk of becoming addicted, but rather to objects and activities of which drugs are only one subset. In an updated edition to his original text, he reviews empirical support for gambling, eating, exercise and sex being included in the “core” addictions (Orford, 2001). By defining addiction as a *relationship* that develops between a person and an object, a more complete understanding of addiction and its effects in the workplace are possible. Although no universally agreed upon definition of addiction exists, there is agreement that the defining traits include loss of control, consequences and compulsivity. Further, the relationship between person and object is best determined by the interdependence of biological, psychological and social forces (Schaffer, 1996). Establishing the prevalence and range of addictive behavior in the workplace is critical if employers are to accurately identify and manage individuals with addictions.

Few would argue that excessive alcohol and drug use in the work force are among the most prevalent and costly problems to employers. A comprehensive national survey in 1997 found that 7.6% of full-time employees drink heavily (five or more drinks per occasion) and 7.7% use illegal drugs (Zhang, Huang, & Brittingham, 1999). In another national survey, full-time workers reported using alcohol (78%), marijuana (9%) and other illegal drugs (5%) during the preceding 12 months. Even more, 35% of the sample reported binge drinking (five or more drinks during one occasion) and 12% acknowledged heavy drinking (at least five binge episodes) during the preceding 30 days (Department of Health and Human Services, 1999). These surveys need to be understood as estimates of use across all contexts including both work and home. The prevalence of use *on the job* has received little empirical study with the exception of two reviews. Ames (1993) and Newcomb (1994) show that most studies to date vary in terms of the size and quality of the sample, time frame measured, substances

investigated, and the specifics of how substance use and impairment were assessed on-the-job. Consequently, the prevalence of use on-the-job has been estimated as low as 1% and as high as 39%.

The relationship between alcohol use and the workplace has been studied extensively. Researches have primarily focused on how the workplace contributes to problem drinking and how drinking behavior impacts the workplace. A comprehensive review of the findings is beyond the scope of this paper. However, some consistent themes are worth noting. Alcohol use may be higher among employees who have: (1) low workforce integration (2) low levels of supervision (3) low visibility of work behavior (4) physical access to alcohol (5) social settings on the job where drinking behavior can occur, and (6) a need to drink in response to physical and psychosocial qualities of the work environment (Frone, 1999). From a systems perspective, it is clear that factors both on and off the job influence each other simultaneously, and identifying which variables have the greatest impact on problem drinking requires a thorough understanding of the multiple feedback mechanisms. Unfortunately, use of systems theory to understand addictive disorders is practically nonexistent.

One area of increasing focus has been on the link between alcohol use disorders and occupational stress. Frone (1999) points out that research in this area has grown from 17 published studies in the 1980s to 39 in the 1990s. In one study, Crum, Muntaner, Eaton, and Anthony (1995) hypothesized that jobs with high demands and low control would be at greater risk for alcohol problems than jobs with low demands and high control (based on the Demand/Control model of psychosocial work environments). The authors utilized a sample of 18,571 participants that took place in the Epidemiologic Catchment Area Program funded by the National Institute of Mental Health. Probability sampling occurred in five metropolitan cities between 1980 and 1984. Baseline and one-year follow-up interviews utilized standardized assessments that differentiated types of problem drinking and assessed occupational and stress variables. Results indicated that men in high demand and low control

jobs were 27.5 times more likely to develop alcohol abuse or dependence than if they were employed in a low demand/high control position. Further, men were 3.4 times at higher risk for an alcohol use disorder if they worked in a high-strain job with high physical demands and low control. Interestingly, no significant risk was found in women regardless of the level of job-strain or control. This finding is consistent with other research and appears to be explained by multiple variables that include sociodemographic characteristics, organizational factors, as well as the presence of other psychopathology. In another study, Hemmingsson and Lundberg (1998) estimated the impact of psychosocial workplace factors in a sample of 49,323 young men born between 1949 and 1951 who were required to enlist in military training during 1969-70. Utilizing census data on employment in 1975, subjects were classified into groups based on various occupational variables and then cross-checked for alcohol use disorders. Results indicated that low work control, low work demands, and low social support all predicted increased alcohol consumption.

More recently, efforts to understand *how* and *when* work stress increases alcohol consumption have relied on sophisticated modeling that goes beyond simple cause and effect models. The most promising of late is the *Moderated Mediation Model* reviewed by Frone (1999) which incorporates both mediating and moderating variables. Mediators are variables that link work stress to alcohol use and could include negative emotions, depression and job distress. In essence, they help to elucidate *why* or *by what mechanism* work stress is linked to alcohol abuse. Moderators are variables that interact with work stress to either increase or decrease the risk of alcohol problems. They help to understand *when* and *under what conditions* work stress leads to excessive drinking. Despite that only two studies have empirically tested the model (Cooper, Russell, & Frone, 1990; Grunberg, Moore, & Greenberg, 1998), there is evidence that the relationship between alcohol and stress involves multiple pathways. Frone (1999) concludes that future studies need to have a broader focus on mediators and moderators, more attention given to

specific types of job stressors, and greater specificity of both the degree of drinking and the context in which it takes place.

Unfortunately, it is not just alcohol that presents problems for employers. Marijuana is by far the most extensively used illicit drug that impacts the workplace, and nicotine the most frequently used legal drug. There is now sufficient empirical evidence for the harmful effects of marijuana on job performance. Lehman, Farabee, Holcom, and Simpson (1995) investigated the effects of marijuana on job performance in a sample of 4,600 municipal employees in four southwest cities and found that 8% had smoked marijuana in the past year, and a larger percentage had used the drug during the past month. Significant differences were found between users and non-users. Those who smoked marijuana had higher arrest histories, low self-esteem, higher rates of depression, and increased levels of alcohol consumption, often at abuse or dependent levels. In terms of job performance, marijuana users were: (1) less likely to commit to an organization (2) had less faith in management (3) reported more absenteeism, tardiness, accidents, workers' compensation claims, and turnover, and (4) more likely to exhibit impaired cognitive and behavioral functioning. In another interesting study investigating the impact of smoking on the workplace, Borland, Cappiello, and Owen (1997) studied the impact of workplace smoking bans. In a sample of 794 smokers from 42 medium-sized companies they found that the average smoker consumed 5.4 cigarettes during work breaks, and that 39% of smokers reported leaving work to smoke one or more times on non-break time. Further, indices of addiction accurately predicted both leaving work to smoke and total consumption of nicotine. The authors conclude that smoking in the workplace can negatively impact productivity, and measures to further reduce its use could be beneficial.

As mentioned previously, it is not just to substances that people become addicted. Behavioral addictions to gambling, sex and food can have significant consequences in the workplace. Before reviewing some of the empirical research, it is important to recognize the immense disparity in research funding for alcohol

and drug problems compared to behavioral addictions. Most studies investigating behavioral addictions utilize limited funds from private organizations or foundations. The result has been fewer large-scale, randomly controlled empirical studies. Nevertheless, there is sufficient evidence that behavioral addictions pose a threat to the health of the workplace.

Gambling in some form is now legal in all but three states, and 1997 estimates are that over 80% of Americans have gambled at some point in their life (National Research Counsel, 1999). Of the three studies that have attempted to measure problem gambling in the United States, 1% - 6% of the population meet criteria depending on the assessments used and the context in which it is measured (Kallick, Suits, Dielman, & Hybels, 1976; Shaffer, Hall, & Bilt, 1997; National Opinion Research Center, 1999). Less is known about the prevalence of on-the-job gambling, but a number of studies have investigated the impact of gambling on the workplace. Thompson, Gazel, and Rickman (1996) randomly surveyed 1000 Wisconsin adults and found that .90% were serious problem gamblers (32,425 residents). Average career losses per gambler were nearly \$100,000. Most disturbing were the findings related to the workplace. About 60% of the problem gamblers reported missing at least seven hours of work per week to gamble and one-third admitted to stealing from employers to continue their addiction with the average amount stolen being \$5,738. In another study by Lesieur (1998) about one-fourth to one-third of gamblers attending self-helps groups reported losing their job due to gambling activities. An increasing trend that will significantly impact gambling behavior in the future and have detrimental consequences in the workplace is use of the internet which is discussed later in this paper.

A few years ago the words *Addicted to Sex* were boldly printed on the cover of a Fortune Magazine with the subtitle *Corporate America's Dirty Secret*. Today sexual addiction has gone mainstream with assistance from President Clinton and those searching for answers to the sexual abuse crisis in the Catholic church. Sex as an addiction gained widespread recognition soon after Patrick Carnes published *Out of the Shadows*

in 1983. Since that time, a significant body of research has studied both the prevalence and impact of sexual addiction. Among the most comprehensive studies to date was done by Carnes (1992) who recruited 932 participants from all 50 states with histories of sexual compulsivity to take part in a comprehensive survey that assessed multiple dimensions of sexual behavior and its affects on psychosocial health. In summarizing his findings, he found that 80% of sex addicts reported loss of productivity in the workplace. Examples cited include: (1) put off tasks due to fantasy (2) abandoned work frequently to pursue sex (3) loss of sleep caused work to suffer (4) masturbated on the job (5) phone sex during work hours and (6) sexually harassed women. Unfortunately, employee exploits can be extremely costly as in the case of Astra USA that paid out \$10 million dollars because of the sexual behavior of several top executives. Dow Chemical fired 50 employees (and suspended 200) for electronically sending or storing pornographic images. And Microsoft settled a \$2.2 million lawsuit involving sexual impropriates related to the internet. Recently, an entire issue of *Sexual Addiction & Compulsivity* (2002) was devoted to sexual addiction in the workplace. With prevalence estimates at 5% of the adult population (Carnes, 1992; Goodman, 1998), Delmonico (2002) pointed out that one would have to consider that five percent of the workforce struggles with problems related to sexual compulsivity. He also adds that 80% of sex addicts are male, a statistic that parallels the patterns of sexual harassment in the workplace. Since compulsive sexual behavior exists on a continuum, some researchers (Lavelle, 1998; Lobel, 1991) have suggested the heading *Vo-sexual behavior* to refer to sexual behavior occurring in a vocational setting that may violate a norm of conduct and may or may not fall into a category of sexual harassment. The underlying theme throughout the issue was that compulsive sexual behavior should clearly be on the radar of human resource managers, and companies should have clear policies in place to deal with the issue as it arises.

Although gambling and sex fit nicely into an addiction model, the idea that people can

become addicted to food has only recently been acknowledged. With about 55% of the adult American population being overweight or obese, scientists working at the U.S. Department of Energy's Brookhaven National Laboratory have recently discovered a food-addiction link that may help to explain this epidemic pattern (Wang & Volkow, 2001). In the study the authors used positron emission tomography (PET) to assess metabolic activity and density of dopamine (pleasure) receptors in 10 severely obese individuals and 10 nonobese subjects. The findings showed that obese individuals had fewer brain dopamine receptors than nonobese subjects, supporting the hypothesis that obese people eat as a way to compensate for deficiency of low dopamine receptors in the brain. Since people who abuse drugs have also been found to have low levels of brain dopamine, the evidence for food becoming an object of addiction is rapidly mounting. In a review of over 50 scientific studies done by Ganley (1998), he concluded that much of obesity is based on emotional eating. The most common moods preceding overeating include depression, anxiety, anger, boredom and loneliness - in other words, negative moods. This finding provides clues to how food, mood, and addictive behavior may link together in complex *moderated mediation models* to create potential problems in the workforce. Consider that obesity is associated with higher levels of smoking, problem drinking, type 2 diabetes, osteoarthritis of the knee and hip, sleep problems, hypertension, and more than 30 other health conditions. Wolf & Colditz (1998) estimated that the economic cost of obesity is \$47.56 billion in indirect costs related to lost productivity and restricted activity days. Further, Thompson (1998) reported that obesity cost U.S. businesses \$12.7 billion in 1994 due to obesity-attributable business expenditures on paid sick leave and insurance payments. Although food addiction has yet to be explored in the mainstream organizational research literature, its impact on the workforce is nothing less than staggering. It is hard to believe that it is not even close to being on the radar of human resources managers.

Thus far this paper has reviewed empirical support for some of the objects of addictive behavior including alcohol, drugs, gambling, sex

and food. It is unfortunate that most researchers today still tend to focus on one specific object while failing to recognize the interdependent nature of addictive behavior. Clinicians have long recognized that most people struggling with an addiction also have additional mental, physical and social problems that complicate treatment. Before moving on to how the workplace has responded to addiction, one final object of addictive behavior that may prove to be the most costly is addressed.

Internet-based Addictive Disorders in the Workplace

During the past decade, the internet has transformed the workplace into a global network now utilized by every large corporation in the world. The Nielsen Net-ratings (2002) indicate that internet access in the workplace has increased 17% in the year ending August 2002, with almost 46 million American office workers now on-line. The benefits of this new technology include new markets, the potential for reduced costs, and changes in the processes and mechanisms of financial transactions. There is little doubt that the internet has revolutionized how corporate America does business, but the costs of this new technology may be greater than realized. Davis (2001e) points out that the internet is also responsible for lost productivity, legal liabilities, bandwidth waste, and adverse publicity. Today the average worker spends 21 hours per week online in the workplace compared to only 9.5 hours at home (Davis, 2001e). Much of this time is spent reading personal e-mail, online chats, shopping and checking personal finances. Many companies are not even aware that incoming and outgoing information via the internet may be illegal or inappropriate. Examples include child pornography, MP3 music files, and pirated software. Further, the cost of adverse publicity can be staggering. One recent example is a Disney executive who was arrested and charged for using the internet to solicit sex from a minor. This behavior is indicative of the growing recognition that the internet can become a very powerful object of addictive behavior.

In 1996 Young presented a paper titled *Internet Addiction: The emergence of a new*

clinical disorder at the American Psychological Association's annual conference that was the first empirical attempt to describe the problem. Using adapted criteria that assesses pathological gambling, she collected a sample of 396 individual case studies of dependent internet users and compared them to a control group of 100 non-dependent internet users. Qualitative analyses indicated that the two groups differed significantly in terms of time spent on-line, applications used, and consequences of behavior. Dependents spent an average of 38.5 hours on-line per week compared to non-dependents 8.04 hours per week. Chat rooms were accessed five times more frequently by dependents than non-dependents. In terms of consequences, non-dependents reported no adverse problems with the exception of poor time management once on-line. Dependents however, reported significant losses related to personal, family and occupational functioning that parallel the losses seen in addictions to alcohol and drugs and other addictive behaviors. The findings, although provocative, are somewhat limited in their generalizability due to the rather small, self-selected sample size relative to the estimated 47 million on-line users. Nevertheless, the paper hit a profound nerve at the conference and has spurred on a new field of academic interest.

Among the most profound findings of late are that 70% of all adult content traffic occurs during the 9-to-5 workday (Branwyn, 1999), and that adult sites are the fourth most visited category while at work (Goldberg, 1998). In the most comprehensive empirical study to date, Cooper, Scherer, Boies, and Gordon (1999) found that 20% of men and 12% of women reported using the internet at work for sexual pursuits. The study utilized a 59-item survey that was made available via the MSNBC web site for seven weeks during March and April 1998. Informed consent, confidentiality and anonymity were assured in regard to the responses. In addition to the MSNBC audience, the survey was advertised through other major media including radio, television and newspapers. To guard against multiple submittals, the MSNBC server attached a globally unique identifier to each subject that could be cross-checked for duplications. In addition, a statistical

check of external validity compared the sample to the 3.8 million visitors to the MSNBC web site as well as to the demographics of the 9.6 million visitors of the top adult sites and found it to be representative. The usable sample was 9,265 after eliminating missing or inconsistent entries. This study was further analyzed in Cooper, Delmonico, and Burg (2000) who summarized the outcomes related to the workplace by saying that "*perhaps the most remarkable aspect of these findings was the extent to which subjects in all groups were apt to carry on cybersex activities while at work. Even for the nonsexually compulsive group, 6 out of 100 employees reported their work computers to be the primary way they accessed sexual material (p. 23).*"

Equally disturbing is the growing trend of on-line gambling taking place in the workplace. This in large part is due to a shift in gambling away from gaming environments and into the home and office (Griffiths, 2002). Based on a report by Informa Media Group revenues from on-line gambling will reach \$15.5 billion in 2006, almost five times the \$3.81 billion in 2002 (eMarketer, 2002). Datamonitor (2001) estimates that on-line gambling will reach \$20.8 billion by 2005. These estimates need to be tempered by the lack of empirical epidemiological research in this area. Unlike the comprehensive surveys regarding cybersex, to date there are few studies that address the specific prevalence of on-line gambling in the workplace. In one study by Ladd and Petry (2002) of university dental and health clinic employees, 8% reported lifetime internet gambling and 3.6% reported weekly gambling on the internet. The 389 participants in the study were not randomly selected, but agreed to fill out a questionnaire when approached by experimenters, or voluntarily filled out the same questionnaire that was made available over a period of 13 months. The South Oaks Gambling Screen (SOGS) was used to differentiate problem from non-problem gambling in the sample. The mean SOGS score for internet gamblers of 7.8 was considerably higher than the mean score of non-internet gamblers of 1.8. Of those that gambled on-line, the authors found that 26% met criteria for problem or pathological gambling. There are however, significant limitations to this study. First, self-selection could

account for the higher than expected prevalence of problem gambling found in the sample. Those who agreed to participate or filled out the questionnaire on their own may have done so because they liked gambling. Indeed, everyone who participated in the study reported lifetime history of gambling behavior. Also, the actual number of participants who reported internet gambling was quit small compared to the entire sample. In the future, a more carefully designed longitudinal study utilizing random selection will need to be done to determine accurately the prevalence of internet gambling in the workplace.

Decline in Workplace Interventions for Addictive Disorders

At the same time that addictive disorders present significant threats to workplace health, mechanisms for addressing the problem have been deteriorating. This is surprising given that members of the workforce and their families easily account for the single largest segment of the population affected by addictions. The first effort to address addiction in the workplace occurred in the 1970s with the creation of the *Employee Assistance Program* (EAP). Built upon earlier models of intervention, EAPs flourished under the guise of a more broad-based human resource management solution to substance abuse. By shifting the focus away from employees with substance use problems to employees who experienced a wide range of behavioral health issues, much of the stigma in seeking help was alleviated. Ironically, this change led to EAPs broadening their scope of service to the point that today many are not appropriately equipped to deal effectively with addiction problems (Roman, 2003). It is important to also bear in mind that EAPs were never designed to address behavioral addictions like gambling and sex since only recently have they gained any recognition as threats to workplace health. Although the mechanism for workplace referrals of substance abusing employees remains, the infrastructure in terms of EPAs to treat and manage these individuals has been seriously eroded.

With the development of EAPs in the 1970s, both the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the National

Institute of Drug Abuse (NIDA) provided substantial funding for the development of different EAP models of service delivery. At the same time, considerable resources were expended on research related to EAPs and the workplace. When the newly-elected conservative administration of the early 1980s cut the majority of the research funding, EAPs began moving away from substance abuse treatment and embraced problems such as HIV and workplace violence. Today research related to EAPs and workplace interventions for addictive disorders is practically nonexistent. Roman (2003) points out that from 1972 to 1999 the National Institute of Health (NIDA and NIAAA included) funded 25 major studies concerned with EAPs. Today a search for funded research reveals only a single project that mentions EAPs but is really focused on workplace safety. The same author conducted a national longitudinal study of 400 private substance abuse treatment agencies in 1995 that revealed that on average 7.05 of referrals per year were from EAPs. In 1998 the same study was repeated and average referrals dropped to 2.53 per year. At the same time referrals from workplace sources went from 21.1% in 1995 to 8.75% in 1998. Equally disturbing is that since 1998 there have been no well designed, empirically sound studies investigating how EAPs are dealing with addictions in the workforce (Roman, 2003).

Despite that EAPs have moved away from focusing on addiction problems in the workplace, the basic infrastructure still remains. For those struggling with addiction that do access services, there is evidence that EAPs can be helpful. By providing a bridge to treatment programs and working with workplace supervisors, EPAs have the ability if properly trained, to dramatically assist in reducing the negative impact of addiction in the workplace. Roman (2003) has argued that the EAP system needs to be partially reconstructed. Educating key personnel about screening, assessment and referral, in addition to developing seamless mechanisms to facilitate addiction treatment is necessary. It is also clear that based on the prevalence of behavior addictions in the workplace, EAPs will need to develop strategies to effectively deal with these issues. In a time when funding for addiction

treatment continues to disappear, it is unlikely that any restructuring will occur in the near future.

Summary Conclusions

This paper has attempted to illustrate the significant prevalence of addictive behavior in the workplace. By understanding addiction to include both substances and behaviors, a more complete picture of its impact on the workplace is gained. Although a brief discussion of the decline in workplace interventions was included, this paper did not address many other significant issues that include: (1) drug testing (2) supervisor's role in addressing the problem (3) the emergence of employee internet monitoring software (4) prevention measures and (5) alternatives to EAPs. These interdependent topics all provide some level of clarity as to how to address addiction in the workplace. Nevertheless, from the evidence presented in this paper it should be clear that these intervention measures have primarily focused on alcohol and drugs, have practically ignored behavioral addictions, and continue to often be less of a priority relative to other human resource management expenditures.

References

- Ames, G.M., Grube, J.W., & Moore, R.S. (1997). The relationship of drinking and hangovers to workplace problems: An empirical study. *Journal of Studies on Alcohol*, 58, 37-47.
- Borland, R., Cappiello, M., & Neville, O. (1997). Leaving work to smoke. *Addiction*, 92(10), 1361-1368.
- Branwyn, G. (1999). How the porn sites do it. The Industry Standard. Retrieved June 1, 2003 from <http://www.thestandard.net>
- Carnes, P.J. (1992). *Don't call it love: When the diagnosis is sexual addiction*. New York, NY: Bantam Books.
- Cooper, A., Delmonico, D.L., & Burg, R. (2000). Cybersex users, abusers, and compulsives: New findings and implications. *Sexual Addiction & Compulsivity*, 7, 5-29.
- Cooper, M.L., Russell, M., & Frone, M.R. (1990). Work stress and alcohol effects: A test of stress-induced drinking. *Journal of Health and Social Behavior*, 31, 260-276.
- Cooper, A., Scherer, C., Boies, S.C., & Gordon, B. (1999). Sexuality on the internet: From sexual exploration to pathological expression. *Professional Psychology: Research and Practice*, 30(2), 154-167.
- Crum, R.M., Muntaner, C., Eaton, W.W., & Anthony, J.C. (1995). Occupational stress and the risk of alcohol abuse and dependence. *Alcoholism: Clinical and Experimental Research*, 19, 647-655.
- DataMonitor (2001). Bright future for online gambling. Retrieved June 1, 2003 from <http://nua.com>
- Davis, R.A. (2001). Cyberslacking: Internet abuse in the workplace. Retrieved June 1, 2003 from <http://www.internetaddiction.ca/cyberslacking.htm>
- Delmonico, D.L. (2002). Reflections from corporate America: One view on compulsive sexual behavior in the workplace. *Sexual Addiction & Compulsivity*, 9, 167-171.
- Department of Health and Human Services. (1999). *Substance use and mental health characteristics by employment status*. (DHHS Publication No. SMA 99-3311). Washington, DC: Government Printing Office.
- eMarketer (2002). Online gambling revenues on a roll. Retrieved June 1, 2003 from <http://www.nua.com>
- Frone, M.R. (1999). Work stress and alcohol use. *Alcohol Research & Health*, 23(4), 284-291.
- Goldberg, A. (1998). *Monthly users report on MSNBC for April 1998*. Washington, DC: Relevant Knowledge.
- Goodman, A. (1998). *Sexual addiction: An integrated approach*. Connecticut: International Universities Press.
- Griffiths, M. (2002). Internet gambling in the workplace. In M. Anandarajan & C. Simmers (Eds.), *Managing web usage in the workplace: A social, ethical and legal perspective*. London: Idea Group Publishing.
- Grunberg, E.S., Moore, S., & Greenberg, E.S. (1998). Work stress and problem alcohol behavior: A test of the spill-over model. *Journal of Organizational Behavior*, 19, 487-502.
- Hemmingsson, T., & Lundberg, I. (1998). Work control, work demands, and work social support in relation to alcoholism among young men. *Alcoholism: Clinical and Experimental Research*, 22, 921-927.
- Kallick, M., Suits, D., Dielman, T., & Hybels, J. (1979). *A survey of American attitudes and behavior*. Research report series, Survey Research Center, Institute for Social Research. Ann Arbor, MI: University of Michigan Press.
- Ladd, G.T., & Petry, N.M. (2002). Disordered gambling among university-based medical and dental patients: A focus on internet gambling. *Psychology of Addictive Behavior*, 16(1), 76-79.
- Lavelle, M. (1998). Sexual harassment: The new rules. *U.S. News & World Report*, July, 30-32.
- Lehman, W.E.K., Farabee, D.J., Holcom, M.L., & Simpson, D.D. (1995). Prediction of substance use in the workplace: Unique contributions of personal background and work environment variables. *Journal of Drug Issues*, 25(2), 253-274.
- Lesieur, H.R. (1998). Costs and treatment of pathological gambling. *Annals of the American Academy*, 556, 153-171.

- Lobel, S.A. (1991) Global leadership competencies. *Human Resource Management*, 29, 39-46.
- National Opinion Research Center. (1999). *Overview of the national survey and community database research on gambling behavior: Report to the national gambling impact study commission*. Chicago, IL: National Opinion Research Center.
- National Research Council. (1999). *Pathological gambling: A critical review*. Washington, DC: National Academy Press.
- Newcomb, M.D. (1994). Prevalence of alcohol and other drug use on the job: Cause for concern or irrational hysteria? *Journal of Drug Issues*, 24, 403-416.
- Nielson Netratings 2002, OnlineUsage at Work Jumps 17 percent year-over-year, Driven by Female Office Workers. Retrieved May 20, 2003, from <http://www.nua.org>
- Orford, J. (1985). *Excessive appetites: A psychological view of addictions*. West Sussex, England: John Wiley & Sons Ltd..
- Orford, J. (2001). *Excessive appetites: A psychological view of addictions* (Rev. ed.). West Sussex, England: John Wiley & Sons Ltd..
- Roman, P. (2002). Missing work: The decline in infrastructure and support for workplace alcohol intervention in the United States, with implications for developments in other nations. In W.R. Miller & C.M. Weisner (Eds.), *Changing substance abuse through health and social systems* (pp. 197-210). New York, NY: Kluwer Academic/Plenum Publishers.
- Schaffer, H.J. (1996). Understanding the means and objects of addiction: Technology, the internet, and gambling. *Journal of Gambling Studies*, 12(4), 461-469.
- Schaffer, H.J., Hall, M.N., & Bilt, J.V. (1997). *Estimating the prevalence of disordered gambling behavior in the United States and Canada: A meta-analysis*. Cambridge, MA: Harvard Medical School Division on Addictions.
- Thompson, D. (1998). Estimated economic costs of obesity to U.S. business. *American Journal of Health Promotion*, 13(2), 202-207.
- Thompson, W.N., Gazel, R., & Rickman, D. (1996). *The social costs of gambling in Wisconsin*. Thiensville, WI: Wisconsin Policy Research Institute.
- Wang, G.J., & Volkow, N.D., et. al. (2001). Brain dopamine and obesity. *Lancet*, 357(9253), 354-357.
- Wolf, A.M., & Colditz, G.A.(1998). Current estimates of the economic cost of obesity in the United States. *Obesity Research*, 6(2), 97-106.
- Young, K.S. (1996). Internet addiction: The emergence of a new clinical disorder. Paper presented as the 104th Annual Convention of the American Psychological Association, Toronto, Canada.
- Zhang, Z., Huang, L.X., & Brittingham, A.M. (1999). *Worker drugs use and workplace policies and programs: Results from the 1984 and 1997 National Household Survey on Drug Abuse*. Rockville, MD: Department of Health and Human Services, Substance Abuse and Mental Health Services Administration.