ABSTRACT

Title of Document: Development and Initial Validation of the Work Addiction Inventory

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The purpose of the study is to develop and validate the Work Addiction Inventory (WAI). The WAI is designed to assess individual's addiction to work via self-report. Data were collected from 127 working professional employed on at least a part-time (20 hours per week) basis. Results of an exploratory factor analysis retained 24 items and indicated that the WAI consists of three underlying factors. The WAI subscale and total scores showed adequate internal consistency reliabilities. Convergent and discriminant validity was initially supported by the relationship between WAI scores, an existing measure of workaholism, and social desirability. Also, WAI scores correlated highly with several criterion variables. Finally, evidence was found to suggest that the WAI accounts for unique variance beyond an existing measure of workaholism. In conclusion, psychometric properties of the WAI were initially supported by findings of the study.

Development and Initial Validation of the Work Addiction Inventory

By

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CHAPTER 1

Introduction

More than thirty-five years ago, Oates (1971) introduced "workaholism" as an analogy to alcoholism because the two addictions were believed to have similar origins and symptoms. Since that time, workaholism has been used in popular culture to describe both positive and negative behaviors. From a positive perspective, workaholism is used to express commitment to jobs and careers or to describe people who work more than the average person. As a result, workaholism is generally viewed positively from an organizational perspective (Korn, Pratt, & Lambrou, 1987; Machlowitz, 1980; Sprankle & Ebel, 1987). Alternatively, workaholism can be characterized negatively as an overcommitment to work which has negative consequences for the worker and possibly his or her significant others.

Despite its widespread use, workaholism is not a formal psychological term, nor does a generally accepted medical definition exist (Pietropinto, 1986). However, with the changing nature of careers (Arthur & Rousseau, 1996), fewer clearly defined work roles and responsibilities (Sullivan, 1999), and the increased use of technology (e.g., the Internet, computers, cell phones) (Haffner, 2000), boundaries between work and personal life are increasingly becoming blurred (Fletcher & Bailyn, 1996). More employees are able to work outside of the office and are no longer confined to working only during normal business hours (Cooper, 1998). This change in how and when employees work, including the impact of work on other aspects of a person's life, along with the increase in weekly working hours over the past 20 years (McMillan, Brody, O'Driscoll, & Marsh, 2002), has led to the perception that workaholism is increasing in North America and

worldwide (Fassel, 1990; Schor, 1991; Sparks, Faraher, & Cooper, 2001). As a result, the concept of workaholism has been attracting the attention of laypersons as well as researchers, practitioners, and organizations.

Definitions

Presently a single, widely accepted definition of workaholism does not exist (Seybold & Solomon, 1994). One of the earliest definitions of a workaholic was "an individual who worked at least 50 hours per week" (Mosier, 1983). This definition assumed a standard 40 hour work week, was very U.S.-centric, and focused on the amount of time worked as central to the construct. Although time spent at work remains prominent in how workaholism is conceptualized by laypersons and a large number of researchers, a few alternative, multi-faceted definitions have been introduced more recently. For example, Spence and Robbins (1992) suggested that workaholism could be conceived as a three-part construct, including work involvement, internal drive, and enjoyment of work. This definition emphasized being internally driven to work despite not enjoying the work performed.

By contrast, Robinson (1989) defined workaholism as the overindulgence in and preoccupation with work, often to the detriment of the workaholic's health, intimate relationships, and participation in child rearing. Robinson defined workaholism from a family systems perspective, giving particular consideration to relationships outside of the work environment. Snir and Zohar (2000) defined workaholism as the steady and considerable allocation of time to work-related activities and thoughts, which is not derived from external necessities. Scott, Moore, and Miceli (1997) maintained that workaholism consists of three behavioral patterns, including spending time in work

activities, thinking about work when not at work, and working beyond organizational or economic requirements. Workaholism has also been defined simply as a form of obsessive perfectionism (Homer, 1985) and as an irrational commitment to excessive work (Naughton, 1987).

Most of the existing definitions only focus on the behavioral patterns of workaholics. Although identifying workaholic behaviors is important, particularly for shaping our understanding of workaholism, behavior is only one component of what appears to be a more complex construct. A complete definition might also need to consider cognitive, social, and affective implications.

Theoretical Beginnings

During the past three decades, several theories have been put forth to explain workaholism. The most prominent theory, supported by the existing literature, conceptualizes workaholism as a form of addiction (Aziz & Zikar, 2006; Klaft & Kleiner, 1988; Minirth et al., 1981; Morris & Chaney, 1983; Oates, 1971). Addiction has been characterized as including compulsion and loss of self-control as well as continued engagement despite negative consequences (Smith & Seymore, 2004). Addiction has also been defined in more positive terms as having an excessive appetite, the satisfaction of which brings gratification and pleasure (Orford, 1985). The underlying premise of the addiction theory is that workaholics feel an uncontrollable, compulsive need to work. Although addiction is often thought of in terms of a physical dependence, workaholism generally refers to the psychological dependence on work.

Learning theory, a second theoretical model used to explain workaholism, suggests that excess working is a learned behavior. Advocates of this theory believe that

workaholism is learned either as a child or as an adult through modeling or reinforcement. Learning theories, such as Bandura's (1977) social cognitive theory, emphasize the importance of social learning by observing the behaviors, attitudes, and emotional reactions of others. It also accounts for the direct and indirect effects of reinforcements and punishments. From this theoretical perspective, workaholism is learned from one's environment.

Other researchers subscribe to trait and personality theory (Machlowitz, 1980; Spruell, 1987), viewing workaholism as a tendency toward overworking which results from genetic characteristics and lifelong experiences. Workaholism, as viewed from the vantage point of trait and personality theory, suggests that the behavior of consistently overworking stems from individual traits. In his theory of trait and personality, Allport (1975) stated that our personalities consist of many different traits or "dispositions" that ultimately shape our behavior. Supporters of trait and personality theory would argue that workaholics are individuals who are innately predisposed to that condition via their personality.

Finally, family systems theory has also been proposed as the basis of workaholism (Robinson, 1998). From the family systems perspective, workaholism is not an issue affecting individuals alone, but rather one that involves the family system in both cause and treatment. Through this theoretical lens, workaholism is a characteristic of one or more of the family members. As such, a family with open or fluid boundaries tends to be affected by workaholism, which eventually influences how members of the family interact with one another.

Problem Statement

Despite its widespread popularity for nearly forty years, research on workaholism is in its infancy. However, during the past ten to fifteen years, there has been a surge in research interest in this topic across several disciplines, including psychology, business, and sociology. Most of the existing empirical literature has investigated the effects of workaholism on individuals, families, and organizations. But considerable debate continues among researchers regarding a comprehensive definition, an underlying theory, and a valid measure of the construct of workaholism itself.

The two leading measures used to assess workaholism are the Workaholism Battery (WorkBAT) (Spence & Robbins, 1992) and the Work Addiction Risk Test (WART) (Robinson, 1989). However, the original versions of these measures were developed on the basis of different concepts and definitions. The WorkBAT is based on a triadic concept of workaholism, involving high Work Involvement (WI), high internal Drive (D), and low Enjoyment (E). Alternatively, the WART is believed to consist of five factors: compulsive tendencies, control, impaired communications/self-absorption, inability to delegate, and self-worth.

Both the WorkBAT and the WART have been criticized for possessing questionable construct definitions and factor structures. In particular, it has been argued that one shortcoming of the Spence and Robbins (1992) scales is that they primarily assess attitudes or affect rather than behavioral tendencies (Mudrack & Naughton, 2001). This is best demonstrated by sample items such as “Much of my satisfaction in life comes from my job”, “Most of the time my work is very enjoyable,” and ”I often feel there’s something inside of me that drives me to work hard.” The WART, on the other hand, was primarily developed from a family-therapy paradigm and mostly taps Type A behaviors

which refer to life in general (e.g., speed of eating, talking, bodily movements) as opposed to work-specific behaviors (Porter, 1996). Although research suggests some similarities and overlap between characteristics of Type A personalities and adult workaholics, they appear to be two separate constructs and should be reflected as such in our measurement tools (Burke et al., 2004; Robinson, 1999). If the element of addiction is to remain central to our understanding of workaholism, as it has from the earliest years of workaholism research (Ng et al., 2007; Oates, 1971; Seybold & Salomone, 1994), it is important that the workaholism construct reflect research findings on addiction, which places an emphasis on three overarching dimensions: affect, cognition, *and* behavior (Smith & Seymour, 2004). Neither the WorkBAT nor the WART were developed using such a multidimensional conception but rather each only emphasized one of the three aforementioned dimensions.

While the personal, social, and organizational costs of workaholism appear to be extensive, the lack of agreement on a definition has prevented coherent aggregation of findings. This has been compounded by the lack of reliable and valid measures which are necessary to increase our understanding of workaholism (Mudrack & Naughton, 2001), to further investigate the causes and the outcomes of workaholism, and to develop preventative treatments as well as effective interventions.

One of the first steps in establishing a systematic program of research into a new phenomenon is to develop, refine, and validate a measure, then use it to explore the parameters of the construct itself (Clark & Watson, 1995; McMillan, 2002). Therefore, the purpose of the current project is twofold: (a) to propose a new, comprehensive definition of workaholism and (b) to develop and validate a measure of workaholism, the

Work Addiction Inventory (WAI), that is linked to the new definition. The theory of workaholism as an addiction will be the basis of this proposed instrument (Oates, 1971), thus the terms "workaholism" and "work addiction" will be used interchangeably throughout this report. To measure workaholism, the inventory will focus on cognition, affect, and behaviors. Although it is important to acknowledge the impact of workaholism on others in the home and work environments, this measure will be based on self-report and focus primarily on the individual's perception rather than on actual or externally assessed behaviors.

CHAPTER 2

Review of Literature

Perceptions of Work

The Industrial Revolution in the late 18th and early 19th centuries brought many changes to how work was viewed and performed. Beginning in Great Britain and subsequently spreading to America, the Industrial Revolution had a profound effect on socioeconomic and cultural conditions. The manual labor economy was eventually replaced by machinery and industry. Although this shift had a global impact, the U.S. workforce in particular was transformed from a predominantly self-employed nation of farmers and tradespersons to a nation dependent on factory work (Neubeck, 1991). As the manufacturing sector grew, and fewer individuals were self-employed, people became less self-sufficient and more dependent on wages and bureaucracies, making them very vulnerable and dependent on others for evaluation of their worth (Nuebeck, 1991; Tilly, 1997). Individualism and the belief that through hard work one could be successful were ever present. This view of work was an extension of Weber's (1958) original assertion of the Protestant Work Ethic which originated in the 16th century. The Protestant Work Ethic continues to serve as the basic tenet of the U.S. work culture, promoting hard work as good and moral and, conversely, viewing leisure as suspicious.

According to Sprankle and Ebel (1987), prior to World War II, family was more central than work in the U.S. However, as a large number of men left home to serve in the military and women moved into the workforce to provide for the war effort, a new sense of freedom and meaning was found in organized work. Historians have suggested

that this was the start of a major shift in U.S. culture around work and family (Spankle & Ebel, 1987; Tilly, 1997).

After WWII, the service sector grew substantially, with the majority of Americans providing services as a means of income versus working in manufacturing environments (Neubeck, 1991). In the 1960's, work became a way for people to define who they were – a way to discover their personal identity (Saal & Knight, 1988; Sprankle & Ebel, 1987). Two decades later, in the 1980's, the U.S. culture was thought of as "work-obsessed" (Sprankle & Ebel, 1987) and one's job became synonymous with who a person was.

Technological gains have also contributed to the fast paced culture and increased industry demands. In addition to making workers more productive in the office, computers, cellular phones, and other portable devices also made it possible for individuals to complete work outside of the office environment when they were at home, during their commutes to and from work, and during other non-work hours. As a result, today Americans are working more hours with less leisure time, particularly compared to other countries (Sprankle & Ebel, 1987). According to a 2007 International Labor Organization (ILO) report, Americans work 137 more hours per year than Japanese workers, 260 more hours per year than British workers, and 499 more hours per year than French workers (ILO, 2007). Thirty-four percent of workers agree that work demands "seriously interfere with their private lives," up from 24 percent in 2002, according to surveys by Towers Perrin – International Survey Research (2005), a Chicago-based employee research and consulting firm. In sum, today in the United States, work has become an integral part of one's personal identity. Increasing demands from employers, organizations, and industries, fueled by technological advances as a significant catalyst,

have changed the parameters of work life. One's work is no longer confined within a particular time and space, which has subsequently led to quality of life challenges such as work-life balance and workaholism which span several life domains.

Addictive Behaviors

The DSM-IV-TR (APA, 2000) does not recognize the term "addiction" which was derived from the Latin *addeicere* meaning "bound to" or "enslaved by" (Potenza, 2006). Although the term was initially used without reference to substance use, over the past several centuries it has become increasingly identified with substance use and has also adopted a negative connotation. As a result, the DSM-IV-TR categorizes substance use disorders by problematic substance (e.g., alcohol) within separate groupings: abuse, dependence, withdrawal, and intoxication. Similarly, impulse control disorders (e.g., pathological gambling, pyromania, kleptomania) form a separate category (APA, 2000). Although categorized separately in the DSM-IV-TR and other medical references, many of the above mentioned disorders share similar addictive behavioral features and core elements of addiction, including: (a) a craving state prior to behavioral engagement or a compulsive engagement; (b) impaired control over behavioral engagement; and (c) continued behavioral engagement despite adverse consequences (Shaffer, 1999).

The continuing debate on whether or not addictive disorders can include non-substance abuse conditions has led researchers to distinguish between *substance* (e.g., chemical or biological dependence) and *process* addictions, with the latter group describing non substance addictions such as sex, internet/computer, and shopping. Addiction to work also fits into this category. Despite these opposing views, many researchers contend that an individual can become addicted to, dependent on, or

compulsively obsessed with any activity, substance, object, or behavior that gives him or her pleasure (Miller, 1984).

Research suggests that both substance and process addictions share common characteristics such that (a) the individual becomes obsessed by the object, activity, or substance and will seek it out often to the detriment of personal relationships; (b) the person will compulsively engage in the activity, even if he or she does not want to; (c) upon cessation of the activity, withdrawal symptoms of irritability, craving, and restlessness will occur; (d) the person does not appear to have control over when, how long, or how much he or she will continue the behavior; and (e) he or she often denies problems resulting from his or her engagement in the behavior, even though others can see the negative effects (Engs, 1987). Many of these characteristics have been identified with the concept of workaholism and will be discussed further in the following section.

Antecedents and Consequences of Workaholism

The lack of agreement on a workaholism definition and a theoretical model has resulted in limited investigation into the antecedents and consequences of workaholism. The small number of empirical studies that have been conducted in this area have primarily focused on the outcomes of workaholism, defined in a variety of ways, rather than the causes. However, there has been some discussion in the literature on why people become workaholics. It has been suggested that certain personality traits can predispose people to workaholism. It has also been suggested that individuals who become addicted to work are seeking a means of escape or control or trying to meet self-esteem needs (Canatrow, 1979; Machlowitz, 1980).

The two leading personality traits that authors believe may play a major role in workaholism are Type A and obsessive-compulsive tendencies, two achievement related personality traits. A few researchers have even made reference to both constructs and workaholism. For example, Machlowitz (1980) commented that Type A behavior patterns correspond closely with obsessive-compulsive behavior and probably to that of workaholics. Additionally, Schwartz (1982) observed that Type A individuals tend also to be obsessive and are often addicted to work.

Type A Personality. Type A behavior has been described as impatience, competitiveness, time urgency, hostility, and overinvolvement in work (Savickas, 1990) as well as driven and hurried behavior (Friedman & Roenman, 1974). Many researchers have considered the overlap between Type A behavior and workaholism (Burke, 1999; Ng et al., 2007; Robinson, 1999; Scott et al., 1997; Seybold & Solomon, 1994). It has been suggested that the two constructs are similar in that both describe the same high stress and are frequently associated with physical health problems (Robinson, 1999) and are heavily work involved (Burke, 1999). It has also been posited that some types of workaholics and Type A's experience low satisfaction in work, relationships, and extra-curricula activities (Friedman & Rosenman, 1974; Porter, 1996; Scott et al., 1997).

In 1999, Robinson conducted a study with 363 adult students examining the relationship between work addiction and Type A behavior. Robinson (1999) found significant correlations of WART scores to the Type A Self Report Inventory (r=.37, p<.05) and the Jenkins Activity Survey: Type A Scale (r=.50, p<.05). Results of an analysis of variance also showed that participants classified as high risk for work

addiction based on the WART scored significantly higher on the Type A Inventory than did medium and low risk participants.

Burke (1999) also explored the relationship between work addiction and Type A behavior. Using Spence and Robbins' (1992) definition of workaholism (high work involvement, high internal drive, and low enjoyment) and the theory that personal beliefs and fears affect Type A behavior (Price, 1992), Burke investigated how workaholism related to each of the following beliefs: (a) one must constantly prove oneself through achievements or risk the fear of being judged unsuccessful and unworthy; (b) no universal principles exist, and; (c) resources, or things worth having, were in limited supply so one must strive against others to obtain one's fair share (Price, 1992). Responses from 530 Canadian MBA graduates resulted in all three beliefs being positively, significantly correlated with feeling Driven (D) and negatively, significantly correlated with work Enjoyment (E). More specifically, workaholics scored significantly higher on indices of "no moral principles" and "striving against others" than other worker types. Also, workaholics scored higher on the need to prove themselves than did work enthusiasts. This may suggest that workaholism is a response to low self-worth and insecurity (Burke, 1999).

Obsessive-compulsive personality. Obsessive-compulsive traits may also play a role in workaholism. Obsessive-compulsive personality traits have been said to include obstinacy, parsimony, and orderliness (Freud, 1963) as well as perseverance, industriousness, ambition, and self-control (Pollak, 1979). Naughton (1987) suggested that some obsessive-compulsive individuals may simply choose to act out their personality orientation at work. Mudrack (2004) explored this theory in a study of job

involvement, obsessive-compulsive personality traits, and workaholic behavioral tendencies. It is important to note that in this study, Mudrack (2004) used Scott et al.'s (1997) definition of workaholism which consists of three behavior patterns: spending discretionary time in work activities, thinking about work when not at work, and working beyond organizational and economic requirements. The researcher developed and used two scales. The first assessed non-required work, which was defined as how much time and energy individuals spend on thinking about ways to improve their work and on initiating projects. The second scale assessed the tendency to control others at work , which was defined as taking responsibility for others' work, fixing problems created by others, checking on the accuracy of others' work, and responding to crises in an active and instrusive manner. Six traits (obstinacy, orderliness, parsimony, perseverance, rigidity, and superego) were used to represent the obsessive-compulsive personality (Mudrack, 2004). Based on responses from 278 full time workers in the Detroit metro area, Mudrack (2004) found support for his hypotheses that non-required work scores would be highest in the presence of high job involvement, high obstinacy, and high superego. Specifically, a hierarchical regression analysis showed that the cross product terms of (a) job involvement and obstinacy and (b) job involvement and superego each explained small but significant amounts of unique variance in non-required work, above and beyond that contributed by any individual factor.

While some authors have suggested that certain personality traits may predispose individuals to workaholism, others have proposed that workaholism results from a deficiency or problems in other areas of life such as a need to escape, maintain control, or enhance self-esteem. Bartolome (1983) distinguished between workaholics and non-

workaholics by suggesting that workaholics try to escape their private lives through overcomitting to work, whereas non-workaholics, who work a lot, neglect their lives as they attempt to succeed. He highlighted "intent", in terms of one's attempt to escape versus one's attempt to succeed, as the difference between the two groups. A similar idea was put forth by Minirth et al. (1981) who suggested that workaholics use busyness as a way to avoid intimacy with others and getting in touch with their own personal feelings. Machlowitz (1980) even suggested that workaholics' desire to escape might stem from a fear of failure, boredom, or laziness.

Need for control. Workaholism has also been linked to an individual's need to gain control in his or her life (Canatrow, 1979; Machlowitz, 1980). Some authors have stated that the issue of control is very important to workaholics (Machlowitz, 1980) and that working excessively allows workaholics to maintain control over one area of their lives (Robinson, 1996), particularly when they feel less in control of other areas.

Self esteem. Developmental issues, particularly as they relate to self image and self esteem, have also been cited as a cause of workaholism. Self esteem is the extent to which one likes oneself and feels one is a person of worth (Brockner, 1988). Thorne (1987) suggested that mishaps in early childhood development could make people lose a sense of control over their lives to the extent that work becomes like a drug. Machlowitz (1980) also suggested that workaholics, as children, probably viewed love from their parents as a condition of their success as children. Robinson (1999), a proponent of workaholism as a family systems problem, supports the concept that work addiction is a learned behavior. Thus, adults dealing with low self esteem issues may be more

susceptible to workaholism, particularly if workaholic behaviors are validated and rewarded in their work environment.

Most of the dialogue about antecedents of workaholism has been for the purpose of construct and theory development. Although some researchers have begun to explore the area empirically, early results only demonstrate correlational relationships between workaholism and other constructs (i.e., Type A behavior).

In contrast, research on the consequences of workaholism is relatively more developed. Findings suggest that consistent, excessive work can potentially impact personal well-being, family and interpersonal relationships, and the professional environment. In exploring how workaholism relates to personal well-being, correlational studies suggest that people who overwork may suffer from high stress and anxiety (Booth & Friedman, 1987) as well as secondary addictions, such as smoking, eating, and alcohol (Kiechel, 1989). Workaholics may also have a lower sex drive compared to people who are not addicted to work (Machlowitz, 1980). Additionally, increases in general health complaints have also been documented in relation to workaholism (Kanai et al, 1996; Spence & Robbins, 1991).

Studies indicate that excessive work may also result in negative outcomes for people other than the worker, both inside and outside of the work environment. Workaholism can potentially impact the functioning of other family members as well as the workaholics' interpersonal relationships with family members. For example, it has been shown that children of workaholics have higher depression and parentification scores (Carroll & Robinson, 2000), anxiety (Carroll & Robinson, 2000; Robinson & Kelley, 1997), and increased feeling of loneliness and abandonment (Robinson, 2000)

than children whose parents are not workaholics. Also, workaholics tend to experience a higher rate of marital failure (Klaft & Kleiner, 1988; L'Abate & L'Abate, 1981).

Previous studies have investigated the impact of workaholism on marriage from both the male and female perspective. Robinson, Carroll, and Flowers (2001) found that wives of workaholics reported greater marital problems, less positive affect towards husbands, and higher external locus of control than spouses of nonworkaholics. Robinson, Flowers, and Ng (2002) examined husbands' perception of their marriages in respect to their wives' workaholic behaviors and found that workaholism was positively related to marital disaffection. Both studies used a definition of workaholism previously put forth by Robinson and Chase (2001), "a compulsive and progressive, potentially fatal disorder characterized by self-imposed demands, compulsive overworking, inability to regulate work habits, and overindulgence in work to the exclusion and detriment of intimate relationships and major life activities."

Researchers have also suggested that workaholics experience higher rates of work-family conflict (Bonebright et al., 2000; Buelens & Poelmans, 2004) and interrole or work-nonwork conflict (Greenhaus & Parasuraman, 1994) than nonworkaholics, indicating that balancing multiple life roles presents more of a challenge for this group than for others.

Moving from the family to the work domain, workaholic behavior may lead to burnout (Lowman, 1993; Nagy & Davis, 1985), destructive competitiveness, higher conflict, and decreased morale in the workplace, particularly within the teams to which the workaholic belongs (Porter, 1996; Spruell, 1987). There can also be an increase in inefficiency due to the workaholic's unwillingness to delegate responsibilities or to share

the workload with co-workers. This can be detrimental to organizations in the short- and long-term, resulting in declines in individual performance, increases in health- and accident-related expenses, and higher turnover rates (Homer, 1985; Maslach & Jackson, 1981; Pines & Aronson, 1988).

Despite the potential negative impact of workaholism on individuals, families, and organizations, many companies encourage and reward workaholic behaviors. Research has shown that workaholism is positively correlated with time commitment to work (Burke & Koksal, 2002; Spence & Robbins, 1992) and perfectionism (Spence & Robbins, 1992) as well as salary increase and promotion (Burke, 2001). As a result, workaholism has been labeled the "best dressed" (Robinson, 1998) and "most rewarded" (Spruell, 1987) addiction in America.

Critique of Existing Workaholism Measures

Two measures of workaholism have been empirically tested and published, the Workaholism Battery (WorkBAT) (Spence & Robbins, 1992) and the Work Addiction Risk Test (WART) (Robinson, 1989).

WorkBAT. The WorkBAT, a 25 item self report questionnaire, uses a 5-point Likert response scale ranging from strongly agree (1) to strongly disagree (5) and was developed based on a triadic conception of workaholism, including the factors of Work Involvement (WI), internal Drive (D), and Enjoyment (E). Frequently used in empirical studies, the WorkBAT has been administered to various employee groups including social workers, Norwegian nurses, Japanese businessmen, high technology employees, Australian psychologists, and Turkish managers (Bonebright, Clay & Ankenman, 2000;

Burgess, Burke, & Oberklaid, 2006; Burke, Matthiesen & Pallesen, 2006; Kanai et al., 1996; Spence & Robbins, 1992).

The WI measures a general attitude of psychological involvement with work and has yielded moderate internal consistency reliability estimates (alpha coefficients) ranging from .67 to .81 (Burke, 2001; Burke, 1999; Perez-Prada, 1996; Elder, 1991; Spence & Robbins, 1991). The eight items in this scale include "I like to use my time constructively on and off the job" and "I like to relax and enjoy myself as much as possible" (reverse scored). The WI scale scores range from 0 to 32, with higher scores indicating greater levels of Work Involvement.

The D scale measures an inner pressure that is maintained by internal fulfillment rather than external pressures. The scale scores range from 0 to 28, with higher scores suggesting a higher level of internal Drive. This subscale has yielded internal consistency reliability estimates (alpha coefficients) ranging from .67 to .81 (Burke, 1999; Perez-Prada, 1996; Spence & Robbins, 1992) and consists of 7 items. The Drive scale includes items such as "I often feel that there is something inside me that drives me to work hard" and "I feel guilty when I take time off from work."

The E scale measures the level of pleasure derived from work, includes 10 items, and ranges in scores from 0 to 40. High scores on the Enjoyment scale are representative of high enjoyment. The subscale has high internal consistency reliability estimates (alpha coefficients) ranging from .84 to .89 (Kanai et al., 1996; Perez-Prada, 1996; Spence & Robbins, 1992). Examples of items in the scale are "My job is so interesting that it often does not seem like work" and "I lose track of time when I am engaged on a project".

Each of the three WorkBAT subscales is scored separately. The sample-specific cutoff points for high and low categories of each scale are established by transforming raw scores into z scores and determining means for each subscale. Scores above the mean (positive z scores) are classified as "high" and those below the mean (negative z scores) as "low." When all high/low categories for each scale are combined, they result in a 6-level worker typology: nonenthusiastic workaholic, enthusiastic workaholic, relaxed worker, unengaged worker, work enthusiast, and disenchanted worker. According to Spence and Robbins (1992), "nonenthusiastic workaholics" is the subset of workers that uniquely suffers from work addiction with high work involvement, high drive because of inner pressures, and low enjoyment of work.

The WorkBAT is the leading measurement instrument in this research area and has received some support for its reliability and validity. In 1999, Burke replicated Spence and Robbins' (1992) initial study by administering the WorkBAT to a managerial population (N=530). Burke (1999b) found that the workaholism triad produced acceptable internal consistency reliability estimates (work involvement=.67, driveness=.80, and work enjoyment=.88) and that the scales intercorrelated in a pattern similar to that reported by Spence and Robbins (1992). Burke also found that all six worker types, as defined by Spence and Robbins (1992), were represented within the sample. In addition, the WorkBAT's validity was replicated using seven measures representative of potential workaholic behaviors including job involvement, perceived time worked relative to others, job stress, perfectionism, difficulty delegating, extra hours worked, and estimated total hours worked. Results indicated that components of the workaholism triad (e.g., Work Involvement, Drive, Enjoyment) were generally positively

and significantly correlated with the 6 validation measures (r=.09 to .53, p<.05), similar to Spence and Robbins' (1992) original study. It is important to note that 18% of study respondents did not fall into any of the six worker type categories, suggesting that the typology Spence and Robbins initially proposed may be incomplete or require further analysis.

McMillan et al. (2002) found mixed results regarding the convergent validity of the WorkBAT. McMillan et al. used the Schedule for Nonadaptive and Adaptive Personality Workaholism scale (SNAP-Work; Clark, 1993) as a parallel measure for the WorkBAT. The SNAP-Work is comprised of 18, forced choice (true/false) items and produced an internal consistency reliability estimate of .82 (split half). McMillan et al. found significant correlations between the SNAP-Work and each of the WorkBAT scales, with WI=.47, E=.36, and D=.59.

McMillan et al. (2002) also explored the convergent validity of the WorkBAT relative to other conceptually similar measures. They reported a weak convergence (r=.26) between the WI scale and Warr, Cook, and Wall's (1979) Work Involvement Scale, which measures the degree to which individuals want to engage in work. They also found "adequate convergence" (r=.46) between the E scale and a parallel job satisfaction scale, Warr et al.'s (1979) Job Satisfaction Scale, which measures the degree of satisfaction with intrinsic aspects of the current job. Finally, the D scale converged moderately with Warr et al.'s (1979) Intrinsic Job Motivation Scale (r =.40), which measures the degree to which individuals are driven by personal fulfillment in their work.

Despite being used frequently in empirical studies, researchers have encountered some factorial validity issues with the measure, specifically with the WI subscale (Burke

& Koksal, 2002; Ersoy-Kart, 2005; Kanai et al., 1996; McMillan et al., 2002; Russo & Waters, 2006). Using a Ward's cluster analysis and a K-mean cluster analysis, McMillan et al. (2002) were unable to replicate the 6 clusters (worker typology) proposed by Spence and Robbins (1992) and were unable to classify over 33% of the study's participants into the original typology. McMillan et al. also conducted factor analyses. A confirmatory analysis showed poor goodness of fit to the data (GFI=.79, adjusted GFI=.75). Both indices were below the desired threshold of .90, indicating a poor fit between the data and the three-factor model. An exploratory factor analysis found that a two factor solution explained 30% of the total variance. After rotating the two factors orthogonally and using three criteria for retaining items, 11 items were removed from the measure, 7 of which were initially Work Involvement items. As a result, the Work Involvement scale of the WorkBAT was removed because its construct validity was not replicated, it displayed weak convergence (r=.26) with Warr, Cook, and Wall's (1979) Work Involvement Scale, and the exploratory factor analysis suggested the removal of the majority of Work Involvement items. These findings led to the development of the WorkBAT-Revised tool consisting of only two subscales, Drive and Enjoyment, with four worker types: workaholics, enthusiastic workaholics, relaxed workers, and uninvolved workers. The WorkBAT-Revised has not yet been widely tested.

In a study of 169 workers employed in the legal industry, Russo and Waters (2006) used exploratory factor analysis and found that the three factor solution initially suggested by Spence and Robbins (1992) was not an accurate representation of the construct demonstrated. Specifically, a significant chi-square value, (X^2 [228]=390.57, $p<.001$), suggested poor goodness-of-fit. Although all items from the D and E dimensions

loaded adequately on the relevant scales, only three of the eight WI scale items had loadings of .34 or greater (Russo & Waters, 2006).

Based on a comprehensive review of the literature, Scott et al. (1997) suggested that one reason the WI scale may be problematic is that it represents an attitude that may not necessarily be demonstrated behaviorally. In other words, it could be possible for a person to be highly work involved in terms of attitudes, beliefs, and affect, but not engage in typical workaholic behaviors (e.g., high number of actual hours worked) as measured by the WorkBAT's Work Involvement scale.

WART. The second leading workaholism measure, the WART (Robinson, 1989), was developed based on a definition of workaholism as the overindulgence in and preoccupation with work, often to the exclusion and detriment of the workaholic's health, intimate relationships, and participation in child rearing (Robinson, 1999). The measure consists of 25 self report items using a 4 point Likert scale ranging from never true (1) to always true (4). Summing responses across all items results in a total score ranging from 25 to 100. The higher the score, the more one is considered to be addicted to work. Persons with scores above 67 are deemed as being at a high risk for workaholism. The WART was reportedly constructed around five major symptoms of work addiction: overdoing, control-perfectionism, mental preoccupation-future reference, intimacy, and self worth (Robinson & Post, 1994). Although used less frequently than the WorkBAT in empirical studies, the WART has been administered to undergraduate students, Workaholics Anonymous members, psychotherapists, adult students, and Dutch workers (Robinson, 1999; Robinson & Phillips, 1995; Robinson & Post, 1995).

A handful of studies have examined the validity and reliability of the WART. In a study of 151 graduate students participants, Robinson, Post, and Khakee (1992) reported a test-retest correlation coefficient of r=.83 over a two-week interval and an internal consistency reliability estimate of .85. In 1995, based on a study with 442 graduate counseling students, undergraduate sociology students, and Workaholics Anonymous attendees, Robinson and Post (1995) found split-half reliability coefficient estimates of r=.85 and an interitem reliability coefficient of .26, suggesting that the 25 items measured distinctly different aspects of the construct.

Content validity has also been explored for the WART. In 1995, Robinson and Post randomly selected 32 psychotherapists from the North Carolina Directory of Licensed Marriage and Family Therapists. Respondents were asked to identify items related to work addiction. Ten statements unrelated to work addiction were added to the questionnaire. With a return rate of 63% (20 respondents), the sample's average percentage score of correctly identified items was 89 indicating that the test items have generally high content validity (Robinson & Post, 1995).

Additionally, researchers have explored the underlying dimensionality of the WART. Flowers and Robinson conducted a study including two different, previously used samples (Robinson, 1999; Robinson & Post, 1997). The first sample consisted of 105 members of Workaholics Anonymous and registrants from a national self-help conference (Robinson & Post, 1997). The second sample, the comparison group, consisted of 363 graduate and undergraduate students (mean age of 22) at a large university in the southeast United States. The average WART score for the workaholic group was 73.91 (SD=10.35) and for the comparison group it was 59.92 (SD=7.77). The

means of these two groups were significantly different ($t=12.88$, $df=474$, $p<.001$); the effect size of this difference was large ($g=1.67$).

A principal component analysis resulted in five factors, accounting for 53% of the total variance. A review of the items by Flowers and Robinson (2002) and two psychologist experts in the field of workaholism resulted in organizing the items with structure coefficients greater than .40 by common themes. The Compulsive Tendencies factor was represented by 9 items with coefficients greater than .4. Sample items for this factor included "I seem to be in a hurry and racing against the clock" and "I find myself doing two or three things at a time such as writing memos and eating lunch while talking on the phone." The Control factor had 7 items with coefficients greater than .4 and consisted of sample items such as "I get impatient when I have to wait for someone else or when something takes too long" and "I get irritated when I get interrupted while I am in the middle of something." Five items were grouped under the Impaired Communication/Self-Absorptions factor. Sample items included "I ask the same question over, without realizing it, after I have been given the answer" and "I dive into projects to get a head start before all phases have been finalized." Only one item seemed to fit under Inability to Delegate, "I prefer to do most things for myself rather than ask for help." Two items were grouped under Self Worth, "It is important that I see the concrete results of what I do" and "I am more interested in the final results of my work than in the process." And one statement (item 14) did not have a correlation greater than .40 on any factor.

Criticisms of the WART include concerns about the instrument's validity, the belief that the measure taps Type A behavior, and the inconclusive factor structure of the

instrument. To date, there have only been a handful of studies investigating the WART's validity, which may account for its limited use in the field by other researchers. Critics have also suggested that the measure over-represents Type A behavior. The WART has been found to correlate with the Type A subscale of the Jenkin's Activity Survey at r=.50 (Robinson, 1999), suggesting that the WART may be testing for general Type A behavior rather than workaholism as a separate construct. Although this correlation fails to suggest that the WART is only tapping into Type A behavior, Robinson (1999) argued that there is a strong link between Type A personality and workaholism (Robinson, 1999).

There continues to be some debate over the dimensions in the WART. Flowers and Robinson's (2002) used discriminant analyses to examine the correct classification rate of scores on the WART and to explore which of the items accounted for the differences in the average score profiles of the workaholic and comparison groups. Using the five subscales found in the factor analysis (e.g., Compulsive Tendencies, Control, Impaired Communication/Self-Absorption, Inability to Delegate, and Self-Worth) as independent variables and group membership (e.g., workaholic group versus comparison group) as the dependent variable, Flowers and Robinson (2002) found a statistically significant function (Wilk's lambda=.61, X^2 =220.28, p<.001) with a canonical correlation of .63.

Flowers and Robinson (2002) also performed a factor analysis using structure coefficients greater than .30 to identify the most important subscales for separating the groups. The factor analysis results of the WART suggest that workaholism, as defined by Robinson (1999), only has three dimensions: (a) Compulsive Tendencies, (b) Control,

and (c) Impaired Communication/Self-Absorption, as opposed to the five dimensions previously suggested. The results of the discriminant and factor analyses conflict, indicating that further investigation of the WART's construct validity may be warranted.

New Definition of Workaholism

The WorkBAT and WART were developed from different workaholism constructs and definitions, with the WorkBAT defining workaholism as high work involvement, high internal drive, and low enjoyment of work (Spence & Robbins, 1992) and the WART defining workaholism as the overindulgence in and preoccupation with work often to the detriment of the workaholic's health, intimate relationships, and participation in child rearing (Robinson, 1989).

Several other workaholism definitions have been proposed by researchers. For example, Oates (1971) originally defined workaholism as the compulsion or uncontrollable need to work incessantly and the increased need to work that hinder one or more life functions. Mosier (1983) defined workaholics simply as individuals who work at least 50 hours per week. This definition is more US-centric, where a forty hour work week is generally accepted as standard practice. More recently, Snir and Zohar (2000) incorporated the concept of time and compulsion, defining workaholism as the steady and considerable allocation of time to work-related activities and thoughts which are not derived from external necessities.

A comprehensive review of the field's theoretical and empirical literature, including criticisms of the existing measures, revealed an array of workaholism definitions and explanations for the construct. For the purposes of this study, workaholism will be defined *as the excessive engagement in work related activities and*

thoughts which significantly and negatively interfere with an individual's normal mental, emotional, and/or physical health. Although workaholism is assumed to stem from internal motives, it can be exacerbated by environmental influences such as home and work life conditions.

While personal, social, and organizational costs of workaholism appear to be extensive, lack of agreement on a definition and a theory has hindered research in this area. This has been compounded by a lack of reliable and validated measures, which are necessary to increase our understanding of workaholism (Mudrack & Naughton, 2001), to further investigate the causes and the outcomes of workaholism, and to develop preventative treatments as well as effective interventions.

The purpose of the current project is to develop and validate the Work Addiction Inventory (WAI), which is based on the above definition of workaholism. The theory of workaholism as an addiction (Aziz & Zikar, 2006; Klaft & Kleiner, 1988; Minirth et al., 1981; Morris & Chaney, 1983; Oates, 1971) will be the basis of this proposed instrument. To measure workaholism, the inventory will focus on affect, cognition, and behaviors. Although it is important to acknowledge the impact of workaholism on others in the home and work environment, this measure will be based on self-report and focus primarily on the individual's perception rather than on actual or externally assessed behaviors.

Research Questions and Hypotheses

The current study was designed to develop and validate the WAI, which aims to assess an individual's level of addiction to work through self-report. In particular, this study was designed to explore the instrument's factor structure, validity, and reliability.

An exploratory factor analysis will be conducted to examine the WAI's factor structure. Although researchers are still trying to define the construct, there is substantial empirical evidence to suggest that work addiction is multidimensional. Therefore, a multi-factor structure is expected.

To initially validate the WAI, several different methods will be implemented, including content validity, construct validity, and criterion-related validity. Specifically, construct validity will be assessed by examining convergent and discriminant validity. In terms of convergent validity, it is anticipated that the WAI would produce high, positive correlations with the original version of the WorkBAT. The WorkBAT was selected as an alternative measure of workaholism for comparison with the WAI because of its widespread use throughout the work addiction literature. As mentioned previously, the WorkBAT has had some degree of success at identifying workaholism. However, the WorkBAT, particularly the Work Involvement scale, has been criticized for poor construct validity. It has been suggested that in its present form, the Work Involvement subscale measures workaholic behaviors rather than the intended construct of an attitude of psychological involvement. Notwithstanding the above concerns, moderate to strong correlations are expected between the WAI and each of the WorkBAT scales: Work Involvement, Drive, and Enjoyment.

Discriminant validity will be examined using social desirability bias, which is the tendency to present oneself in a manner that will be viewed favorably and accepted by others. Although there is no known research investigating the possibility of a direct relationship between social desirability and workaholism, it is not difficult to imagine one. It has been argued that workaholism can be viewed positively from an

organizational perspective (Korn, Pratt & Lambrou, 1987; Machlowitz, 1980). In these environments where workaholic behavior can earn acceptance and rewards, social desirability bias is likely to be present. A small positive relationship between the WAI and social desirability is expected (i.e., the WAI is not expected to be highly saturated with social desirability bias). Social desirability bias will be measured using the Maslowe-Crowne Social Desirability Scale- Form B (Reynolds, 1982).

Criterion-related validity will be examined using measures of job satisfaction, job involvement, work centrality, number of hours worked per week, work/personal life conflict, health and well-being, and leisure satisfaction.

Job satisfaction. Previous research on the relationship between workaholism and job satisfaction has yielded conflicting results. Some researchers have found that job satisfaction is positively related to workaholism (Machlowitz, 1980; Ng, Eby, Sorenson, & Feldman, 2005), while others have identified a negative relationship (Burke, 2001). Based on prior findings and the workaholism definition proposed for the WAI, it is anticipated that at least a small, positive correlation would exist between job satisfaction as measured by the Abridged Job in General Scale (Russell et al., 2004) and workaholism as measured by the WAI.

Work centrality. Although the early literature on job involvement and work centrality used these terms interchangeably (Kanungo, 1982; Paullay et. al., 1994), more recent researchers have made a clear distinction between the two constructs. Job involvement is "the degree to which one is cognitively preoccupied with, engaged in, and concerned with one's present job" (Paullay, 1996, p.225). Work centrality, on the other hand, initially termed "work involvement" by Kanungo (1982), is defined as a normative

belief about the value of work in one's life. The latter concept focuses more on an individual's general attitude towards work, rather than feelings about a specific job or work role. Since the definition introduced in this study supports the theory that workaholism is primarily intrinsically motivated, work centrality as a value or belief in relation to workaholism warrants further investigation. There is limited evidence of a positive relationship (Harpaz & Snir, 2003) between the two constructs. The present author contends that individuals who highly value work are more likely to be workaholics than people who do not. Thus, a positive correlation between work centrality (as measured by the Work Centrality Scale (Paullay et al., 1994)) and workaholism is expected.

Hours worked. Since working long, non-required hours is generally associated with addiction to work (Aziz & Zickar, 2006; Burke, 2001; Mudrack & Naughton, 2001; Spence & Robbins, 1992), the relationship between work hours and workaholism will also be explored in this study. Work hours will be measured as a continuous variable and it is expected that the WAI would be highly, positively correlated with excess work hours (e.g., >50 hours per work week).

Work personal/life conflict. Researchers continue to explore the relationship between work/life conflict and workaholism. Initial findings suggested that workaholics experience more work-life conflict than non-workaholics (Bonebright et al., 2000; Russo & Waters, 2006). Results from this investigation are expected to show a strong, positive relationship between workaholism and work/life conflict as measured by the Work/Personal Life Conflict Scale (Gutek et al., 1991).

Health and well-being. Previous research findings suggest that a relationship exists between workaholism and personal health. Support has been found for the proposition that workaholics experience lower levels of psychological and physical well being than non-workaholics. For example, workaholism has been has been linked to high job stress (Burke & Koskal, 2002; Spence & Robbins, 1992), anxiety (Robinson, 1999), depression (Robinson & Carroll, 1999), exhaustion (Burke & Matthiesen, 2004), and general health complaints (Kanai et al., 1996; Spence & Robbins, 1992). In this study, it is anticipated that work addiction would be correlated negatively both with physical and mental health, as measured by the Short Form 12-Item Health Survey Questionnaire (SF-12; Ware et al., 1996).

Leisure satisfaction. Investigations of the relationship between leisure satisfaction and workaholism are not evident in the existing literature. This may be because, similar to work addiction, the concept of leisure satisfaction is relatively new (Beard & Ragheb, 1980). Leisure satisfaction is defined as "the positive perceptions or feelings which an individual forms, elicits, or gains as a result of engaging in leisure activities and choices" (Beard & Ragheb, 1980, p.22). It has been argued that leisure activities can be physically restorative (Brightbill, 1961), self-actualizing (Dumazedier, 1974; Maslow, 1962), and provide an opportunity to express individuality (Walshe, 1977). Workaholics, as conceptualized for the purpose of this study, are likely to spend a considerable amount of time and energy on work-related rather than leisure activities. Therefore, it was anticipated that workaholism would be negatively related to leisure satisfaction.

Hypotheses

To summarize, the current study aimed to test the following hypotheses:

Hypothesis 1: Factor structure: The WAI will form a multi-factor structure.

Hypothesis 2: Internal reliability: The WAI (total scale and any factor-derived subscales) will produce adequate estimates of internal consistency reliability.

Hypothesis 3: Content validity: The WAI will have high content validity.

Hypothesis 4: Convergent validity: It is expected that the WAI will correlate with an existing measure of workaholism, the WorkBAT as indicated, below.

Hypothesis 4a: The WAI will have a positive relationship with the Work Involvement scale of the WorkBAT.

Hypothesis 4b: The WAI will have a high, positive relationship with the Drive scale of the WorkBAT.

Hypothesis 4c: The WAI will have a small to moderate, positive relationship with the Enjoyment scale of the WorkBAT.

Hypothesis 5: Discriminant validity: The WAI will yield a small, positive relationship with the Marlowe-Crowne Social Desirability Scale – Form B (M-C-Form B). A small correlation would suggest that workaholism represents more than just the participants' desire to make a good impression.

Hypothesis 6: Criterion-related validity: The WAI is expected to relate to relevant work, health, and well-being criteria.

Hypothesis 6a: Workaholism will be positively related to job satisfaction.

Hypothesis 6b: Workaholism will have a moderate to strong, positive correlation to work centrality.

Hypothesis 6c: Workaholism will have a strong, positive correlation with work hours (>50) per week.

Hypothesis 6d: Workaholism will have a strong, positive relationship with work/personal life conflict.

Hypothesis 6e: Workaholism will be negatively related to physical health.

Hypothesis 6f: Workaholism will be negatively related to mental health.

Hypothesis 6g: Workaholism will be negatively related to leisure satisfaction.

CHAPTER 3

Method

Sample

The sample for this study consisted of 127 working professionals in a non-profit organization that provides services to the scholarly community. An *a priori* power analysis was completed based on Cohen's (1992) article to determine the sample size necessary to have a power of .80 with a significance level of .01. To find medium effect sizes (r >.33) when testing the statistical significance of the association between two variables using a two tailed alpha level, Cohen suggested a sample size of 125. Thus, the total number of participants for this study meets these criteria. The sample consisted of 45 males (35%) and 82 females (65%). Fifty nine of the participants were African American (46%), 52 were Caucasian (41%), 7 were Latino/a (6%), 4 were Asian American/Pacific Islander (3%), and 5 identified as Other (4%). Sixty four (51%) were married, forty seven were single (37%), 3 were separated (3%), and 11 were divorced (9%). Within this same group, 70 individuals (55%) had no children under the age of 18, twenty six (21%) had one child under the age of 18, sixteen (13%) had two children under the age of 18, seven (5%) had three children under 18 years old, and eight (6%) did not answer the question.

Participants ranged in age from 21 to 75 (M=42.24, SD=16.41) and also represented different employee classifications within the organization, including entry level (8%), individual contributor (38%), supervisor/manager (25%), senior manager (14%), and executive (15%). Additionally, one hundred and twenty participants reported working full-time (94%) and seven reported working part-time (6%). As this study was

looking specifically at individuals who worked for pay on at least a part-time (20 hours or more) basis, participants who did not answer that item, as well as those who did not respond to 5% or more of the survey items, were excluded from the analyses. A final total of 111 participants were included in the analyses, which was somewhat less than the target sample size of 125, resulting in a post-hoc achieved power level of .71.

Item Development

The first draft of the WAI consisted of 38 items which were developed based on the author's definition of workaholism and focused on cognitive, affective, and behavioral indicators. Theoretical research on antecedents and empirical research findings on the consequences of workaholism were also used to develop sample items. Such outcomes included preoccupation with work, lack of control, excessive work behaviors and thoughts, self neglect/physical health, and impact on personal/family life (Booth-Kewley & Friedman, 1987; Robinson, 1988; Robinson & Post, 1997; Spence & Robbins, 1992). Additional items were also adopted from measures used in other areas of addiction with overlapping definitions. The Internet Addiction Test (IAT) (Young, 1996) and the Rapid Alcohol Problems Screen (RAPS) (Cherpitel, 1995) are particularly relevant. Both of these tests were developed and validated to measure strong, uncontrollable psychological dependencies that generally produce disruptive behaviors across a variety of environments. This is similar to how workaholism has been defined and conceptualized in this study.

As a first step towards establishing content validity, the WAI was piloted using a small group (8) of counseling psychology graduate students. In addition to completing the measure, participants in the pilot study were asked to assess the readability, clarity,

and appropriateness of each item. The pilot study resulted in the refinement and rewording of certain items as well as support for the instrument's face validity. The measure was subsequently sent to a panel of 10 experts, including researchers and practitioners, in the field of work addiction for review. Feedback was received from 6 panelists and resulted in the elimination of 5 items due to lack of relevance to the construct of work addiction, clarity, or conciseness. The version of the WAI administered to participants contained 33 items (Appendix A).

Measures

Data for this study were gathered using a variety of measures including: a demographic questionnaire, two instruments to assess workaholism (WAI; WorkBAT; Spence & Robbins, 1992), a measure of social desirability (Reynolds, 1982), a job satisfaction measure (Russell et al., 2004), a work centrality measure (Paullay et. al, 1994), a work/personal life conflict scale (Gutek et al., 1991), a health survey (Ware et al., 1996), and a measure of leisure satisfaction (Beard & Ragheb, 1980). An existing measure of workaholism, the WorkBAT, was used to explore convergent validity with the target measure, the WAI, and social desirability was used to estimate discriminant validity. The remaining measures and a single item assessing number of hours worked per week were used to estimate criterion-related validity.

Demographic questionnaire. A demographic questionnaire (Appendix B), developed for this study, was completed by all participants. The questionnaire asked participants to answer questions regarding their gender, age, marital status, salary, race/ethnicity, number of dependents under age 18, position title, work status (e.g., full-time, part-time, self-employed, contract employee), average number of hours worked per

week, job function (e.g., finance, marketing), and industry (e.g., education, business, technology, healthcare).

Workaholism. An analysis of the WAI's relationship to an existing workaholism measure, the original Workaholism Battery (WorkBAT; Spence & Robbins, 1992) (Appendix C), was undertaken to explore convergent validity. The psychometric properties of the WorkBAT were reviewed earlier but it should be noted that the 25 item self report questionnaire was developed based on a triadic conception of workaholism, including the factors of Work Involvement (WI), internal Drive (D), and Enjoyment (E). WI measures a general attitude of psychological involvement with work and has yielded moderate internal consistency reliability estimates (alpha coefficients) ranging from .67 to .81 (Burke, 2001; Burke, 1999; Perez-Prada, 1996; Elder, 1991; Spence & Robbins, 1991). D measures an inner pressure that is maintained by internal fulfillment rather than external pressures. This subscale has yielded internal consistency reliability estimates (alpha coefficients) ranging from .67 to .81 (Burke, 1999; Perez-Prada, 1996; Spence & Robbins, 1992) and consists of 7 items. E measures the level of pleasure derived from work, includes 10 items, and ranges in scores from 0 to 40. The subscale has high internal consistency reliability estimates (alpha coefficients) ranging from .84 to .89 (Kanai et al., 1996; Perez-Prada, 1996; Spence & Robbins, 1992).

Social Desirability. The Marlowe-Crowne Social Desirability Scale (MCSD; Crowne & Marlow, 1960) was originally developed to measure one form of response bias, social desirability, or "faking good" (Crowne & Marlowe, 1964). Social desirability is commonly thought of as the tendency of individuals to project favorable images of themselves (Johnson & Fendrich, 2003). Given that workaholic behaviors are rewarded

and encouraged in some environments, the claim could be made that individuals might want to be classified as a workaholic. Therefore, it is possible that the WAI will correlate at least minimally with social desirability response bias, but the magnitude of the correlation should not be so high as to suggest that the WAI is only tapping response bias.

Over the years, as social desirability has been studied more, several shorter versions of the MCSD have been introduced. The first version of the scale contained 33 items. Reynolds (1982) set out to construct reliable and valid shorter forms by considering item factor loadings, total scale correlations, and concurrent validation with an alternative social desirability scale. To reduce the number of items on the scale and create the initial short form, Reynolds conducted a factor analysis using a .40 factor-item loading as the minimum level of item inclusion. Subsequent short form versions, including Form B (12 items), were created by adding homogeneous items selected on the basis of their inter-item correlations. Factor loadings for items included on Form B ranged from .40 to .50. The concurrent validity correlation estimate between Form B and the original 33 item MCSD was $r=.92$ ($p<.001$). Additionally, internal consistency reliability was estimated at .75.

Loo and Thorpe (2000) also conducted confirmatory factor analyses of the full and short versions of the MCSD scale. Using 232 student participants from undergraduate nursing and management classes, they found support for previous researchers' claims that the full scale was lacking in terms of its factor structure and internal consistency reliability (Ballard, 1992; Fischer & Fick, 1993). Their results suggested that Form B (Reynolds, 1982) had the best fitting results (AGFI=.95), with

support for a two-factor model, Attribution and Denial, originally proposed by Crowne and Marlowe (1960). By contrast, the full scale MCSD measure yielded an adjusted goodness-of-fit index of only .81. Thus, the M-C-Form B (Appendix D) will be used in this study to assess social desirability. Sample items include "It is sometimes hard for me to go on with my work if I am not encouraged" and "There are times that I felt like rebelling against people in authority even though I knew they were right." Scoring of the M-C-Form B assigns 1 point for each "true" response and 0 points for each "false" response. Total scores range from 0 to 12, with higher scores indicating a higher level of social desirability bias.

Job Satisfaction. The Abridged Job in General Scale (AJIG; Russell et al., 2004) will be used to tap job satisfaction in this study. The questionnaire is an 8-item measure of global satisfaction (Appendix E) with one's job and a revision of the Job in General Scale (JIG; Ironson, 1989). The original JIG, which consists of 42 items, has been used extensively in job attitudes research as well as in other domains. Russell et al. (2004) used a combinatorial strategy in conjunction with item goodness judgments to identify items to retain, with an objective to obtain a pool of items yielding alpha coefficients of at least .85. Selection of final AJIG items was based on three criteria: (a) acceptable univariate distributions for all items, (b) a relative balance between positively and negatively worded adjectives, and (c) avoidance of content overlap with the Job Descriptive Index (JDI; Smith et al., 1969), a complementary measure of facet job satisfaction.

The AJIG asks respondents to indicate whether eight adjectives describe how they feel about their job. These instructions and response format were adopted directly from

the original JIG. Sample AJIG items include "Makes me content", "Undesirable" (reverse-scored), and "Excellent". Scoring of individual items is as follows: for positively worded items (e.g., "Excellent), responses of "yes" are assigned 3 points and "no" receives 0 points. For negatively worded items (e.g., "Undesirable), "yes" responses receive 0 points and "no" answers are assigned 3 points. All undecided, omitted, or "?" responses, regardless of the wording of question, receives 1 point. The scale is unidimensional with overall scores ranging from 0 to 24; scores higher than 12 indicate job satisfaction.

A cross-validation study of the AJIG with participants from a random sample of U.S. workers examined the measure's validity and reliability. The resulting Spearman correlation coefficient between AJIG and JIG was high (r=.97). As further evidence of AJIG's construct validity, correlations with affective organizational commitment (r=.48) and organizational identification (r=.47) demonstrated that higher job satisfaction is associated with greater commitment to and identification with one's employer. AJIG was also negatively related to active job search (r=-.21). The internal consistency reliability estimates of the AJIG ranged from .85 to .87.

Work centrality. Paullay et al.'s (1994) measure of work centrality (WC) will be used to assess the degree of importance that work plays in one's life (Appendix F). People who consider work as a central life interest have a strong identification with work in the sense that they believe the work role to be an important and central part of their lives (Hirschfeld & Field, 2000). The WC measure has 12 items, five of which were adopted from Kanungo's (1982) Work Involvement Questionnaire. The WC items refer to work in general, not to one's current job, and include "The major satisfaction in my

life comes from my work" and "Most things in life are more important than work" (reverse scored). All items are rated using a 6-point Likert scale (7=strongly agree; 1=strongly disagree) with total scores ranging from 12 to 84. Higher scores indicate a strong belief that work is central to one's life.

The WC scale was initially tested with 313 human services employees at a state psychiatric hospital (Paullay et al., 1994). Internal consistency reliability (alpha coefficient) was estimated at .80 and a test of split half reliability yielded a correlation coefficient of .75. The study also showed statistically significant ($p<.05$) correlations between work centrality and job involvement ($r=.41$ to .48), and a measure of Protestant work ethic ($r=.43$).

Similar validity and reliability results for the WC measure were found when researchers investigated work centrality and work alienation as they relate to a general commitment to work (Hirschfeld & Field, 2000). Respondents from two sub-samples in this study included 180 full time employees working at a Fortune 200 financial services corporation and 327 employed adults working full-time and enrolled in graduate and undergraduate classes at a metropolitan state university. The WC measure yielded an internal consistency reliability estimate of .76. In terms of validity, statistically significant ($p<.05$) correlations were found between work centrality and job involvement ($r=.35$) and Protestant work ethic ($r=.31$). Additionally, a significant negative correlation was found between work centrality and leisure ethic ($r=-.43$).

Health and well being. The Short Form 12-Item Health Survey Questionnaire (SF-12; Ware et al., 1996) is a self-administered questionnaire measuring both positive and negative health states. As a short version of the Medical Outcomes Survey 36-Item

Short Form Health Survey (SF-36; Ware et al., 1994), the SF-12 yields physical and mental health component summary scores as well as a functional health and well-being profile. This profile consists of eight subscales: (a) physical functioning which assesses limitations performing daily activities due to poor health (2 items); (b) social functioning which measures limitations in social activities such as visiting friends (1 item); (c) role limitations (physical problems) which looks at problems with work or other activities in the last four weeks related to physical health issues (2 items); (d) role limitations (emotional problems) considers role limitations due to emotional problems (2 items); (e) general health perception measures subjective evaluation of general health (1 item); (f) mental health measures assesses for depression and anxiety (2 items); (g) vitality considers feelings of energy and tiredness (1 item); and (h) pain gauges the amount of pain and limitations resulting from bodily pain (1-item).

Forward step regression analysis was used to identify a subset of 12 or fewer items from the SF-36 and two weighting algorithms for estimating the physical and mental component summary measures from the SF-36. Drawing on a sample from the U.S. population (n=2,474), researchers tested the reliability and validity of the SF-12 and found that the 12-item short form achieved R^2 of .91 and .92 in predictions of the SF-36 physical components summary and mental component summary, respectively. With a subset of the sample (n=232), test-retest reliability over a two-week period resulted in correlations of .89 and .76, respectively, for the physical component summary and the mental component summary scales on the SF-12. Additional investigations of validity examined the relationship of SF-12 summary and individual scales with 16 health condition variables. Results included statistically significant relationships between the

physical health component scale and comorbid conditions (r=.77, p<.001), ear, nose and throat issues (r=.67, p<.001), and chronic heart failure (r=.58, p<.001). Additionally, the mental health component scale was significantly related to central nervous system conditions (r=.67, p<.001) and gastrointestinal issues (r=.98, p<.001).

The SF-12 (Appendix G) uses numerical rating scales, both Likert and yes/no formats, and is well validated for its ability to distinguish between function and dysfunction, distress and well-being, and objective and subjective symptoms of illness (Ware & Gandek, 1998). The mental health component scale measures general mental wellness using several items that are summed and averaged to provide a summary score ranging between 0 and 100. Low scores indicate mental distress, social dysfunction, and emotional problems, whereas high scores indicate positive affect, social competence, and emotional health. Typical items refer to feeling calm and feeling happy. The internal consistency reliability estimates of the mental health component scale ranged from .66 to .94.

The physical health components scale measures current physical health across several items and also provides a score between 0 and 100. Low scores indicate poorer self care, frequent tiredness, and severe pain, while high scores indicate high energy levels, well-being, and good general health. Typical items refer to having a lot of energy and being free from pain. The internal consistency reliability estimates of the physical health component scale ranged from .52 to .96.

Work/personal life conflict. Work-personal life conflict will be measured by a scale initially developed by Kopelman et al. (1983) to assess interrole conflict, which is defined as "the extent to which a person experiences pressures within one role that are

incompatible with the pressures that arise in another role" (p.201). Kopelman et al. (1983) designed their scale to specifically measure interrole conflict between work and family. This same measure was later revised to measure conflict between work and personal life in general, rather than just family, making the items more appropriate for both married and unmarried respondents (Gutek et al., 1991). For the purposes of this study, the latter version of the scale used to measure the amount of conflict between the work role and non-work role (Appendix H). Response options for this four item, 5 point scale, range from strongly disagree (1) to strongly agree (5), with higher scores indicating high levels of work/personal life conflict. A sample item is "After work, I come home too tired to do some of the things I'd like to do." The measure has been shown to have internal consistency reliability estimates ranging from .80 to .83 (Bonebright et al., 2000; Gutek et al., 1991). Studies also indicate that the measure is moderately to highly correlated with hours spent in paid work (rs of .40 to .56) (Gutek et al., 1991).

As part of their study, Gutek et al. (1991) utilized both this scale, which they called work-interference-with-family (WIF), and a second scale, family-interference-with-work (FIW), to assess work-family conflict. A factor analysis of both scales revealed that the items for the two scales loaded on two separate factors. The correlation between the two scales was .26.

Leisure satisfaction. The Leisure Satisfaction Survey (LSS) was designed to measure the extent to which individuals perceive that certain personal needs are met or satisfied through leisure activities. The LSS was developed based on a definition of leisure satisfaction as the positive perceptions or feelings which an individual forms, elicits, or gains as a result of engaging in leisure activities and choices (Beard & Ragheb,

1980). Initial item development followed an extensive literature review and identification of the effects of individuals participating in leisure activities. These categories, and eventual subscales of the instrument, included: (a) psychological, (b) educational, (c) social, (d) relaxing, (e) physiological, and (f) aesthetic. The LSS has been widely used in leisure studies (Lloyd & Auld, 2002; Trottier et al., 2002)

The first set of items were reviewed by 160 experts in the field of leisure behavior and recreation. This group of professors, researchers, and practitioners rated each of the items for relevance, clarity, reading level, and objectivity. As a result of their feedback, the items were refined, revised, and simplified where possible, providing good content-related evidence of validity. Subsequently, the test was administered to 603 students, working professionals, and retirees. A principal component factor analysis yielded 12 factors with eigenvalues greater than 1. These factors were then rotated using an orthogonal (varimax) solution which reduced the number of interpretable factors to the six previously mentioned.

A 24-item short form of the LSS was simultaneously developed, resulting in internal consistency reliability coefficients ranging from .87 to .93, with internal consistency reliability coefficients for each of the subscales ranging from .59 to .92 (Beard & Ragheb, 1980; Trottier et al., 2002). The test-retest reliability estimate for the total score over two weeks was $r=.75$ ($p<.001$) (Trottier et al., 2002). The instrument consists of items such as "My leisure activities are very important to me" and items are rated on a 5-point Likert scale from "Almost never true for you" to "Almost always true for you". The short form version of the measure will be used in this study (Appendix I).

Procedure

The survey was administered using an online survey administration tool, Survey Monkey. Participants were able to access the World Wide Web from any home, work, or other computer that had Internet access. A link to the survey was included in an email invitation to participate, which the researcher sent to the entire company (178 employees) via an intracompany listserv. The questionnaire remained available online for 1 month and a reminder email was sent to the listserv during weeks 2 and 3. As an incentive, respondents were eligible to participate in a raffle to win one of four $50 American Express gift cards. In total, one hundred twenty seven people participated in the online survey, yielding a 71% participation rate. However, 16 of the respondents did not provide useable data. It should be noted that in addition to the weekly email reminders and the raffle incentives, two other factors likely contributed to the relatively high participation rate in the online survey. First, part of the organization's mission is to promote and support scholarly research, thus many of the employees were already highly motivated and experienced at participating in academic research. Second, the researcher formerly held a leadership position in the organization so it is likely that many respondents were also motivated to participate by their professional relationship with the researcher.

The online questionnaire briefly described the purpose of the study, communicated that it should take approximately twenty to thirty minutes to complete the questionnaire, and reiterated a commitment to confidentiality. After logging on to the survey administration site, each participant was asked to acknowledge their informed consent for participating in the study and basic demographic information (Appendix A). The questionnaire consisted of eight instruments: the WAI, WorkBAT, Marlowe-Crowne

Social Desirability Scale – Form B (M-C-Form B; Reynolds, 1982), Abridged Job in General Scale (AJIG; Russell et al., 2004), work centrality measure (WC; Paullay et al., 1994), work/personal life conflict measure (Gutek et al., 1991), Short Form 12-Item Health Survey Questionnaire (SF-12; Ware et al., 1996), and Leisure Satisfaction Scale – Short Form (LSS-Short Form; Beard & Ragheb, 1980). Each instrument was administered on a separate page with its own set of clear, distinct instructions.

CHAPTER 4

Results

To explore the psychometric properties of the WAI, items were first factor analyzed, and then internal consistency estimates and intercorrelations among the resulting scales were calculated. Next, the WAI's convergent and discriminant validity were examined in relation to workaholism (assessed by the WorkBAT) and social desirability (assessed by M-C Form B). Additionally, relationships between the WAI and several criterion variables, such as job satisfaction, average paid work hours per week, and mental health, were investigated. Finally, hierarchical multiple regressions predicting each criterion were conducted, entering the WorkBAT and the WAI at the first and second steps, respectively to explore whether the WAI accounted for unique predictive variance beyond the more established workaholism measure, the WorkBAT.

Hypothesis 1: Factor structure: The WAI will form a multi-factor structure. Work addiction is still a fairly new territory for researchers and very little scientific exploration has been conducted on the antecedents and outcomes of the construct. Because of this, the principle axis factoring procedure, which seeks the least amount of factors that can account for the common variance of a set of items in an effort to remove all unexplained variance from the model (Gorsuch, 1989), was used to explore the factorial composition of the WAI's 33 items.

As the first method of extraction, the scree test was used and included the review of a plot of eigenvalues in descending order, with each factor explaining less variance than the preceding one. The rule of thumb for interpreting the scree test was to retain factors above the break in the line connecting the eigenvalues, otherwise known as the

"elbow", and to reject those factors below the "elbow". As a second method of extraction, the Kaiser-Guttman rule of retaining all factors with eigenvalues ≥ 1 was applied to determine the number of factors extracted (Loehlin, 1998). Also, two criteria were used simultaneously to select and anchor items in a given factor. First, items that loaded most highly and beyond .32 on a single factor were retained (Worthington & Whittaker, 2006). Second, where cross-loadings became an issue, items with loadings above .32 were anchored in the factor on which they loaded most highly if their loadings showed a difference of >.15 between the highest loading and next highest loading factors (Worthington & Whittaker, 2006). Finally, the loadings were rotated using the oblique rotational method, which assumed that the factors were correlated (which is likely to be the case with most psychological measures) (Gorsuch, 1997). This process maximized the highest loadings and minimized the lowest loadings to achieve the simplest possible structure, facilitating the interpretability of factors (Gorsuch, 1997). These criteria were designed to clean up the factor structure of the WAI scale and provide an appropriate framework for interpretation and prediction of criterion variables.

Initial factor analyses suggested an 8 factor structure. However the rotation did not converge to a solution. After closer review of the results, a 3- or 4- factor solution appeared more plausible based on eigenvalues ≥ 1 after extraction and scree at 3 or 4 factors. Using the aforementioned criteria for selecting and anchoring items, results of the oblique rotation solutions suggested the best fit with a solution of 3 factors, accounting for 45% of the total variance. Items were removed if they did not load above .32 on any given factor or if they loaded above .32 on two or more factors and th

difference between the loadings was <.15. The resulting factors, eigenvalues, item content, and factor loadings are displayed in Table 1.

Table 1

Items and Factor Loadings of the Work Addiction Inventory

Item	Factor						
	1	2	3	Skew	SD	Kurtosis	SE
1. Work Absorption, eigenvalue = 9.25				.21	.23	-.55	.46
I am preoccupied with work during vacations, holidays, and other non-work hours.	**.79**	.35	.40	.41	.23	-.47	.46
I find myself thinking about work during social activities.	**.77**	.31	.41	.31	.23	-.16	.46
When I leave work I do not think about the job until I return. [a]	**.73**	.38	.32	.03	.23	-.74	.46
I lose sleep because I can not stop thinking about work.	**.70**	.13	.34	.09	.23	-.01	.46
I feel irritable or nervous when I am away from work for long periods of time.	**.70**	.39	.48	.69	.23	.04	.46
I feel guilty when I am not working.	**.68**	.37	.41	.27	.23	-.78	.46
It is difficult for me to relax when I am not working.	**.66**	.30	.46	.56	.23	-.53	.46
I check my work email and voice messages during non-work hours.	**.64**	.18	.17	.03	.23	.96	.46
I tend to get engrossed in my work.	**.50**	.34	.22	.01	.23	.17	.46
2. Work Attraction, eigenvalue = 2.54				-.24	.23	-.40	.46
I would rather spend time	.39	**.73**	.21	.41	.23	-.63	.46

working than doing anything else.							
I get more excited about working than anything else.	.45	**.69**	.24	.21	.23	-.55	.46
I feel more fulfilled when I am with friends and family than when I am working. [a]	.13	**.52**	-.03	.06	.23	-.58	.46
I value time away from work. [a]	.33	**.52**	.13	1.85	.23	4.21	.46
I have more energy away from work. [a]	.22	**.48**	-.12	-.16	.23	.11	.46
Having free time for hobbies and non work activities is important to me. [a]	.31	**.48**	.21	.13	.23	-1.49	.46
Given the choice, I would rather work than not.	.11	**.47**	.11	-.09	.23	-.54	.46
3. Relationship Implications, eigenvalue = 1.33				.23	.23	-.52	.46
My social life suffers as a result of my work and work-related responsibilities.	.50	.14	**.80**	.23	.23	-.70	.46
Working long hours has hurt my relationships with family and others.	.33	.18	**.80**	.39	.23	-.68	.46
My family and friends complain about the amount of time I spend working.	.50	.30	**.74**	.29	.23	-.34	.46
My job negatively impacts my health.	.34	.10	**.69**	.43	.23	-.36	.46
I find that I spend more time at work than with my partner, family, and friends.	.45	.21	**.62**	.16	.23	-.66	.46
I hide how much I work from others.	.20	.07	**.52**	.69	.23	-.68	.46
Working by myself is the best way to ensure that things get done correctly.	.11	.00	**.43**	-.18	.23	.54	.46

I get annoyed when people interrupt me when I am working.	.19	-.06	**.42**	.08	.23	.25	.46
4. Removed Items							
I experience work related stress.	.51	.12	.41	-.57	.23	.51	.46
I skip or forget to eat while I am working.	.37	.07	.44	.04	.23	-.82	.46
I meet most of my new friends at work or work related events.	.00	.32	-.01	.23	.23	-.37	.46
I get impatient with coworkers who have other priorities besides work.	.34	.33	.47	.49	.23	-.43	.46
Most of my goals and aspirations are related to my professional life.	.43	.34	.37	.03	.23	-.34	.46
I spend more energy nurturing my personal relationships than I do my professional ones. [a]	.40	.46	.15	-.08	.23	-.79	.46
Work is central to my personal identity.	.45	.48	.24	-.02	.23	-.61	.46
I have tried but failed to cut down on the amount of time I spend working and thinking about work.	.60	.16	.62	.41	.23	-.84	.46
I work longer hours than required by my job.	.47	.21	.42	.03	.23	-.50	.46

Note. N =111. The Work Absorption, Work Attraction, and Relationship Implications scales accounted for 29.63%, 9.28%, and 5.75%, respectively, of the total variance. Factor loadings were obtained with the rotated factor matrix of the oblique solution. [a] Indicates reverse scored items.

The three factors were labeled (a) Absorption (9 items) consisting of items demonstrating a preoccupation with work; (b) Work Attraction (7 items) reflecting the

tendency to prefer work over other activities; and (c) Relationship Implications (8 items) implying an adverse effect of work on one's personal and professional relationships. All items loaded at least moderately (above .42) on their corresponding factors. Thus, hypothesis 1 was supported.

Hypothesis 2: Internal reliability: The WAI (total scale and any factor-derived subscales) will produce adequate estimates of internal consistency reliability. As shown in Table 2, internal consistency reliability estimates of the WAI subscales ranged from .74 (Work Attraction) to .89 (Absorption); the reliability estimate of the WAI total scale was .90. Thus, hypothesis 2 was supported. The intercorrelations, means, standard deviations, and internal consistency values (Cronbach alphas) for the WAI subscale and the total scale scores, and for each of the other measures, are displayed in Table 2. As expected, the three subscales correlated significantly with each other, ranging from .21 to .53. All WAI subscales scores also had high correlations (*r* ranged from .64 to .89) with the total score.

Internal consistency reliability estimates for the pre-existing measures used in this project varied considerably, ranging from .54 (Physical Health) to .96 (Leisure Satisfaction). Four measures resulted in Cronbach alphas below .70, as displayed in Table 2. The implications of these low alphas are outlined in the Discussion section.

Table 2

Correlations, Means, Standard Deviations, and Reliability Coefficients of the Predictors and Dependent Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. WAI-Absorption	--														
2. WAI-Work Attract	.46**	--													
3. WAI-Relat Implic	.53**	.21*	--												
4. WAI Total	.89**	.64**	.78**	.--											
5. Avg Hrs Work/Wk	.35**	.09	.32**	.35**	--										
6. Work Involvement	.47**	.34**	.36**	.50**.	.11	--									
7. Enjoyment	.28**	.55**	-.04	-.30**	-.04	.29**	--								
8. Drive	.63**	.32**	.54**	.66**	.22*	.43**	.13	--							
9. Job Satisfaction	.12	.29**	-.27**	.03	.02	.11	.59**	-.07	--						
10. Work Centrality	.52**	.65**	.50**	.57**	.16	.31**	.46**	.19	.26**	--					
11. Physical Health	-.07	-.14	.06	-.03	.04	-.01	-.19	.06	-.09	-.07	--				
12. Mental Health	.03	.10	-.25*	-.06	-.06	.06	.42**	.00	.33**	-.04	-.14	--			
13. Social Desirability	.11	-.11	18	.10	.18	-.06	-.25**	.06	-.22*	.02	.13	-.30	--		
14. Work/Life Conflict	.30**	.03	.50**	.39**	.37**	.20*	-.03	.25**	-.09	.23*	-.04	-.11	.15	--	
15. Total Leisure Sat	-.10	-.18	-.11	-.16	-.02	.17	.20*	.01	.11	-.19	.14	.31**	-.21*	.00	--
M	13.47	8.64	11.88	33.99	44.8	16.93	22.65	17.42	19.56	36.10	53.38	45.90	17.16	8.52	90.24
SD	6.40	3.79	5.43	12.36	9.43	3.45	6.97	4.52	4.90	8.87	6.89	9.98	2.59	2.60	15.60
α	.89	.74	.84	.90	--	.63	.88	.74	.76	.82	.54	.69	.65	.63	.96

Note. *N* ranged from 98 to 111 because of missing values. * Correlations $p < .05$ ** Correlations $p < .01$.

Hypothesis 3: Content validity: The WAI will have adequate content validity.

The WAI was piloted using a small group of counseling psychology graduate students (*n* = 8). In addition to completing the measure, participants in the pilot study were asked to assess the readability, clarity, and appropriateness of each item. The pilot study resulted in the refinement and rewording of select items and also provided support for face

validity of the instrument. The measure was then sent to a panel of 10 experts, including researchers and practitioners, for review. Panelists were selected based on their level of experience and familiarity with assessments of work addiction measured by a rough estimate of reported use in their own practice and research. The panel consisted of Dr. Ilene Philipson (practitioner), Dr. Ronald Burke (York University), Dr. Thomas W.H. Ng (University of Hong Kong), Dr. Gayle Porter (Rutgers University), Dr. Michael O'Driscoll (University of Waikato), Dr. Peter E. Mudrack (Kansas State University), Dr. Raphael Snir (Academic College of Tel Aviv), Dr. Dov Zohar (Israel Institute of Technology), Dr. Marc Buelens (University of Ghent – Belgium), and Dr. Lucy Johnston (University of Canterbury). Feedback was received from 6 panelists and resulted in the elimination of 5 items due to lack of relevance to the construct of work addiction, clarity, and/or conciseness. Therefore, hypothesis 3 was supported.

The correlations testing hypotheses 4-6 are contained in Table 2. Correlation coefficients indexing the strength of the relationships between measures were interpreted as small (r = .10 to .29), medium (r = .30 to .49), or large (r > .50) using Cohen's (1988) guidelines.

Hypothesis 4: Convergent validity: It is expected that the WAI will correlate with an existing measure of workaholism, the WorkBAT, as indicated below. Evidence of convergent validity of the WAI was provided by the significant and positive correlations between the WAI and each of the subscales of the WorkBAT (see Table 2).

Hypothesis 4a: The WAI will have a positive relationship with the Work Involvement scale of the WorkBAT. The correlation of the WAI total scale score and the Work Involvement scale of the WorkBAT was r = .50 ($p<.01$), indicating a large,

positive, statistically significant correlation. Thus, hypothesis 4a was supported. Additionally, positive, statistically significant correlations were also found between the Work Involvement scale of the WorkBAT and each of the WAI subscales (Absorption, *r* =.47; Work Attraction, *r* = .34; Relationship Implications, *r* = .36).

Hypothesis 4b: The WAI will have a large, positive relationship with the Drive scale of the WorkBAT. The correlation of the WAI total scale and the Drive scale of the WorkBAT was *r* = .66 ($p<.01$), indicating a large, statistically significant, positive correlation. Thus, hypothesis 4b was supported. Additionally, positive, statistically significant correlations were also found between the Drive scale of the WorkBAT and each of the WAI subscales (Absorption *r* =.63; Work Attraction, *r* = .32; Relationship Implications, *r* = .54).

Hypothesis 4c: The WAI will have a small to moderate, positive relationship with the Enjoyment scale of the WorkBAT. The correlation of the WAI total scale and the Enjoyment scale of the WorkBAT was *r*= .30 ($p<.01$), indicating a moderate, positive correlation. Thus, hypothesis 4c was supported. Additionally, positive, statistically significant correlations were found between the Enjoyment scale of the WorkBAT and two of the WAI subscales (Absorption *r* =.28; Work Attraction, *r* = .55). However, a small, non-significant, negative correlation was found between the Enjoyment scale and Relationship Implications (*r* = -.04), the third WAI subscale.

Hypothesis 5: Discriminant validity: The WAI will yield a small, positive relationship with the Marlowe-Crowne Social Desirability Scale – Form B (M-C-Form B). A small correlation would suggest that workaholism represents more than just the participants' desire to make a good impression. The discriminant validity of the WAI

was supported by low and non-significant correlations between the WAI total measure and social desirability (r = .10). Each of the WAI subscales also resulted in low and non-significant correlations with social desirability (Absorption, r =.11; Work Attraction, r = -.11; Relationship Implications, r = .18). Thus, hypothesis 5 was supported.

Hypothesis 6: Criterion-related validity: The WAI is expected to relate to relevant work, health, and well-being criteria.

Hypothesis 6a: Workaholism will be positively related to job satisfaction. The correlation of the WAI total scale score and job satisfaction was r = .03 ($p>.05$), indicating that workaholism and job satisfaction were not substantially correlated. Thus, hypothesis 6a was not supported. Regarding the relationships between job satisfaction and each of the WAI subscales, a positive, statistically significant correlation was found with Work Attraction (r = .29, $p<.01$), a negative, statistically significant correlation was found with Relationship Implications (r = -.27, $p<.01$), and a positive non-significant correlation was found with Absorption (r = .12).

Hypothesis 6b: Workaholism will have a moderate to strong, positive correlation to work centrality. The correlation of the WAI total score with work centrality was r = .57 ($p<.01$), indicating that workaholism and work centrality are strongly, positively correlated. Thus, hypothesis 6b was supported. Each of the WAI subscales also resulted in positive, statistically significant correlations with work centrality (Absorption, r =.52; Work Attraction, r = .65; Relationship Implications, r = .23).

Hypothesis 6c: Workaholism will have a strong, positive correlation with work hours per week. The correlation of the WAI total score and paid work hours per week was r = .35 ($p<.01$), indicating that workaholism and work hours per week are

moderately, positively correlated. However, Hypothesis 6c was not supported because the strength of the relationship was not as strong as had been expected. Moderate, statistically significant correlations were also found between work hours per week and the Absorption (r = .35) and Relationship Implications (r = .32) subscales. Only a small, non-significant correlation was found between work hours per week and Work Attraction (r = .09).

Hypothesis 6d: Workaholism will have a strong, positive relationship with work/personal life conflict. The correlation of the WAI total score and work/personal life conflict was r = .39 ($p<.01$), indicating that workaholism and work work/personal life conflict are moderately, positively correlated. Thus, hypothesis 6d was not technically supported. Absorption (r = .30) and Relationship Implications (r = .50) had moderate and large correlations, respectively, with work/personal life conflict. However, Work Attraction (r = .03) only resulted in small, non-significant correlations with work/personal life conflict.

Hypothesis 6e: Workaholism will be negatively related to physical health. The correlation of the WAI total score and physical health scale was r = -.03 ($p >.05$), indicating that workaholism and physical health were not significantly correlated. Thus, hypothesis 6e was not supported. Each of the WAI subscales also resulted in small, non-significant correlations with physical health (Absorption, r =.07; Work Attraction, r = -.14; Relationship Implications, r = -.06). However, these correlations should be considered in light of the inadequate reliability of the physical health measure used in this study.

Hypothesis 6f: Workaholism will be negatively related to mental health. The correlation of the WAI total and mental health scale was $r = -.06$ ($p>.05$), indicating that workaholism and mental health were not significantly correlated. Thus, hypothesis 6f was not supported. Small, non-significant correlations were also found between mental health and two of the WAI subscales, Absorption ($r = .03$) and Work Attraction ($r = .01$). However, a small, negative, statistically significant correlation was found between mental health and the Relationship Implications ($r = -.25$, $p<.05$) subscale.

Hypothesis 6g: Workaholism will be negatively related to leisure satisfaction. The correlation of the WAI total score and leisure satisfaction was $r = -.16$ ($p>.05$), indicating that workaholism and leisure satisfaction are negatively, but not significantly, correlated. Thus, hypothesis 6g was not supported. Each of the WAI subscales also resulted in small, negative, non-significant correlations with leisure satisfaction (Absorption, $r = -.10$; Work Attraction, $r = -.18$; Relationship Implications, $r = -.11$).

Supplementary Analyses

Joint prediction of the criteria from the WAI subscales. While correlations between each of the WAI subscales and the total scale are high (r ranges from .64 to .89), relationships among the subscales appear to be more modest (r ranges from .21 to .53). Each of the subscales also produced a differential pattern of correlations with the criterion variables. The varying magnitude of correlations among the subscales and the different patterns of correlations between each WAI subscale and the criterion variables suggest that each subscale may reflect a unique aspect of workaholism. Minimal overlap between the subscales could have significant implications for both the measure's scoring procedures (i.e., use of total score versus composite score) and how the construct of

workaholism is conceptualized in general. Therefore, a set of regression analyses was conducted to further explore the individual and joint relationships of the WAI subscales (Work Absorption, Work Attraction, Relationship Implications) to the criterion variables in hypothesis 6.

Results, displayed in Tables 3 – 9, showed that the combined WAI scales accounted for statistically significant variance ($p < .01$) in predicting four of the seven criterion variables: average hours worked per week (ΔR^2=.15), work centrality (ΔR^2=.49), job satisfaction (ΔR^2=.23), and work life conflict (ΔR^2=.26). However, the combined WAI scales did not account for significant variance in predicting physical health (ΔR^2=.07), mental health (ΔR^2=.11), or leisure satisfaction (ΔR^2=.04).

The regression analyses also suggested relationships between individual predictors and each of the dependent variables. Results indicated that Work Absorption contributed significantly to predicting average hours worked per week (β=.30, p <.01), job satisfaction (β=.24, p <.05), work centrality (β=.32, p <.01), and physical health (β=.28, p <.04). Work Attraction contributed significantly to predicting job satisfaction (β=.28, p <.01), work centrality (β=.52, p <.01), and physical health (β=-.25, p <.05) with the latter being the only one of the three with an inverse relationship to Work Attraction. Relationship Implications contributed significantly, and inversely, to predicting job satisfaction (β=-.46, p <.01) and mental health (β=-.37, p <.01), and also (positively) to predicting work/personal life conflict (β=.46, p <.01).

The results of the regression analyses suggest different relationships between the WAI scales and the criterion variables than initially found when only correlations were investigated. Therefore, if the regression results were used to test hypothesis 6, different

outcomes would be expected. A complete comparison and review of the correlation and regression results addressing hypothesis 6 is explored further in the Discussion section.

Table 3

Summary of Regression Analysis Testing WAI Subscales as Predictors of Average Hours Worked Per Week

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Absorption	.39	.15	3, 107	6.42	.00**	.30**
	Work Attraction						.39
	Relationship Impl						.10

* p < .05 ** *p* < .01.

Table 4

Summary of Regression Analysis Testing WAI Subscales as Predictors of Job Satisfaction

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Absorption	.48	.23	3, 107	10,90	.00**	.24*
	Work Attraction						.28**
	Relationship Impl						-.46**

* p < .05 ** *p* < .01.

Table 5

Summary of Regression Analysis Testing WAI Subscales as Predictors of Work Centrality

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Absorption	.70	.49	3, 107	33.86	.00**	.32**
	Work Attraction						.52**
	Relationship Impl						-.05

* p < .05 ** *p* < .01.

Table 6

Summary of Regression Analysis Testing WAI Subscales as Predictors of Physical Health

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	*B*
Model 1	Work Absorption	.25	.07	3, 94	2.16	.10	.28*
	Work Attraction						-.25*
	Relationship Impl						-.16

* p < .05 ** *p* < .01.

Table 7

Summary of Regression Analysis Testing WAI Subscales as Predictors of Mental Health

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Absorption	.33	.11	3, 94	3.70	.14	.20
	Work Attraction						.08
	Relationship Impl						-.37**

* p < .05 ** *p* < .01.

Table 8

Summary of Regression Analysis Testing WAI Subscales as Predictors of WorkLifeConflict

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Absorption	.51	.26	3, 107	12.83	.00**	.11
	Work Attraction						-.11
	Relationship Impl						.46**

* p < .05 ** *p* < .01.

Table 9

Summary of Regression Analysis Testing WAI Subscales as Predictors of Leisure Satisfaction

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Absorption	.19	.04	3, 107	1.36	.26	.02
	Work Attraction						-.17
	Relationship Impl						-.08

* p < .05 ** *p* < .01.

Incremental validity of the WAI subscales. As an additional way to examine the utility of the WAI, a set of hierarchical regression analyses was conducted predicting each of the above criterion variables (the same ones used in testing hypothesis 6). The purpose of these analyses was to examine whether the WAI accounted for unique predictive variance beyond the more established workaholism measure, the WorkBAT. Thus, in each equation, the WorkBAT scales were entered at the first step and the WAI scales were entered at the second step. Results, displayed in Tables 10 – 16, showed that the WAI scales (Work Absorption, Work Attraction, Relationship Implications)

accounted for statistically significant unique variance ($p < .05$) beyond the scales of the WorkBAT (Work Involvement, Drive, Enjoyment) in predicting five of the seven criterion variables: average hours worked per week (ΔR^2=.11), work centrality (ΔR^2=.29), leisure satisfaction (ΔR^2=.17), job satisfaction (ΔR^2=.06), and mental health (ΔR^2=.08). The WAI scales did not account for significant unique variance in predicting either physical health (ΔR^2=.05) or work/life conflict (ΔR^2=.07), although the increment in explained variance was nearly significant ($p = .054$) in the latter equation.

Table 10

Summary of Hierarchical Regression Analysis Testing WAI and WorkBAT as Predictors of Average Hours Worked Per Week

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Involvement	.24	.06	3, 105	2.21	.09	.04
	Drive						.22*
	Enjoyment						-.08
Model 2	Work Involvement	.41	.11	3, 102	4.35	.00**	-.07
	Drive						-.05
	Enjoyment						-.10
	Work Absorption						.35**
	Work Attraction						.00
	Relationship Impl						.18

* p < .05 ** *p* < .01.

Table 11

Summary of Hierarchical Regression Analysis Testing WAI and WorkBAT as Predictors of Job Satisfaction

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Involvement	.61	.37	3, 105	20.59	.00**	.00
	Drive						-.14
	Enjoyment						.61**
Model 2	Work Involvement	.66	.06	3, 102	3.60	.02*	.03
	Drive						-.10
	Enjoyment						.53**
	Work Absorption						.19
	Work Attraction						.00
	Relationship Impl						-.31*

* p < .05 ** *p* < .01.

Table 12

Summary of Hierarchical Regression Analysis Testing WAI and WorkBAT as Predictors of Work Centrality

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Involvement	.51	.26	3, 104	12.43	.00**	.19*
	Drive						.07
	Enjoyment						.40**
Model 2	Work Involvement	.74	.29	3, 101	21.54	.00**	.04
	Drive						-.27**
	Enjoyment						.12
	Work Absorption						.40**
	Work Attraction						.48**
	Relationship Impl						.05

* p < .05 ** *p* < .01.

Table 13

Summary of Hierarchical Regression Analysis Testing WAI and WorkBAT as Predictors of Physical Health

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Involvement	.21	.04	3, 92	1.41	.25	.01
	Drive						.10
	Enjoyment						-.21
Model 2	Work Involvement	.31	.05	3, 89	1.76	.16	.02
	Drive						.09
	Enjoyment						-.23
	Work Absorption						.27
	Work Attraction						-.13
	Relationship Impl						-.24

* p < .05 ** *p* < .01.

Table 14

Summary of Hierarchical Regression Analysis Testing WAI and WorkBAT as Predictors of Mental Health

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Involvement	.43	.18	3, 92	6.91	.00**	-.04
	Drive						-.06
	Enjoyment						.45**
Model 2	Work Involvement	.51	.08	3, 89	3.25	.03*	.04
	Drive						.10
	Enjoyment						.47**
	Work Absorption						.03
	Work Attraction						-.16
	Relationship Impl						-.31**

* p < .05 ** *p* < .01.

Table 15

Summary of Hierarchical Regression Analysis Testing WAI and WorkBAT as Predictors of Work/Personal Life Conflict

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Involvement	.14	.02	3, 105	.72	.54	-.10
	Drive						-.44
	Enjoyment						-.05
Model 2	Work Involvement	.30	.07	3, 102	2.62	.054	-.01
	Drive						.17
	Enjoyment						-.06
	Work Absorption						-.23
	Work Attraction						.02
	Relationship Impl						-.21

* p < .05 ** *p* < .01.

Table 16

Summary of Hierarchical Regression Analysis Testing WAI and WorkBAT as Predictors of Leisure Satisfaction

	Predictors	*R*	ΔR^2	*df*	ΔF	*Sig* ΔF	β
Model 1	Work Involvement	.24	.06	3, 105	2.20	.09	.15
	Drive						-.08
	Enjoyment						.17
Model 2	Work Involvement	.48	.17	3, 102	7.37	.00**	.26**
	Drive						.15
	Enjoyment						.39**
	Work Absorption						-.20
	Work Attraction						-.42**
	Relationship Impl						-.07

* p < .05 ** *p* < .01.

Examination of the beta weights revealed that the individual WAI scales each contributed uniquely ($p < .05$) to the prediction of two criterion variables: Absorption (hours worked, work centrality); Work Attraction (work centrality, leisure satisfaction); Relationship Implications (job satisfaction, mental health). Although most were positive, some of the beta weights were negative. In particular, Relationship Implications were inversely related to job satisfaction and mental health, and Work Attraction was inversely related to leisure satisfaction. Only two of the WorkBAT scales contributed uniquely to the regression equations: Enjoyment yielded significant positive beta weights in predicting three criteria (leisure satisfaction, job satisfaction, and mental health), while Drive yielded a significant negative beta weight in predicting work centrality. (The latter may have reflected a suppressor effect because Drive had produced a positive bivariate correlation with work centrality.)

CHAPTER 5

Discussion

Despite its widespread popularity for nearly forty years, research on workaholism remains in its infancy. Most of the existing empirical literature has investigated the effects of workaholism on individuals, families, and organizations. But considerable debate continues among researchers regarding a comprehensive definition, an underlying theory, and a valid measure of the construct of workaholism itself. Existing measurement tools, such as the WorkBAT (Spence & Robbins, 1992) and the WART (Robinson, 1989), have been criticized for their construct definitions and factor structures. The lack of a comprehensive construct definition and an instrument to properly assess workaholism may have slowed progress in understanding work as an addiction and providing services to people and organizations impacted by this syndrome. Therefore, the purpose of the current project was: (a) to propose a new, comprehensive definition of workaholism and (b) to develop and validate a measure of workaholism, the Work Addiction Inventory (WAI), linked to the new definition.

For the purposes of this study, workaholism was defined *as the excessive engagement in work related activities and thoughts which significantly and negatively interfere with an individual's normal mental, emotional, and/or physical health.* Unlike the Spence and Robbins' (1992) WorkBAT scales which primarily assess attitudes and affect (Mudrack & Naughton, 2001) and the WART (Robinson, 1989) which mostly taps general (rather than work-specific) Type A behaviors, the WAI is intended to tap three different overarching dimensions of work addiction: affect, cognition, *and* behavior (Smith & Seymour, 2004). Neither the WorkBAT nor the WART were developed using

such a multidimensional conception but rather each only emphasized one of the three aforementioned dimensions.

Overall, the hypotheses in this study were partially confirmed by the results. As anticipated, items of the WAI supported a multi-factor (specifically, 3-factor) solution and the WAI total and subscale scores produced adequate estimates of internal consistency reliability (α=.74 to .90). Based on the results of a pilot study and input from a panel of experts in the field of work addiction, adequate content validity was also established. As evidence of convergent validity, the WAI-total and subscale scores correlated positively and significantly with each of the WorkBAT subscales (r =.28 to .66), with the exception of one nonsignificant, negative relationship between Relationship Implications and Enjoyment (r =-.04). In terms of discriminant validity, there were low and nonsignificant correlations between the WAI total and subscale measures and social desirability (r =-.11 to .18).

Relationships between the WAI scales and each of the criterion variables differed, producing mixed results regarding criterion-related validity. The WAI total scale score was significantly correlated with work centrality (r = .57, p<.01), average work hours per week (r = .35, p<.01), and work/personal life conflict (r = .39, p<.01), but not with job satisfaction (r = .03, p>.05), physical health (r = -.03, p >.05), mental health (r = -.06, p>.05), or leisure satisfaction (r = -.16, p>.05). The analyses also suggested different relationship patterns between each of the WAI subscales and the criterion variables. Work Absorption correlated positively and significantly with work centrality (r =.52, p<.01), average hours worked per week (r = .35, p<.01), and work/personal life conflict (r = .30, p<.01). Work Attraction correlated significantly with job satisfaction (r = .29,

p<.01), and work centrality (r = .65, p<.01). Finally, Relationship Implications correlated significantly and positively with work centrality (r = .23, p<.05), average hours worked per week (r = .32, p<.01), and work/personal life conflict (r = .50, p<.01) and also correlated significantly and negatively with job satisfaction (r = -.27, p<.01) and mental health (r = -.25, p<.05).

Supplemental analyses revealed that that the combined WAI scales accounted for statistically significant variance in predicting four of the seven criterion variables: average hours worked per week (ΔR^2=.15), work centrality (ΔR^2=.49), job satisfaction (ΔR^2=.23), and work life conflict (ΔR^2=.26), but did not account for significant variance in predicting physical health (ΔR^2=.07), mental health (ΔR^2=.11), or leisure satisfaction (ΔR^2=.04). It was also found that the WAI scales (Work Absorption, Work Attraction, Relationship Implications) accounted for statistically significant unique variance ($p < .05$) beyond the scales of the WorkBAT (Work Involvement, Drive, Enjoyment) in predicting five of the seven criterion variables: average hours worked per week (ΔR^2=.11), work centrality (ΔR^2=.29), leisure satisfaction (ΔR^2=.17), job satisfaction (ΔR^2=.06), and mental health (ΔR^2=.08). Implications of the above findings are discussed in greater detail in the following sections.

Factor Structure and Reliability of the WAI

Findings of the current study provided initial support for the validity and internal consistency reliability of WAI scores. The factor analysis suggested that the WAI is composed of three correlated factors. The first subscale, Work Absorption, covers thoughts, feelings, and behaviors demonstrating a preoccupation with work. Examples include thinking about work on vacations or during social activities, feeling guilty,

irritable, or nervous when not working, and losing sleep or checking email and voicemail during non-work hours. Preoccupation with work has not been assessed extensively in existing workaholism measures.

The second subscale, Work Attraction, focuses on the level at which work is preferred over other activities. Examples include valuing time away from work and having free time for hobbies, feeling excited and energized about work, and having the preference to work rather than not. The third subscale, Relationship Implications, demonstrates the extent to which personal and professional relationships are impacted, including one's own intrapersonal relationship with health. Examples include the belief that working alone is the best way to get things done correctly, feeling annoyed when people interrupt work flow, and family and friends complaining about amount of time spent working.

Putting these three subscales together, it seems that the first and second subscales tap possible antecedents of workaholism (e.g., losing sleep due to thoughts of work or getting more excited about work than anything else) while the third subscale targets outcomes or consequences of workaholism (e.g., relationship issues or health difficulties). Another observation is that while Work Absorption and Work Attraction primarily focus on intrinsic values and qualities, Relationship Implications is more extrinsic in nature.

There is mixed evidence regarding whether use of a WAI-total score is appropriate. On the one hand, high correlations between the WAI-total score and each of the subscales (r=.64 to .89) and the high internal consistency (α=90) of the total score suggest that all items of the WAI are closely related. On the other hand, correlations

among the subscales are more modest (r=.21 to .53) and produce a differential pattern of relationships with criterion variables in the study. Specifically, Work Absorption correlated with average hours worked per week, work centrality, and work/personal life conflict; Work Attraction correlated with job satisfaction and work centrality, and Relationship Implications correlated with average hours worked per week, work/personal life conflict, work centrality and (inversely with) job satisfaction and mental health. Additionally, regression analyses showed that the combined WAI scales were predictive of average hours worked per week, work centrality, job satisfaction, and work life conflict. However, beta weights for the Work Absorption scale were only significant in predicting hours worked per week and work centrality, beta weights for Work Attraction were only significant for job satisfaction and work centrality, and beta weights for Relationship Implications were only significant for job satisfaction and work/personal life conflict. This suggests that each of the subscales may reflect a different aspect of workaholism that should be examined individually or in the context of each other, but not necessarily by combining them together into a single total score.

Some researchers have proposed the existence of workaholic "types". Naughton (1987) presents a three tier typology of workaholism based on the dimensions of career commitment and obsession-compulsion that consist of job-involved workaholics (high work commitment, low obsession-compulsion), compulsive workaholics (high work commitment, high obsession-compulsion) and compulsive non-workaholics (low work commitment, high obsession-compulsion). Scott, Moore, and Miceli (1997) also suggest three types of workaholic behavior patterns: compulsive-dependent workaholism which they propose is positively related to anxiety and stress but negatively related to job

satisfaction and job performance; perfectionist workaholism which is positively related to stress, hostile interpersonal relationships, and low job satisfaction; and, achievement oriented workaholism which is positively related to physical and psychological health, job satisfaction, and low pro-social behaviors.

Finally, Spence and Robbins (1992) proposed three workaholic patterns based on their workaholic triad definition: work involvement, feeling driven to work, and work enjoyment. They suggest that there are workaholics (high work involvement, high drive, low enjoyment), work enthusiasts (high work involvement, high enjoyment, low drive), and enthusiastic workaholics (high work involvement, enjoyment, and drive). The existence of different workaholic types or patterns might explain this study's modest subscale intercorrelations, establishing a case to consider each subscale individually rather than combining them into a single, WAI-total score. However, this requires additional exploration and empirical support.

Convergent and Discriminant Validity

Convergent validity of the WAI scores was initially supported by moderate to high, positive correlations between the WAI-total score and each of the WorkBAT subscales. These high correlations might stem from their common emphases on the affective aspects of work addiction between the two measures. However, the WAI intends to measure other dimensions of workaholism as well, specifically behavioral and cognitive aspects. This difference in dimensions measured might explain the somewhat lower, positive, statistically significant correlations found between each of the WAI subscales and the WorkBAT subscales. The pattern of correlations between the WAI and

WorkBAT subscales may suggest that the workaholism constructs measured by each instrument overlap or complement each other.

Discriminant validity of the WAI scores was initially demonstrated by their nonsignificant and low correlations to social desirability (*r* ranged from -.11 to .18), suggesting that workaholism represents more than just the participants desire to make a good impression. The fact that workaholic behaviors are rewarded and encouraged in some environments may increase the chance that some individuals might want to be seen as a workaholic. The size of the WAI-social desirability relationships suggests that the WAI cannot be reduced to self-presentation bias.

Criterion Validity of the WAI Scores

WAI scores were also found to be associated with several criterion variables. Although the correlation between the WAI-total score and job satisfaction was not significant, statistically significant relationships were found between job satisfaction and two WAI subscales: Work Attraction was positively related to job satisfaction, while Relationship Implications was negatively related. Additionally, each of the WAI subscales contributed significantly to predicting job satisfaction, although Relationship Implications was the only subscale of the three with an inverse relationship to job satisfaction.

These mixed results reflect previous findings on the relationship between workaholism and job satisfaction. Some researchers have found job satisfaction to be positively related to workaholism (Machlowitz, 1980; Ng, Eby, Sorenson, & Feldman, 2005), while others have identified a negative relationship (Burke, 2001). These mixed results suggest that the relationship between workaholism and job satisfaction may be

moderated by such variables as work environment, sample demographics, or measures used to index workaholism. Further investigation of the relationship between job satisfaction and work addiction is warranted.

Positive correlations were found between work addiction and work centrality in the current study. The WAI total score and each of the WAI subscales resulted in positive, statistically significant correlations with work centrality (*r* ranged from .23 to .65). However, only two of the WAI subscales, Work Absorption (β=.32, p <.01) and Work Attraction (β=.52, p <.01), contributed uniquely to the prediction of work centrality. Relationship Implications (β=-.05) did not account for unique variance in work centrality. This study is the first to explore the link between work centrality, defined as an individual's belief about the value of work, and work addiction. The results suggest that there may be a relationship between individuals who highly value work and workaholism.

Working long, non-required hours has been associated with addiction to work (Aziz & Zickar, 2006; Burke, 2001; Mudrack & Naughton, 2001; Spence & Robbins, 1992) and has been used by the general public as a subjective criterion for identifying potential workaholics. In this study, relationships between the WAI and average work hours per week were found. More specifically, the WAI-total score correlated significantly and positively with average work hours per week (r =.35, p<.01), as did the Work Absorption and Relationship Implications subscale scores (r = .35 and .32, respectively). Among the WAI subscales, Work Absorption contributed uniquely to the prediction of average hours worked.

By contrast, the existing literature on the relationship between work hours and work addiction documents conflicting patterns. For example, McMillan et al. (2002) found a positive but weak relationship between work hours and work addiction in a study of New Zealand census respondents. Buelens and Poelmans (2004) also found a positive relationship between workaholism and work hours in Flemish citizens. Conversely, Burke (2002) found an inverse relationship between work addiction and work hours among MBA students in the U.S. It is possible that other factors besides work addiction potentially influence the amount of hours an individual works, such nationality or culture, type of job or industry, or personal obligations. Such factors might help to explain the different findings. It will be important for future research to explore the causes and context of work hours to gain additional insight into the relationship between workaholism and number of hours worked.

The WAI total score, as well as the Work Absorption and Relationship Implications scores, correlated positively with work/personal life conflict. These findings are supported by earlier research by Bonebright et al. (2000) and Buelens and Poelmans (2004) who each found that workaholics had significantly more work-life conflict than did non-workaholics. Similarly, Aziz and Zickar (2006) found that workaholics reported significantly more work/life imbalance than did unengaged workers. Interestingly, among the WAI scores in the present study, Relationship Implications uniquely predicted work/personal life conflict. This is not surprising given that work/personal life balance is often thought to be associated with unhealthy non-work relationships and time away from work, both of which are components of the items in the Relationship Implications scale. Generally, addictive behavior tends to negatively impact personal relationships.

Relationships of the WAI to the physical health scale should be interpreted very cautiously given the inadequate reliability coefficient of the latter scale. The WAI total score and the physical health scale did not correlate significantly. However, among the WAI subscales, Work Absorption and Work Attraction both contributed significantly to the prediction of physical health, with Work Attraction yielding a negative beta weight. Andreassen et al. (2007) found that one WorkBAT subscale, Work Enjoyment, was inversely related to subjective health complaints. This seems to support the negative relationship found in this study between Work Attraction and physical health. By contrast, Buelens and Poelens (2004) found that work addicts reported a higher number of health and stress complaints than other types of workers. McMillan and O'Driscoll (2004), meanwhile, found that workaholics and nonworkaholics did not differ in self-reported physical health.

The WAI total score and mental health scale were not significantly correlated. However, a small, negative, statistically significant correlation was found between mental health and the Relationship Implications subscale. This subscale also contributed uniquely and inversely to the regression predicting mental health, suggesting that individuals who experience adverse relationship consequences from overworking tend to report lessened mental health. Thus far, there has been very little research investigating the relationship between general mental health and workaholism, although some researchers have found relationships between work addiction and specific health problems, such as job stress and burnout. Andreassen et al. (2007) found that Drive and Enjoyment, as measured by the WorkBAT, each predicted job stress and burnout. Burke

(2001) found that Drive correlated highly with job stress and that Enjoyment correlated weakly and inversely with job stress.

Finally, the analyses did not reveal any statistically significant relationships between the WAI scores and leisure satisfaction. It is possible that the two constructs, work addiction and leisure satisfaction, are less related than originally believed. Given that this is the first known study to explore this relationship, there is no existing evidence that one's level of addiction to work has any bearing on one's level of leisure satisfaction. However, because of the general relationship between leisure and work, further exploration of the relationship between these constructs is warranted.

It is important to acknowledge that the WAI did not result in significant correlations with all of the criterion variables (e.g., physical health, mental health, total leisure satisfaction). One possible explanation lies in the low internal consistency reliabilities of some of these scales – in particular, physical and mental health – which could have attenuated predictor-criterion relations. A second explanation might be that some of the criterion variables, like leisure satisfaction, may not be appropriate criteria against which to validate a workaholism measure. For instance, it may be that workaholism does not relate systematically to how workers feel about their leisure activities. Finally, a third possible explanation for the low correlations between the WAI and criterion related variables used in this study might be the underlying theory. This study was designed based on the theory of addiction which guided the selection of criterion variables. Researchers continue to debate the theoretical basis of workaholism. Although addiction is the most prominent theory supported by the literature, other theories have been used to explain workaholism, such as learning theory (Bandura,

1977), trait and personality theory (Machlowitz, 1980), and family systems (Robinson, 1998). It may be useful for future research to employ criterion variables aligned with these theories.

In summary, the findings suggest that the WAI yielded a 3-factor structure, adequate internal consistency reliability estimates, and initial evidence of convergent validity as evidenced by moderate to high correlations with the WorkBAT scores. Moreover, the WAI scores showed discriminant validity by their nonsignificant and low correlations to social desirability. Finally, the WAI total and subscale scores were associated with several criterion variables. Findings of this study suggest that further exploration of the WAI subscales as different components of workaholism (rather than use of a single WAI-total score) may be warranted. Although these results seem promising, it is important to cross-validate these findings with different and larger samples to obtain additional estimates of the WAI's psychometric properties.

Implications for Research, Theory, and Practice

Findings of the current study offer several implications for workaholism research, theory, and practice. First, the WAI presents the first tool to uniquely assess workaholism tapping three different overarching dimensions of addiction: affect, cognition, *and* behavior (Smith & Seymour, 2004). It allows us to not only look at the behaviors of work addicts, but also to assess their thoughts and feelings. Generally, there are both positive and negative implications to any form of addiction. The WAI is consistent with the rewards and consequences aspects of addiction as measured by each of the three subscales. Because of its comprehensiveness, the WAI has the potential to

add to the field of work addiction by focusing on the multidimensional aspects of the construct.

Second, the WAI's potential utility in helping us better understand workaholism is particularly important for research and practice. An instrument with good psychometric properties and emphasis on the multidimensional nature of the construct, such as the WAI, can facilitate further research on work addiction. The small number of empirical studies that have been conducted in this area thus far have primarily focused on the outcomes of workaholism, defined in a variety of ways, rather than the causes. One reason for this is likely the unidimensionality of the existing measures, which either focus on affect or behaviors. A measure that assesses affect, behavior, *and* cognition could support further exploration of antecedents and causes, which are critical components to understanding the origins of workaholism. It could also support exploration of the complex nature of work addiction, rather than simply focusing on behavioral outcomes which are easily observable but do not address the "why" and "how" of the syndrome. Future research should explore how the WAI scales relate to workers' personality traits, cultural factors, and environmental factors in order to more completely understand the correlates and predictors of workaholism.

Third, the WAI could also be used in clinical settings to identify persons struggling with workaholism and to develop appropriate treatment plans. Results of the regression analyses in the current study specifically suggest that the combined WAI scales are predictive of average hours worked per week, work centrality, job satisfaction, and work/life conflict. Additionally, each of the WAI subscales has a different set of relationships with the criteria. Clinicians may want to consider these differing

relationships when developing a treatment plan. These predictive relationships may also contribute to implementing preventative care for individuals who are at risk of becoming workaholics. Additionally, it is expected that like most addicts, individuals addicted to work would be in denial of a chronic problem or resistant to seeking treatment. The WAI could be one instrument clinicians use to assess the client's level of work addiction. From a client's perspective, a tangible tool often adds credibility to a clinician's assessment or diagnosis, therefore the WAI could not only support the therapist's efforts in helping the client acknowledge their problem but also to make the connection between this abstract concept of work addiction to the client's own thoughts, behaviors, and feelings that are indicative of workaholism. Naturally, these clinical comments should be considered as speculative, given the early stage of research on the WAI.

Fourth, it is important to highlight that the WAI contributes to the field's ongoing theoretical debate by providing support for conceptualizing workaholism as a form of addiction (Aziz & Zikar, 2006; Klaft & Kleiner, 1988; Minirth et al., 1981; Morris & Chaney, 1983; Oates, 1971). Addiction has been characterized as including compulsion and loss of self-control as well as continued engagement despite negative consequences (Smith & Seymore, 2004). The underlying premise of addiction theory is that workaholics feel an uncontrollable, compulsive need to work. Compulsion to work is primarily measured through the items on the Work Absorption subscale. Similarly, the "negative consequences" of workaholism, specifically how work addiction impacts relationships and personal health, is reflected by the Relationship Implications subscale.

Limitations and Future Directions

Although findings from the current study provide initial support for the validity and reliability of the WAI scores, there are several limitations and future research directions that should be discussed. First, the sample used in the study was relatively small ($N = 111$). Larger samples are more likely to produce more stable results. Second, participants in this study were from a single organization. While there are some benefits to this, particularly related to study logistics and gaining access to participants, there are also some disadvantages. One such disadvantage is that the small number of participants and use of a single organization would make it difficult to generalize these findings to different work organizations. Another disadvantage is the inability to control the influence of the organization's culture on the results. This is particularly important given that some organizations support and reward workaholism or workaholic behaviors, which may influence individuals' tendency to present themselves as work addicts.

Third, because the researcher formerly held a leadership role in the organization from which the sample was drawn, it is possible that the researcher's relationship with the organization and the organization's general employee base could have influenced participation levels and the nature of responses. For example, although participation was optional for employees, they were aware of the researcher's identity and thus may have felt compelled to participate because of the researcher's former seniority in the organization. Additionally, despite numerous disclaimers that the data collected would be anonymous and confidential, the perceived possibility of management having direct or indirect access to the collected data may have skewed participant responses. A fourth limitation of the current study is the self report nature of the WAI. Given this, responses to the WAI may be skewed by an individual's self-perception which may be distorted and

not reflect the true nature of the situation. In fact, all of the measures used in this study were self reports, which is the most common method of collecting data on workaholics. The lack of multiple data sources is something that needs to be addressed in future work addiction research to validate self report responses.

Although findings from this study provide initial support for the WAI as a measurement of work addiction, further research on the instrument is warranted. For example, the factor structure of the WAI requires cross-validation using different samples and different statistical procedures. It is important to investigate whether the same factor structure would be found among working adults in different disciplines (e.g., consulting, accounting, education), industries, and cultures. Confirmatory factor analysis could provide the opportunity to investigate the factor structure using a pre-established theory. As mentioned previously, one of the challenges researchers have faced in the field of workaholism is the lack of an agreed upon definition and underlying theory. A confirmatory analysis of the WAI could be a significant step in providing theoretical support for workaholism.

It would also be useful to explore possible typologies of the construct, for example, using cluster analysis. Results of this study suggest that there may be support for prior researchers' notions of workaholic types. However, further investigation is needed. Additionally, exploring the relationship between the WAI and other existing measures of workaholism, such as the WART, would provide more evidence for convergent validity of the WAI scores. Examining the WAI for test-retest reliability over both a short (e.g., 2 week) and longer (e.g., 3 month) period of time would also allow for the opportunity to further explore the measure's reliability.

Appendix A

Work Addiction Inventory

(33 items before exploratory factor analysis)

Please use the following scale to respond to the questions below. After reading each statement carefully, select the response that most accurately and frequently reflects your situation.

0-Never
1-Rarely
2-Sometimes
3-Frequently
4-Always

1. ____ I experience work-related stress.
2. ____ My family and friends complain about the amount of time I spend working.
3. ____ I hide how much I work from others.
4. ____ Having free time for hobbies and non-work activities is important to me.*
5. ____ I lose sleep because I can not stop thinking about work.
6. ____ I feel irritable or nervous when I am away from work for long periods of time.
7. ____ My social life suffers as a result of my work and work-related responsibilities.
8. ____ Given the choice, I would rather work than not.
9. ____ Working long hours has hurt my relationships with family and others.
10. ____ Working by myself is the best way to ensure that things get done correctly.
11. ____ I get annoyed when people interrupt me while I am working.
12. ____ I have more energy away from work.*
13. ____ I skip or forget to eat while I'm working.
14. ____ I meet most of my new friends at work or work-related events.

15. ____ I check my work email and voice messages during non-work hours.

16. ____ I tend to get engrossed in my work.

17. ____ I get impatient with coworkers who have other priorities besides work.

18. ____ I find that I spend more time at work than with my partner, family or friends.

19. ____ Most of my goals and aspirations are related to my professional life.

20. ____ I feel more fulfilled when I am with friends and family than when I am working.*

21. ____ I get more excited about work than anything else.

22. ____ I am preoccupied with work during holidays, vacations, and other non-work hours.

23. ____ My job negatively impacts my health.

24. ____ I find myself thinking about work during social activities.

25. ____ I spend more energy nurturing my personal relationships than I do my professional ones.*

26. ____ Work is central to my personal identity.

27. ____ I would rather spend time working than doing anything else.

28. ____ I feel guilty when I am not working.

29. ____ I have tried but failed to cut down on the amount of time I spend working and thinking about work.

30. ____ When I leave work, I do not think about the job until I return.*

31. ____ It is difficult for me to relax when I am not working.

32. ____ I work longer hours than required by my job.

33. ____ I value time away from work.*

* indicates reverse scored items

Appendix B

Demographic Information Survey

100%

1. Age

2. Sex

- ☐ Male
- ☐ Female

3. Marital Status

- ☐ Single
- ☐ Separated
- ☐ Married
- ☐ Divorced

4. Race/Ethnicity (choose all that apply)

- ☐ White or European American
- ☐ Asian/Pacific Islander American
- ☐ Black or African American
- ☐ Native American
- ☐ Latino/a or Hispanic American
- ☐ Other

5. Number of dependents under 18yrs of age (in number format)

6. Position Title

7. Job Function

- ☐ Accounting/Finance
- ☐ Legal
- ☐ Business Development
- ☐ Marketing
- ☐ Customer Relations/Service
- ☐ Operations
- ☐ Human Resources
- ☐ Sales
- ☐ Information Technology
- ☐ Other

8. Employment Status

- ☐ Full-time
- ☐ Self-employed
- ☐ Part-time
- ☐ Seasonal
- ☐ Contractor

9. Annual Salary

- ☐ Under $30,000
- ☐ $20,000-$39,999
- ☐ $40,000-$59,999
- ☐ $60,000-$79,999
- ☐ $80,000-$99,999
- ☐ $100,000-$124,999
- ☐ $125,000-$149,999
- ☐ $150,000-$174,999
- ☐ $175,000-$199,999
- ☐ $200,000-$250,000
- ☐ 0ver $250,000

10. Average hours worked per week (in number format)

Appendix C

Workaholism Battery

Spence and Robbins (1992)

Using a rating scale of 1 – 5, indicate how much you agree or disagree with each of the following statements.

1=strongly agree
2=agree
3=neither agree nor disagree
4=disagree
5=strongly disagree

1. When I have free time I like to relax and do nothing serious.
2. I like my work more than most people do.
3. I feel guilty when I take time off work.
4. My job is more like fun than work.
5. I often wish I weren't so committed to work.
6. I like to relax and enjoy myself as often as possible.
7. My job is so interesting that it often doesn't seem like work.
8. I really look forward to the weekend – all fun, no work.
9. I do more work than is expected of me strictly for the fun of it.
10. Most of the time my work is very pleasurable.
11. I seldom find anything to enjoy about my work.
12. Wasting time is as bad as wasting money.
13. I spend my free time on projects and other activities.
14. I feel obliged to work hard even when it is not enjoyable.
15. I like to use my time constructively, both on and off the job.

16. I lose track of time when I'm involved on a project.
17. Sometimes when I get up in the morning I can hardly wait to get to work.
18. It's important to me to work hard, even when I don't enjoy what I what I'm doing.
19. When I get involved in an interesting project, it's hard to describe how exhilarated I feel.
20. I often find myself thinking about work, even when it's not enjoyable.
21. Between my job and other activities I'm involved in, I don't have much free time.
22. I often feel there is something inside me that drives me to work hard.
23. Sometimes I enjoy my work so much I have a hard time stopping.
24. I get bored and restless on vacations when I haven't anything productive to do.
25. I seem to have an inner compulsion to work hard.

Appendix D

Marlowe-Crowne Social Desirability Scale – Form B

Reynolds (1982)

Please read each item below. Mark the item as "True" if is applies to you and "False" if it does not.

1. It is sometimes hard for me to go on with my work if I am not encouraged.
2. I sometimes feel resentful when I don't get my way.
3. There have been times when I felt like rebelling against people in authority even though I knew they were right.
4. No matter who I am talking to, I am always a good listener.
5. There have been occasions when I took advantage of someone.
6. I'm always willing to admit it when I make a mistake.
7. I sometimes try to get even rather than forgive and forget.
8. I am always courteous, even to people who are disagreeable.
9. I have never been irked when people expressed ideas very different from my own.
10. There have been times when I was quite jealous of the good fortune of others.
11. I am sometimes irritated by people who ask favors of me.
12. I have never deliberately said something that hurt someone's feelings.

Appendix E

Abridged Job in General Scale

Russell, Spitzmuller, Lin, Stanton, Smith and Ironson (2004)

Think of the work you do at present and indicate whether or not the word or phrase describes your job.

- Y = "Yes" if it describes your job;
- N = "No" if it does NOT describe job; or
- ? = "Undecided" if you can not decide

How well does each of the following words or phrases describe your job?

1) Good
2) Undesirable
3) Better than most
4) Disagreeable
5) Makes me content
6) Excellent
7) Enjoyable
8) Poor

Appendix F

Work Centrality Scale

Paullay, Alliger, & Stone-Romero (1994)

Using a rating scale of 1 – 6, indicate how much you agree or disagree with each of the following statements.

1= strongly disagree
2= disagree
3= slightly disagree
4= slightly agree
5= agree
6= strongly agree

1) Work should only be a small part of one's life.
2) In my view, an individual's personal life goals should be work oriented.
3) Life is worth living only when people get absorbed in work.
4) The major satisfaction in my life comes from my work.
5) The most important things that happen to me involve my work.
6) I have other activities more important than my work.
7) Work should be considered central to life.
8) I would probably keep working even if I didn't need the money.
9) To me, my work is only a small part of who I am.
10) Most things in life are more important than work.
11) If the unemployment benefit was really high, I would still prefer to work.
12) Overall, I consider work to be very central to my existence.

Appendix G

Short Form 12-Item Health Survey 2.0 Questionnaire

Ware, Kosinski, and Keller (1996)

Below are general questions about your health. Please read and answer each question carefully.

1. In general, would you say you health is excellent, very good, good, fair, or poor?

The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

2. First, moderate activities such as moving a table, pushing a vacuum cleaner, bowling or playing golf. Does your health now limit you a lot, limit you a little, or not limit you at all?
    a. Limited a lot
    b. Limited a little
    c. Not limited at all

3. Climbing several flights of stairs. Does your health now limit you a lot, limit you a little, or not limit you at all?
    a. Limited a lot
    b. Limited a little
    c. Not limited at all

4. During the past four weeks, have you accomplished less than you would like as a result of your physical health?
    a. No
    b. Yes

5. During the past four weeks, were you limited in the kind of work or other regular activities you do as a result of your physical health?
    a. No
    b. Yes

6. During the past four weeks, have you accomplished less than you would like to as a result of any emotional problems, such as feeling depressed or anxious
    a. No
    b. Yes

7. During the past four weeks, did you not do work or other regular activities as carefully as usual as a result of any emotional problems such as feeling depressed or anxious?
    a. No
    b. Yes

8. During the past four weeks, how much did pain interfere with your normal work, including both work outside the home and housework? Did it interfere not at all, slightly, moderately, quite a bit, or extremely?
    a. Not at all
    b. Slightly
    c. Moderately
    d. Quite a bit
    e. Extremely

These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling.

9. How much time during the past 4 weeks have you felt calm and peaceful? All of the time, most of the time, a good bit of the time, some of the time, a little of the time, or none of the time?
    a. All of the time
    b. Most of the time
    c. A good bit of the time
    d. Some of the time
    e. A little of the time
    f. None of the time

10. How much of the time during the past 4 weeks did you have a lot of energy? All of the time, most of the time, a good bit of the time, some of the time, a little of the time, or none of the time?
    a. All of the time
    b. Most of the time
    c. A good bit of the time
    d. Some of the time
    e. A little of the time
    f. None of the time

11. How much time during the past 4 weeks have you felt down? All of the time, most of the time, a good bit of the time, some of the time, a little of the time, or none of the time?
    a. All of the time
    b. Most of the time
    c. A good bit of the time

d. Some of the time
e. A little of the time
f. None of the time

12. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities like visiting with friends, relatives etc? All of the time, most of the time, some of the time, a little of the time, or none of the time?
    a. All of the time
    b. Most of the time
    c. Some of the time
    d. A little of the time
    e. None of the time

Appendix H

Work/Personal Life Conflict Scale

Gutek, Searle, and Klepa (1991)

Using a rating scale of 1 – 5, indicate how much you agree or disagree with each of the following statements.

1=strongly disagree
2=disagree
3=neither agree nor disagree
4=agree
5=strongly agree

1. After work, I come home too tired to do some of the things I'd like to do.
2. On the job, I have so much work to do that it takes away from my personal interests.
3. My family/friends dislike how often I am preoccupied with my work while I am at home.
4. My work takes up time I'd like to spend with my family and friends.

Appendix I

Leisure Satisfaction Scale – Short Form

Beard and Ragheb (1980)

Using a rating scale of 1 to 5, indicate how true each of the following statements are for you.

1=Almost never true
2=Seldom true
3=Sometimes true
4=Often true
5=Almost always true

1. My leisure activities are very interesting to me.
2. My leisure activities give me self confidence.
3. My leisure activities give me a sense of accomplishment.
4. I use many different skills and abilities in my leisure activities.
5. My leisure activities increase my knowledge about things around me.
6. My leisure activities provide opportunities to try new things.
7. My leisure activities help me to learn about myself.
8. My leisure activities help me to learn about other people.
9. I have social interaction with others through leisure activities.
10. My leisure activities have helped me to develop close relationships with others.
11. The people I meet in my leisure activities are friendly.
12. I associate with people in my free time who enjoy doing leisure activities a great deal.
13. My leisure activities help me to relax.
14. My leisure activities help relieve stress.
15. My leisure activities contribute to my emotional well being.
16. I engage in leisure activities simply because I enjoy doing them.
17. My leisure activities are physically challenging.
18. I do leisure activities which develop my physical fitness.
19. I do leisure activities which restore me physically.
20. My leisure activities help me to stay healthy.
21. The areas or places where I engage in my leisure activities are fresh and clean.
22. The areas or places where I engaged in my leisure activities are interesting.

23. The areas or places where I engage in my leisure activities are beautiful.
24. The areas or places where I engage in my leisure activities are well designed.

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