

## A Meta-Analysis of Workaholism

by

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This meta-analysis examines the relationship between workaholism and numerous work behaviors and outcomes in an attempt to derive a consensus regarding the current state of our understanding of this construct and clarify the impact that the compulsion to work may have on an individual's life. Overall, based on data from 44 studies, results suggest that there is a considerable amount of variability between workaholism and work-related outcomes. Specifically, the two most established and reputable measures of workaholism, the Work Addiction Risk Test (WART) and the Workaholism Battery (WorkBat), appear to focus on uniquely different aspects of workaholism and were subsequently found to be differentially related to various work criteria. These findings suggest that a consistent definition and operationalization of workaholism is explicitly needed before further progress can be made.



# **A Meta-Analysis of Workaholism**

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## **Chapter 1: Introduction**

The term workaholism was originally coined to describe an individual's deleterious compulsion to work (Oates, 1971). This impulse was initially considered an addiction that was equally as destructive as alcoholism; hence, Oates suggested the term workaholism. Over time the definition has been expanded to include not only the symptoms of harmed mental, physical, and social health typically associated with alcoholism (Porter, 1996), but also the specific personality characteristics which comprise the workaholic profile (Harpaz & Snir, 2003; Scott, Moore, & Miceli, 1997). This broadened conceptualization of workaholism – along with its association with personality and mental health – is considered to have a serious impact on both the personal and work lives of countless individuals (c.f. Booth-Kewley & Friedman, 1987; Chamberlin & Zhang, 2009; Clark, McEwen, Collard, & Hickok, 1993).

Workaholism is considered to be problematic for everyone involved; negatively affecting not only workaholics, but also their employers, families, and society as a whole (Robinson, 2000, 2001; Salmela-Aro & Nurmi, 2004). Although naïve interpretation of its meaning may lead many to initially believe that a workaholic is an asset to their organization, research has shown evidence to the contrary. For example, Salmela-Aro and Nurmi (2004) noted that individuals who tend to work excessively – a hallmark behavior of workaholics – are at a higher risk of burnout. Subsequently, workaholics often experience emotional exhaustion, cynicism about their job, and dissatisfaction with their work accomplishments (Maslach & Jackson, 1984), all of which decrease worker productivity (Liang & Chu, 2009). Aside from negatively affecting effectiveness on the job, workaholism has also been shown to negatively affect an individual's

family life. For example, Robinson (2001) noted that workaholism takes a significant toll on individuals' relationships with their spouses and negatively affects the development of their children. This in turn leads to unsatisfactory relationships with family members due to the emotional and mental strains placed not only on the workaholic but also on their family members. Moreover, within our society workaholics are frequently rewarded for their work-related behaviors, thus perpetuating the behavior of existing workaholics and encouraging others to become workaholics under the societal label of virtue (McMillan & Northern, 1995). Thus, workaholism is ultimately a societal predicament as much as it is an individual dilemma. The positive reception surrounding this disorder has created denial on the part of workaholics, and the lack of recognition of workaholism as an actual problem is fueling its continuation (Porter, 1996).

Empirical research has also shown that workaholism is related to numerous life effecting variables such as an individual's level of happiness (Schaufeli, Bakker, Van der Heijden, & Prins, 2009), need for perfection (Burke & Fiksenbaum, 2009), supervisor support and co-worker cohesion (Johnstone & Johnston, 2005), mental and physical health (McMillan & O'Driscoll, 2004), and work-family conflict (Bakker, Demerouti, & Burke, 2009). However, the verity of these relationships is not easily estimated as there is little consistency across studies in terms of the criterion variables used. Thus, it is difficult to differentiate between true correlations and random error (c.f. Aziz & Zickar, 2006; Burke & Fiksenbaum, 2009; Schaufeli, Taris, & van Rhenen, 2008).

A more prominent issue is the lack of consistency regarding the operationalization of workaholism across studies. For example, when utilizing the Work Addiction Risk Test,

Schaufeli and colleagues (2008) renamed the “need for control” factor to “working excessively.” Similarly, when utilizing the Workaholism Battery, Burke and Fiksenbaum (2009) renamed the “work enjoyment” factor to “passion and drive to addiction.” Subsequently, there is an overabundance of measures that purportedly measure workaholism but utilize different operational definitions. Thus again, it is difficult to ascertain the current state of workaholism and determine whether it has consistent relationships with other variables. Hence, the primary purpose of the present study was to attempt to clarify the current state of the construct of workaholism, specifically clarifying its relationship with some of the more common aspects of work behaviors and outcomes. Clarification of the correlates of workaholism will be a step forward in the process of developing a commonly agreed-upon definition for this form of addiction. Additionally, this study sought to determine which, if any, measure of workaholism served as a superior predictor of the work related outcomes typically examined within this literature base.

## Chapter 2: Literature Review

### Definitions of Workaholism

The original conceptualization of a workaholic is “a person whose need for work has become so excessive that it creates noticeable disturbance or interference with his bodily health, personal happiness, and interpersonal relations, and with his smooth social functioning” (Oates, 1971). For over a decade after Oates’ earliest description, the definition of workaholism did not evolve substantially. Nagy and Davis (1985) later redefined workaholism as “total devotion to an occupation or cause” (p. 1) and two years later, Booth-Kewley and Friedman (1987) utilized a simpler definition of a workaholic as a hurried, impatient individual. Similarly, Spruell (1987) additionally defined a workaholic simply as someone who works long hours regardless of the productivity of the time spent. Although Spruell noted that endless hours of work are usually a manifestation of assorted motivators and result in different personal effects, she did not go into any further detail with regard to what those motivators and effects could be.

More recently, as the study of workaholism has grown, the definition has evolved to include specific types of workaholics. Spence and Robbins (1992) presented a two-factor approach to workaholism, categorizing workaholics as either work enthusiasts or non-enthusiastic workaholics. By their definition, *work enthusiasts* are individuals who are very involved in their work, thoroughly enjoy their work, but are not particularly driven or compelled to work. For example, someone who would be considered a work enthusiast would work many long hours every week because they enjoy their work, not because they have an insatiable need to work. Thus, these individuals seemingly have no negative mental or physical health consequences due to their workaholic nature, but perhaps may be emotionally struggling with

deteriorating social relationships outside of work. In contrast, *non-enthusiastic workaholics*, or customary workaholics, are those who are highly involved in their work and lack enjoyment, yet feel driven to work. For example, a non-enthusiastic workaholic would be someone that works many long hours every week because they feel compelled to do so and not because they take pleasure in their work. Thus, these individuals may display more mental and physical strain than work enthusiasts, and also will likely have unsatisfactory social relationships with family and friends.

Scott, Moore, and Miceli (1997) criticized Spence and Robbins' definition and argued that a definition of workaholism should involve more stable behavioral patterns. Specifically, they distinguished among three types of workaholics: compulsive-dependent workaholics, perfectionist workaholics, and achievement-oriented workaholics. According to Scott and colleagues, a *compulsive dependent workaholic* is an individual who works more than they intend to and, although they realize they are overworking themselves, they cannot physically and mentally abstain from working excessively. Thus, these types of workaholics are like many other addicts of different persuasions in that they are aware of their addiction and the harm it is causing, but are unable to overcome the addiction of their own will. *Perfectionist workaholics* are similar to compulsive dependent workaholics in that they also show signs of obsessive compulsive personality disorder; however, perfectionist workaholics experience an overbearing need for control and are very meticulous. These individuals find it very difficult to share their work with team members and are compelled to be scrupulous over trivial details. Such behaviors can lead to discord with coworkers and inefficient use of time at work. Finally, *achievement-*

*oriented workaholics* are described as competitive personalities who intensely desire success and a strong career identity. These individuals are driven to work excessively in order to achieve the goals they have established for themselves. It is likely that these individuals will not only physically and mentally exhaust themselves, but will probably also annihilate their relationships with their coworkers, friends, and family due to their insatiable competitive nature.

Robinson (2000) suggested a novel typology of workaholics which included relentless workaholics, bulimic workaholics, attention deficit workaholics, and savoring workaholics. He described *relentless workaholics* as the stereotypical workaholics who are high in work initiation and high in work completion. These workaholics are probably most comparable to the achievement-oriented workaholics mentioned previously. They are likely to invest long hours on the job and to exceed what is asked of them due to an innate drive to work. Relentless workaholics work compulsively and constantly, whereas bulimic workaholics work more sporadically. Additionally, *bulimic workaholics* are known to be low in work initiation, but high in work completion. These workaholics are not likely to seek out work, but when presented with a new project, they are prone to adamantly work on it until it is completed. Their determination to complete their work tasks often leaves them mentally and physically exhausted, which probably is the cause of their low likelihood to initiate work. In contrast, *attention deficit workaholics* are high in work initiation, but low in work completion because they are adrenaline-seeking and easily lose interest in work tasks. These individuals are addicted to the surge of energy and excitement provided by new projects, thus they are expected to accumulate many different projects at once and ultimately experience burnout before any of the projects are

completed. Finally, *savoring workaholics* are low in both work initiation and work completion; they are typically perfectionists who are so detail oriented that they often miss deadlines. These individuals are prone to obsessive compulsive disorder and may find it difficult to work in teams as they need tasks to be completed according to their specific guidelines and standards.

Although these operational definitions have progressed from a simple description of workaholism as a compulsion to work to a more complex explanation of the different manifestations of workaholism, there has been little effort to specifically identify the psychological, social, and physical effects of workaholism as an addiction. Alcoholism is known to have physical side effects such as liver failure and heart problems, along with psychological side effects such as depression and violent behavior. Unlike alcoholism and many other known addictions, workaholism has no openly agreed-upon physical, emotional, or mental effects. Therefore, the purpose of this meta-analysis is to combine and analyze data from prior research measuring workaholism to increase our understanding of the overall impact of numerous operationalizations of workaholism.

### **Measures of Workaholism**

Currently the most commonly utilized measure of workaholism is the Spence and Robbins' (1992) Workaholism Battery (WorkBat). As previously noted, the WorkBat operationalizes workaholism as being comprised of three-factors including (1) *work enjoyment*, (2) *work involvement*, and (3) *drive to work*. Specifically:

*Work enjoyment* is a measure of how much an individual likes doing his or her work, *work involvement* is an evaluation of how invested an individual is in his or her work, and

*drive to work* is a measure of an individual's compulsion-like motivation to work. (p. 162)

The WorkBat is a self-report questionnaire consisting of 25 items divided between the three factors; work involvement (eight items), drive to work (seven items), and work enjoyment (10 items). All of the items utilize a five-point Likert scale ranging from 1 (*disagree*) to 5 (*agree*). Work enjoyment items are reverse-scored, after which high scores on all three factors are considered to be indicative of workaholism. Overall, the WorkBat has been used in approximately 482 studies, each examining either individual factor scores or the aggregated score in relation to workaholism.

Clark (1993) developed the Schedule for Nonadaptive and Adaptive Personality-Workaholism (SNAP-Work); which defines workaholism as a combination of one's need for perfection and dedication to one's job. The SNAP-Work is a true or false questionnaire consisting of 18 items, and it constitutes one of 12 dimensions of the SNAP. The other dimensions are mistrust, manipulateness, aggression, self-harm, eccentric perceptions, dependency, exhibitionism, entitlement, detachment, impulsivity, and propriety; totaling 375 true-false items for the SNAP. Although Clark concluded that the workaholism dimension of this measure has high internal consistency, split-half reliability, and convergence with other measures of workaholism (Clark, Livesley, Schroeder, & Irish, 1996; Clark, McEwen, Collard, & Hickok, 1993), the SNAP-Work is not widely used by other researchers (McMillan, O'Driscoll, Marsh, & Brady, 2001).



Robinson's (1999) Work Addiction Risk Test (WART) is growing in popularity as a measure of workaholism (c.f. Brady, Vodanovich, & Rotunda, 2008; Brough, O'Driscoll, Kalliath, Cooper, & Poelmans, 2009; Chamberlin & Zhang, 2009). The WART operationalizes workaholism as a five-factor model including (1) *compulsive tendencies*, (2) *control*, (3) *impaired communication/self-absorption*, (4) *inability to delegate*, and (5) *self-worth*.

Specifically:

*Compulsive tendencies* are characterized by one's need to hurry, stay busy, multitask, overly commit, feelings of guilt if not working, working long hours, placing self-imposed deadlines for oneself, difficulty relaxing, and lack of time spent socializing. *Control* is defined as a need for perfectionism that causes impatience, irritation, and anger towards others and oneself when work is not suitable to the workaholic's standards. *Impaired communication and self-absorption* is identified by lack of attentiveness to what others have to say, jumping into tasks before completing necessary prior steps, making decisions without factual support, and lack of interest in relationships with others and the milestones in their lives. *Inability to delegate* is the unwillingness to entrust others with work responsibilities and failure to ask others for help when it is needed. And finally, *self-worth* is described as feeling guilty when not working and being unforgiving towards one's minor mistakes and setbacks. (p. 202)

The WART is composed of 25 statements which participants are asked to rate on a scale of 1 (*never true*) to 4 (*always true*). Individuals scoring between 25 and 54 are usually considered to not be addicted to work, those between 55 and 69 are mildly work addicted, and those with

scores of 70 to 100 are considered to be highly addicted. Overall, the WART has been used in approximately 138 studies which have looked at individual factor scores and the aggregated score in relation to workaholism.

The Children of Workaholic Parents Screening Test (CWST) is yet another measure of workaholism (Robinson & Carroll, 1999). The CWST is unique in that it measures children's perceptions of their parents' work habits using 30 yes or no questions based on behaviors and experiences. Although the measure doesn't identify any specific dimensions, it includes items similar to the WART but is altered to request descriptions of one's parents rather than oneself. The test is scored by allotting one point to every "yes" answer selected; hence, scores may range from 0 to 30, with higher scores indicating workaholism. The CWST has been used to measure workaholism in two recent studies (Chamberlin and Zhang, 2009; Ng, Sorensen, & Feldman, 2007), but has failed to generate the level of popularity seen by the WART and WorkBat.

Mudrach and Naughton (2001) have developed two scales based on the workaholic behavioral patterns of performing non-required work and attempting to control the work of others. The items of the *non-required work scale* focus on the amount of time and energy spent on thinking about improving current work and starting new projects. The items of the *control of others scale* focus upon the amount of time and energy spent on fixing problems created by others, checking the work of others, taking responsibility of the work of others, and dealing with crisis situations. Both of these scales are composed of four items each and use a Likert scale ranging from 1 (*none/not applicable*) to 5 (*very large amount of time and energy are spent*).

These scales are still in the preliminary stages of empirical testing and have not yet been recognized as mainstream measures of workaholism.

Finally, Senholzi (2008) created the Work Attitudes and Behaviors Inventory (WABI) for her dissertation which studied workaholism using dimensions similar to the WorkBat. The WABI includes five scales measuring *anxiety*, *obsessive-compulsiveness*, *mania*, *intolerance*, and *self-doubt*. The *anxiety scale* measures workaholism through a series of mental and physical health-related items, such as feelings of exhaustion, headaches, mood swings, and forgetfulness. The *obsessive-compulsiveness scale* includes items such as amount of time spent working, amount of time spent thinking about work, and difficulty relaxing. The *mania scale* reflects the multitasking nature of workaholics, with items regarding one's organization skills, ability to do several things at once, and time spent planning the future. The *intolerance scale* focuses on perfectionism, intolerance of mistakes, and dissatisfaction with the work of others. The *self-doubt scale* features items relating to feelings of lack of accomplishment, lack of time to complete tasks, and negative self attitudes. Together these scales include 70 items and require 10-15 minutes to complete. The WABI has not yet been identified as an accepted measure of workaholism because it is still in its initial stages of empirical testing.

Of all of the workaholism measures, the WorkBat and WART have received the most empirical attention, and thus have been adapted to different languages and cultures around the world. For example, the Dutch Work Addiction Scale (DUWAS) created by Taris, Schaufeli, van Hoogenhuyze, and Zon (2003) is merely the WART translated from English to Dutch and reduced to 10 items to better accommodate for the Dutch participant sample. Similarly, there is a

Norwegian (Andreassen, Ursin, & Eriksen, 2007) and a Turkish (Burke, Koyuncu, & Fiksenbaum, 2008) adaptation of the WorkBat. The WART and the WorkBat, including their lingual and cultural variations, will be included in the meta-analysis because of their universal acceptance as measures of workaholism.

Due to the lack of usage by researchers other than the developers of the measure, the SNAP-Work will not be included in this meta-analysis as a measure of workaholism. Similarly, the Mudrach and Naughton (2001) scales and the WABI will not be included in the meta-analysis because of their preliminary stages of empirical testing and lack of replication of validity or reliability through subsequent research. The CWST will also not be included in this meta-analysis because it does not directly assess the individuals in question, the workaholics, and instead assesses children's perceptions of their parents' workaholic behaviors.

### **Current State of Workaholism**

Despite the various conceptualizations of workaholism, consensus exists with regard to several expected outcomes. The majority of workaholism research hypothesized that one of the leading concerns of the disorder is its negative effect on one's personal relationships and social life (Bonebright & Clay, 2000; Burke, 2000; Robinson & Post, 1997). Research shows that workaholics' ratings of their condition tends to be less severe than the ratings of their significant others, and workaholics are more likely to experience greater disturbances in social relationships than non-workaholics (McMillan, O'Driscoll, & Brady, 2004). Ironically, as the quality of social relationships decreases, the onset of workaholism is usually hypothesized to be propelled by encouragement and praise from co-workers and supervisors (Johnstone & Johnston, 2005; Liang

& Chu, 2009; Smith, 2007). Support may come in the form of positive work evaluations and feedback (Piotrowski & Vodanovich, 2006), competitive peers (Ng et al., 2007), and workaholic supervisors setting high standards (Ng et al., 2007).

Another common finding is that workaholism is correlated with long working hours. There is a general consensus amongst researchers that the longer period of time one works beyond that which is necessary for their job, the more likely they are to become a workaholic (Burke & Fiksenbaum, 2009; Burke et al., 2008; Feeney & Bozeman, 2009; Robinson, Flowers, & Ng, 2006; Snir & Zohar, 2008; ). These longer hours are usually not hypothesized to be motivated by monetary gain. Although income is just as compelling an incentive for workaholics as for non-workaholics, it has not been linked with the drive behind the disorder (Burke, 2004; Srivastava, Locke, & Bartol, 2001).

Workaholism has also been purported to be related to burnout and negative feelings about work and life. Workaholism-induced burnout has been shown to be related to negative emotions due to high levels of stress and more physical health symptoms (Burke, Richardsen, & Mortinussen, 2004). Taris, Beckers, Verhoeven, Geurts, Kompier, & van der Linden (2006) hypothesized that work exhaustion and work-life interference caused by workaholism will result in negative feelings about oneself and life in general. Schaufeli and colleagues (2008) studied the correlation between workaholism and burnout as a product of job demands. Schaufeli and colleagues (2009) also researched burnout as a result of work-life conflict due to workaholism.

## **The Present Study**

Aside from the few commonalities discussed in the previous section, a lack of clarity remains regarding the consistent and specific relations workaholism has with one's personal life and overall wellbeing. The purpose of this meta-analysis is to better understand the correlates of workaholism based on findings from previous research. This study aims to identify the most common correlates of workaholism with hopes to develop a universally agreed-upon construct for the disorder. As previously noted, various definitions of workaholism exist that focus upon differing aspects of the addiction. Clarifying the construct of workaholism through its relationships with its correlates will help to illuminate the implications workaholism has on one's life. Identifying the implications of workaholism will be a step forward in the prognosis and prevention of the addiction. Therefore, combining and analyzing the data from prior workaholism research will serve to increase our understanding of the overall impact of the numerous operationalizations of workaholism.

## **Chapter 3: Methods**

### **Literature Search**

Articles were collected through an Internet search using the PsycINFO database (American Psychological Association, 1887-2009). No date range was set in order to ensure the most comprehensive analysis of workaholism measures. Keywords used in the search were *workaholism*, *work addiction risk test*, *WART*, *workaholism battery*, *WorkBat*, and *workaholism measures*. Furthermore, articles were located by conducting a reverse citation search for the Robinson (1999) article presenting the development of the WART and the Spence and Robbins (1992) article presenting the WorkBat. As previously noted, the WART and the WorkBat measures were focused upon due to their prominence within the study of workaholism.

### **Inclusion Criteria**

Once the initial list of studies was created using the results of the literature search, it was narrowed down using several inclusion criteria. First, only peer-reviewed articles, not student dissertations, were included in the meta-analysis. The use of only peer-reviewed articles ensures that only studies utilizing quality research designs were included. Next, of the foreign studies, only those that provided an English translation were considered for analysis due to limitations regarding the researcher's fluency in languages other than English. Lastly, to be included in the final set of articles for the meta-analysis, each study must have reported (1) correlations between the predictor (i.e., the WART or WorkBat) and criterion variables, and (2) the sample size used, since such statistical data is necessary to calculate the mean correlation of workaholism with the

criterion variables, and the 95% confidence intervals about those means. Overall, 44 studies were included in the meta-analysis.

### **Data Coding**

Data found within the studies included in the meta-analysis were coded according to specific rules developed to help maintain inter-rater reliability. Three raters coded the studies individually and then the data were compared for consistency among the raters. The identification coding for each study consisted of the initials of the rater, the date of the coding, a citation for the article, the date of publication, and a unique article identification number that was assigned to each article prior to coding. As some articles include more than one study, a unique number corresponding to each individual study within an article was also recorded, in the order in which the studies were reported within the article. For example, if the first article had two studies, the article identification number was 1, and the study identification number was 1 for the first study in the article and 2 for the second study. Each predictor-criterion correlation reported within every study was also recorded.

The predictor codes (i.e., workaholism) included the measure name, the dimension name, and the type of measure studied (behavioral, self-report, supervisor rating, or other type of measure). If reported, the predictors' internal consistency, test-retest reliability, and inter-rater reliability were also recorded. The same coding scheme was applied to the criterion variables, and additionally included the general category of the criterion studied.

The criterion variables were placed into general categories by three raters individually categorizing each criterion and then cross-referencing the individual categorizations for inter-



rater reliability. This process resulted in a final list of 28 general criterion categories with 95% agreement among all three raters (see Table A1).

To test for moderators and assist with the analysis of the predictor-criterion correlations, demographic data of the samples were coded. Sample size, form of sampling conducted (online, in person, or via mail), the participants' occupation (student, blue collar/manual labor, white collar/office position, upper level management, professional/doctoral, or other job type), and the country from which the sample was selected were all recorded. If provided by the studies, the percentage of each ethnicity and gender represented in the samples was noted, along with the average age, salary, and hours worked per week with their corresponding standard deviations. Finally, the overall quality of the studies was coded subjectively by listing any characteristics of the study that could potentially cause problems with the overall integrity of the analysis. After coding all of the above for each study, the raters indicated whether or not they thought the study should be included in the final analysis.

## Chapter 4: Results

### Work Addiction Risk Test

Table A2 presents a summary of the average correlations between the dimensions of the Work Addiction Risk Test (WART) and criterion categories of possible workaholism correlates. The effect sizes of the correlation coefficients were rationalized using Cohen's (1988) suggestion that a large effect size is greater than or equal to .5; a moderate effect is between .5 and .3; and a correlation between .3 and .1 is small.

Table A2 also presents the 95% confidence intervals about the mean correlation coefficients, using the Fisher *r*-to-*z* transformation and the sample population, *n*. As observed within Table A2, there were several mean correlation coefficients for which the confidence interval included zero; thus, these scores are not significantly different from zero at the 95% confidence level.

**Aggregated.** Overall, scores on the aggregated WART displayed no significant correlation with job stress, perceived control, positive affect towards non-work, and self-efficacy. However, scores on the aggregated WART did demonstrate a weak but significant relationship with demographic ( $n = 464$ ,  $r = .11$ ,  $CI_{95} = .02, .20$ ), job characteristics ( $n = 464$ ,  $r = .17$ ,  $CI_{95} = .08, .26$ ), negative affect towards non-work ( $n = 1450$ ,  $r = .20$ ,  $CI_{95} = .15, .25$ ) and work effort ( $n = 272$ ,  $r = .18$ ,  $CI_{95} = .06, .29$ ). Furthermore, scores on the aggregated WART demonstrated moderate significant correlations with negative affect towards work ( $n = 464$ ,  $r = .33$ ,  $CI_{95} = .25, .41$ ), perceived job demands ( $n = 232$ ,  $r = .32$ ,  $CI_{95} = .20, .43$ ), and work-life balance ( $n = 594$ ,  $r = .36$ ,  $CI_{95} = .29, .43$ ). Moreover, the aggregated WART scores demonstrated

a highly significant correlation with mental health ( $n = 102, r = .67; CI_{95} = .55, .77$ ), suggesting that workaholism, as measured by the aggregated WART, is significantly related to mental health. However, it should be noted that this correlation is based on a relatively small sample size. Although the effect sizes of the correlations between the aggregated WART and negative affect towards work, perceived job demands, and work-life balance were not as large as the effect size for mental health, the strength of the correlations with these other criterion measures suggests that they are also related to workaholism. Thus, the relationship the aggregated WART has with these correlates is worthy of consideration.

**Compulsive Tendencies.** Overall, scores on the Compulsive Tendencies dimension of the WART displayed no significant correlation with demographics and perceived control. However, scores on the Compulsive Tendencies dimension did demonstrate weak significant correlations with job stress ( $n = 130, r = .20, CI_{95} = .03, .37$ ), negative affect towards non-work ( $n = 870, r = .16, CI_{95} = .09, .23$ ), positive affect towards non-work ( $n = 1492, r = .22, CI_{95} = .17, .27$ ), professional success ( $n = 398, r = .16, CI_{95} = .06, .26$ ), and work effort ( $n = 272, r = .23, CI_{95} = .11, .34$ ). Scores on the Compulsive Tendencies dimension yielded moderate correlations with negative affect towards work ( $n = 663, r = .37, CI_{95} = .31, .43$ ) and negative non-performance work behaviors ( $n = 326, r = .41, CI_{95} = .32, .50$ ). Strong correlations emerged between scores on the Compulsive Tendencies dimension and need for power ( $n = 326, r = .51, CI_{95} = .43, .59$ ), perceived job demands ( $n = 431, r = .50, CI_{95} = .43, .57$ ), and work-life balance ( $n = 1001, r = .56, CI_{95} = .52, .60$ ). Hence, need for power, perceived job demands, and work-life balance all have strong relationships with workaholism as measured by the Compulsive

Tendencies dimension of the WART. Although the correlations the scores of the Compulsive Tendencies dimension had with negative affect towards work and negative non-performance work behaviors were less robust than the previously stated correlations, their relationship with workaholism should nevertheless be noted.

**Control.** The Control dimension of the WART demonstrated no significant correlations with mental health or self-efficacy. However, scores on the Control dimension did demonstrate weak, yet significant, correlations with commitment and cohesion ( $n = 2348$ ,  $r = .09$ ,  $CI_{95} = .05, .13$ ), negative affect towards work ( $n = 1174$ ,  $r = .20$ ,  $CI_{95} = .15, .26$ ), negative non-performance work behaviors ( $n = 1500$ ,  $r = .19$ ,  $CI_{95} = .14, .24$ ), perceived control ( $n = 859$ ,  $r = .15$ ,  $CI_{95} = .08, .22$ ), positive affect towards work ( $n = 587$ ,  $r = .21$ ,  $CI_{95} = .13, .29$ ), and work effort ( $n = 859$ ,  $r = .12$ ,  $CI_{95} = .05, .19$ ). Furthermore, scores on the Control dimension displayed moderate significant correlations with job involvement ( $n = 587$ ,  $r = .37$ ,  $CI_{95} = .31, .44$ ), negative affect towards non-work ( $n = 870$ ,  $r = .37$ ,  $CI_{95} = .31, .43$ ), perceived job demands ( $n = 587$ ,  $r = .43$ ,  $CI_{95} = .37, .50$ ), and positive affect towards non-work ( $n = 924$ ,  $r = .37$ ,  $CI_{95} = .31, .43$ ). Although these correlations are only moderate in strength, they express an attention-worthy significant relationship with workaholism through the Control dimension of the WART. In addition, there was a strong significant correlation with job stress ( $n = 587$ ,  $r = .58$ ,  $CI_{95} = .53, .64$ ); indicating that level of job stress and a workaholic's need for control are highly related.

**Delegation.** Scores on the Delegation dimension of the WART demonstrated no significant correlations with perceived control, positive affect towards non-work, and work effort. However, weak significant correlations were present between scores on the Delegation

dimension and both negative affect towards non-work ( $n = 544, r = .10, CI_{95} = .02, .18$ ) and physical health ( $n = 733, r = .10, CI_{95} = .03, .17$ ). Scores on the Delegation dimension did not yield moderate or strong significant correlations with any of the workaholism correlates studied.

**Impaired Communication.** Scores on the Impaired Communication dimension of the WART did not yield significant correlations with perceived control or work effort. However, scores on the Impaired Communication dimension did demonstrate moderate significant correlations with negative affect towards non-work ( $n = 870, r = .43, CI_{95} = .38, .49$ ) and positive affect towards non-work ( $n = 924, r = .38, CI_{95} = .33, .43$ ). Although there were no strong significant correlations between the Impaired Communication dimension scores and the criterion measures, the moderate correlations stated above indicate that these criteria are significantly related to workaholism as measured by the WART.

**Self-Worth.** No significant correlations resulted between scores on the Self-Worth dimension of the WART and perceived control. However, the scores on the Self-Worth dimension did demonstrate weak significant correlations with negative affect towards non-work ( $n = 870, r = .18, CI_{95} = .12, .25$ ), positive affect towards non-work ( $n = 598, r = .20, CI_{95} = .12, .28$ ), and work effort ( $n = 272, r = .13, CI_{95} = .01, .25$ ). Self-Worth dimension scores did not display moderate or strong significant correlations with any of the workaholism criteria studied.

The absence of moderate or strong significant relationships between the WART dimensions of Self-Worth and Delegation with any of the criterion measures indicates that they may be measuring other aspects of workaholism that have yet to be studied, or that these dimensions may not be viable aspects of workaholism. The Compulsive Tendencies and the

Control dimensions appear to be measuring the largest effects of workaholism by the criteria studied in this meta-analysis. None of the criterion categories displayed a strong relationship with all five dimensions of the WART. The aggregated WART only had a strong relationship with the mental health criterion, but this criterion's relationship with the individual dimensions has not yet been studied (except for an insignificant correlation with the Control dimension).

### **Workaholism Battery**

Table A3 presents a summary of the average correlations linking the dimensions of the Workaholism Battery (WorkBat) to criterion categories of possible workaholism correlates. The effect sizes of the correlation coefficients are rationalized using Cohen's (1988) suggestion that a large effect size is greater than or equal to .5; a moderate effect is between .5 and .3; and a correlation between .3 and .1 is small.

Table A3 also presents the 95% confidence intervals about the mean correlation coefficients, using the Fisher *r*-to-*z* transformation and the sample population, *n*. As observed within Table A3, there are several mean correlation coefficients for which the confidence interval includes zero; thus, these scores are not significantly different from zero at the 95% confidence level.

**Aggregated.** Overall, scores on the aggregated WorkBat dimension displayed weak significant correlations with perceived job demands ( $n = 389$ ,  $r = .30$ ,  $CI_{95} = .21, .39$ ) and positive affect towards non-work ( $n = 1905$ ,  $r = .26$ ,  $CI_{95} = .22, .31$ ). The aggregated WorkBat dimension scores also demonstrated moderate significant correlations with negative non-performance work behaviors ( $n = 1120$ ,  $r = .42$ ,  $CI_{95} = .38, .47$ ), perfectionism ( $n = 387$ ,  $r = .46$ ,  $CI_{95} = .38, .54$ ),

physical health ( $n = 557, r = .46, CI_{95} = .39, .53$ ), and positive affect towards work ( $n = 948, r = .39, CI_{95} = .34, .45$ ). Furthermore, the aggregated WorkBat scores yielded strong significant correlations with job characteristics ( $n = 171, r = .58, CI_{95} = .47, .67$ ), job involvement ( $n = 556, r = .66, CI_{95} = .62, .71$ ), job stress ( $n = 387, r = .54, CI_{95} = .46, .61$ ), mental health ( $n = 171, r = .58, CI_{95} = .47, .67$ ), professional success ( $n = 171, r = .50, CI_{95} = .38, .61$ ), and work effort ( $n = 357, r = .71, CI_{95} = .66, .77$ ). These moderate and strong correlations indicate that workaholism, as measured by the WorkBat, is significantly related to these criteria. According to these correlations and the WorkBat's definition of workaholism, a major aspect of identifying the disorder would be through the characteristics of one's job, involvement with this job, level of job stress, mental health status, and level of professional success.

**Drive.** Scores on the Drive dimension of the WorkBat did not yield any significant correlations with conscientiousness, extraversion, professional success, and relationship status. However, Drive dimension scores did demonstrate weak significant correlations with agreeableness ( $n = 496, r = .14, CI_{95} = .05, .23$ ), commitment and cohesion ( $n = 2885, r = .11, CI_{95} = .07, .15$ ), demographics ( $n = 6096, r = .07, CI_{95} = .05, .10$ ), flexibility, ( $n = 816, r = .29, CI_{95} = .23, .36$ ) job characteristics ( $n = 4042, r = .12, CI_{95} = .09, .15$ ), job involvement ( $n = 2894, r = .27, CI_{95} = .24, .31$ ), mental health ( $n = 3545, r = .28, CI_{95} = .25, .31$ ), negative affect towards non-work ( $n = 464, r = .21, CI_{95} = .12, .29$ ), negative affect towards work ( $n = 1644, r = .29, CI_{95} = .25, .34$ ), negative non-performance work behaviors ( $n = 3078, r = .20, CI_{95} = .17, .24$ ), perceived control ( $n = 587, r = .18, CI_{95} = .10, .26$ ), physical health ( $n = 1765, r = .19, CI_{95} = .15, .24$ ), positive affect towards non-work ( $n = 3876, r = .16, CI_{95} = .13, .19$ ), positive affect towards work ( $n =$

2375,  $r = .12$ ,  $CI_{95} = .08, .16$ ), positive non-performance work behaviors ( $n = 807$ ,  $r = .15$ ,  $CI_{95} = .08, .22$ ), self-efficacy ( $n = 2438$ ,  $r = .24$ ,  $CI_{95} = .21, .28$ ), and work effort ( $n = 2812$ ,  $r = .25$ ,  $CI_{95} = .22, .29$ ). Moreover, Drive dimension scores demonstrated moderate correlations with achievement motivation ( $n = 562$ ,  $r = .34$ ,  $CI_{95} = .27, .42$ ), job stress ( $n = 3206$ ,  $r = .37$ ,  $CI_{95} = .34, .40$ ), perceived job demands ( $n = 7160$ ,  $r = .35$ ,  $CI_{95} = .33, .38$ ), perfectionism ( $n = 1291$ ,  $r = .38$ ,  $CI_{95} = .34, .43$ ), and work-life balance ( $n = 983$ ,  $r = .36$ ,  $CI_{95} = .31, .42$ ). These moderate correlations indicate that workaholism, as defined through this dimension, is significantly related to one's motivation for achievement, level of job stress, job demands, need for perfectionism, and ability to balance their work and life.

**Work Enjoyment.** Scores on the Work Enjoyment dimension of the WorkBat were not significantly correlated with conscientiousness. However, Work Enjoyment dimension scores demonstrated weak significant correlations with achievement motivation ( $n = 495$ ,  $r = .26$ ,  $CI_{95} = .18, .34$ ), agreeableness ( $n = 793$ ,  $r = .23$ ,  $CI_{95} = .16, .29$ ), demographics ( $n = 7773$ ,  $r = .06$ ,  $CI_{95} = .04, .08$ ), extraversion ( $n = 496$ ,  $r = .21$ ,  $CI_{95} = .12, .29$ ), flexibility ( $n = 816$ ,  $r = .17$ ,  $CI_{95} = .10, .24$ ), job characteristics ( $n = 5154$ ,  $r = .19$ ,  $CI_{95} = .17, .22$ ), job stress ( $n = 3219$ ,  $r = .24$ ,  $CI_{95} = .21, .28$ ), mental health ( $n = 2255$ ,  $r = .21$ ,  $CI_{95} = .17, .25$ ), need for affiliation ( $n = 594$ ,  $r = .20$ ,  $CI_{95} = .12, .28$ ), negative affect towards non-work ( $n = 675$ ,  $r = .11$ ,  $CI_{95} = .03, .19$ ), negative non-performance work behaviors ( $n = 3413$ ,  $r = .17$ ,  $CI_{95} = .14, .21$ ), perceived control ( $n = 199$ ,  $r = .23$ ,  $CI_{95} = .09, .36$ ), perceived job demands ( $n = 7366$ ,  $r = .08$ ,  $CI_{95} = .06, .10$ ), perfectionism ( $n = 2706$ ,  $r = .28$ ,  $CI_{95} = .25, .32$ ), physical health ( $n = 4052$ ,  $r = .22$ ,  $CI_{95} = .19, .25$ ), positive affect towards non-work ( $n = 5497$ ,  $r = .16$ ,  $CI_{95} = .13, .19$ ), positive non-



performance work behaviors ( $n = 1018$ ,  $r = .13$ ,  $CI_{95} = .07, .19$ ), professional success ( $n = 1789$ ,  $r = .15$ ,  $CI_{95} = .10, .20$ ), relationship status ( $n = 1060$ ,  $r = .07$ ,  $CI_{95} = .01, .13$ ), self-efficacy ( $n = 1791$ ,  $r = .24$ ,  $CI_{95} = .02, .29$ ), work effort ( $n = 3554$ ,  $r = .24$ ,  $CI_{95} = .21, .28$ ), and work-life balance ( $n = 2607$ ,  $r = .13$ ,  $CI_{95} = .09, .17$ ). Furthermore, Work Enjoyment dimension scores yielded moderate correlations with commitment and cohesion ( $n = 748$ ,  $r = .34$ ,  $CI_{95} = .28, .41$ ), job involvement ( $n = 3194$ ,  $r = .40$ ,  $CI_{95} = .01, .07$ ), negative affect towards work ( $n = 1388$ ,  $r = .34$ ,  $CI_{95} = .29, .39$ ), and positive affect towards work ( $n = 4979$ ,  $r = .31$ ,  $CI_{95} = .29, .34$ ). These moderate correlations demonstrate significant relationships with workaholism as measured by the Work Enjoyment dimension of the WorkBat and should be acknowledged as integral to the disorder.

**Work Involvement.** Scores on the Work Involvement dimension of the WorkBat did not yield any significant correlations with agreeableness, conscientiousness, extraversion, flexibility, mental health, professional success, or self-efficacy. However, scores on the Work Involvement dimension did demonstrate weak significant correlations with achievement motivation ( $n = 1060$ ,  $r = .25$ ,  $CI_{95} = .20, .31$ ), demographics ( $n = 6106$ ,  $r = .07$ ,  $CI_{95} = .05, .10$ ), job characteristics ( $n = 4298$ ,  $r = .07$ ,  $CI_{95} = .04, .10$ ), job involvement ( $n = 1239$ ,  $r = .27$ ,  $CI_{95} = .22, .32$ ), negative affect towards non-work ( $n = 464$ ,  $r = .28$ ,  $CI_{95} = .20, .37$ ), negative non-performance work behaviors ( $n = 1344$ ,  $r = .08$ ,  $CI_{95} = .03, .13$ ), perfectionism ( $n = 590$ ,  $r = .14$ ,  $CI_{95} = .06, .22$ ), physical health ( $n = 1060$ ,  $r = .08$ ,  $CI_{95} = .02, .14$ ), positive affect towards non-work ( $n = 3756$ ,  $r = .06$ ,  $CI_{95} = .03, .09$ ), positive affect towards work ( $n = 1468$ ,  $r = .10$ ,  $CI_{95} = .05, .15$ ), positive non-performance work behaviors ( $n = 807$ ,  $r = .12$ ,  $CI_{95} = .05, .19$ ), relationship status ( $n = 1060$ ,

$r = .08$ ,  $CI_{95} = .02, .14$ ), work effort ( $n = 1669$ ,  $r = .22$ ,  $CI_{95} = .18, .27$ ), and work-life balance ( $n = 1761$ ,  $r = .18$ ,  $CI_{95} = .14, .23$ ). There were no moderate or strong significant correlations between scores on the Work Involvement dimension and any of the criterion variables.

Despite the absence of strong significant correlations between any of the criterion categories and the individual dimensions of the WorkBat, several strong relationships nevertheless emerged between the aggregated WorkBat and the criterion measures. This pattern of results indicates that drive to work, work involvement, and work enjoyment must be combined in order to successfully correlate the WorkBat's definition of workaholism with the criterion measures that have been shown to identify with the aggregated WorkBat. Individually, the three dimensions seem to lack the power to identify with any particular workaholism criteria.

## Chapter 5: Discussion

### General Discussion

The Work Addiction Risk Test (WART) and the Workaholism Battery (WorkBat) are the two most prominent measures of workaholism, yet the results of this meta-analysis indicate that few meaningful relationships with the criteria of interest are shared by both measures. In fact, only a few moderate to strong relationships with criterion variables are shared within the dimensions of each measure. Such discrepancies between and within two measures that purport to evaluate the same condition indicate that the definition of workaholism is in need of further clarification.

With respect to the WART, of the 28 workaholism criterion categories, only five (negative affect towards non-work, negative affect towards work, perceived job demands, positive affect towards non-work, and work-life balance) shared significant correlations with two or more WART dimensions. The Control and the Impaired Communication dimensions both displayed moderate correlations with negative affect towards non-work and positive affect towards non-work. None of the WorkBat dimensions displayed correlations greater than .3 with these two categories.

The aggregated WART and the Compulsive Tendencies dimension both evidenced moderate to strong relationships with negative affect towards work, perceived job demands (which also had a significant relationship with the Control dimension), and work-life balance. These workaholism criterion categories also demonstrated moderate relationships with a few of the WorkBat dimensions. Negative affect towards work shared a moderate relationship with the

WorkBat's Work Enjoyment dimension. The Drive dimension displayed moderate relationships with both perceived job demands and work-life balance. Although these significant relationships show that both the WART and the WorkBat seek to measure a few of the same correlates of workaholism, they also highlight the absence of strong relationships between these measures' dimensions and the criterion variables. For example, while a strong relationship emerged between the aggregated WorkBat dimension and work effort, all of the individual WorkBat dimensions and all of the WART dimensions displayed very weak or non-significant relationships with work effort. In addition, the Compulsive Tendencies dimension of the WART demonstrated a strong relationship with need for power, yet none of the other dimensions of either measure have been researched in relation with need for power.

The lack of consistency in the relationships between these two workaholism measures and the criterion variables of interest underscores the need for a standardized definition of workaholism. Although individually the WorkBat dimensions evidenced few meaningful relationships with the criterion variables, the aggregated WorkBat was strongly correlated with job characteristics, job involvement, job stress, mental health, professional success, and work effort. In contrast, each of the WART dimensions displayed at most one strong relationship with various criterion variables. The few moderate effects shared among the WART dimensions seemed to focus upon workaholic correlates such as positive and negative affect towards work and non-work, perceived job demands, and work-life balance. The discrepancy in the criteria that each measure had strong relationships with suggests that these measures assess different traits to fit their varying definitions of workaholism. The WART and the WorkBat appear to use two

different working definitions of workaholism, which has resulted in the measurement of uniquely different outcomes of the disorder.

In order to achieve more consistent results across workaholism studies, it is critical for a universal definition to first be established. A potential premise for such a definition could be the few criterion categories across both the WART and WorkBat measures that have resulted in promising relationships between the measures' dimensions and the workaholism correlates. For example, the aggregated WART and the aggregated WorkBat both evidenced significant correlations with mental health ( $r = .67$  and  $.58$ , respectively). Similarly, the aggregated WART and the Control dimension of the WorkBat both displayed strong correlations with job stress ( $r = .54$  and  $.58$ , respectively). A proposed definition could examine these common relationships with workaholism correlates across workaholism measures and use this as the basis for a consistent characterization of workaholism.

As with any disease, condition, or disorder, the symptoms and their effects must first be determined in order to better understand its causes and treatment. Current research seems to have adopted a backwards approach in that it has invented a condition, workaholism, and is now attempting to unearth symptoms that could possibly lead to this condition. Workaholism should be treated no differently from any other medical condition, in that the addictive behaviors must first be identified and agreed upon, and their influence on the lives of those affected must be examined before the causes of the addiction and the treatment of it may be determined.

Presently, it is known that particular individuals are addicted to working in a way that negatively affects their psychological, physical, and social health. The current challenge for researchers is to

identify and reach a consensus regarding what these psychological, physical, and social health issues are and how they manifest themselves in individuals as possible symptoms of workaholism. Only after the symptoms of the disorder are ascertained can researchers determine a single, coherent, and conclusive definition of workaholism for which they may develop measures to ease the process of making an accurate diagnosis.

### **Limitations**

As with any research methodology, certain limitations and weaknesses pertained to this meta-analysis. Language barriers prevented the inclusion of international research that had not been transcribed into English. Also, only those studies that reported correlation coefficients and sample sizes were garnered in this meta-analysis, as those values were necessary in order to compare and analyze data across all studies. Furthermore, the demographics of the participants in the individual studies were collected but could not be used in the analysis due to the lack of consistency in the units of measurements across all studies. For example, some studies reported participants' job type by directly stating their occupation, and other studies classified occupations as 'blue collar' or 'white collar' without specifying the actual occupations. Variance in the method of providing demographics was too great to derive statistically meaningful results, and hence, was not included in the analysis. Other limitations included subjective coding of criterion measures into general categories. Although inter-rater reliability was present, the categories were still subjectively determined for comparison purposes. Finally, as with all meta-analytical studies, the quality of the results is only as good as the original data. Although

precautions were taken by omitting studies that did not feature quality research designs, this too was a subjective task, and all such studies may not have been removed.

### **Future Research**

Future research would benefit from focusing upon the personality traits and situational characteristics that influence the manifestation of problematic symptoms that may lead to work addiction. Rather than base research upon one's own definition of workaholism and investigate criterion variables that fit this definition, it would be advantageous for researchers to first identify the specific behaviors that engender addictive work patterns and the way in which such work addiction influences individuals and the organizations for which they work. Only after examining the foundation of addictive work behaviors can a definition regarding the positive or negative effects of workaholism upon an individual's life and the organization employing them be determined. It is imperative to the study of workaholism that a single collective definition is constructed in order to develop measures that can accurately and reliably identify the disorder. In an effort to develop a universally agreed upon definition, researchers must first establish how individuals are physically, socially, and psychologically impacted by their excessive work habits. The condition of workaholism exists, but future research must take a step back and first establish a foundation of symptoms and outcomes of the disorder before diagnostic measures, such as the WART and WorkBat, may be used to pursue the causes and treatment of workaholism.

## **Chapter 6: Conclusions**

The study of workaholism is still in its infancy and will require significant collaboration amongst researchers and modifications of current definitions in order to achieve a coherent description of the construct. Currently the WART and the WorkBat are two reliable measures of workaholism, but they cannot be practically used in research until an agreed-upon definition of workaholism is attained. As evidenced by the results, both of these measures correlate with very different workaholism components, suggesting the need for a consistent definition of workaholism. This meta-analysis has taken the first step in the process by identifying the shortcomings of current workaholism measures and addressing focal needs for future research.





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## Appendix

Table A1 <i>Criterion Categories</i>
Achievement Motivation
Agreeableness
Commitment and Cohesion
Conscientiousness
Demographics
Extraversion
Flexibility
Job Characteristics
Job Involvement
Job Stress
Mental Health
Need for Affiliation
Need for Power
Negative Affect Towards Non-work
Negative Affect Towards Work
Negative Non-performance Work Behaviors
Perceived Control
Perceived Job Demands
Perfectionism
Physical Health
Positive Affect Towards Non-work
Positive Affect Towards Work
Positive Non-performance Work Behaviors
Professional Success
Relationship Status
Self-efficacy
Work Effort
Work-life Balance

Table A2  
*Work Addiction Risk Test*

	Aggregated					Compulsive Tendencies					Control				
	n	k	r	L	U	n	k	r	L	U	n	k	r	L	U
Achievement Motivation															
Agreeableness															
Commitment and Cohesion											2348	4	0.09	0.05	0.13
Conscientiousness															
Demographic	464	4	0.11	0.02	0.20	862	6	0.07		0.14					
Extraversion															
Flexibility															
Job Characteristic	464	4	0.17	0.08	0.26										
Job Involvement											587	1	0.37	0.31	0.44
Job Stress	130	1	0.17		0.34	130	1	0.20	0.03	0.37	587	1	0.58	0.53	0.64
Mental Health	102	1	0.67	0.55	0.77						2348	4	0.04		0.08
Need for Affiliation															
Need for Power						326	1	0.51	0.43	0.59					
Negative Affect Towards Non-work	1450	8	0.20	0.15	0.25	870	3	0.16	0.09	0.23	870	3	0.37	0.31	0.43
Negative Affect Towards Work	464	4	0.33	0.25	0.41	663	5	0.37	0.31	0.43	1174	2	0.20	0.15	0.26
Negative Non-performance Work Behaviors						326	1	0.41	0.32	0.50	1500	3	0.19	0.14	0.24
Perceived Control	598	2	0.01	-0.07	0.09	272	1	0.09	-0.03	0.21	859	2	0.15	0.08	0.22
Perceived Job Demands	232	2	0.32	0.20	0.43	431	3	0.50	0.43	0.57	587	1	0.43	0.37	0.50
Perfectionism															
Physical Health															
Positive Affect Towards Non-work	830	4	0.05	-0.02	0.12	1492	7	0.22	0.17	0.27	924	3	0.37	0.31	0.43
Positive Affect Towards Work											587	1	0.21	0.13	0.29
Positive Non-performance Work Behaviors															
Professional Success						398	2	0.16	0.06	0.26					
Relationship Status															
Self-efficacy	232	2	0.05	-0.08	0.18						587	1	0.06	-0.02	0.14
Work Effort	272	1	0.18	0.06	0.29	272	1	0.23	0.11	0.34	859	2	0.12	0.05	0.19
Work-life Balance	594	5	0.36	0.29	0.43	1001	6	0.56	0.52	0.60					

Table A2 - continued  
*Work Addiction Risk Test*

	Delegation					Impaired Communication					Self Worth				
	n	k	r	L	U	n	k	r	L	U	n	k	r	L	U
Achievement Motivation															
Agreeableness															
Commitment and Cohesion															
Conscientiousness															
Demographic															
Extraversion															
Flexibility															
Job Characteristic															
Job Involvement															
Job Stress															
Mental Health															
Need for Affiliation															
Need for Power															
Negative Affect Towards Non-work	544	2	0.10	0.02	0.18	870	3	0.43	0.38	0.49	870	3	0.18	0.12	0.25
Negative Affect Towards Work															
Negative Non-performance Work Behaviors															
Perceived Control	272	1	0.02	-0.10	0.14	272	1	0.12		0.24	272	1	0.04	-0.08	0.16
Perceived Job Demands															
Perfectionism															
Physical Health	733	1	0.10	0.03	0.17										
Positive Affect Towards Non-work	272	1	0.03	-0.09	0.15	924	3	0.38	0.33	0.43	598	2	0.20	0.12	0.28
Positive Affect Towards Work															
Positive Non-performance Work Behaviors															
Professional Success															
Relationship Status															
Self-efficacy															
Work Effort	272	1	0.09	-0.03	0.21	272	1	0.06	-0.06	0.18	272	1	0.13	0.01	0.25
Work-life Balance															

*Note.*

n = total sample size

k = number of studies

r = average correlation

L = lower limit of 95% confidence interval

U = upper limit of 95% confidence interval

Table A3  
Workaholism Battery

	Aggregated			Drive			Work Enjoyment			Work Involvement		
	n	k	r	n	k	r	n	k	r	n	k	r
Achievement Motivation				562	3	0.34	495	2	0.26	1060	2	0.25
Agreeableness				496	1	0.14	793	2	0.23	46	1	0.04
Commitment and Cohesion				2885	9	0.11	748	6	0.34			
Conscientiousness				496	1	0.02	496	1	0.07	496	1	0.02
Demographic				6096	12	0.07	7773	19	0.06	6106	12	0.07
Extraversion				496	1	0.04	496	1	0.21	496	1	0
Flexibility				816	2	0.29	816	2	0.17	496	1	0.08
Job Characteristic	171	1	0.58	4042	11	0.12	5154	16	0.19	4298	12	0.07
Job Involvement	556	2	0.66	2894	12	0.27	3194	13	0.4	1239	6	0.27
Job Stress	387	1	0.54	3206	12	0.37	3219	12	0.24	704	2	0.07
Mental Health	171	1	0.58	3545	7	0.28	2255	5	0.21	1026	2	0.04
Need for Affiliation							594	2	0.2			
Need for Power												
Negative Affect Towards Non-work				464	4	0.21	675	5	0.11	464	4	0.28
Negative Affect Towards Work				1644	4	0.29	1388	6	0.34			
Negative Non-performance work Behaviors	1120	4	0.42	3078	8	0.2	3413	10	0.17	1344	4	0.08
Perceived Control				587	1	0.18	199	1	0.23			
Perceived Job Demands	389	1	0.3	7160	12	0.35	7366	14	0.08			
Perfectionism	387	1	0.46	1291	3	0.38	2706	7	0.28	590	2	0.14
Physical Health	557	2	0.46	1765	5	0.19	4052	10	0.22	1060	2	0.08
Positive Affect Towards Non-work	1905	5	0.26	3876	12	0.16	5497	17	0.16	3756	10	0.06
Positive Affect Towards Work	948	3	0.39	2375	7	0.12	4979	15	0.31	1468	5	0.1
Positive Non-performance Work Behaviors				807	4	0.15	1018	5	0.13	807	4	0.12
Professional Success	171	1	0.5	1650	4	0.04	1789	4	0.15	1590	3	0.04
Relationship Status				1060	2	0.02	1060	2	0.07	1060	2	0.08
Self-efficacy				2438	6	0.24	1791	4	0.24	1556	3	0.02
Work Effort	357	1	0.71	2812	8	0.25	3554	11	0.24	1669	6	0.22
Work-life Balance				983	7	0.36	2607	13	0.13	1761	10	0.18

Note. n = total sample size, k = number of studies, r = average correlation, L = lower limit of 95% confidence interval, U = upper limit of 95% confidence interval

