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Research Article

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Health and Mental Health Outcome of Work Addiction among Full-time Employees in China

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Abstract

Purpose: *Work addiction, or workaholism, can be conceptualized as a non-substance-related behavioral addiction that incorporates the experience of "classic" addiction symptoms similar to alcohol and drug addiction. This study aimed to determine the prevalence of work addiction and its association with demographic characteristics, work factors, and adverse health outcome among full-time employees in China.*

Methods: *This study included 1000 adult full-time Chinese employees (505 women, 495 men) in the People's Republic of China. They completed a web survey on their work behavior, depression symptoms, and general physical functioning.*

Results: *Participants who were of younger age, had longer work hours, and had more supervisees showed higher risks of work addiction than their respective comparison groups. Gender, marital status, and educational level did not relate to work addiction. Among all participants, 43.4% would be classified as work addicts, 57.3% as having moderate to severe depression, and 15.9% as having moderate to severe impairment in physical functioning. The work addict group had 1.34 times the risk of depression and 2.32 times the risk of poor physical functioning compared to the non-work addict group.*

Discussions: *Work addiction is common among full-time employees in China. It is related to high rates of depression and negative health condition. Prevention and intervention strategies should be in place to tackle this phenomenon. Findings about the relative risks can assist the identification of vulnerable groups for early detection and intervention of work addiction tendency.*

Keywords: Work addiction, Depression, Employees in China

Introduction

Global economic competition prompts organizations to reward employees who are willing to work hard. With a high pace of technological innovation, work is now accessible to anyone, in anywhere, and at any time. This stimulates employees to invest their time more heavily than before; especially in countries where there are rapid economic development and cultural emphasis on hard work. Work addiction, or workaholism, refers to a compulsive and uncontrollable need to work incessantly [1-4]. It can be conceptualized as a non-substance-related behavioral addiction that incorporates the experience of "classic" addiction symptoms similar to alcohol and drug addiction [5-7]. These addiction symptoms include: being totally preoccupied by work (salience); using work to reduce emotional stress (mood modification); gradually working longer and longer hours to get the same mood modifying effects (tolerance); suffering emotional and physical distress if unable to work (withdrawal); sacrificing personal, family, and social/or obligations because of work (conflict); desiring or attempting to control number of hours on work without success (relapse); and suffering harm or negative consequences as either a direct or indirect result of the excessive working (problems) [8].

Systematic reviews and meta-analytic studies have indicated that work addiction is commonly found in working adults in urbanized/industrialized countries in America and Europe [1, 9-10], and more recently in East Asia [11-13]. It has been estimated that about 5% to 25% of the employees in the United States, Canada, and European countries may be addicted to work [1, 9-10]. In the Asian contexts, the estimated prevalence rates of work addiction are 21% in Japan and 50% in Singapore [14-15]. It is also noted that this wide range of prevalence rates may be related to a lack of consensus in the definition and measurement of work addiction.

Recent research findings have converged to show that work

addiction is related to many negative individual, interpersonal, and organizational outcome as well as conflicts between work and family life [1, 4, 10-11, 16-18]. In particular, work addiction is associated with mental health disorders, including depression, mania, anxiety, obsessive-compulsive, attention-deficit, and sleep disorders. Findings about demographic characteristics of work addicts are mixed. A recent large cross-sectional survey of 16,426 employees in Norway has shown that those who were younger, non-married, highly educated, and of high socioeconomic status were more likely to exhibit work addiction than their respective comparison groups [16]. Work addiction was also more prevalent among managers, self-employed individuals, and individuals working in the private sector, as compared to non-mangers and public sector. No effect of gender was noted, with men and women being equally vulnerable to work addiction.

Work addiction is typically viewed as a rather stable behavioral tendency [1]. It is likely to be exacerbated by modern mobile technology. Moreover, work addiction has not been included in the latest edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) [19]. There is also a paucity of work addiction research conducted in non-Western countries. As such, the presence of work addiction and its potential negative impact on various social and health domains may be easily overlooked, especially in East Asian countries where there is increasing economic development and competitiveness. This study adopted the behavioral addiction framework in defining and measuring work addiction [8, 20]. It aimed to determine the prevalence rates of work addiction and the extent to which it would associate with demographic characteristics, work condition, and adverse health outcome among full-time employees in China.

Method

Procedure

Inclusion criteria of this study were full-time Chinese employees who were at least 25 years old and resided in the People's Republic of China. Full-time employment was defined as engaging in salaried work for an average of 35 to 40 hours per week. A crowdsourcing Internet marketplace sent out nation-wide email invites to recruit individuals that fit the inclusion criteria. Hyperlinks to the web survey were sent to those who consented to participate in the study. Upon completion of the survey, participants were given a code number that they used to claim their participation fees from the Internet marketplace. This study was approved by the Institutional Ethics Review Board of the affiliated university of the first author.

Measures

The web survey included a 7-item Bergen Work Addiction Scale, a 9-item Patient Health Questionnaire on depression symptoms, and a 10-item Health Survey on physical functioning [20, 21-23]. These scales were first translated from English to Chinese by an expert in the field who is proficient in both English and Chinese. The Chinese version was then back-translated to English by another Chinese-English bilingual expert. Slight modifications of the wordings of the scales were then made to the Chinese translation to ensure translation equivalence. In addition, participants were also asked to provide information on age, gender, educational attainment, marital status, types of industry, number of work hours per week, and number of supervisees at work. The web survey took about 15-20 minutes to complete.

Participant Characteristics

A total of 1500 emails were sent nation-wide to recruit individuals that fit the inclusion criteria. Among them, 1000 individuals (505 women, 495 men) completed the web survey, yielding a response rate of 67%. Table 1 shows the descriptive data of participants' demographic information. The average age of participants was 39.93 years old (SD=8.85), and about 90% of them were married and completed tertiary/university education. They worked in various types of industry, mainly from manufacturing, hospitality, and education/health.

Table 1: Summary of Descriptive Statistics

	N = 1000
	N (%)
Age	
25-35 years	350 (35.0%)
36-45 years	368 (36.8%)
46-55 years	244 (24.4%)
56 years and older	38 (3.8%)
Gender	
Female	505 (50.5%)
Male	495 (49.5%)
Marital Status	
Married/with partner	906 (90.6%)
Single/without partner	94 (9.4%)
Education	
Elementary school and lower	1 (0.1%)
Secondary school	83 (8.3%)
Tertiary/University	916 (91.6%)
Type of Industry	
Manufacturing/Construction	365 (36.5%)
Trade/Transportation/Utilities	108 (10.8%)
Informational Technology	35 (3.5%)
Professional, Business, Finance	93 (9.3%)
Education and Health	151 (15.1%)
Leisure, Hospitality, Others	248 (24.8%)
Number of Supervisees	
0	163 (16.3%)
1-5	223 (22.3%)
6-10	209 (20.9%)
11-20	180 (18.0%)
21 and above	225 (22.5%)
	Mean (SD)
Age	39.93 (8.85)
Work hours per week	40.24 (7.11)
Work addiction	22.98 (5.91)
Depression scores	6.72 (5.39)
Physical functioning scores	80.75 (22.60)

Statistical Analysis

The IBM SPSS 23.0 software was used for statistical analyses. Descriptive analysis of sample characteristics and major variables were conducted. The prevalence rates of work addiction, depression, and poor physical functioning were computed according to the specified cut-off scores. From logistic regression analyses, relative risks of work addiction were calculated between subgroups as broken down by demographic characteristics and work parameters. Similarly, the relative risks of depression and poor physical functioning between work addicts and non-work addicts were also computed.

Results

Using the cut-off score of the Bergen Work Addiction Scale, participants who reported "often" or "always" on at least four of the seven items on this scale were classified as having work addiction [20]. About 43.4% of the participants would be classified as work addicts according to the above cut-off score. Table 2 presents a summary of the relative risk statistics (RR) of work addiction. For demographic characteristics, results showed that younger participants (aged 25-35 years) had significantly higher risk of work addiction compared to older participants (aged above 36 years) (RR=1.34, p=.000, 95% CI 1.17-1.5). The relative risks of work addiction between men and women, between single and married participants, and between tertiary/university graduates and non-university graduates were non-significant (p>.05). For work parameters, participants who worked more than 40 hours per week had significantly higher risk of work addiction compared to participants who worked 40 or less hours per week (RR = 1.24, p=.000, 95% CI=1.06-1.46). Participants who had five or more supervisees also showed significantly higher risk of work addiction compared to those who had four or less supervisees (RR=1.52, p=.000, 95% CI=1.29-1.79).

To calculate the relative risks of depression and poor physical health between work addicts and non-work addicts, these two health variables were recoded according to the specified cut-off scores. About 57.3% of the participants who reported at least five of the nine symptoms on the Patient Health Questionnaire were classified as having moderate to severe depression [19]. About 15.9% of the participants who had average scores less than 50 on the Health Survey were classified as having moderate to severe impairment in physical functioning [22]. Results showed that work addicts had 1.34 times the risk of depression (p=.000, 95%CI=1.20-1.48) and 2.32 times the risk of poor physical functioning (p=.000, 95%=1.72-3.14) as compared to non-work addicts (Table 2).

Table 2: Summary of Relative Risk (RR) Statistics

	Z Statistics	P value	Relative Risk (95% CI)
Demographic Parameters and Work Addiction			
Age (25-35 vs above 36)	4.12	0.000	1.34 (1.17-1.54)
Gender (Female vs Males)	0.53	0.594	0.96 (0.83-1.11)
Marital Status (Single vs Married)	1.40	0.160	0.82 (0.62-1.08)
Education (University vs No university)	0.98	0.325	1.15 (0.87-1.53)
Work Parameters and Work Addiction			
Work hours per week (above 40 vs 40 and less)	2.67	0.000	1.24 (1.06-1.46)
Number of work supervisees (above 4 vs 0-4)	5.03	0.000	1.52 (1.29-1.79)
Work Addiction and Health Outcome			
Depression (Yes vs No)	5.38	0.000	1.34 (1.20-1.48)
Poor Physical Functioning (Yes vs No)	5.53	0.000	2.32 (1.72-3.14)

Discussion

There is a lack of studies on work addiction in non-Western countries. Researchers have argued that a high rate of work addiction is expected in contemporary China with the interplay between traditional Confucian emphasis on hard work and the recent rapid economic development [11-12, 25]. Indeed, the present study showed that Chinese full-time employees had a high rate of work addiction. Other study has also found employees in China being more work addicted than employees in the Netherlands, Spain, and Finland [12].

Current literature has documented that work addiction is related to many negative physical and mental health problems in Western countries [1, 10, 16-18]. Of the few studies conducted in China, work addiction was found to relate to job burnout and depression among university teachers [13]. Hotel managers in China who reported workaholic behavior also indicated lower levels of psychological well-being [11]. The present results were consistent with the above literature and found that Chinese work addicts relative to non-work addicts had higher risks of depression and poor physical functioning. It should be noted that Chinese employees might also under-report their work addiction behavior and/or depressive symptoms due to a lack of awareness or reluctance to disclose their emotion [24].

Previous findings about the associations between work addiction and demographic data are mixed. This is probably related to the differences in the study design, characteristics of the samples, and measurement scales in assessing work addiction. In general, our results on demographic correlates were similar to a recent study conducted in Norway that also used a web-based survey and the Bergen Work Addiction Scale [14]. The present study found that participants who were of younger age, had longer work hours, and had more supervisees showed higher risks of work addiction than their respective comparison groups. Other studies also found that people tended to show more workaholic behavior when they first started their career than when they were in the latter stage of their career [27]. Employees at the managerial or supervisory status tended to work longer hours as well as experience work role overload and conflicts, which were in turn related to work addiction [17]. Finally, the present study found that the risks of work addiction

were similar between men and women as well as between subgroups as broken down by marital status and educational attainment. These latter results were in agreement with a meta-analytic study [17].

The major limitations of the work addiction research are the lack of nationally representative samples of employed individuals and the reliance on self-report data. This study also shared these limitations. It should be noted that the present sample was biased towards employees who were married, who had high educational attainment, and who were technologically competent to complete a web survey. Thus, it remained unclear whether the present results could be generalized to the entire populations of full-time employees in China. Furthermore, this study only collected information from the participants without objective verification of their work behavior and clinical assessment of their health/mental health condition. The cross-sectional study design also rendered it difficult to establish directionality and causality between work addiction and health/mental health status.

Despite the above limitations, this study provided the much needed cross-cultural data on work addiction. The present findings have implications for early detection and prevention of work addiction for the individuals as well as for primary health care and mental health professionals. This study showed that work addiction is prevalent in China, and is associated with high rates of negative health condition. Hence, prevention and intervention strategies should be in place to address this phenomenon. Results on relative risks are useful to identify vulnerable groups for early detection and early intervention of work addiction tendency and related adverse health outcome. Assessment and treatment of mood disturbances and poor physical functioning should also be included in the management of work addiction.

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