ADDICTION POTENTIAL AMONG IRANIAN GOVERNMENTAL EMPLOYEES: PREDICTING ROLE OF PERCEIVED STRESS, JOB SECURITY, AND JOB SATISFACTION

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ABSTRACT

Aim/Purpose	To explore the incidence of addiction potential within the Iranian public working population, describing how many Iranian public employees fall within the diagnostic categories of low, moderate, and high addiction potential. Also, to investigate the predicting role of occupational variables such as perceived stress, job security, and job satisfaction on addiction potential and belonging to low, moderate, and high addiction potential diagnostic categories.
Background	Substance addiction among employees can lead to several negative consequences at the individual and organizational levels. Also, it is the fourth cause of death in Iran. However, few studies have been conducted on the topic among employees, and non among Iranian employees.
Methodology	The study participants were 430 employees working in governmental offices of the North Khorasan province, Iran. Descriptive statistical analysis and multiple linear regression analysis were conducted to explore the incidence of addiction

	potential within the analyzed population and to investigate whether occupational variables such as perceived stress, job security, and job satisfaction predicted low, moderate, or high addiction potential.
Contribution	This paper suggests that perceived stress might act as a risk factor for developing addiction, whereas job security and job satisfaction might be protective factors against the likelihood of addiction development.
Findings	More than half of the sample showed moderate to high addiction potential. Perceived stress was positively related to addiction potential. Job security and job satisfaction were negatively related to addiction potential.
Recommendations for Practitioners	Managers and policymakers may find a valuable strategy to reduce employees' substance addiction risks in the design, development, and implementation of initiatives and interventions that prevent or reduce perceived stress and improve job satisfaction and job security.
Recommendations for Researchers	When addressing the topic of substance addiction, researchers should focus on the preventative side of investigating it; that is, addiction risk rather than already unfolded addiction. Also, researchers should be mindful of the cultural context in which studies are conducted.
Impact on Society	Substance addiction threatens the sustainability of communities and societies worldwide. Providing applied psychological findings, this paper can inform the broader public and help individuals, groups, communities, and institutions to address this issue in a science-based fashion.
Future Research	Future research might investigate other relevant occupational predictors in relation to employee addiction potential, such as leadership style, work-life balance, and worktime schedule, or expand on the relevant causal chain by including personality traits such as neuroticism.
Keywords	substance addiction, addiction potential, public employees, stress, job security, job satisfaction, occupational health, Iranian employees

INTRODUCTION

Substance addiction is the repetitive, excessive, and compulsive consumption of addictive psychotropic substances such as drugs, alcohol, or tobacco. It represents a threat to the person who suffers from it, and it is a psychological and behavioral disorder that seriously threatens the sustainability of communities and societies (Fontaine, 2007; Sadock et al., 2007). Furthermore, it represents a cost even in the workplace.

Substance addiction impairs both workers' well-being and performance since it leads to reduced attention and concentration, poor time management, and illegal behaviors in the workplace (De Beyer & Brigden, 2004; Evans, 2016; Frone, 2012). Previous literature shows that substance addiction has been linked to undesired business performance and workplace safety outcomes, such as decreased income and productivity, increased turnover, and severe injuries (De Beyer & Brigden, 2004; Evans, 2016; Frone, 2012; Ovuga & Madrama, 2006). The negative consequences of employees' substance addiction call for the relevant endeavor of elaborating strategies to reduce it within the working population.

Addiction potential is a person's tendency, likelihood, or risk to develop an addiction, encompassing a strong desire and preference for using drugs, alcohol, or tobacco over enacting other or different behaviors (Afshari, 2019; Amiri, Sadeghi et al., 2020; Goudarzian et al., 2017; Saadat et al., 2019; Weed et al., 1992; Zargar, 2006; Zargar & Ghaffari, 2009; Zargar et al., 2008). Previous literature (Amiri, Sadeghi et al., 2020; Weed et al., 1992; Zargar, 2006) has identified three diagnostic categories that

can be used when assessing addiction potential, such as low, moderate, and high addiction potential, each of them corresponding to a specific level of risk of addiction. Amiri, Khosravi et al. (2021) found a statistically significant relationship between addiction potential status (i.e., low, moderate, high) and the tendency to use drugs, conceptualized as an individual attitude toward addiction, with people with high addiction potential being almost twice as likely to use drugs as people with low addiction potential.

The first purpose of the present study consists in estimating the extent to which a statistically representative random sample of the survey population falls into each of these three levels of substance addiction risk. While possibly linked to specific stable individual characteristics, like personality traits (Zargar, 2006), addiction potential may also be related to more modifiable variables, such as those from the occupational domain (e.g., Helbig & McKay, 2003). Hence, the second purpose of this study is to identify whether relevant occupational variables (i.e., perceived stress, job security, and job satisfaction) are related to employees' addiction potential. They were chosen as study variables because they represent the critical perceptions of any worker (e.g., Ettner & Grzywacz, 2001). We posit that perceived stress is a positive predictor of addiction potential, and job security and job satisfaction are negative predictors of the same outcome variable. In so doing, this paper aimed to produce applied psychological findings that can inform the broader public and help individuals, groups, communities, and institutions to address the issue of substance addiction within the working population in a science-based fashion (Tommasi, 2023).

The study was conducted in Iran, where the prevalence of substance use has been estimated between 3.9% and 11.9% within the general population older than 15 years (Moradinazar et al., 2020; Noorbala et al., 2020), and between 9% and 60% depending on the province within the population of industrial workers (Damari et al., 2020). However, addiction is a worldwide problem, as the situation is comparable in other countries. For example, it is estimated that an annual average of 8.6% of full-time workers aged 16 to 64 in the United States use illicit drugs (Bush & Lipari, 2015).

First, perceived stress at work is conceived as a mismatch between the demands that employees face while carrying out their job (e.g., workload, time pressure, complexity, responsibility) and the resources which are available to face those demands (e.g., skills, organizational support; Bakker & Demerouti, 2017). Job demands are physical, psychological, social, or organizational aspects of the job that require physical or psychological effort from the worker. In contrast, job resources are physical, psychological, social, or organizational aspects that workers can use to counterbalance costs regarding physical, cognitive, and emotional energy (ibidem). The stress-induction and tension-reduction proposition — first introduced by Conger (1956), further developed by Cooper et al. (1995) and Khantzian (1997), and still used nowadays in several studies in the field of substance use (e.g., Lau-Barraco et al., 2023; Montal-Rosenberg et al., 2023) — suggests that people use addictive substances to reduce tensions deriving from stressors. This might also be true for perceptions of stressful situations at work, as noted, for instance, by Frone (2008), who found a positive relationship between work overload and consumption of drugs and alcohol. People perceiving higher stress levels revert more to a maladaptive coping strategy, such as consuming substances, to try and alleviate the harmful effects of stressful conditions in the short term. However, to our knowledge, the specific relationship between perceived stress and addiction potential has not been investigated within the population of workers. On this basis, we propose the following hypothesis:

> H1: Perceived stress is positively related to addiction potential.

Job security can be defined as a perception of the stability of one's job. It can be conceived as the opposite of job insecurity, a set of subjective concerns about the continued existence of one's job (De Witte et al., 2015). As such, job insecurity can expose workers to relevant stress (Taheri Nakhost, 2011) and, following the stress-induction and tension-reduction proposition (Conger, 1956), can therefore be thought to be positively associated with addiction potential. Frone (2008) found a significant positive relationship between workers' perceptions of job insecurity and the use of drugs and

alcohol, which was even more significant than that between work overload and consumption of drugs and alcohol. However, to our knowledge, no research has previously studied the relationship between job security and the specific construct of addiction potential among workers. So, we propose the following hypothesis:

> H2: Job security is negatively related to employees' addiction potential.

Finally, job satisfaction, an overall favorable attitude towards one's job (Rafferty & Griffin, 2009), can also be hypothesized as a negative predictor of addiction potential. The underlying rationale is that addictive substances can be used as a coping strategy to reduce negative feelings toward one's job (Frone & Windle, 1997). At the same time, employees with higher job satisfaction might deploy their positive perceptions and feelings as individual-level job resources to cope with stress. In support of this argument, Moore and colleagues (2000) found that people who drink but have no alcohol addiction show significantly more favorable job attitudes than people with alcohol addiction. Also, Saari and Judge (2004) found that low levels of job satisfaction predict disruptive behaviors, among which was substance abuse. Hence, we propose the following hypothesis:

> H3: Job satisfaction is negatively related to employees' addiction potential.

MATERIALS AND METHODS

The current paper reports on a cross-sectional study. The following sections provide information about the sample, procedure, measures, and statistical analyses deployed to achieve the study's aims.

SAMPLE

Government employees from the North Khorasan province of Iran constitute the study's statistical population, meaning 8,565 individuals. North Khorasan has 50 government offices located all over the province. In the first stage of the sampling procedure, all the government offices with more than 100 employees were selected based on the targeted sampling method, meaning a total of 5,527 individuals. Then, to ensure the manageability and feasibility of the study procedure, a sample of 360 employees was further selected based on the stratified sampling method. However, to prevent the negative consequences of potential participants' dropout and ensure enough usable data, questionnaires were distributed among 500 employees from 22 different public departments of the municipality of Bojnord. Valid responses were collected from 450 participants, corresponding to a 90% response rate. After removing outliers using the Mahalanobis distance measure, a final sample of 430 employees was left and included in the subsequent statistical analyses. The sample comprised 366 men (85.1%) and 64 women (14.9%). Age ranged from 24 to 58 years (M = 37.24, SD = 6.66). Most of the sample reported holding a bachelor's degree (n = 265, 61.6%) and a fixed-term employment contract (n = 181, 42.1%). Job tenure ranged from 1 to 36 years (M = 11.77, SD = 6.70).

PROCEDURE AND MEASURES

A paper-and-pencil questionnaire, including four self-report psychometric measurement scales, was administered between March 2019 and October 2020. The questionnaires were filled in at the participants' workplaces and then returned to the researchers. The study's aims and the ethical principles of confidentiality and voluntary participation were explained and ensured to participants.

The Persian validation by Zargar (2006) of the Addiction Potential Scale by Weed and colleagues (1992) was used to measure addiction potential. It is composed of 41 items and answers are given on a 5-point Likert scale ranging from "0 = strongly disagree" to "4 = strongly agree". The score ranges from 0 to 144 (0-36 = low addiction potential; 37-54 = moderate addiction potential; >54 = high addiction potential). Subdivision into three classes is part of the original versions of the scale (Weed et al., 1992; Zargar, 2006) and has been previously used by other Iranian studies (Amiri, Sadeghi et al., 2020). The validity and reliability of this instrument have been previously tested (Afshari, 2019;

Amiri, Sadeghi et al., 2020; Goudarzian et al., 2017; Saadat et al., 2019; Zargar, 2006). In the present study, Cronbach's alpha was 0.88 and Spearman-Brown's coefficient was 0.85.

The Persian translation by Maroufizadeh and colleagues (2014) of the Perceived Stress Scale by Cohen and colleagues (1983) was used to measure perceived stress. This is a unidimensional 10-item instrument measuring individual perceptions of stress in terms of uncontrollability, unpredictability, and overload in one's life. Participants were instructed to provide the frequency to which they were experiencing stress due to work on a 5-point Likert-type scale ranging from "0 = never" to "4 = very often" (0 – 13 = low stress; 14 – 26 = medium stress; 27 – 40 = high perceived stress). The psychometric characteristics of this instrument were deemed suitable in previous studies (Maroufizadeh et al., 2014). Cronbach's alpha was 0.83, and Spearman-Brown's coefficient was 0.80.

The Iranian Job Security Questionnaire by Mahmodian and Naisi was used to measure job security. This is a 30-item instrument measuring factors that protect or threaten job security in the workplace. Answers are given on a 5-point Likert-type scale ranging from "0 = strongly disagree" to "4 = strongly agree". The psychometric characteristics of this instrument were deemed suitable in previous studies (Mahmodian & Naisi, 2002). Cronbach's alpha was 0.90 and Spearman-Brown's coefficient was 0.88.

Finally, the Persian translation by Ghadiri and colleagues (2013) of the Job Satisfaction Scale by Brayfield and Rothe (1951) was used to measure job satisfaction. This is a 5-item instrument measuring employees' satisfaction with their job. Answers are given on a 5-point Likert-type scale ranging from "1 = strongly disagree" to "5 = strongly agree". The psychometric characteristics of this instrument were considered satisfactory in previous studies (Ghadiri et al., 2013). Cronbach's alpha was 0.81 and Spearman-Brown's coefficient was 0.80.

STATISTICAL ANALYSIS

Confirmatory Factor Analysis (CFA) was conducted to assess the dimensionality of the administered questionnaire. We compared a one-factor model with a four-factor model, with each factor representing the main study variables: addiction potential, perceived stress, job security, and job satisfaction. Composite reliability (CR), Cronbach's alpha, and Spearman-Brown's coefficient were computed to evaluate the reliability of the deployed psychometric measures. For CR, we adopted the cut-off values indicated by Hair and colleagues (2018), namely >0.70.

After ensuring that normal distribution assumptions were met by running the Kolmogorov-Smirnov test ($p < .05$), two main statistical procedures, one per each study's aim, were conducted. First, descriptive statistics were used to report on frequencies, means, and standard deviations from low, moderate, and high addiction potential, used as one categorical variable. Second, Pearson's correlation analysis, dummy coding for categorical dependent variables, and multiple linear regression analysis with all continuous predictors entered in a single step were run to investigate the predicting role of the occupational variables under study. The thresholds of statistical significance were set at $p < .05$, $p < .01$, and $p < .001$. Data analysis was performed using the SPSS and Mplus statistical software.

RESULTS

CONFIRMATORY FACTOR ANALYSIS

CFA showed a better fit for the four-factor than the one-factor version of the administered questionnaire. The one-factor model showed the following fit indices: χ^2 (3569) = 16673.96, χ^2/degrees of freedom (df) = 4.67, Root Mean Square Error of Approximation (RMSEA) = 0.09, Standardized Root Mean Square Residual (SRMR) = 0.11. The four-factor model showed the following fit indices, χ^2 (3563) = 13272.92, χ^2/df = 3.73, RMSEA = 0.08, SRMR = 0.09. Thus, the dimensionality of the administered questionnaire was assessed favorably since the four-factor fit was better than the single-factor fit. CR showed above-threshold values for addiction potential (0.89), job satisfaction (0.82),

perceived stress (0.84), and job security (0.91). Thus, the model measures' goodness of fit, and the structural validity and reliability were supported.

INCIDENCE OF ADDICTION POTENTIAL WITHIN THE STUDY SAMPLE

The average addiction potential in the overall study sample was 41.11 (SD = 19.90). Table 1 shows that the low addiction potential diagnostic category (n = 203, 47.20%) was the most represented. However, more than half (n = 227, 52.80%) of the sample fell between the moderate (n = 116, 27.00%) and the high (n = 111, 25.80%) addiction potential diagnostic categories.

Table 1. Frequencies and descriptives from addiction potential diagnostic categories

Diagnostic Category	N	%	Maddiction potential	Mperceived stress	Mjob security	Mjob satisfaction
Low	203	47.2	23.61	14.37	72.17	19.69
Moderate	116	27.0	46.38	18.32	66.70	18.54
High	111	25.8	67.61	20.28	61.72	16.45
Total	430	100				

Average perceived stress was lower among low-addiction potential employees (M = 14.37, SD = 5.11) than among moderate-addiction potential employees (M = 18.32, SD = 5.35). High-addiction potential employees showed the highest average level of perceived stress (M = 20.28, SD = 6.03). Also, average job security was higher among low-addiction potential employees (M = 72.17, SD = 14.32) than among moderate-addiction potential employees (M = 66.70, SD = 15.52). In contrast, high-addiction potential employees showed the lowest average level of job security (M = 61.72, SD = 13.75).

Finally, average job satisfaction was higher among low-addiction potential employees (M = 19.69, SD = 4.43) than among moderate-addiction potential employees (M = 18.54, SD = 3.82). In contrast, high-addiction potential employees showed the lowest average level of job satisfaction (M = 16.45, SD = 4.21).

Overall, these findings suggest that different degrees of addiction potential might have different associations with levels of perceived stress, job security, and job satisfaction.

OCCUPATIONAL PREDICTORS OF ADDICTION POTENTIAL AND ITS DIAGNOSTIC CATEGORIES

Table 2 shows the correlations among the examined variables. Among these results, we point out that the significant negative correlations between perceived stress and job security (r = -.27, p < .01) and job satisfaction (r = -.21, p < .01) were consistent with the theoretical propositions according to which being concerned about continuing to perform one's job can be associated with a stressful experience and that a positive attitude toward one's job can be used as a resource to cope with stressors (Frone & Windle, 1997; Taheri Nakhost, 2011).

Table 2. Correlations between variables

	N	M	SD	Perceived stress	Job security	Job satisfaction
Perceived stress	430	16.96	5.98	–		
Job security	430	67.99	15.11	-.27**	–	
Job satisfaction	430	18.54	3.97	-.21**	.55*	–
Addiction potential	430	41.11	19.90	.43**	-.33**	-.35**

As per the hypothesized regression model with addiction potential as the dependent variable, it was statistically significant (R^2 = .26, $F(3, 426)$ = 52.07, $p < .001$). Specifically, perceived stress ($p < .001$), job security ($p < .05$), and job satisfaction ($p < .001$) all significantly predicted employees' addiction potential. As expected, perceived stress (β = .35) was a positive predictor, thus supporting H1, whereas job security (β = -.11) and job satisfaction (β = -.20) were negative predictors, thus supporting H2 and H3 respectively.

Analyzing the regression models adopting the three levels of addiction risk as the dependent variable, low addiction potential as the dependent variable (R^2 = .20, $F(3, 426)$ = 37.17, $p < .001$) was significantly related to perceived stress (β = -.35, $p < .001$) and job satisfaction (β = .15, $p < .01$). In contrast, job security (β = .07, $p = .14$) did not significantly predict low addiction potential.

Moderate addiction potential as the dependent variable (R^2 = .02, $F(3, 426)$ = 3.08, $p < .05$) was significantly related to perceived stress (β = .13, $p < .01$), whereas job security (β = -.04, $p = .45$) and job satisfaction (β = .05, $p = .35$) were not significant predictors of moderate addiction potential.

Finally, high addiction potential as the dependent variable (R^2 = .16, $F(3, 426)$ = 28.90, $p < .001$) was significantly related to perceived stress (β = .26, $p < .001$) and job satisfaction (β = -.23, $p = .001$), whereas job security (β = -.04, $p = .42$) was not a significant predictor of high addiction potential.

DISCUSSION AND CONCLUSION

The study findings revealed that more than half of the sample showed moderate or high potential for addiction. In addition, a pattern of different associations between addiction potential diagnostics categories and occupational factors was suggested. Results also suggested that the more employees feel stressed and the less they feel secure and satisfied about their job, the more likely they are to develop an addiction to substances. Conversely, if employees do not perceive the existence of overwhelming stress and feel secure and satisfied about their job, they have less potential for addiction. These findings supported our H1, H2 and H3, proposing the perceived stress is positively related to addiction potential, whereas job security and job satisfaction are negatively related to employees' addiction potential.

The finding regarding the positive relationship between perceived stress and addiction potential can be explained by adopting the stress-induction and tension-reduction proposition (Conger, 1956; Cooper et al., 1995; Khantzian, 1997) as a theoretical reference. In this framework, substance use is understood as a coping strategy to reduce one's negative feelings from stress (Frone, 2008; Frone & Windle, 1997). A consistent interpretation can be given to the negative relationship between job security and addiction potential since job security is a condition in which employees do not worry about the continued existence of their job, thus avoiding a relevant source of stress (Zargar & Ghaffari, 2009; Zargar et al., 2008). The findings supported the role of job satisfaction concerning addiction potential. This result is in line with previous literature (Frone, 2008; Frone & Windle, 1997). However, it should be noted that Van Jaarsveld and Keyser (2018) found that employees reported lower levels of job satisfaction because they were using drugs. Thus, the relationship between job satisfaction and addiction might be considered bi-directional.

Stress was shown to be related to each level of addiction risk. It was negatively related to low conditions but positively related as early as the medium and high-risk levels. On the other hand, job satisfaction showed significant correlations only in the highest levels of addiction potential: a positive effect in the low-risk and a negative effect on the high-risk levels. Finally, when the risk categories of addiction potential and not the full scale were used, job security showed no significant relationships with the different potential risk levels. Results thus reveal how stress tends to bind more strongly and in more situations with addiction potential than job security and job satisfaction. There are at least two possible interpretations for this research evidence. First, the stress condition may relate to perceptions that are more likely to involve behaviors of reaction to it. In other words, participants are

more likely to use substances to react to a momentary stressful situation rather than concerning issues that unfold from long-established, less momentary perceptions, such as job security and job satisfaction. A second interpretation might instead be found in the Conservation of Resources (COR) theory (Hobfoll et al., 2018), according to which it is more harmful to individuals to lose resources (i.e., stress), compared to when there is a gain of resources (i.e., job security and job satisfaction). In other words, it would be primarily the negative effect of stress that would push toward addictive behaviors.

LIMITATIONS AND FUTURE RESEARCH

The present study has several limitations. Most of all, the gender imbalance within the study sample, the deployment of self-report measures, the use of cross-sectional data, and the peculiar Iranian contextualization of the study should be noted. These limitations prevent claiming generalizability of the study's findings. The cross-sectional nature of the data prevents us from making causal inferences about the relationships found among the variables under study. Future research may address these issues. Another limitation might be related to the use of the Perceived Stress Scale (Cohen et al., 1983; Maroufizadeh et al., 2014). Originally, this is a questionnaire that measures stressful life events, not directly occupational stress.

Further occupational predictors might be investigated in the future about employee addiction potentials, such as leadership, work-life balance, and worktime schedule. Moreover, it should be noted that, although it was out of the scope of the present study to gather empirical data regarding actual addiction or addictive behaviors that we could relate to the three levels of addiction potential (i.e., low, moderate, high), evidence is scarce even in the available literature, with Amiri, Khosravi et al. (2021) being an exception. Thus, it might be interesting for future studies to further establish the relationship between the three levels of addiction potential and actual addiction or addictive behaviors within the working population, to better understand what low, moderate, and high risk means for workers. Finally, the causal chain of addiction potential could be expanded beyond the factors considered here, by including personality traits and dispositional factors. For instance, it is known that neuroticism is positively associated with perceived job stress (Bergomi et al., 2017; Mamcarz et al., 2019; Törnroos et al., 2013), so it might be that, in an introspective rating, people being more nervous about their job are also rating themselves as being more vulnerable to addiction. We propose this point as a final input to future research.

APPLIED IMPLICATIONS

Despite its limitations, the study's results hold relevant theoretical and practical implications for managers and policymakers. On the one hand, they advance the available knowledge about addiction potential within the specific population of public employees, thus shedding light on the relationships that the focused construct of addiction potential has with occupational predictors such as perceived stress, job security, and job satisfaction. Based on the study's findings, perceived stress might be understood as a risk factor for employees to develop an addiction. In contrast, job security and satisfaction might be considered protective factors.

On the other hand, professionals and practitioners might exploit this knowledge to design, develop, and implement strategies and interventions that, to prevent or reduce addiction potential among employees, should reduce perceived stress and increase job security and job satisfaction. Employers might implement actions, for instance, designing, organizing, and managing jobs in a way that provides favorable working conditions, such as autonomy, flexibility, and job security. However, these actions might also be carried out at the national and international policymaking level, for example, by developing laws that ensure fair labor rights and a more stable labor market.

Finally, we suggest organizations carry out periodical surveys to investigate addiction among their employees and act upon it. Employee well-being surveys should be good practice in organizations

around the world. We suggest, for the Iranian and international context, to make sure not only that these surveys are conducted, but also that they investigate the area of addiction potential, which is too often still taboo in organizations around the globe. Particularly, there is the risk that employees might be reluctant to report the use of drugs due to social desirability (Johnson & Fendrich, 2005) so organizational surveys should guarantee that data are collected anonymously.

CONCLUSION

To conclude, substance addiction can be an issue facing both employers and employees. In this study, we have provided knowledge on the tendency to develop substance addictions, particularly focusing on the predicting role of stress, job satisfaction, and job security. Managers and practitioners can use it to inform preventative actions to be implemented at their workplaces. For instance, as indicated by recent literature (Frone et al., 2022), organizations may consider workplace-supported recovery actions to deal with substance use disorders among employees.

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