



Effectiveness of Interventions on Habits Among University Staff in Southeastern Iran

Maryam Seraji ¹, Fariba Shahraki-Sanavi ^{1,*}, Alireza Ansari-Moghaddam ¹, Sara Rezaei ²

¹ Department of Public Health, Health Promotion Research Center, School of Health, Zahedan University of Medical Sciences, Zahedan, Iran

² Department of Research, School of Public Health, Zahedan University of Medical Sciences, Zahedan, Iran

*Corresponding Author: Department of Public Health, Health Promotion Research Center, School of Health, Zahedan University of Medical Sciences, Zahedan, Iran.
Email: faribasnavi@gmail.com

Received: 30 April, 2024; Revised: 12 May, 2024; Accepted: 25 May, 2024

Abstract

Background: Health-promoting environments are a key focus of the Ottawa Strategic Charter, which aims to enhance health in the workplace and reduce unhealthy behaviors among employees.

Objectives: This study aimed to evaluate the effectiveness of health-promoting interventions on the habits of university staff in Southeastern Iran.

Methods: This semi-experimental study was conducted from 2020 to 2021 in Zahedan, Southeastern Iran. A total of 254 administrative staff from the University of Medical Sciences and Sistan & Balochistan University were selected using available randomized methods and divided into control and intervention groups. The study instrument was a researcher-designed questionnaire, which demonstrated a content validity ratio (CVR) of 0.8, a Content Validity Index (CVI) ranging from 0.83 to 0.97, and an internal consistency with a Cronbach's alpha of 0.85. The questionnaire was distributed online via the Porsline platform. For the intervention, training sessions were conducted online, and the session files and training booklet were made available to intervention group staff through the university's education system. A post-test was administered one month after the pretest. Data were analyzed using SPSS 21 software, with pretest results adjusted using chi-square and ANCOVA statistical tests.

Results: The study found that the mean age of participants was 40.5 ± 7.4 years. Scores for employee knowledge, attitude, and behavior were 80.0 ± 16.4 , 86.6 ± 22.8 , and 80.8 ± 17.6 , respectively. The most significant factors influencing attitudes were education ($P < 0.001$) and health status ($P = 0.001$). Type of employment ($P = 0.025$), work experience ($P = 0.017$), and health status ($P = 0.037$) were also significantly associated with behavior. After adjusting for pretest results, there were significant differences between the intervention and control groups in terms of scores for knowledge, attitude, and behavior ($P < 0.001$).

Conclusions: The study concluded that employees with correct attitudes and healthy behaviors reported better health outcomes. Additionally, educational interventions effectively improved staff knowledge, attitudes, and behavior. To enhance health status, reduce employee disability, decrease absenteeism, and increase organizational productivity, it is recommended to plan and implement workplace health promotion programs focused on employees.

Keywords: Cigarette, Alcohol, Drug, Staff, Iran

1. Background

Lifestyle factors such as smoking, alcohol consumption, and drug use are strongly associated with poor health outcomes and reduced mental capacity. Illicit drug use is a significant contributing factor to these health issues (1). Additionally, smoking and alcohol consumption are major avoidable risk factors that contribute to morbidity and mortality (2).

The likelihood of premature death due to smoking-related diseases is very high. Smoking also has substantial financial and social impacts on the workforce, reducing productivity due to increased mortality, absenteeism, sick leave, and disability (3). Meta-analysis of 29 longitudinal and cohort studies showed a 33% increased risk of absenteeism among smokers compared to non-smokers. Smokers were absent for an average of 2.74 more days per year

compared to non-smokers. The risk of absenteeism increased by 14% for ex-smokers compared to never smokers, but there was no increase in the duration of absence. The risk increased by 19% for current smokers compared to ex-smokers (3).

Morbidity and mortality are also significantly affected by alcohol and drug use (4). Alcohol is the most commonly used and misused psychoactive substance in the workforce (5), with risky levels of consumption reported by 10% to 30% of employees (6). The use of alcohol among employees can lead to increased sickness absence (7-9) and adversely affect employee health and productivity, increasing healthcare costs. Given that most adults spend a majority of their waking hours in formal employment, it is important to understand the potential impact of the work environment on employee alcohol use. For example, negative work experiences are generally believed to lead to high levels of alcohol consumption due to stress at work (10).

Additionally, 3.1% of the workforce reported using illicit drugs before or during work hours, and 2.9% reported working under the influence of illicit drugs. Some vulnerable subgroups have a higher prevalence of illicit drug use and related disabilities at work. Among young women in high-risk occupations, 10.6% reported illicit drug use at work and 11.4% had drug disorders at work. Among young men in high-risk occupations, 28% reported illicit drug use at work, and 26.3% had workplace drug disorders (11). Alcohol and illegal drug use by employees can cause work-related absenteeism (12), off-the-job injuries, and health problems that concern employers. Employee drug use and impairment in the workplace can lead to decreased productivity and increased risk of accidents and injuries. Exposure to drug use in the workplace has several negative consequences: Decreased workplace safety, increased workload, and decreased morale (12, 13).

Research suggests that workplace interventions should focus on creating supportive work environments, providing skill training, and managing stress, as these are most likely to promote healthier lifestyles (8).

2. Objectives

The aim of this study was to assess the knowledge, attitudes, and practices (KAP) of university staff regarding habits such as cigarette smoking, alcohol

consumption, and drug use and to improve current conditions.

3. Methods

3.1. Type of Study, Sample Size and Sampling

This semi-experimental intervention study, in 2021, on public university employees; University of Medical Sciences (control group) and University of Sistan and Baluchistan (intervention group) in the south-east of Iran, Zahedan. Based on the formula of interventional studies and based on the study of Fayazbakhsh et al., that the general health of the studied employees was 27.34 ± 12.06 (14) and with a test power of 95% and an error rate of 0.05, with the aim of improving 15% of behavior in Employees, the sample size was 236 people (118 people in each group). Finally, the study included a total of three hundred people (150 in each group) due to the sliding down of each group.

3.2. Inclusion and Exclusion Criteria

All the employees working at Zahedan University of Medical Sciences and University of Sistan and Baluchistan in the academic year 2021 were included in the study, and the completed questionnaires with duplicate IP addresses and the completed questionnaires in less than half of the expected time (less than 15 minutes) and the incomplete questionnaires were excluded from the study. Lastly, 110 and 144 questionnaires were analyzed in the control and intervention groups.

3.3. Study Implementation

Due to the Corona situation, an online questionnaire was designed and an announcement was made in the administrative automation of the staff of Sistan and Baluchistan University and Zahedan University of Medical Sciences about the purpose of the study and the confidentiality of the information. Subjects were voluntarily included in the study by complying with ethical codes and obtaining informed consent.

3.4. Research Tool

The instrument used was a researcher-made questionnaire based on previous studies.

- Formal validity determination: The questionnaire was provided to ten experts with experience in the field,

and they were asked to express their views on the appropriateness, suitability, and inappropriateness of the questionnaire's appearance in relation to the research objectives. Questions that experts selected as completely appropriate and suitable were approved.

- Content validity ratio: Based on the expert panel's opinion, a three-part Likert scale criterion was devised for each item to measure constructs, indicating whether an item is necessary, useful but not necessary, or unnecessary. Ten experts will provide feedback on the questions, and those questions that score above 0.62 according to the Lawshe table remain in the questionnaire.

- Content validity index: The expert panel evaluated whether items were designed to measure constructs in the best way using a four-part Likert scale based on simplicity and fluency, relevance or specificity, and clarity and transparency criteria. The scores were calculated, and items with a CVI score above 79% were deemed suitable for inclusion in the final questionnaire based on expert feedback and suggestions.

- Reliability: The questionnaire was administered to 20 employees, and after calculating its reliability using Cronbach's alpha, questions with a reliability score above 0.70 were retained.

The validity of the final questionnaire was confirmed based on the opinion of ten experts and the Kendall coefficient with a content validity ratio (CVR) of 0.8, a content validity index (CVI) of 0.83 - 0.97, and the internal consistency of the instrument with Cronbach's alpha of 0.85.

The questions of the 36-question include: Demographic information (6 questions) and knowledge questions (10 questions) where the correct answer is scored as 2 and I don't know as a score of 1 and incorrect answers are scored as zero, attitude questions (10 questions) that I completely agree with the Likert scale. I agree, neither agree nor disagree, strongly disagree and disagree and the scores were 0 - 5, performance questions (10 questions) with the range of always, sometimes and never with scores of 0 - 2. The online questionnaire was uploaded on the [Iranian Porsline platform](#). The duration of completing the questionnaire was considered 30 minutes.

3.5. Educational Content

After collecting the pretest questionnaires, analyzing the data of the participating, the training requirements of the intervention group employees were determined; the self-control booklet for prevention and control of tobacco, alcohol and drug consumption, being developed on the basis of scientific arguments, and having been adjusted at a meeting of experts to enhance the quality and assurance of their appropriateness.

In order to intervene, a training meeting was held online for sixty minutes in the educational system of Sistan and Baluchistan University, in the form of lecture, questioning, and discussion; the booklet and meeting were uploaded into the educational system of Sistan and Baluchistan University, and a month after intervention the post-test examination was completed again in the employment portal, and completed by staff in the intervention and control universities.

3.6. Statistical Analysis

Data were described with frequency, percentage, chi-square tests, as well as mean and standard deviation. On the other hand, univariate and multivariate analysis was performed based on demographic variables and examination of changes in pre-test and post-test average scores between the intervention and control groups after pre-test scores were adjusted using SPSS 21 software.

4. Results

A total of 254 employees from two universities participated in the study. The mean age was 40.5 ± 7.4 years, with most participants being female (71.1%) and married (82.7%). Most had over 10 years of work experience (70.9%) and at least a bachelor's degree (85.5%). The majority were in good health (61.7%).

Before the intervention, the mean scores for knowledge (80.0 ± 16.4), attitude (86.6 ± 22.8), and behavior (80.8 ± 17.6) regarding habits were over 80% of the total score. No significant relationships were found between knowledge and health or demographic factors. Attitude was significantly more positive among employees with higher education levels ($P = 0.001$), better health ($P = 0.001$), contractual employment ($P = 0.004$), and females ($P = 0.029$). In the multi-factor model, the most important factors related to attitude were education ($P < 0.001$) and health condition ($P = 0.001$). Behavior was significantly more positive among

Table 1. Mean of Knowledge, Attitude, and Behavior About Habit (Drug Abuse, Cigarette and Alcohol Use) Before Intervention Based on Health Condition and Demographic Factors

Variables	Knowledge			Attitude			Practice		
	Mean ± SD	P-Value ^a	P-Value ^b	Mean ± SD	P-Value ^a	P-Value ^b	Mean ± SD	P-Value ^a	P-Value ^b
Gender		0.584	NS ^c		0.029	NS ^c		0.027	NS ^c
Female	79.6 ± 16.3			88.6 ± 19.9			82.4 ± 14.1		
Male	80.8 ± 16.7			81.7 ± 28.3			77.0 ± 23.8		
Marital status		0.545	NS ^c		0.631	NS ^c		0.248	NS ^c
Single	78.3 ± 20.1			87.9 ± 21.9			83.6 ± 12.4		
Married	80.0 ± 15.6			86.0 ± 23.2			80.1 ± 18.7		
Type of employment		0.206	NS ^c		0.004	NS ^c		0.001	0.025
Permanent	78.5 ± 16.2			88.7 ± 18.5			84.2 ± 11.6		0.020
Contractual	82.8 ± 14.0			92.1 ± 14.3			84.7 ± 13.5		0.016
Temporary	79.0 ± 17.8			81.2 ± 28.5			75.4 ± 21.9		Ref.
Age (y)		0.465	NS ^c		0.695	NS ^c		0.105	NS
Equal/less than 35	81.6 ± 17.9			86.2 ± 22.9			77.0 ± 18.5		
36 - 45	80.7 ± 15.7			88.9 ± 19.6			82.8 ± 14.5		
More than 45	78.3 ± 13.9			88.0 ± 20.9			80.6 ± 21.5		
Work experience (y)		0.942	NS ^c		0.601	NS ^c		0.002	0.017
Under 5	80.8 ± 27.0			83.0 ± 28.7			79.6 ± 17.1		0.211
5 - 10	81.4 ± 13.5			83.5 ± 25.7			74.5 ± 20.2		0.727
10 - 15	79.3 ± 17.0			87.6 ± 20.6			83.3 ± 12.3		0.044
15 - 20	80.2 ± 14.9			90.0 ± 20.1			87.5 ± 12.6		0.007
More than 20	79.0 ± 13.8			86.7 ± 21.9			78.2 ± 21.1		Ref.
Education		0.142	NS ^c		0.001	< 0.001		0.009	NS ^c
Diploma	73.3 ± 25.1			65.9 ± 36.2		< 0.001	70.2 ± 29.9		
Associate degree	78.8 ± 10.2			75.8 ± 32.8		0.046	74.1 ± 18.1		
BSc	82.1 ± 15.4			89.9 ± 17.7		0.674	82.2 ± 14.6		
MSc and PhD	79.3 ± 15.7			89.6 ± 18.6		Ref.	82.2 ± 16.4		
Health condition		0.064	NS ^c		0.001	0.001		0.043	0.037
Very low	64.0 ± 19.4			48.0 ± 47.7		Ref.	63.0 ± 25.3		Ref.
Low	78.0 ± 17.0			83.7 ± 23.9		< 0.001	78.9 ± 20.3		0.104
Much	81.3 ± 14.8			90.1 ± 18.7		0.046	82.6 ± 15.3		0.015
Very much	82.3 ± 25.0			77.3 ± 30.2		0.674	77.6 ± 17.9		0.062

^a One-factor model.^b Multi-factor model.^c NS: Not significant.

employees with 10-20 years of work experience ($P = 0.002$), higher education levels ($P = 0.009$), better health ($P = 0.043$), permanent and contractual employment ($P = 0.001$), and females ($P = 0.027$). According to the multi-factor model, the most important factors related to behavior were type of employment ($P = 0.025$), work experience ($P = 0.017$), and health condition ($P = 0.037$) (Table 1).

Comparison of the intervention and control groups has been illustrated in Table 2. In contrast to gender ($P = 0.120$), marital status ($P = 0.422$), and education ($P =$

0.419), there was a significant difference between the intervention and control groups in terms of age ($P < 0.001$), type of employment ($P < 0.001$), work experience ($P < 0.001$), and health condition ($P = 0.029$).

Intervention and control groups were significantly different in knowledge ($P = 0.012$), attitude ($P < 0.001$), and behavior ($P < 0.001$) before the intervention. After adjusting for pre-measures, the post-pre difference in knowledge ($P < 0.001$), attitude ($P < 0.001$), and behavior ($P < 0.001$) was significantly different between the intervention and control groups. In addition, by

Table 2. Frequency Distribution of Health and Demographic Factors in Intervention and Control Group

Variables and Group	Intervention Group (n = 144)	Control Group (n = 110)	Group Comparison (P-Value) ^a
Gender			0.120
Female	108 (75.0)	72 (66.1)	
Male	36 (25.0)	37 (33.9)	
Marital status			0.422
Single	22 (15.3)	21 (19.1)	
Married	122 (84.7)	89 (80.9)	
Age (y)			< 0.001
Equal/ less than 35	21 (14.6)	47 (46.1)	
36 - 45	80 (55.6)	34 (33.3)	
> 45	43 (29.9)	21 (20.6)	
Type of employment			< 0.001
Permanent	45 (60.0)	30 (40.0)	
Contractual	71 (95.9)	3 (4.1)	
Temporary	28 (26.7)	77 (73.3)	
Work experience (y)			< 0.001
Under 5	4 (2.8)	21 (19.1)	
5 - 10	10 (6.9)	39 (35.4)	
15 - 20	43 (29.9)	19 (17.3)	
10 - 20	42 (29.2)	9 (8.2)	
> 20	45 (31.2)	22 (20.0)	
Education			0.419
Diploma	9 (6.3)	12 (11.0)	
Associate degree	9 (6.3)	8 (7.3)	
BSc	56 (38.9)	45 (41.3)	
MSc and PhD	70 (48.6)	44 (40.4)	
Health condition			0.029
Very low	0 (0.0)	5 (4.5)	
Low	50 (34.7)	32 (29.1)	
Much	89 (61.8)	65 (59.1)	
Very much	5 (3.5)	8 (7.3)	

^a Pre-attitude (P < 0.001); pre-practice (P < 0.001).

eliminating the effect of knowledge and attitude, the post-pre difference in behavior was still significantly different between the intervention and control groups (P = 0.013) (Table 3).

5. Discussion

Two hundred and fifty-four employees of public universities in south-eastern Iran were included in the present study. The results showed that most employees were aware of the individual habits examined (smoking, alcohol, and drugs) and had appropriate attitudes and behaviors. Female, contracted, and higher-educated employees had better attitudes; and people with the right attitude also reported better health. Education was the most important factor in the right attitude.

Appropriate behavior was also related to 10 - 20 years of work experience, type of contract employment, better health, and female gender, which were the main variables influencing healthy behavior, work experience, and type of employment. In addition, people with better health exhibited healthier behaviors. In general, the results after the educational intervention showed a statistically significant difference between the scores for awareness, attitude, and achievement in the employees' individual habits after adjustment for the pre-test results and the demographic variables effective in the study.

A cross-sectional study conducted on knowledge gaps related to smoking and the demographics of Iraqi university students showed that smoking was positively

Table 3. Mean of Knowledge, Attitude, and Behavior Before and After Intervention

Time Structure	Pre	Post	Post-pre difference	P-Value ^a	P-Value ^b	P-Value ^c
Knowledge				< 0.001	< 0.001	---
Intervention	82.26 ± 13.23	91.08 ± 11.01	8.82 ± 13.57			
Control	77.04 ± 19.47	77.64 ± 19.80	0.59 ± 8.42			
Attitude				< 0.001	0.001	---
Intervention	93.47 ± 10.43	96.49 ± 7.85	3.02 ± 11.44			
Control	77.68 ± 30.31	78.68 ± 25.83	1.00 ± 9.45			
Behavior				< 0.001	0.002	0.013
Intervention	85.14 ± 12.03	88.40 ± 11.66	3.26 ± 13.74			
Control	75.09 ± 21.79	75.59 ± 19.68	0.50 ± 11.83			

^a ANCOVA model for comparing practice difference between intervention and control group adjusted for pre-intervention practice.

^b ANCOVA model for comparing practice difference between intervention and control group adjusted for pre-intervention practice, age, work experience, health condition, and type of employment.

^c ANCOVA model for comparing practice difference between intervention and control group adjusted for pre-intervention practice, age, work experience, health condition, type of employment, knowledge difference, and attitude difference.

associated with male gender, increasing age, being unmarried, attending college, drinking alcohol, and having positive attitudes towards smoking and related to the father's level of education (15). A study in southern Iran found that men use hookahs 2.8 times more often than women. The risk of hookah smoking was 4.9 times higher in the 18 - 24 age group than in the +45-age group. University-educated people were 1.4 and 1.7 times more likely to use hookah than college-educated and illiterate people, respectively (16).

In line with the results of this study, Rosendahl et al. found essentially no association between knowledge and future tobacco use (17). In contrast to another research, there was a strong association between the certainty that one could quit smoking based on knowledge and tobacco use, and a strong association between tobacco use and attitudes. The first is that ambivalence has a strong impact on smoking behavior over time. They also found that positive attitudes likely predict people's past and future smoking behavior (18). Larsen and Cohen found that positive and negative responses to smoking were equal, and there was a strong association between attitudes and smoking. Thus, positive attitudes toward smoking predicted how much someone had smoked in the past, while negative attitudes predicted nothing about past or current smoking behavior (19).

Xu et al. found that overall scores for attitudes toward smoking and positive behaviors toward quitting smoking differed significantly among the three groups according to educational level. Researchers concluded

that young adult males with higher education have better knowledge about the dangers of smoking and more positive attitudes toward smoking. Overall, the results indicate the impact of education on smoking-related KAP in young adults (20). The results of the study "Effectiveness of education about healthy lifestyles on workers' attitudes towards drug use" show that the two-month training of the healthy lifestyle program had an effect on the overall attitudes towards addiction in the intervention group, reducing the prevalence and harm of addiction in the workplace (21).

5.1. Limitations

The limitation of the present study was the simultaneous implementation of the study with the epidemic of Covid-19 and the busy work of the employees of Zahedan University of Medical Sciences, resulting in their reduced participation in the study.

5.2. Conclusions

In general, the working environment is one of the important channels for the implementation of prevention programs. Therefore, it can be concluded that work environments are one of the main elements for the implementation of a community-oriented program aimed at changing knowledge, attitudes, and behavior related to smoking, alcohol, and drug use in the community. In addition, based on the results of the study, it is proposed to design and implement comprehensive and integrated workplace health

promotion interventions and programs with a focus on improving employee attitudes to enable them to develop healthy behavioral habits.

Acknowledgements

This study was approved by the Ethics Committee of Zahedan University of Medical Sciences (IR.ZAUMS.REC.1397.489). The project's financial resources were provided by the Research and Technology Vice-Chancellor of Zahedan University of Medical Sciences. We would like to thank the staff of the University of Sistan and Baluchistan and Zahedan University of Medical Sciences for their assistance in the implementation of this study.

Footnotes

Authors' Contribution: S. R. contributed to the experimental design and data collection. M. S. assisted in the experimental design, teachings and critically reviewed the manuscript. F. Sh. S. conceived and designed the experiment, teachings and conducted data collection, and wrote the manuscript. A. A. M. assisted in analyzing and data interpretation, manuscript revision and final approval.

Conflict of Interests Statement: This research does not have any conflicts of interest.

Data Availability: The dataset presented in the study is available on request from the corresponding author during submission or after publication.

Ethical Approval: This study was approved by the Ethics Committee of Zahedan University of Medical Sciences (IR.ZAUMS.REC.1397.489).

Funding/Support: This project's financial resources have been provided by the Research and Technology Vice-Chancellor of Zahedan University of Medical Sciences. Thanks to the staff of the University of Sistan and Baluchistan and Zahedan Medical Sciences who helped us in the implementation of the study.

Informed Consent: Subjects were voluntarily included in the study, with adherence to ethical codes and obtaining informed consent.

References

1. Degenhardt L, Whiteford HA, Ferrari AJ, Baxter AJ, Charlson FJ, Hall WD, et al. Global Burden of Disease Attributable to Illicit Drug Use and Dependence: Findings From the Global Burden of Disease Study 2010. *Lancet*. 2013;**382**(9904):1564-74. [PubMed ID: 23993281]. [https://doi.org/10.1016/S0140-6736\(13\)61530-5](https://doi.org/10.1016/S0140-6736(13)61530-5).
2. Forouzanfar MH, Afshin A, Alexander LT, Anderson HR, Bhutta ZA, Biryukov S, et al. Global, Regional, and National Comparative Risk Assessment of 79 Behavioural, Environmental And Occupational, and Metabolic Risks or Clusters of Risks, 1990-2015: A Systematic Analysis for the Global Burden of Disease Study 2015. *Lancet*. 2016;**388**(10053):1659-724. [PubMed ID: 27733284]. [PubMed Central ID: PMC5388856]. [https://doi.org/10.1016/S0140-6736\(16\)31679-8](https://doi.org/10.1016/S0140-6736(16)31679-8).
3. Weng SF, Ali S, Leonardi-Bee J. Smoking and Absence From Work: Systematic Review and Meta-Analysis of Occupational Studies. *Addiction*. 2013;**108**(2):307-19. [PubMed ID: 23078132]. <https://doi.org/10.1111/add.12015>.
4. McNeely J, Kumar PC, Rieckmann T, Sedlander E, Farkas S, Chollak C, et al. Barriers and Facilitators Affecting the Implementation of Substance Use Screening in Primary Care Clinics: A Qualitative Study of Patients, Providers, and Staff. *Addict Sci Clin Pract*. 2018;**13**(1):8. [PubMed ID: 29628018]. [PubMed Central ID: PMC5890352]. <https://doi.org/10.1186/s13722-018-0110-8>.
5. Thorrisen MM, Skogen JC, Bonsaksen T, Skarpaas LS, Aas RW. Are Workplace Factors Associated With Employee Alcohol Use? the WIRUS Cross-Sectional Study. *BMJ Open*. 2022;**12**(10). e064352. [PubMed ID: 36229146]. [PubMed Central ID: PMC9562323]. <https://doi.org/10.1136/bmjopen-2022-064352>.
6. Thorrisen MM, Skogen JC, Aas RW. The Associations Between Employees' Risky Drinking and Sociodemographics, and Implications for Intervention Needs. *BMC Public Health*. 2018;**18**(1):735. [PubMed ID: 29898703]. [PubMed Central ID: PMC6000943]. <https://doi.org/10.1186/s12889-018-5660-x>.
7. Amiri S, Behnezhad S. Alcohol Consumption and Sick Leave: A Meta-Analysis. *J Addict Dis*. 2020;**38**(2):100-12. [PubMed ID: 32037988]. <https://doi.org/10.1080/10550887.2020.1724606>.
8. Hashemi N S, Skogen JC, Sevic A, Thorrisen MM, Rimstad SL, Sagvaag H, et al. A Systematic Review and Meta-Analysis Uncovering the Relationship Between Alcohol Consumption and Sickness Absence. When Type of Design, Data, and Sickness Absence Make a Difference. *PLoS One*. 2022;**17**(1). e0262458. [PubMed ID: 35015789]. [PubMed Central ID: PMC8752011]. <https://doi.org/10.1371/journal.pone.0262458>.
9. Schou L, Moan IS. Alcohol Use-Sickness Absence Association and the Moderating Role of Gender and Socioeconomic Status: A Literature Review. *Drug Alcohol Rev*. 2016;**35**(2):158-69. [PubMed ID: 26331574]. <https://doi.org/10.1111/dar.12278>.
10. Frone MR. Relations of Negative and Positive Work Experiences to Employee Alcohol Use: Testing the Intervening Role of Negative and Positive Work Rumination. *J Occup Health Psychol*. 2015;**20**(2):148-60. [PubMed ID: 25528689]. [PubMed Central ID: PMC4372465]. <https://doi.org/10.1037/a0038375>.
11. Frone MR. Prevalence and Distribution of Illicit Drug Use in the Workforce and in the Workplace: Findings and Implications From a U.S. National Survey. *J Appl Psychol*. 2006;**91**(4):856-69. [PubMed ID: 16834510]. <https://doi.org/10.1037/0021-9010.91.4.856>.
12. Frone MR. Employee Alcohol and Illicit Drug Use: Scope, Causes, and Organizational Consequences. In: Barling J, Cooper CL, editors. *The SAGE Handbook of Organizational Behavior: Volume 1 - Micro Approaches*.

1. 1st ed. Queen's University, Canada.; SAGE Publications Ltd; 2008. p. 519-40. <https://doi.org/10.4135/9781849200448.n28>.
13. Frone MR. Does a Permissive Workplace Substance Use Climate Affect Employees Who Do Not Use Alcohol and Drugs at Work? a U.S. National Study. *Psychol Addict Behav.* 2009;**23**(2):386-90. [PubMed ID: 19586158]. [PubMed Central ID: PMC2760538]. <https://doi.org/10.1037/a0015965>.
14. Fayazbakhsh A, Tavakoli MR, Hosseinzadeh S, Abbasi Moghadam MA. [The Relationship between Public Health and Burnout among Hospital Staff in Tehran University of Medical Sciences]. *Payavard Salamat.* 2017;**10**(6):488-95. FA.
15. Mousawi AA. The Prevalence of Smoking Among Karbala/Iraq University Students in Iraq in 2005. *Tob Use Insights.* 2014;**7**:9-14. [PubMed ID: 25741180]. [PubMed Central ID: PMC4335460]. <https://doi.org/10.4137/TUI.S12238>.
16. Danaei M, Jabbarinejad-Kermani A, Mohebbi E, Momeni M. Waterpipe Tobacco Smoking Prevalence and Associated Factors in the Southeast of Iran. *Addict Health.* 2017;**9**(2):72-80. [PubMed ID: 29299209]. [PubMed Central ID: PMC5742413].
17. Rosendahl KI, Galanti MR, Gilljam H, Ahlbom A. Knowledge About Tobacco and Subsequent Use of Cigarettes and Smokeless Tobacco Among Swedish Adolescents. *J Adolesc Health.* 2005;**37**(3):224-8. [PubMed ID: 16109342]. <https://doi.org/10.1016/j.jadohealth.2004.08.021>.
18. Ma GX, Shive S, Legos P, Tan Y. Ethnic Differences in Adolescent Smoking Behaviors, Sources of Tobacco, Knowledge and Attitudes Toward Restriction Policies. *Addict Behav.* 2003;**28**(2):249-68. [PubMed ID: 12573677]. [https://doi.org/10.1016/s0306-4603\(01\)00225-8](https://doi.org/10.1016/s0306-4603(01)00225-8).
19. Larsen JT, Cohen LM. Smoking Attitudes, Intentions, and Behavior Among College Student Smokers: Positivity Outweighs Negativity. *Addict Res Theory.* 2009;**17**(6):637-49. <https://doi.org/10.3109/16066350802068854>.
20. Xu X, Liu L, Sharma M, Zhao Y. Smoking-Related Knowledge, Attitudes, Behaviors, Smoking Cessation Idea and Education Level Among Young Adult Male Smokers in Chongqing, China. *Int J Environ Res Public Health.* 2015;**12**(2):2135-49. [PubMed ID: 25689992]. [PubMed Central ID: PMC4344716]. <https://doi.org/10.3390/ijerph120202135>.
21. Mohammadi A. [The Effectiveness of education of healthy lifestyle on attitudes toward the narcotic use among workers]. *Rooyesh-e-Ravanshenasi Journal(RRJ).* 2019;**8**(7):231-8. FA.