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Status of substance abuse literacy in manufacturing and production sites in Iran: Results from a nationwide survey

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Abstract

Background: Due to highly risk-taking behaviors such as alcohol and drug use status of health literacy at workplace is a major concern for health policy makers. Substance abuse literacy (SAL) includes the individuals' skills to obtain, understand and use substance-relevant health information. This will help to establish a healthy communication in a workplace setting and developing professional knowledge on workplace safety regulations, risky approaches and behaviours that may hurt the community workers. Since poor SAL status would inevitably cause serious harms to both community workers' health and facilities this study aimed to determine the status of SAL among manufacturing and production workers in Iran.

Methods: This is a nationwide cross-sectional survey conducted on 13,600 subjects who were selected through simple randomization into 380 workplaces in 31 provinces of Iran during February 2015 to January 2016. Data were collected through an author-made structured questionnaire by some trained interviewers. The study tool was developed using the literature and then sent to some experts for approving internal validity; minor changes were applied. Internal reliability test in 30 samples yielded Cronbach's alpha of 0.82. All the questionnaires were administered at the participants' workplaces following obtaining their consent on releasing blinded information.

Results: Given that the score range was from 1 to 5, the mean for SAL in substance abuse was 4.04, so that the highest and lowest means were related to East Azerbaijan (4.22±0.74) and Hormozgan (3.69±0.73) provinces, respectively.

Conclusion: This study revealed that the Iranian workers SAL status was fairly high despite the reported high rate of substance abuse (30%) among Iranian workforces. This apparently contradictory finding could be resolved using Syndemics in which refers to clustering of several issues in a society that contribute to and result from socioeconomic and cultural factors and inequalities. Therefore, it is still necessary for policy makers and other researchers to take this issue into consideration in Iranian manufacturing and production plants.

Keywords: Substance abuse literacy, Health literacy, Iranian worker, Production site

Conflicts of Interest: None declared
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Introduction

Health literacy has been evolved from 1970's and appeared in a variety of disciplines most notably medical education, healthcare policy-making, library science, public and occupational health, and mental health, as well (1). American Institute of Medicine has defined the health literacy (HL) as the "degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions" (2). The definition points at the term "literacy" as the "capacity to obtain, process and understand", while in the 2015 American Association of College and Research Libraries (ACRL) updated the defini-

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↑What is "already known" in this topic:
The rate of substance abuse in Iranian workplace is reported to be high (33%) and this denotes that the Iranian workforce substance abuse literacy is limited.

→What this article adds:
It was revealed that the status of Iranian workers' SAL is overall high, though this is not enough and there might have been a variety of other factors affecting the rate of substance abuse in Iran.

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tion and moved beyond the basic "need-search-find-use" cliché and put a greater emphasis on creation, value and the ethical issues surrounding it (3).

In terms of ontology, health literacy (HL) or health information literacy (HIL) is an umbrella term for substance abuse literacy (SAL) known also as addiction information literacy (3). Based on a proposed model in 2012 (5), HL includes 12 dimensions of knowledge, motivation, competence assessment, understanding, encouragement and application of health-related information for care, prevention, and promotion.

While it is highly critical for the wellbeing of the people and society, unfortunately, health literacy is not well addressed in many modern societies (9). According to the WHO (6), modern societies actively market unhealthy lifestyle and their education systems too often fail to provide people with reliable health information literacy. This paradox has led a dramatic increase in healthcare expenditures worldwide. For instance, Eichler et al (8) reported that the burden of low-level health literacy on the healthcare system level ranges from 3 to 5% of healthcare total cost per year and on the patients' level ranges from US $143 to 7,798 per person per year (8).

HL limitations may cause several complications such as lack of accessibility to appropriate health services, less willingness to follow treatment, low medication coherence, increasing the emergency presentation, increasing the treatment period in hospital, and high mortality rate (6, 8). Also, according to the WHO's "Solid Facts" book, weak health literacy may result in less healthy choices, riskier behavior, poorer health, less self-management and more hospitalization (6). Thus, limited health literacy is a silent killer hiding behind all health-related issues (7).

In a national study (10), it was revealed that about 40% of Iran's population had limited health literacy, mostly in vulnerable groups including the elderly, housewives, unemployed people and people with limited general literacy. Health literacy in the workplace, as the third place (the two others being home and school), points at the importance of organizational responsibilities in educating workers to access, appraise and apply health information on individual and occupational health concerns (11). Many studies have examined the consequences of limited health literacy in the incidence of diabetes, asthma, cancer, cardiovascular disease and mental disorders, while a few studies are performed on the association between the prevalence of substance abuse and health literacy (12) (Lincoln et al. 2006).

Given the increasing growth of substance use in the workplace, substance abuse literacy could be one of the effective toolkits to prevent the abuse of narcotics (13). In a study (14) to evaluate SAL programs in the workplace in five Iran's provinces, most important achievements were increasing the status of awareness and sensitivity of employees and employers to substance abuse, and increasing productivity, reduction of absenteeism and leave.

The Ministry of Health and Medical Education jointly with Department of Cultural and Social Affairs of the Ministry of Labor, Social Co-operation and Social Welfare and the Welfare Organization recently has released a document to report the prevalence of substance abuse at the Iranian workplaces to be 33% in 2015 (15). Since the prevalence of substance abuse is highly critical, this research aimed to measure the SAL of Iranian community of workers in manufacturing and production sites.

Methods

This study was a quantitative survey conducted in 31 provinces of Iran. The data were collected by the trained interviewers through an interview-based author-made structured questionnaire .Sorensen et al (16) in a study on HL in Europe explained the process of designing a HL questionnaire. They categorized HL competencies in three fields including healthcare, prevention of disease and health promotion related to the accessibility to health-related information, the ability to understand health-related information, the ability to evaluate health information and the utility of health-related information.

The current research tool was developed on the bases of Sorensen et al and some similar ones, e.g. (17, 18). The SAL questionnaire used in this survey has eleven questions designed by the researchers. The questions included the eleven false beliefs about substance abuse to specify how much respondents would agree with each item with 6-point Likert type scale including very much, much, average, low, very low, and no idea . The content validity of this questionnaire was verified in an expert panel of which yielded CVR of 0.89 and CVI of 0.87 .In order to reduce the measurement error, the intended correct answer for questions 1, 2, 4 and 6 to 11 was assigned to be "very low", and in questions 3 and 5 "very much". Also, for the questionnaire filling out needed, feasibility of the study, face validity and possible problems of the questionnaire, a pilot study was conducted in two workshops in Tehran province with a sample size of 30 people in each workshop .The Cronbach's alpha was 0.82.

To determine the sample size in each province, considering Alpha (type I error) of 0.05 and prevalence of 0.5, 400 samples were needed. For the three provinces of Razavi Khorasan, Tehran and Isfahan, because of the large number of workers, 13600 samples (almost double) in total were considered (Table 1). Sampling method was randomization using random number table. Also, in each province, the workshops were randomly selected from the list of workshops.

To minimize survey error, all interviewers participated in a one-day workshop before performing the survey and were educated to learn how to properly administer the questionnaire. The data were inputted by two independent computer operators and analyzed through SPSS software version 20.

Results

In this survey, 13,842 questionnaires were completed in 380 workplaces in 31 provinces of Iran. Of the total number of samples, 85.5% were male and 14.5% were female with an average working experience of 11.3 years. In order to compute responses, the range of points was from 1 to 5 including "Very much = 1, Much = 2, Average = 3, Low = 4, and Very Low = 5". For questions 1, 2, 4 and 6

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Table 1. The number of samples in each province

Code	Province	N	Code	Province	N
01	Khuzestan	400	17	Kohkiluyeh and Boyer-Ahmad	400
02	North Khorasan	400	18	Lorestsn	400
03	Gilan	400	19	Markazi	400
04	Ilam	400	20	Chaharmahal and Bakhtiari	400
05	Yazd	400	21	Hormozgan	400
06	Sistan and Baluchestan	400	22	Hamadan	400
07	Zanjan	400	23	Qazvin	400
08	Semnan	400	24	Qom	400
09	Bushehr	400	25	West Azerbaijan	400
10	Razavi Khorasan	800	26	East Azerbaijan	400
11	South Khorasan	400	27	Ardabil	400
12	Golestan	400	28	Isfahan	800
13	Kurdistan	400	29	Alborz	400
14	Kerman	400	30	Shiraz	400
15	Kermanshah	400	31	Mazandaran	400
16	Tehran	800		Total	13600

Table 2. The mean score of the literacy of addiction prevention in the work and production society by province (range: 1 to 5)

Province	N	Mean	Standard deviation
East Azerbaijan	404	4.22	0.74157
West Azerbaijan	448	4.12	0.80927
Ardabil	446	4.07	0.90555
Isfahan	808	4.06	0.85651
Alborz	403	4.20	0.78491
Ilam	400	4.02	0.85472
Bushehr	415	4.06	0.99028
Tehran	836	4.01	0.86813
Chaharmahal and Bakhtiari	390	4.01	0.75210
South Khorasan	404	4.17	0.74634
Razavi Khorasan	813	4.08	0.81475
North Khorasan	398	4.01	0.88460
Khuzestan	401	4.17	0.90844
Zanjan	400	4.06	0.87439
Semnan	373	4.08	0.75243
Sistan and Baluchestan	400	3.92	0.93461
Shiraz	400	4.05	0.90607
Qazvin	384	4.07	0.88422
Qom	402	4.08	0.74918
Kurdistan	400	4.10	0.72556
kerman	400	3.97	0.93997
kermanshah	418	3.88	0.89492
Kohgiluyeh and Boyer-Ahmad	401	4.04	0.72772
Golestan	400	4.00	0.90683
Gilan	388	3.98	1.01193
Lorestsn	405	4.05	0.81850
Mazandaran	404	4.02	0.80201
Markazi	421	4.15	0.73826
Hormozgan	397	3.59	0.72833
Hamadan	398	3.87	0.89174
Yazd	485	4.16	0.70408
Total	13842	4.04	0.84

Source: National survey of the literacy of addiction prevention in the work and production Society in 2016

to 11 the order of answers were reversed to "Very Low = 1, Low = 2, Average = 3, Much = 4, Very much = 5 ".

According to the results, the average national rate of workplace SAL was 4.04 (out of 5). The provi ncial averages are shown in Table 2, where highest SAL mean was for East Azerbaijan (4.22±0.74) and the lowest for Hormozgan (3.69±73) provinces. Figure 1 presents the provinces by either yellow or green colors, where the yellow denotes below the average level and green above the average level.

The results of the statistical analysis of the 11 questions are shown in Table 3, where the highest wrong answer (lowest score) was for seventh question: "Anyone can easily quit substance abuse forever" followed by the third question: "Drug offer by colleagues and boss never should be accepted at the workplace".

Discussion

This survey was conducted to evaluate the level of SAL in manufacturing and production sites before any intervention and thus reports the existing Iran's national workplace SAL to be 4.04 .The highest wrong answer (lowest score) was for seventh question of "Anyone can easily quit the drug addiction forever". Newman (19) has reviewed cognitive models of quitting addiction including self-efficacy (indicating the individual judgment about the

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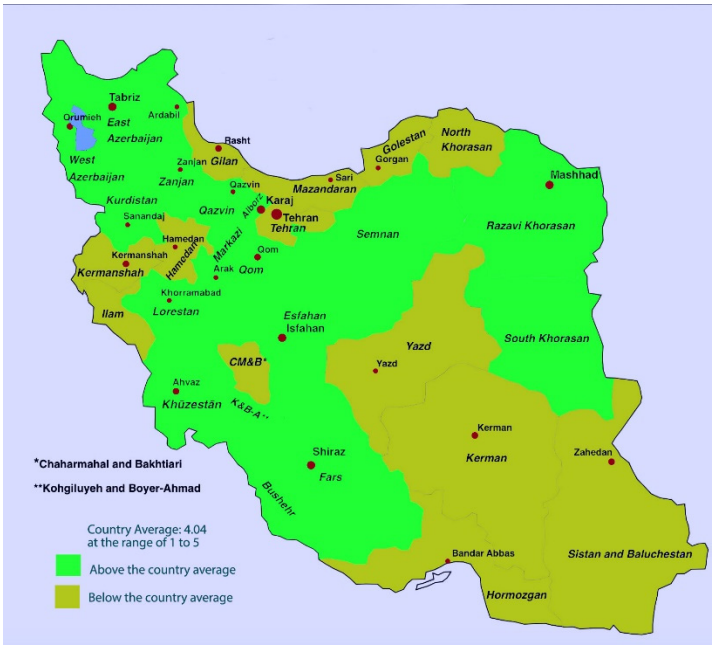


Fig. 1. Provincial status of SAL in workplace in Iran

Table 3. The mean score of workplace SAL by questions (range: 1 to 5)

Question		Mean score
1.	Trying to consume drug just once on curiosity does not hurt	4.27
2.	If the drug be pure and of good quality, it won't lead to addiction and has no complication	4.42
3.	The offer of drug by colleagues and the boss never should be accepted at the workplace	3.51
4.	The use of drug can be palliative in case of nerve pressure	4.46
5.	The use of drug in recreational way can also lead to a permanent addiction	3.90
6.	The use of drug can reduce fatigue and increase work efficiency in the workplace	4.24
7.	Anyone can easily quit the drug addiction forever	3.28
8.	The use of methamphetamine is one of the best ways for slimming and achieving ideal weight	4.71
9.	Opium is produced from herbals and has no chemical aspect, it is harmless	4.52
10.	Cannabis is harmless because it is produced from herbals and has no chemical aspect	4.60
11.	Addiction is for those who have family, social or economic problems	3.95

ability to face challenges and risk conditions), expectations of predicted outcomes (indicating the individual's guesses about the effects of use and/or non-use of the narcotics), reasons (indicating the individual's judgment of the external and internal causes for the consumption or quitting the narcotics) and the decision-making process (indicating the effect of multiple decisions on the consumption or quitting the narcotics.

The second most incorrect answer was for to the third question of "The offer of drug by colleagues and the boss never should be accepted at the workplace", in which depicts the role of peer pressure to substance. In line with current study, Yadav et al (20) showed that the primary reasons to take up smoking among Delhi university students had been pleasurable experience, adding to intimacy and peer pressure. Another study (21) suggested that limited health literacy may be a significant and independent risk factor for smoking in individuals with a low socioeconomic status. In a study performed on the underlying reasons for substance abuse in workplaces in Iran, Damari et al (22) proposed a national-based survey to clarify dimensions of substance abuse in Iran to help policymakers.

Overall, major studies confirm the positive role of HL in improving the individuals' health by preventing substance abuse and taking up narcotic materials habit. For instance, Rogers et al (23) in a very recent study showed that HL significantly negatively is associated with opioid misuse. As they claimed, substance abuse has become a growing epidemic in the US and interventions targeting people's HL may help to address the crisis.

According to Syndemics, in which multiple health issues (such as drug abuse, AIDs, and violence) interact with each other and with the sociocultural and economic problems (24), one cannot overcome the complex problem of addiction by investing in just an intervention. A cluster of preventive and supportive policies are needed to act effectively against substance abuse and related problems.

Conclusion

In spite of the high level of SAL, the prevalence of addiction is still high in Iran (15). Therefore, it seems that just having a health literate people is not sufficient to prevent substance abuse in an effective manner. To this regard, some suggestions are presented below to address the issue, as follows; A proper investment in prohibitory measures and condign actions to reduce drugs supply, budgeting health promotion programs sufficiently to reduce drugs demands (e.g. for reducing pain), improving the society's political, economic, social and international relations to relieve mental disorders and diseases, provid-

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ing supportive data for policymakers so that they be able to decide in an evidence-base manner, and including the HL test results for future job opportunities and funds allocations. Damari et al (25) also suggests that increasing the income and improving the status of welfare and recreation facilities, and modification of sexual health status which is currently low due to the prevalence of sexual dysfunctions in men and women (20-40%) are other effective measures.

Major HL studies have been conducted on the relationship between HL and the incidence of disease, but the present study firstly investigated the dimensions of the addiction prevention, and then examined the extent of workplace SAL in the manufacturing and production sites in Iran. To the best of our knowledge, this study is genius for both the studied sample size and the covered subject; the SAL.

Conflicts of interest

The authors declare no conflict of interest.

Ethical considerations

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors.

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