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The Relationship between Substance Abuse, Tobacco, and Alcohol Consumption and Socioeconomic Status among Participants in the Fasa PERSIAN Cohort Study

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Abstract

Background & Objectives: Contemporary societies are increasingly affected by the adverse consequences of substance abuse, tobacco use, and alcohol consumption, which have profound impacts on various economic, social, cultural, and political dimensions of communities. This study aims to examine the relationship between substance abuse, tobacco use, and alcohol consumption in relation to the socioeconomic status of participants in the Fasa PERSIAN Cohort Study.

Materials & Methods: This cross-sectional cohort study encompassed approximately 10,000 individuals aged over 35 years from the Sheshdeh and Qarah Bolagh regions of Fasa (southern Iran), who were enrolled between 2012 and 2017 through a comprehensive census approach. The research utilized data from the Fasa Cohort Center at Fasa University of Medical Sciences. With the cooperation of the Research Deputy, data were obtained from general information questionnaires and medical information forms completed by attendees at the Fasa Cohort Center, and subsequently analyzed in collaboration with a statistical consultant.

Results: The total number of participants in this study was 10,138, comprising 4,580 men (45.2%) and 5,558 women (54.8%). Among the participants, 9,014 (88.9%) were married, while 375 (3.7%) were single. Only 212 individuals (2.1%) reported alcohol consumption. Additionally, 7,779 participants (76.7%) reported no substance abuse, while 2,356 (23.2%) reported substance use. Furthermore, 1,942 individuals (19.1%) were tobacco smokers. Statistical analysis revealed a significant relationship between socioeconomic status and alcohol consumption (P = .01). Similarly, a statistically significant difference was observed between socioeconomic status and substance abuse (P = .04).

Conclusion: The findings of this research indicate a significant relationship between socioeconomic status and variables such as alcohol consumption and substance abuse. Based on the results of this study and previous research, it can be concluded that while the factors identified in the present investigation are important, a complex interplay of individual, familial, social, cultural, economic, and other factors influences the propensity for substance abuse.

Keywords: Substance abuse, Socioeconomic status, Fasa Cohort Population

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Introduction

The contemporary world faces myriad challenges spanning environmental, economic, security, political, and social domains. Among

these social issues, addiction and substance abuse stand out as some of the most significant problems confronting nations globally. The World Health Organization defines substance addiction as "a periodic or persistent state of intoxication resulting from repeated substance use" (1). While drug consumption constitutes a substantial issue in many countries, addiction to narcotics, as a specific condition, is a relatively recent phenomenon, having been recognized only since the late eighteenth and early nineteenth centuries.

Scientific evidence has conclusively established causal relationships between tobacco and drug use and numerous diseases, including twelve types of cancer, six forms of cardiovascular disease, diabetes, chronic obstructive pulmonary disease, and pneumonia (2). Addiction and substance abuse, as social issues, represent phenomena that undermine societies' capacity for organization and the maintenance of order, precipitating structural transformations within economic, social, political, and cultural systems (3).

Substantial evidence confirms the correlation between alcohol consumption and physical injuries. Multiple studies have demonstrated that alcohol misuse leads to various violent and antisocial behaviors among adolescents and young adults. Beyond affecting individual health, substance abuse poses risks to the broader community by potentially facilitating the spread of dangerous diseases such as human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) and Hepatitis B and C, while also contributing to social problems, including divorce, delinquency, and theft (4).

Statistical data indicate that the global prevalence of substance misuse has surged by 19 percent, increasing from 4.9 percent (208 million individuals) in 2006 to 5.2 percent (247 million individuals) in 2015. In Iran, reports from the spokesperson for the country's Drug Control Headquarters indicate that the prevalence rate among individuals aged 15 to 64 years rose from 2.6 percent in 2011 to 5.3 percent by 2016 (5). Estimates suggest that the direct and indirect socioeconomic damages associated with narcotics and drug trafficking in the country amount to approximately 700 billion tomans annually (6).

Extensive and recurrent investigations into the physical, psychological, economic, social, and other detrimental effects of narcotics have been conducted worldwide by domestic authorities in collaboration with international organizations. Such research continues to this day. For instance, the study by Ezzatpour et al. (2018) examined the causes of drug use among youth in Sanandaj, revealing that pleasure-seeking, curiosity, peer pressure, lack of awareness, having an addicted family member, emotional failure, and unemployment were the primary reasons for initial drug use (7). In Ahvaz-based study, Bagheri et al. discovered an inverse and significant relationship between socioeconomic status and addiction severity (8). Results from Mirzaei et al.'s (2018) research in Yazd demonstrated that narcotics, in terms of both supply and consumption, have inflicted irreparable damage on individuals' economic circumstances at both personal and familial levels (9).

In their study of 130,570 participants in Iran, Mirzaei-Alavijeh et al reported the drug use prevention programs in Iran should focus on socioeconomically disadvantaged populations (10). In a previous cohort study conducted by Naghizadeh et al, the substance abuse varied significantly with age and socioeconomic variables (11). Sahan et al. (2019), investigating the socioeconomic factors associated with smoking in Turkey, found that socially disadvantaged groups, particularly those with lower educational attainment, such as unemployed men, exhibited higher smoking rates (12). A study conducted in Pakistan established a positive correlation

between tobacco use and rural residential areas, male gender, and low educational levels (13). Patrick et al. In a cohort study showed that Smoking in young adulthood was associated with lower childhood family SES (14). In a previous study conducted by Bagbanian et al., low education and gender were identified as the most important factors in drug use (15). Substance and alcohol abuse impose substantial social and economic costs due to their destructive effects on individual health, increased crime rates, and elevated mortality within society, thereby evolving into significant threats to communities. Generally speaking, investigations into the relationship between socioeconomic factors and high-risk behaviors such as tobacco use, illicit drug consumption, and alcohol intake can provide valuable information for assessing health indicators within a population. This, in turn, assists policymakers in identifying at-risk demographics and proposing interventions conducive to healthier lifestyles. The objective of this study was to examine the relationship between narcotics, tobacco, and alcohol consumption and the socioeconomic status of participants in the Fasa PERSIAN Cohort Study.

Materials and Methods

Study population

This cohort study encompassed approximately 10,000 individuals aged over 35 years from the Sheshdeh and Qarah Bolagh regions of Fasa County (southern Iran), who were enrolled between 2012 and 2017. As a component of the Prospective Epidemiological Research Studies in Iran (PERSIAN), this population-based prospective cohort study was designed to examine risk factors for non-communicable diseases (NCDs) among individuals aged 35-70 years in southern Iran. All eligible individuals participating in the Fasa Cohort Study were included through comprehensive census sampling method. It is noteworthy that participants consuming opium and its derivatives were classified as substance users, while users of synthetic drugs were excluded from the analysis. The study utilized data from the Fasa Cohort Center at Fasa University of Medical Sciences. Socioeconomic status: The questionnaire for assessing socioeconomic status includes 15 questions covering housing type and size, number of bedrooms and occupants, educational level, employment status, family history of addiction, residential area, home ownership, income level, workplace conditions, means of living, non-curricular books ownership, and travel history. Principal component analysis (PCA) with an assets index variable was employed to calculate the SES score, categorized as low, average, and high SES. In this study, data from the first phase of the Fasa PERSIAN cohort was used. Smoking, alcohol use, and drug abuse were recorded by self-report and through the answer to the question "whether they have used smoking, alcohol, or drugs in the last 12 months.

Data Collection

Information on opium and alcohol consumption was taken from the medical interview questionnaire section of the Fasa cohort study. Medical interview data acquisition forms were completed to inquire about any previous medical history of every participant. Validated screening questionnaires were also used to obtain data on the incident common NCDs, dental health, physical activity, sleep quality and duration, fertility, substance and alcohol abuse and smoking. It should be noted that in this study, due to the small number of industrial drug users and the tendency of most of the study subjects to use traditional drugs, industrial drug users were excluded from the cohort data analysis. For descriptive purposes, means and standard deviations were employed for quantitative variables, while frequencies and percentages were utilized for qualitative variables.

Ethical Approval

Following coordination with the Research Deputy and upon obtaining ethical approval

(IR.FUMS.REC.1398.090), information from general questionnaires and socioeconomic status forms completed by attendees at the Fasa Cohort Center was acquired and subsequently analyzed in collaboration with a statistical consultant.

Data Analysis

Data analysis was conducted using independent t-tests, chi-square tests, one-way analysis of variance and linear regression. All statistical analyses were performed using SPSS version 22, with significance established at the 0.05 level (16, 17).

Results

The primary objective of this study was to examine the relationship between substance use, tobacco consumption, alcohol intake, and socioeconomic status among participants in the Fasa PERSIAN Cohort Study. The total number of participants was 10,138, comprising 4,580 males (45.2%) and 5,558 females (54.8%). Regarding marital status, 9,014 participants (88.9%) were married, while 375 (3.7%) were single. Only 212 individuals (2.1%) reported alcohol consumption. With respect to substance use, 7,779 participants (76.7%) reported no consumption, while 2,356 (23.2%) acknowledged using substances. Additionally, 1,942 individuals (19.1%) were tobacco smokers. In terms of socioeconomic classification, 3,346 participants (33.1%) were categorized as having average socioeconomic status, 3,100 (31.4%) were classified as having good socioeconomic conditions, and 3,555 participants (35.5%) were identified as having poor socioeconomic status (Table 1). The analysis revealed that among participants with poor socioeconomic status, 49 individuals (1.5%) reported alcohol consumption, while 3,299 (85.5%) did not. Among those with average socioeconomic status, 3,283 participants (98.1%) reported no alcohol consumption, whereas 63 (1.9%) acknowledged alcohol use. The highest prevalence of alcohol consumption was observed among those with good socioeconomic status, with 100 individuals reporting such behavior. Statistical analysis demonstrated a significant relationship between socioeconomic status and alcohol consumption (P = 0.01). Regarding substance use, 682 participants (20.4%) with poor socioeconomic status reported consumption,

Table 1. Frequency distribution of the study population's demographic characteristics

Variable	Terms	Frequency (n)	Percentage (%)
Gender	Female	5558	54.8
	Male	4580	45.2
Marital Status	Single	375	3.7
	Married	9014	88.9
	Other	746	7.4
Social economic situation	Poor	3555	35.5
	Middle	3346	33.1
	Riche	3100	31.4
Employment status	Unemployment	5040	49.7
	Employment	5101	50.3
Home ownership	Personal property	9295	91.6
	Mortgage-rental	805	8.4
Drug use	Yes	2356	23.2
	No	7779	76.7
Smoking status	Yes	1942	19.1
	No	8201	80.9
Alcohol drinking	Yes	212	2.1
	No	9931	97.9

Table 2. Distribution of Alcohol Drinking, Drug use, and Smoking Status Scores by Social Economic Situation and Gender

Variable	Group	Alcohol drinking		P-value	Drug use		P-value	Smoking status		P-value
		Yes	No		Yes	No		Yes	No	
Social economic situation	Poor	49 (1.5)	3229 (98.5)	0.01	682 (20.4)	2664 (79.6)	0.04	607 (18.1)	2741 (81.9)	0.02
	Middle	63 (1.9)	3283 (98.1)		772 (23.1)	2573 (76.9)		648 (19.4)	2698 (80.6)	
	Riche	100 (2.9)	3346 (97.1)		902 (26.2)	2543 (73.8)		687 (19.9)	2759 (80.1)	
Gender	Female	0 (0%)	5557 (100%)	0. 04	98 (1.8)	5459 (98.2)	0.001	132 (2.4)	5425 (97.6)	0.001
	Male	212 (4.6)	4368 (95.4)		2258 (49.3)	2322 (50.7)		1810 (39.5)	2770 (60.5)	

Table 3. Results from the regression of the effect of socioeconomic status on alcohol, drug, and cigarette consumption

	Alcohol		drug		smoking	
	OR(95% CI)	P-value*	OR (95% CI)	P-value*	OR(95% CI)	P-value*
Socio economic statues	1.13 (1.004-1.28)	<0.001	0.804 (0.747-0.864	<0.001	0.836 (0.782-0.894)	<0.001
Age	0925 (0913-0.928)	0.925	0.981 (0.974-0987)	<0.001	0.986 (0.980-0.992)	<0.001
sex	0.008 (0.001-0.014)	<0.001	0.010 (0.007-0.014)	<0.001	22.92 (20.83-27.64)	<0.001
Employment status	0.894 (0.657-1.21)	0.572	0.920 (0.892-1.14)	0.712	1.27 (1.08-1.44)	0.002
marital status	0.744 (0.465-1.17)	0.739	1.05 (0.789-1.41)	0.727	0.657 (0.543-0.796)	<0.001
education level	0.935 (0.901-0.972)	0.001	0.983 (0.963-1.003)	0.096	1.004 (0.985-1.023)	0.678

while 2,664 (79.6%) did not. Among those with average socioeconomic status, 772 participants (23.1%) reported substance use, compared to 2,573 (76.9%) who did not. Statistical analysis confirmed a significant relationship between socioeconomic status and substance use (P = 0.04) (Table 2). The results of the regression analysis showed that as socioeconomic status improves, alcohol consumption increases, but cigarette and drug use decrease. (Table 3).

Discussion

This study aimed to examine the relationship between substance use (including drugs, cigarettes, and alcohol) and the socioeconomic status of participants in the Cohort PERSIAN Study in Fasa. The findings revealed significant associations between socioeconomic status and both drug use and cigarette smoking. Furthermore, a noteworthy relationship was identified between socioeconomic status and alcohol consumption. Additionally, gender was found to be significantly associated with both drug use and cigarette smoking. Various studies have indicated that low socioeconomic status plays a substantial role in driving individuals toward substance use. Generally, an inverse relationship exists between individuals' socioeconomic status and substance use, whereby lower socioeconomic status correlates with higher addiction prevalence. Shaterian et al.'s study found a significant association between cigarette

smoking, drug use, and socioeconomic status, aligning with the findings of the current study. The justification and reasons for the correlation between the results of the two studies include the high prevalence of unemployment among participants in both studies, as unemployed and low-income individuals are more exposed to many risk factors related to drug addiction (18). Research by Aaron and colleagues demonstrated that financial pressure partially mediates the relationship between socioeconomic status and smoking behavior, suggesting that high economic pressure may function as a socioeconomic factor influencing smoking behavior. The findings of both studies provide evidence for the role of financial stress as a context for the mechanism by which socioeconomic status influences smoking and drug use (19). Results from Fayyazbakhsh et al.'s study indicated that male participants consumed cigarettes and other tobacco products at higher rates than female participants, showing a statistically significant difference between gender and cigarette use, corresponding with the findings of the present study. The results of various studies show that social, psychological and economic factors play an important role in the formation of drug consumption patterns, but the intensity and type of these factors differ between the two gender groups; For example, women are more affected by psychological pressures and family relationships, while men are more likely to use drugs due to economic issues and influence from peer groups. Multiple studies have demonstrated that low socioeconomic status may lead to addiction, with lower socioeconomic positioning correlating with higher addiction prevalence (20). Our results revealed that among individuals with favorable socioeconomic status who consumed alcohol, consumption was significantly higher in men than in women. Overall, statistical analysis demonstrated a significant relationship between socioeconomic status and alcohol consumption.

Research by Haq Doost et al. showed that the prevalence of alcohol consumption is increasing in all age groups, genders, and social classes, and that gender, education level, income, and employment status of the family, in other words, social class and status, have an impact on the type of substance consumed and the type of substance consumed, and that lower social classes are more vulnerable (21). Aghaei et al.'s study (2021), titled "Social Analysis of the Status and Causes of Alcohol Consumption," demonstrated that focusing on social capital in underprivileged neighborhoods significantly reduces the tendency toward alcohol consumption (22). Findings from Dastgiri et al. (2024) revealed that individuals with low socioeconomic status, as well as divorced and single individuals, could constitute appropriate populations for implementing alcohol consumption screening programs. Their research further indicated that alcohol consumption among men was twice that of women, aligning with the findings of the present study (23). The results of the study by Aslino et al. showed that men are more likely to use alcohol than women, and this is due to a lack of social support (24). Our results demonstrated that cigarette smoking statistics among the male population in this study substantially exceeded those of females, being approximately 18 times higher. Najafi et al. (2020) discovered that educational and wealth-related inequalities were associated with tobacco, alcohol, and illicit drug use in western regions (25). A study by Dehghani et al. (2023), titled "Investigation of Cigarette Smoking Prevalence and Related Factors Among Kashan University of Medical Sciences Students," revealed that the prevalence of cigarette smoking was higher among male students compared to females, corresponding with the findings of the present study (26). Greater attention to general health and health-related behaviors among women compared to men may explain the higher prevalence of cigarette smoking among men. Nevertheless, considering the increasing social acceptance of

smoking among women, this may constitute a potential health concern for the female population in the future (27). It seems that the difference in smoking between men and women is due to gender differences and the prevailing culture in society with a specific attitude towards girls and women, and the prominence of smoking and drug use among the female segment of society as a social anomaly. The results of the current study, consistent with findings from other research, emphasize the significant impact of socioeconomic status and gender on drug addiction and alcohol consumption. Another study whose findings align with our results is the investigation conducted by Habibi et al. Their findings indicated that factors such as unemployment, anomie, isolationism, generational gaps, low educational attainment, socioeconomic status, relative deprivation, and depression significantly influence addiction patterns in society, establishing a significant relationship between these factors and addiction (28). Furthermore, a significant relationship exists between gender and marital status and addiction. Consequently, through comprehensive and appropriate policy-making, it is possible to prevent or minimize the development of this social issue in society. Jounghani et al. concluded in their research that the majority of addicted individuals are characterized by low socioeconomic status (29). Fayazi et al. (2015) reported that many personal, familial, and social factors play a role in addiction relapse (30). Tavakoli et al., in their research, determined that variables such as economic and social status, age, procrastination, and field of study have a significant relationship with addiction (31). Mahdaviazad et al. (2021) found that addressing socioeconomic status and reducing health-related inequalities should be fundamental concerns in tackling the increasing prevalence of drug and alcohol addiction (32). In the study by Haq Doost et al. (2013), titled "Investigation of the Status and Causes of Alcohol Consumption," results indicated that alcohol abuse in the studied community was recognized as a social pathology characterized by a complex causal network of economic, social, and cultural factors (21). The results of the regression analysis showed that as socioeconomic status improves, alcohol consumption increases, but cigarette and drug use decrease. The findings of various studies indicate that economic poverty can lead to drug and alcohol abuse by affecting mediating variables (33). It seems that the likelihood of drug addiction as a result of addiction is higher among the unemployed, poorly educated, and marginalized people who suffer from social and economic failures and frustrations. Regarding the relationship between gender and substance use, it can be stated that males demonstrate a greater propensity toward addiction compared to females, a finding substantiated by numerous research studies. Among the social factors significantly contributing to increased drug addiction, access to substances is frequently cited in most studies. In this investigation, a close and significant association was found between addiction to drugs, cigarettes, hookah, and social status. This correlation may be attributed to the ease of access to these substances in the study region and the lack of oversight by relevant regulatory authorities in these areas. In explaining the influence of social environments—such as easy access to substances—on increasing high-risk behaviors among young people, the social ecology model can be employed. According to this theory, living in disorganized social environments not only increases access to illegal substances and consequently their consumption, but these environments are also characterized by dysfunctional factors and indicators. For instance, association with deviant peers, the presence of abnormal social elements, and exposure to inappropriate behavioral models facilitate an individual's inclination toward high-risk behaviors. The strengths of the present study were the large sample size and high accuracy in

data classification. Also, the cohort study design is one of the best methods for the Ministry of Health to collect the necessary information required for policymaking in this field. However, there were some limitations. Self-reporting of data may have resulted in recall bias. Also, the age range of study participants was 35 years and older, which limits the comparison of our results with those of studies conducted on subjects aged above 15 years. It is recommended that this study be conducted for other age groups in the future.

Conclusion

The findings of this study demonstrate that lower socioeconomic classes engage in higher rates of illegal behaviors compared to middle and upper classes. This research establishes a significant correlation between socioeconomic status and associated variables, such as alcohol consumption and drug use. While the factors identified in the present investigation are undoubtedly important, it is crucial to acknowledge that a complex interplay of individual, familial, social, cultural, and economic elements influences an individual's propensity toward substance use. This multifaceted etiology underscores the necessity for developing comprehensive intervention programs that address all contributing factors underlying this phenomenon.

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Conflict of Interest

The authors declare that they have no conflicts of interest to disclose.

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Ethical Consideration

This article does not contain any studies with animals performed by any of the authors.

Code of Ethics

The ethical code is IR.FUMS.REC.1398.090

Authors Contribution

M.K. and N.A. conceptualized the study. R.H., H.M., N.A. and A.G performed the study. N.A., A.F., M.K. and A.T. wrote the draft. A.D. and R.H. approved the study. All authors reviewed the manuscript.

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