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The prevalence of the co-occurrence of risky behaviors and association with socioeconomic



Abstract

Background This study aimed to identify distinct population classes with different risk profiles using Latent Class Analysis (LCA) in Iran, as well as, to evaluate the association between various classes of risky behavior and Socio-Economic Status (SES) levels.

Methods This cross-sectional study was conducted on 860 participants in Tabriz, northwestern Iran from September to November 2023. The source population included clients who visited the Asadabadi Family Medicine Clinic. Data were collected using two standard self-report questionnaires. LCA was utilized to categorize the data. Twelve variables were utilized to determine the classes of risky behaviors. After considering the model selection indices, we found that the model with three latent classes was the most suitable. Multi-nominal logistic regression was employed to assess the association between risky behavior and SES.

Results The results of this study showed that the prevalence of the middle-risk class and high-risk class among the study population was 13% and 21%, respectively. Individuals with a very high SES were less likely to engage in multiple risky behavior classes compared to those with a low SES (OR: 0.82, 95% CI: 0.59–0.97 and OR: 0.79, 95% CI: 0.48–1.29). Additionally, divorced participants (OR: 1.7, 95% CI: 1.08–2.71 and 4.31, 95% CI: 1.61–11.56).

Conclusions In the present study, the co-occurrence of risky behaviors was reported as 10 and 3 for the high-risk behavior class and the middle-risk behavior class, respectively. The findings suggest that prevention and treatment interventions aimed at modifying multiple high-risk behaviors should be integrated into the healthcare system, in addition to those focused on altering a single behavior. Furthermore, the results of this study indicate that individuals with lower socioeconomic status are given higher priority in screening programs designed to identify high-risk behaviors.

Keywords Latent class analysis, Socioeconomic factors, Health behaviors, Risk-taking

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Background

a higher level of SES. The reliability of the SES questionnaire was assessed using Cronbach's alpha coefficient, yielding a satisfactory value of 0.656. To ensure data collectors were employed to prevent misclassification due to information bias. The data collectors clarified the questions to ensure a consistent understanding among participants.

Statistical analysis

Mean and standard deviation

Table 3 The three latent classes' model of risky behaviors among Iranian, 2023

	Latent class		
	1 (Low risk)	2 (Middle risk)	3 (High risk)
Latent class prevalence	0.66	0.13	0.21
Item-response probabilities		Probability of a "Yes" response	
Malnutrition	0.05	0.61	0.81
Insufficient sleep	0.12	0.15	0.56
Insufficient physical activity			

Approximately, 66% of participants were categorized as low risk class. Additionally, the prevalence of middle-risk and high-risk classes among participants was 13% and 21%, respectively. Although in the low-risk class, the probability of any risky behaviors is not zero, none of the risky behaviors have a prevalence rate greater than or equal to 0.5.

Table 4 demonstrates the results of multinomial logistic regressions on risky behavior classes. The likelihood of the occurrence of risky behavior among people with very high level of SES was lower than among people who were categorized with low level of SES. Divorced participants showed a higher likelihood of risky behavior than married participants. In the middle-risk class, the prevalence of risky behaviors in females was 1.58 times higher than

in males, while in class 3, females had a lower likelihood of risky behaviors than males. Participants with a post graduate level of literacy had a 4% and 40% lower likelihood of engaging in middle-risk and high-risk classes than people with an elementary level of education, respectively.

Discussion

Identifying clusters of risky behaviors and understanding the determinants of these behaviors are necessary for public health. Although various reported statistics indicate that multiple risky behaviors commonly co-occur, there is no significant evidence of the clustering of these behaviors in Iran [23]. This study aimed to determine the clusters of risky behaviors among the source population

and to estimate the prevalence of these classes. As well, the association between various behavior classes and SES levels was examined.

Regarding the result, the prevalence of the middle-risk class and high-risk class among the study population was 13% and 21%, respectively. These findings showed that 13% of the participants in the study exhibited three risky behaviors, such as malnutrition, inadequate physical activity, and cigarette smoking. Also, 21% of participants reported all examined risk behaviors except for stimulant drugs and analgesic drugs.

In the current study, a negative association was found between various risky behavior classes and SES levels.

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activity, were 14.88 and 84.63 respectively. In addition, females have a lower rate of alcohol consumption than males. A systematic review was conducted by Maryam Chegeni et al. found that the prevalence rate of lifetime alcohol consumption and last 12-month alcohol consumption among the general population was 13.0% and 15%, respectively [

Competing interests

The authors declare no competing interests.

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