

Estimating the prevalence of risky behaviors by using network scale-up method in Larestan City

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ABSTRACT

Risky behavior is a series of behaviors that not only seriously damages the person engaged in this behavior and important people in his life, but also causes the unintentional harm to other innocent people. This study aimed to estimate the prevalence of risky behaviors by using Network Scale-Up method in Larestan in 2016. This cross-sectional study was conducted on 800 people aged 18 to 30 in Larestan in 2014. It was used the data checklist made by the researcher to collect data. In order to assess the demographic variables in the subjects, SPSS software (version 16) was used. Also, to estimate the prevalence of risky behaviors, Stata version 11 was used. Chi-Square test was used to compare the prevalence of risky behaviors in men and women. In all analyzes, the significance level was 0.05. The findings of the study showed that the most common risky behavior in the age group of 18-30 years in Larestan in both males and females is the tobacco products consumption in the amount of 16.82 percent and 11.06 percent, respectively. In contrast, tattoo risk behavior on both males and females respectively in the amount of 1.18 percent and 0.46 percent has the lowest rate. Despite the low prevalence of risky behaviors in Larestan, paying more attention to sexually active individuals can play an important role in reducing this phenomenon in the society. Therefore, developing serious planning by the agencies that are responsible for the health, especially the health centers is essential to reduce these behaviors in the community.

KEY WORDS: LARESTAN, RISKY BEHAVIOR, NETWORK SCALE-UP METHOD

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INTRODUCTION

Risky behavior is a series of behaviors that not only seriously hurts the person engaged in this behavior and important people in his life, but also causes the unintentional harm to other innocent people. Nowadays, the prevalence of risky behaviors among young people is one of the main concerns of the human societies and despite the measures taken in the past three decades, the risky behaviors have the exponential growth throughout the world (Headquarters, 2015).

According to the report of UN Office on Drugs and Crime (UNODC) in 2009, about 147 to 272 million people in 15-64 year age group have used drugs at least once during the past 12 month. The most common health risky behaviors include the excessive consumption of alcohol, drug abuse, unsafe sex, reckless driving, dangerous sports, gambling and illegal acts (TW, 2006). Researches has shown that most of these behaviors occur on the campus (MT, 2005) and the risky behaviors such as excessive alcohol consumption, illicit drug use and unsafe sexual behavior can lead to high levels of morbidity and mortality among them (Wilson , 1995).

Health risky behaviors usually begin from the childhood and adolescence, are established at a young age and will continue into adulthood (Yach D, 2004). Due to the fact that half of our population is below the age of 25 years, exploring these behaviors is important to plan for the future. Also, since the group of society is very vulnerable, the awareness of risky behaviors among them is very important (Momen Nasab, 2006). Risky behaviors have causes that must be understood and we shall strive to eliminate the favorable social contexts for the people's suffering. Unfortunately, in our country, the exact statistics on the prevalence of these behaviors in different age groups is not available (Akbar, 2013).

Due to the sensitive issue of risky behaviors among sexually active population and due to legal and religious restrictions, there is not much information about this sensitive issue. Therefore, there are very few reliable local studies in the field that can be cited as a precedent and because of the limitation of direct methods to estimate the risky behaviors, the need to be done similar studies as soon as possible using indirect methods will be determined to estimate such a critical behaviors in the country (Hamdye M, 2008). Therefore, this study aimed to estimate the prevalence of risky behaviors by using Network Scale-Up method in Larestan in 2016.

MATERIALS AND METHODS

This is a cross-sectional study. The study population consisted of sexually active people who were exposed to health risky behaviors in 2016 in the city of Lar. The

instrument used is the self-made checklist. The checklist contains 2 sections. The first part of demographic information includes gender, age, occupation, place of education, place of residence and marital status, and the second part of checklist is the questions related to the risky behaviors (smoking, hookah, pipe, opium, tramadol, alcohol, ecstasy and unknown drugs, migration history, self-mutilation, drug injection as well as the prevalence of sexual behaviors outside of marriage). The self-made checklists were completed by the clients after providing the necessary explanations by the interviewer, and in the case of illiterate persons, they answered the questions with the help of a questioner.

Since the prevalence of risky behaviors in Network Scale-Up method is indirectly estimated, unlike other studies, there is no formula for determining the sample size. Thus, by classifying people across age groups, a sample with an appropriate volume is considered to make the accuracy of estimates desirable. According to the number of people who are sexually active in 2016 (28192 women and 30390 men), 800 patients were studied.

After extracting and summarizing, the data was encoded and then entered into SPSS version 16 and Microsoft excel and finally was analyzed. The results were reported as "number (percent)" for the qualitative variables. Chi-Square test was used to compare the prevalence of risky behaviors in men and women.

Moreover, Stata 11 software was used to estimate the prevalence of risky behaviors in Wald method. The significance level was 0.05 in tests.

RESULTS

In total, 400 men and 400 women were studied. In table 1, it is shown the frequency distribution of demographic variables in 18-30-year-old people who completed the questionnaire in Larestan in 2016. As the results show the people over 25 years old have the highest frequency (45.42 percent). Also, most of the subjects were married and high school graduates and were living in the city and (Table 1).

Table 2 shows that the total of social networks in men and women is respectively 6515 people with an average 16.29 and 5803 people with an average of 14.50 people. In this study, the social network size (C) was found 296 people. The findings of the study showed that the most common risky behaviors among the age group of 18-30 years in both males and females in Larestan is the use of tobacco products with a frequency of 16.82 percent and 11.06 percent, respectively. In contrast, the tattoo risk behavior on both males and females respectively with a frequency of 1.48 percent and 0.46 percent has the lowest rate (Table 3).

Table 1. The frequency distribution of demographic variables in 18-30-year-old people who completed the questionnaire in Larestan in 2016.

| Variable | Number | Percent |
|---------------------|--------|---------|
| Age groups | | |
| Under 20 years old | 82 | 11.05 |
| 20-25 years old | 323 | 43.53 |
| 25-30 years old | 337 | 45.42 |
| Marital status | | |
| Single | 313 | 42.64 |
| Married | 401 | 54.63 |
| Widow | 20 | 27.0 |
| Address | | |
| City | 598 | 78.58 |
| Village | 163 | 21.42 |
| Education | | |
| Under diploma | 205 | 27.82 |
| High school Diploma | 340 | 46.13 |
| Collegiate | 192 | 26.05 |

Table 3 shows the frequency of risky behaviors differentiated by gender. The results of frequency table estimated show the prevalence of tobacco consumption among young people aged 18-30 years in Larestan. As can be seen, the prevalence of tobacco consumption among men is more than women. This difference was statistically significant ($P < 0.001$).

Also, the prevalence of drugs in men was significantly higher than women ($P < 0.001$). The results of table 3 show the increased prevalence of psychotropic drug use in men than in women that this difference was statistically significant ($P = 0.003$). Also, in the prevalence of dangerous actions and the estimated frequency, there statistically was a significant difference between men and women ($P < 0.001$).

Further, the results in Table 3 show that the prevalence of alcohol consumption is higher in men than in women, and this difference was statistically significant in alcohol consumption ($P < 0.001$). Moreover, the prevalence of unprotected sex outside the family was different in men and women, so that the prevalence was reported in men more than in women ($P < 0.001$). In addition, the

prevalence of migration, particularly migration abroad was higher among men than women ($P = 0.163$). Finally, the prevalence of tattooing was significantly higher among men (18-30 years) than women in Larestan ($P < 0.001$) (Table 3).

DISCUSSION

The findings of the study showed that the most common risky behaviors among the age group of 18- 30 years in both males and females in Larestan is the use of tobacco products with a frequency of 16.82 percent and 11.06 percent, respectively. In contrast, the tattoo risk behavior on both males and females respectively with a frequency of 1.48 percent and 0.46 percent has the lowest rate.

The results showed that the prevalence of tobacco products (Cigarette and hookah) has the highest frequency among the other high-risk behaviors (14.05 percent). According to the results of this study, it was found that the prevalence of (cigarette) smoking is more than hookah smoking among the subjects. In addition, the use of tobacco products (Cigarette and hookah) in all subjects was more common in boys than girls. Atai et al reported the prevalence of smoking is 31.3 in Isfahan (Ataei B, 2011). While Ismail Zadeh in his study showed that the hookah smoking (59.2) is more prevalent compared with the experience of smoking (32.7) among students (Ismail-Zadeh, 1393). Also, in the study of Taremian et al conducted on 2997 students in six Tehran universities in the academic year 2005-2006, the prevalence of smoking and hookah was estimated 15.7 and 22.1 respectively, in the past year. Contrary to the results of this study, the prevalence of hookah smoking was higher that this could be due to changing patterns of tobacco use among young people and the difficulty of hookah smoking in the student dormitories as well as ease of smoking.

The results of this study showed that the prevalence of drug abuse in the 18-30 year-old young people is 2.5% in Larestan. While Ismail Zadeh reported in his study that the illicit drug abuse is 7.3% (Ismail-Zadeh, 1393). The results of another study in Kerman and Rafsanjan showed that the prevalence of injecting drug use has a frequency of 61.5 percent (Torkashvand F, 2015).

Table 2. Sample size and social network total of friends of respondents

| Variable | Sample size | Social network total of respondents' friends | Social network total of respondents' friends |
|----------|-------------|--|--|
| Male | 400 | 6515 | 16.29 |
| Female | 400 | 5803 | 14.50 |

| Table 3. Risky behaviors prevalence among youths (18-30 years) differentiated by gender in Larestan | | | | | | |
|---|---------------------|------------|-------------------------|---------------------|------------|-------------------------|
| Risky behavior | Male | | | Female | | |
| | Estimated frequency | Prevalence | 95% confidence interval | Estimated frequency | Prevalence | 95% confidence interval |
| Consumption of tobacco products | 5112 | 16.82 | -17.75 15.92 | 3119 | 11.06 | 10.26 -11.89 |
| drug use | 1129 | 3.71 | 3.26 -4.20 | 364 | 1.29 | 1.01 -1.61 |
| Psychotropic drug use | 708 | 2.33 | 1.98 -2.72 | 446 | 1.58 | 1.27 -1.94 |
| Dangerous Acts | 2020 | 6.64 | 6.05 -7.27 | 1360 | 4.82 | 4.28 -5.40 |
| alcohol consumption | 4373 | 14.39 | -15.27 13.55 | 2433 | 8.63 | 7.92 -9.38 |
| Sex outside the family | 2631 | 8.65 | 7.98 -9.36 | 1756 | 6.23 | 5.62 -6.89 |
| Emigration | 1833 | 6.032 | 5.48 -6.63 | 1536 | 5.44 | 4.87 -6.06 |
| Tattoo | 359 | 1.18 | 0.93 -1.47 | 132 | 0.46 | 0.30 -0.67 |

Another study in Isfahan showed that the prevalence of drug use among prisoners is 30.1%(Ataei 2011). Garmaroudi et al have also reported 2.7 percent of drug use in the past month(Garmarodi, 2009). In the study of Shokoohi et al, the estimate derived from the indirect method showed that 13.1 percent of people has the experience of drug use(B. M. Shokoohi M, Haghdoost AA 2012). The Sheikh Zadeh's study findings showed that Intravenous drug use has the lowest frequency among students(Sheikhzadeh 2016). In explaining this relationship, it can be concluded that men are more exposed to the social and economic problems and work-related stress compared to women, which may put them at risk for drug use.

Also, the study results showed 11.61 percent prevalence of alcohol and alcoholic beverages in the region. Ismail Zadeh reported 16.7 percent of drinking alcohol in his study(Ismail-Zadeh, 1393).The results of a study reported an experience 17.8% in Isfahan(Ataei B, 2011). Garmaroudi et al also reported the alcohol consumption to 7.4 percent in the past month(Garmarodi GhR, 2009).

In the study of Shokoohi et al, the estimate derived from the probabilistic method was higher than the frequency in the direct method. According to the probabilistic method, 13.7% of men had used alcohol at least once a year(Shokoohi et al., 2012). In this study, similar to previous studies, the prevalence of risk behaviors is higher among boys than girls that this can be justified according to boys' more freedom in the family and soci-

ety, more courage and ease of access to drugs and alcohol, psychological stress caused by unemployment on the boys and on the other hand, family's more precise control over the behavior of girls.

In addition, the study results showed that the prevalence of dangerous acts is 5.77 percent. The study of Torkashvand et al showed that men compared with women significantly had the behaviors such as self-mutilation ($p = 0/001$), after the diagnosis and awareness of their disease. The results of a study in Tehran showed that most patients with self-mutilation suffer from the borderline personality disorder and antisocial personality disorder. More patients had attempted self-mutilation in their upper limbs. Furthermore, most patients with self-mutilation had the previous self-mutilation symptoms, and the average number of previous self-mutilations was approximately 9 times and patients with a history of 2 self-mutilations had the highest frequency. In explaining the risky behavior prevalence, it can be mentioned the people's easy access to sharp tools to harm themselves and attract others.

Also, the Immigration prevalence as another risky behavior was estimated 5.75 percent in the whole sample. No studies have been conducted in this area. In explaining the prevalence of this risky behavior (5.75%), it can be noted that due to the city's proximity to the Persian Gulf states, most residents of Larestan city migrate to the Persian Gulf states, especially Abu Dhabi, Kuwait and Qatar.

Another high-risk behavior examined in this study was a history of sex before marriage that it was observed nearly 7.5 percent of 15–30 year-olds have experienced this behavior. The results of a study in Isfahan showed that the risky behaviors, including partner's illicit sex is 22.1%, illicit sexual relationship and a history of temporary marriage are 17.8% (Ataei B, 2011). The study results of Torkashvand et al in the city of Kerman and Rafsanjan indicated that the unprotected sexual behavior with a frequency of 40% is a risky behavior before HIV diagnosis (Torkashvand 2015). Kolahi et al showed in their study that the female sex workers (prostitutes) who have non-commercial intercourse use condom 1.8 times less than those that have commercial intercourse (Kolahi AA). Garmaroudi et al reported that the prevalence of health risk behaviors such as sexual activities is 20.2% in Tehran (Garmaroudi 2009).

In the study of Shokoohi et al in the indirect method, sex outside the family was estimated 12% over the last year, while sex with female sex workers was reported 7% (Shokoohi et al., 2012). Moreover, in the study of Sheikh Zadeh et al in the indirect method, the alcohol consumption was the most common risky behavior among men and sex outside of marriage was the most common behavior in women (Sheikhzadeh 2016). The history of premarital sex among boys was more than girls that due to the cultural and religious structure of Iranian society is a significant outbreak.

The high prevalence of premarital sex can be a sign of fading interest in religion among young people, lack of suitable conditions for marriage and sometimes a sign of modernity. Although tattooing is often done with care, it is not totally risk-free, and can transmit the blood-borne infections. Limited serologic studies on people who have a history of tattooing have shown that tattooing could be a way to transfer the viral infections, particularly hepatitis B virus.

Tattoo prevalence was estimated 0.84% in the total sample. A study in 2002 showed that people who have been tattooed become infected with the Hepatitis C virus 9 times more than those who have not been tattooed. Also, among the 454 students, 50 percent of them pierced parts of the body such as the lip, ear and navel, and 25 percent had a history of tattooing. Almost 20 percent of those who had the tattoo effects on their body were suffering from the complications such as bacterial infection, bleeding and skin and tissue damage in the area of tattooing. The results of a study showed that the rate of positive HBsAg in the tattooed women was 7.9% in Zahedan (Sharifimoud and Metanat 2007). Torkashvand et al stated in their study that a third of people with HIV had a history of tattooing before the diagnosis of the disease (Torkashvand 2015).

The prevalence of psychotropic drug use was 0.84 percent in the total sample. In the study of Hamdiah et al, the prevalence of psychotropic drugs was reported 3.8% in youth and adolescents in Tehran (Hamdiah et al., 2008). In the study conducted by Ahmadi et al on the students of Shiraz city, a frequency of smoking marijuana, heroin, morphine and cocaine was 0.8, 1, 0.8 and 0.5 percent, respectively (Ghaderi, 2015). Pourasl et al stated in their study that 20 percent of high school students have the experience of psychotropic drug use in Tabriz. Perhaps, a possible justification for the increase in other studies is that people in those areas have easy access to the psychoactive drugs.

In the results of this study, social network size in males and females was estimated 16.29 and 14.5, respectively. This suggests that on average, men and women in the age group 18–30 years are familiar with 16 males and 14 females in this age group. This implies that on average, each man communicates with 1.12 people more than women. While a study in Kerman showed that the social network size in men and women is 25.8 and 29.5, respectively. On average, each man communicates with 3.8 people more than women (Sheikhzadeh 2016).

Moreover, in the study of Shokoohi et al in 2010, it was suggested that the social network size estimated in Iranian population is 303 people (Shokoohi et al., 2012). The value has been estimated much more in this study and a study done in Kerman. This difference may be due to the different definitions of social network in the studies. In a study of Kerman, it was related only to the social network of students on campus. In this study, it also covered the sexual age groups 18–30 years (Sheikhzadeh 2016).

According to the results, the following suggestions are recommended:

In addition, to reduce the prevalence of risky behaviors among young and active population of our country, the following are recommended:

- Improving the knowledge and attitude of people, especially sexually active people aged 18–30 years in conjunction with risky behaviors
- Improving the knowledge and attitude of mental health care workers and psychiatrists in relation to the risky behaviors through mandatory training sessions for all employees
- Development of life skills training as a primary prevention program of alcohol, tobacco and other drugs in the youth in order to reduce drug use among young people by Education's officials and planners
- A comprehensive review and evaluation on a large scale in the field of implementing the program by counseling center for the prevention of behavioral health and identifying the weaknesses and providing the strategies to improve the program
- Evaluation of the knowledge and attitude of mental health care workers in relation to the risky behaviors

Evaluation of the knowledge and attitude of target groups in relation to the risky behaviors
Further studies on the causes and motivations of people for the tendency toward the risky behaviors

CONCLUSION

Despite the low prevalence of risky behaviors in Larestan, paying more attention to sexually active individuals can play a critical role in reducing this phenomenon in the community. Therefore, developing the serious planning by the agencies that are responsible for the health, especially the health centers is essential to reduce these behaviors in the community.

STUDY LIMITATIONS

Entry criteria for the study includes all women and men aged 18-30 years living in Larestan.

Exclusion criteria do not include other people outside the age group 18-30 years are not included.

Exclusion criteria do not include other non-native people.

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REFERENCES

- Akbar, A. (2013). Past Human Development *Quarterly Journal of Social Deveopment*, 7(3), 123-154.
- Ataei B, K. F., Azadeh S, Nokhodian Z, Kassaian N, Anahita Babak. (2011). The Prevalence of High Risk Behaviors among Women Prisoners in Isfahan. *Journal of Isfahan Medical School* 2011, 29(150), 170-177.
- Garmarodi GhR, M. J., Abasi Z. (2009). Health risky habits in students of Tehran *Monitoring* 9(1), 9-13.
- Ghaderi, M. A., Zeinab; Darabzadeh, Fatemeh; Nasiri, Morteza; Fakouri, Elham. (2015). Correlation between Emotional Intelligence and Risky Sexual Behaviors in Nursing Students of Khozestan Province Universities in 2013. *Journal of Clinical Research in Paramedical Sciences*, 4(1).
- Hamdye M, M. N., Hasheri H, Berojerdi A. (2008). Prevalence of stimulant drugs, alcohol and psychoactive drugs Youth and adolescents 15-35 years in Tehran. *Original Article*, 32(4), 315.
- Headquarters, I. D. C. (2015). Exponential Growth of Dangerous Behaviour Among Youngsters *Etamad Newspaper*, 16(0).
- Ismail-Zadeh, H., Asadi, M., Miri, Mir Nadir, Kramtkar, Mary. (1393). MaryThe prevalence of risky behaviors among Journal of Epidemiology Specialist. *adolescents in iran*, 10, 75-82.
- Kolahi AA, R. A., Abadi AR, Nabavi M, Sayyarifard A, Sohrabi M. The knowledge and attitudes of a female at risk population towards the prevention of AIDS and sexually transmitted infections in Tehran. *J Res Med Sci* 16(11), 1452-1455.
- Momen Nasab, M. N., Seyed Saeid; Kaveh, Mohammad Hossein; Ahmadvpour, Farnaz. (2006). Evaluation of Spreading Amount of Risky Sanitary Behaviour Among the Students of Higher Education in the City of Khorram Abad in 2005-06. *Haftah*, 8(2), 29-32.
- Buelow MT (2005). The Influence of Cognitive, Personality and Social Variables: Predicting Changes in Risky Behaviors over a Two-Year Interval. *College of Arts and Science*.
- Gestv R, B. (2013). Comparison of indicators related with injecting drug users(IDUs) in Iran before and after the harm reduction programme. *Kerman University of Medical Sciences*;
- Sharifimoud B. Metanat M, G. H. (2007). Prevalence Of Transfusion-Transmitted Viral Infections Among Women With History Of Tattoo In The City Of Zahidan During 2004-06. *Iranian Journal of Infectious Diseases and Tropical Medicine*, 12(37), 66-69.
- Sheikhzadeh KH, B. M., Afshari M, Haghdoost AA (2016). Comparing direct, network scale-up, and proxy respondent methods in estimating risky behaviors among collegians. *Journal of Substance Use*, 21(1), 9-13.
- Shokoohi M, B. M., Haghdoost A. (2012). Size Estimation of Groups at High Risk of HIV/AIDS using Network Scale Up in Kerman, Iran. *International journal of preventive medicine*, 3(7), 471.
- Shokoohi M, B. M., Haghdoost AA (2012). Size estimation of groups at high risk of HIV/AIDS using network scale up in Kerman, Iran. *Int J Prev Med*, 3, 471-476.
- Torkashvand F, A. M., Sheikh Fathollahi M, Sheikhi E, Salehi Shahrabaki M.H, Hoseini OR, Bakhtar M, Bidaki R (2015). Frequency of High Risk Behaviour in HIV Positive Patients Referred to Centers for Behavioural Disorders of Rafsanjan and Kerman. *J RafsanjanUniv Med Sci in 2012*, 14(7), 587-598.
- Boyer TW (2006). The development of risk-taking. *multiperspective review. Dev Rev*, 26, 291-345.
- Wilson MD, J. A. (1995). Adolescent medicine. *JAMA*, 273(21), 1657-1659.
- Yach D, H. C., Gould CL, Hoffman KJ. (2004). The Global Burden of Chronic Disease: Overcoming impediments to prevention and control. *JAMA*, 291, 2616-2622.