

# Alcohol Abuse in Iranian Adolescents: A Mediation Model of Parental Monitoring and Affiliation with Deviant Peers

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## Abstract

**Aims:** This study aimed to determine the attitudes toward alcohol abuse among students in Tehran and to develop and test a model of the relationships among parental monitoring and affiliation with deviant peers as they predict youth alcohol abuse. **Materials and Methods:** In this cross-sectional study, 1266 adolescents were recruited from high schools in Tehran and three scales of alcohol abuse, parental monitoring, and adolescent affiliation with deviant peers were completed for them. Data were analyzed using independent sample *t*-test, Pearson correlation coefficient, and structural equations modeling. **Results:** The results of this study indicated that 7.4% of individuals had a positive attitude toward alcohol abuse. The percentage of positive attitude among males was nearly 2 times more than females. The study model was confirmed and explained 0.42 of attitudes toward alcohol abuse variance. Moreover, affiliation with deviant peers had a mediating role in the relationship between Parental Monitoring and attitude toward alcohol abuse. **Conclusion:** According to the results, parental monitoring and affiliation with deviant peers could explain the alcohol abuse among adolescents. Therefore, it is suggested to include these factors in prevention programs aimed at reducing alcohol abuse.

**Keywords:** Adolescence, alcohol abuse, deviant peers, parental monitoring

## INTRODUCTION

Most of the researches that have been done on youth subject, suggest that risk-taking is part of the developmental features of adolescents.<sup>[1]</sup> Since young people tend to be egocentric and misapprehend their behavior, the youth period is thought to be an important phase for starting high-risk behaviors<sup>[2]</sup> and these behaviors may end to unpleasant consequences.<sup>[3]</sup>

Based on previous researches, rates of various high-risk behaviors such as smoking and alcohol use,<sup>[4]</sup> substance abuse,<sup>[5]</sup> physical aggression,<sup>[6]</sup> risky driving,<sup>[7]</sup> and unprotected sexual relationships<sup>[8]</sup> are increasing among adolescents. Moreover, children's participation in risky behaviors has become one of the most important sources of concern for parents.<sup>[9]</sup>

After drug abuse, alcohol consumption has the most awful results for adolescents among other high-risk behaviors.<sup>[2]</sup> It has been proved that people who initiate alcohol and drug use

in adolescence will suffer the side effects on their somatic and mental health status in adulthood.<sup>[10,11]</sup> Alcohol consumption in adolescence can cause some major problems such as road traffic deaths,<sup>[12,13]</sup> depressive disorders,<sup>[14,15]</sup> relational problems and poor performance at school,<sup>[10]</sup> and also their engagement in other high-risk behaviors such as sexual risk taking,<sup>[16]</sup> smoking,<sup>[17]</sup> and cannabis use.<sup>[18]</sup>

In general, the results of some epidemiologic studies have shown considerable rates of alcohol consumption in adolescents. The Center on Addiction and Substance Abuse in the United States reported that nearly three of four high school students in America have drunk alcohol.<sup>[19]</sup> Moreover, 74% of American high school students in Fisher *et al.* survey<sup>[20]</sup> report

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having had a whole drink of alcohol and 43% report drinking within the past 30 days. Furthermore, previous researches have shown that 9.8% to 25.7% Iranian adolescents have used alcohol during their life time.<sup>[21,22]</sup> Moreover, boys engage more than girls in high-risk behaviors such as drinking alcohol.<sup>[21-24]</sup> Considering these rates, it is vital to regard adolescents' alcohol abuse.

Older adolescents reported higher tendency for alcohol abuse.<sup>[25,26]</sup> Studies showed that in mid adolescence, people tend to drink more for adaptation with risk factors of alcohol drinking.<sup>[9]</sup> The theories that focus on dominant sociability have proved that principal resources such as family, school and peers play a major role in normal and abnormal behavior acquisition.<sup>[27]</sup>

It has been proved that parental monitoring has the major role in preventing early development and maintenance of high-risk behaviors in children and adolescents.<sup>[28]</sup>

Among family process variables, parental monitoring has been identified in the literature as one of the proximal determinants of early development and maintenance of antisocial and high-risk behaviors in children and adolescents.<sup>[28]</sup>

Parental monitoring means that parents be aware of their child's friends and the places that he or she spends time.<sup>[29]</sup> They also have to do behaviors involving attention to and tracking of the locations and activities of the adolescents.<sup>[28]</sup> In researches, parental monitoring is usually defined as parents' knowledge or adolescents' perceptions of their parents' knowledge of the child's activities and friends.<sup>[30]</sup> It has been well documented that poor parental monitoring is related to adolescents' alcohol risk taking.<sup>[31-34]</sup>

Young adulthood is a period in which the child develops a relationship with peers and enters social context and new activities.<sup>[4]</sup> To fulfill intimacy needs, adolescents tend to spend their time out of the home with friends.<sup>[35]</sup> Brendgen *et al.*<sup>[36]</sup> considered parental monitoring as an important factor in adolescents' participation in high-risk behaviors and affiliation with deviant peers.

Affiliation with deviant peers means relationship with adolescents who are committing risky behaviors such as weapon carrying, offending others, and drug abuse.<sup>[37]</sup> Considering social learning theory, affiliation with deviant peers can cause problem behaviors in adolescents.<sup>[38]</sup> Recent research has shown that those adolescents who had a relationship with deviant peers tend to engage in a variety of alcohol risk behaviors.<sup>[4,23,24,34,39,40]</sup>

Those adolescents, who are monitored poorly, are more likely to participate in risky behaviors<sup>[9]</sup> and affiliate with deviant peers.<sup>[41]</sup>

Problem behavior theory and other available models on high-risk behaviors suggest that peer affiliation mediates the relationship between parental monitoring and adolescent problem behaviors.<sup>[37]</sup>

In other words, parental monitoring can cause high-risk behaviors through affiliation with deviant peers.<sup>[9,37,42]</sup> However, previous studies failed to consider the effectiveness of parental monitoring and affiliation with deviant peers on alcohol abuse in adolescents. This study was aimed to determine the attitude toward alcohol consumption among students in Tehran and to develop and also to test a model of the relationships among parental monitoring and affiliation with deviant peers as they predict youth attitude toward alcohol use.

## MATERIALS AND METHODS

The study was a part of the Survey Project on Alcohol abuse and other high-risk behaviors among adolescents. A cross-sectional study was carried out among a sample of 1266 adolescents (737 girls and 529 boys), were recruited from high schools in Tehran, Iran. The Inclusion criteria were as followings: age limitation from 14 to 18 and residency in Tehran. Participants were selected through cluster sampling method. In the first step of sampling, Tehran was divided into 5 regions (north, west, center, east, and south). Then, some districts were randomly chosen from each of these regions. Subsequently, using the list of high schools located in these district, the sample was selected. All participants were informed about the goals of the survey and completed individually administered questionnaires with regular supervision to provide reliable and valid data. The following instrumentations were applied to collect data.

### Alcohol abuse scale

The alcohol abuse scale (AAS) is a 4-item self-report scale which assesses the adolescents' attitudes to alcohol abuse.<sup>[43]</sup> Because of cultural limitations, there was not any feasibility to assess alcohol use record directly. Zadeh-Mohammadi *et al.*<sup>[43]</sup> confirmed the validity of the scale through exploratory factor analysis. Moreover, originally validated with college students, the AAS has acceptable internal consistency ( $\alpha = 0.91$ ; 43). In this study, the Cronbach's  $\alpha$  of scale was. 83.

### Parental monitoring scale

The parental monitoring scale is a 7-item self-report instrument that previously had achieved a Cronbach's  $\alpha$  of. 81.<sup>[44]</sup> Parental monitoring items included questions about adolescent's whereabouts, friends, and activities. The possible responses were "never/unimportant (0)" to "always/very important."<sup>[28]</sup> The validity of the Persian version has been confirmed by Alboukordi *et al.*<sup>[44]</sup> For this study, Cronbach's  $\alpha$  was. 70.

### Adolescent affiliation with deviant peers scale

The adolescent affiliation with deviant peers (AADP) scale is an 8-item scale, used to ask adolescents for deviant behaviors committed by their peers, like drug and alcohol use, carrying knife or gun and physical fighting during the past 6 months.<sup>[37]</sup> The possible responses were "none of them (0)" to "all of them (4)." The total response score was computed for each adolescent, with the higher score indicating more affiliation with deviant peers. The reliability and validity of the Persian version of the scale have been confirmed in Iran.<sup>[44]</sup> In addition, the Cronbach's  $\alpha$  of scale was. 82.

### Statistical analysis

Attitude toward alcohol abuse was computed using descriptive analysis. Moreover, the latent variable analyses were performed using the structural equations modeling which compare a proposed hypothetical model with a set of actual data. The closeness of the hypothetical model to the empirical data was evaluated statistically and presented in Figure 1.

## RESULTS

### Adolescents' attitude toward alcohol abuse

According to the AAS, 7.4% of all individuals were at high risk in terms of alcohol abuse. The percent of positive attitude among males was nearly 2 times more than the attitude among females (10.39% vs. 5.29%,  $\chi^2 = 23.570$ ,  $P < 0.001$ ).

### Sociodemographic variables analysis

The participants were 529 male and 737 female adolescents. The participants mean and standard deviation (SD) of age were 16.07 and 1.04 years for males and 16.04 and 1.22 for females, respectively. All participants were high school students and 4.5% of them reported distress in the structure of their families. The results of independent sample *t*-test for study variables are shown in Table 1. These findings showed that males and females were significantly different in scores of AAS ( $P < 0.001$ ), parental monitoring ( $P < 0.001$ ), and affiliation with deviant peers ( $P < 0.001$ ).

### Model testing

Table 2 shows the mean and SD of study variables and their correlations. As the table shows, there is a positive and significant relationship between AAS and AADP while PM in negatively correlated with AAS and AADP.

To investigate the proposed model based on the mediating role of AADP in PM and AAS relationship, our findings confirmed the model. Considering the obtained error index, this model explains 42% of AAS variance.

Confirming the mediating role of AADP, the model goodness of fit was investigated using Chi-square test and adjusted goodness of fit index (AGFI). The AGFI equaled 0.98. The insignificant Chi-square showed model goodness of fit. Table 3 shows all of the investigated goodness of fit indices (GFIs).

Schreiber *et al.*<sup>[45]</sup> argue that the model has goodness of fit if and only if the indices of NFI, nonnormed fit index, comparative fit index, GFI, and AGFI exceed 95%, the root mean square residual index is near to zero and SRMR and root mean square error of approximation indices are smaller than 0.80% and 0.60%, respectively. Therefore, Considering Schreiber *et al.*,<sup>[45]</sup> the current model benefits from goodness of fit.

**Table 1: Gender wise comparison of study variables among students**

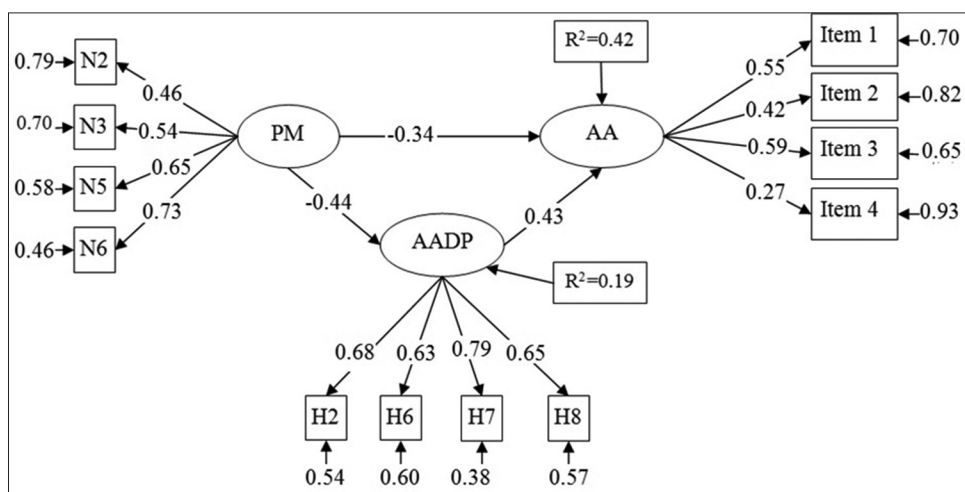
Variable	Mean±SD		df	t	P
	Males	Females			
AAS	9.39±6.42	7.80±5.15	978.142	-4.698	0.001
PM	21.29±3.90	23.74±3.08	967.141	12.049	0.001
AADP	14.58±5.76	10.40±3.44	794.579	-14.90	0.001

SD: Standard deviation, AAS: Adult attachment scales, AADP: Adolescent affiliation with deviant peers, PM: Parental monitoring

**Table 2: Mean and standard deviation of the study's variables and their correlations (latent variables)**

Variables	Mean±SD	Correlation		
		1	2	3
AAS	8.49±5.76	1		
PM	22.71±3.65	-0.288*	1	
AADP	12.16±4.99	0.304*	-0.325*	1

\* $P < 0.001$ . SD: Standard deviation, AAS: Adult Attachment Scales, AADP: Adolescent affiliation with deviant peers, PM: Parental monitoring



**Figure 1:** The investigated model for the mediating role of adolescent affiliation with deviant peers in the relationship between parental monitoring and alcohol abuse scale

Figure 1 shows the results of investigated structural equation model. Regarding this model, PM has a significant effect on AAS through AADP. The direct and indirect effectiveness of PM on AAS were  $-0.42$  and  $-0.094$ , respectively. Moreover, AADP effectiveness on AAS was  $0.21$ .

Finally, to investigate significant of the indirect effect of PM on AAS through AADP used bootstrapping method by macro.<sup>[46]</sup> This result is shown in Table 4.

As shown Table 3, both of lower and upper bound in bootstrap results are negative. Therefore, these results show that indirect effect in this model is significant and then the relationship between PM and AAS mediate by AADP.

## DISCUSSION

The purpose of this study is to investigate the attitudes toward alcohol abuse among students and the role of parental monitoring and affiliation with deviant peers in predicting alcohol abuse. According to the findings of this research, 7.4% of the adolescents were at high risk in terms of alcohol abuse. This can be due to factors such as psychosocial characteristics of the adolescents<sup>[1]</sup> and peers' influences.<sup>[27]</sup> Moreover, drug and alcohol abuse can be used by teenagers to cope with their stress.<sup>[47]</sup> This study, which is consistent with Kelly *et al.*, Kristjansson *et al.*, and Mohammadkhani, also showed that alcohol abuse was more frequent among boys compared to the girls.<sup>[21,23,24]</sup> Explaining the results, factors such as gender roles, different expectations from girls,<sup>[48]</sup> and parents' extra monitoring<sup>[28]</sup> should be considered.

Our results are similar to those of Brendgen, Vitaro, and Bukowski,<sup>[36]</sup> Paschall *et al.*,<sup>[37]</sup> and Meldrum *et al.*<sup>[38]</sup> as they showed that affiliation with deviant peers could predict the high-risk behaviors. Consistent with previous research, spending time with deviant peers has a direct effect on both high-risk behaviors and parental monitoring.<sup>[36,42]</sup> The results also support the idea that relationship with deviant peers is as an important factor in the development of high-risk behaviors in adolescents as it was suggested in the social learning theory.<sup>[38]</sup>

This study showed that parental monitoring was a major factor in adolescents' alcohol abuse directly and also through affiliation with deviant peers. Previous research suggested that parental monitoring is an important deterrent of alcohol

abuse,<sup>[32-34]</sup> hence, this study supported this prediction. Consistent with Brendgen *et al.*,<sup>[36]</sup> parental monitoring could indirectly predict affiliation with deviant peers. Dishion *et al.*<sup>[49]</sup> demonstrated that lacking parental monitoring can foster adolescents' affiliation with deviants by providing children with the opportunity to meet with them. In sum, we found that parental monitoring and affiliation with deviant peers were significant predictors of attitude toward alcohol abuse; furthermore, parental monitoring indirectly influences attitudes through affiliation with deviants.

Regarding the results of the present study, the theoretical model proposed by Paschal *et al.*<sup>[37]</sup> is confirmed. In line with the previous research, it can be concluded that parental monitoring effectiveness on alcohol abuse is mediated through affiliation with peers.<sup>[9,37,42]</sup>

Limitations of this study are worthy of discussion. Considering cultural limitations, we investigate alcohol consumption indirectly, which can affect the results of this study. Another limitation of this study is that measurement of research variables was based on participants' self-report, and there was no independent method for testing the validity of their responses. Furthermore, this study was carried out in Tehran, and its result should be generalized with caution. Future studies would probably benefit from using interview and observational research data to help researchers understand the connections of adolescent alcohol abuse and its connected variables in greater depth.

## CONCLUSION

Generally speaking, results of this study show that parental monitoring and affiliation with deviant peers had largely explained the attitude toward alcohol abuse among adolescents. Therefore, prevention efforts aimed at reducing risky alcohol drinking should be composed of these factors. In fact, the results suggested that prevention efforts beginning earlier (i.e., at the start of high school) may be warranted.

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**Table 3: Goodness of Fit indices of the investigated model**

AGFI	GFI	Standardized RMR	RMR	CFI	NNFI	NFI	RMSEA	$\chi^2/df$	$\chi^2, df=45$
0.98	0.99	0.023	0.024	0.99	0.99	0.98	0.023	1.71	72 ( $P=0.01$ )

AGFI: Adjusted goodness of fit index, GFI: Goodness of fit index, RMR: Root mean square residual, CFI: Comparative fit index, NNFI: Nonnormed fit index, NFI: Normed fit index, RMSEA: Root mean square error of approximation

**Table 4: Bootstrap results for indirect effect in these model**

Indirect effect	Size	Boot	Bias	SE	Lower	Upper
PM on AAS through AADP	-0.0765	-0.0767	-0.0002	0.0130	-0.1027	-0.0523

SE: Standard error, AAS: Adult attachment scales, AADP: Adolescent affiliation with deviant peers, PM: Parental monitoring

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**Conflicts of interest**

There are no conflicts of interest.

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