Prediction of risky sexual behaviors in adolescents based on childhood traumas

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Abstract

Risky sexual behaviors in adolescents are associated with an increased likelihood of sexually transmitted infections and unwanted pregnancies which have many negative consequences. Studies have indicated that risky sexual behaviors are associated with childhood maltreatments. The aim of the present study was to predict risky sexual behaviors based on childhood maltreatments among Iranian adolescents. Three hundred and eleven adolescents (ages 12-17; M=15.91, M=15.9

Keywords: Risky Sexual Behaviors, Adolescent, Neglect, Abuse, Traumas.

Introduction

Engagement in risky behaviors such as unprotected sex are prevalent during adolescence and has been identified as one of the most important public health concerns (12-14). Risky sexual behaviors, including early sexual initiation, unprotected sex (such as not using condoms), and having multiple sexual partners, have attracted worldwide attention for the long-term negative effects of such behaviors, particularly physical health

issues such as sexually transmitted infections (STIs) or other diseases and unwanted pregnancies (1). Premarital sexual relations have been regarded immoral, illegal, and taboo in Iran (1, 2). However, a meta-analysis indicated a relatively high prevalence of pre/extramarital sex and high-risk sexual behaviors among young people in Iran (3).

Several factors play a significant role in adolescents' involvement in risky sexual behaviors. A systematic review

demonstrated that personal, family, peers, school and social factors contribute to risky sexual behaviors of Iranian adolescent girls (8). One of the most significant factors contributing to risky sexual behaviors is the history of traumatic childhood experiences. Childhood maltreatment has been considered as the most significant preventable cause of psychopathology, explaining nearly 45% of the population's attributable threat for early onset psychiatric conditions (2). A meta-analysis reported the pooled estimate of the prevalence of child physical abuse, child emotional abuse and child neglect in Iran to be 43.591%, 64.533% and 40.945%, respectively. Emotional abuse was the most prevalent form of child abuse in the Iranian population (3). It has been demonstrated that children of families with low socioeconomic status are five times more likely to experience some type of abuse or neglect than other children (4).

A large body of evidence suggest that childhood maltreatment is associated with several physical, mental and social consequences (5). A previous study indicated that after accounting for familial characteristics and any other types of substantiated childhood maltreatment, all forms of substantiated childhood maltreatment were separately associated with early sexual debut and adolescent pregnancy (6). Recent studies have indicated that traumatic childhood experiences especially sexual abuse, are associated with a higher risk of adolescent pregnancy (7). Long-term and shortterm results of studies on children who have been exposed to various types of abuse have indicated that these children are at risk for death, mental illness, criminal behaviors, substance use, and sexually high-risk behaviors in adolescence and adulthood (8-11,6).

Clarifying childhood predictors of risky behaviors during adolescents and early adulthood has been identified as a priority (12, 13). Cultural, racial, or ethnical differences may influence the relationship between childhood maltreatments and risky sexual behaviors (14). However, majority of the previous studies investigating predictors of risky sexual behaviors have been conducted in Western countries and very little attention has been given to these issues in the Middle East, especially in Islamic countries (15). In addition, while neglect has been identified as one of the most common types of child abuse that is often accompanied by other types of abuse (16), majority of the previous studies have focused on child abuse and few studies have examined the role of neglect as a childhood trauma in risky sexual behaviors (5). The aim of the present study was to predict risky sexual behaviors based on all types of childhood traumas including physical, emotional and sexual abuse and physical and emotional neglect in a sample of Iranian adolescents. A better understanding of the specific types of childhood traumatic experiences that prone Iranian adolescents to engage in risky

sexual behaviors will help clinicians to develop specific interventions for risky sexual behaviors.

MATERIALS AND METHODS

Participants

A total of 350 adolescents responded to study recruitment advertisements. In total, 11% of the participants did not respond completely to the questions and were excluded from the study. The final sample consisted of 311 adolescents aged 12-17 (M = 15.91; SD = 1.43).

Procedure

This study was part of a larger research project investigated predictors of risky sexual behaviors in Iranian Adolescents. The study was approved by the ethical committee of Shahid Beheshti University of Medical Sciences. All subjects provided informed consent before completing study questionnaires. This was an internet-based study, in which data were collected online using Google Docs. The link to the online questionnaire was distributed on social media. The first section of the questionnaires provided information regarding the purpose and nature of the study. In the next sections, participants were asked to respond to questions regarding demographic characteristics including gender, age, family income and education level. Inclusion criteria were having experienced at least one type of risky sexual behaviors. We excluded participants with missing information on any measure and participants who had no sexual experience.

Measurements

Risky-sexual behaviors

To assess risky sexual behaviors, three questions including (17, 18) (having underage sexual activity, engaging in unprotected sex and having multiple sexual partners) were adapted from previous studies. Adolescents who answered positively to each of the above questions were considered as a person with a history of risky sexual behavior.

Childhood traumas questionnaire (CTQ)

CTQ is a self-report questionnaire designed by Bernstein et al. as a screening tool to assess childhood traumas. This 28-item questionnaire includes five subscales representing each type of abuse (sexual, physical, and emotional) and neglect (physical, emotional) in addition to a 3-item "minimization/denial" scale for detecting false-negative child maltreatment reports. In Bernstein et al's study, Cronbach's alpha coefficients of the CTQ on a group of adolescents for dimensions of emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect were 0.87, 0.86, 0.95, 0.89, and 0.78, respectively (19). Cronbach's alpha coefficients of the Persian

version for the five subscales of the CTQ have been reported to be 0.81 to 0.98 (20). In the present study, Cronbach's alpha coefficients were 0.93 for total scale, 0.77 for emotional abuse; 0.84 for physical abuse, 0.89 for sexual abuse, 0.76 for emotional neglect, and 0.76 for physical neglect.

Statistical analysis

χ2, independent *t*-tests, and Mann-Whitney U test were conducted to examine differences in sociodemographic characteristics and TCQ scores between adolescents with and without risky sexual behaviors. Dependent variable (risky sexual behavior) was categorized dichotomously as present or absent. Hierarchical binary logistic regression was used to examine the predictive relationship between childhood traumatic experiences and risky sexual behaviors. All analyses were carried out using Statistical Package for Social Sciences (SPSS) version 24.

Results

The final sample included 311 adolescents, of which 200 (64 %) had experienced risky sexual behaviors while 111 (36%) did not report any experience of risky sexual behaviors. The

descriptive statistics of sociodemographic variables and CTQ scores are presented in Table 1.

As shown in Table 1, the mean age of the participants was 15.91 years old (range=12 to 17; SD=1.43), and the sample was consisted of 192 males and 119 females. Majority of the adolescents were lived in families with middle or lower middle income (n=271, 87.1 %). Comparing adolescents with and without risky sexual behaviors showed no significant differences in family income (z=-1.39, p>0.05). However, adolescents without risky sexual behaviors compared to adolescents with risky sexual behaviors had a significant lower mean age (t=-3.96, p<0.001) and lower boy-to-girl ratio ($\chi^2=20.36, p<0.001$).

Regarding CTQ, adolescents without risky sexual behaviors in comparison to adolescents with risky sexual behaviors showed lower scores on TCQ total score (t = -3.45, p < 0.05), physical abuse (t = -4.46, p < 0.001), and physical neglect (t = -4.41, t = 0.001). However, no statistically significant differences were observed between two groups regarding emotional abuse (t = -1.92, t = 0.05) and emotional neglect (t = -0.62, t = 0.05).

 Table 1

 Descriptive statistics of sociodemographic variables and Childhood Traumatic Questionnaire

variable	category	Frequency (%) /	Frequency (%) / Mean (S.D.)				
		All participants	With risky	Without risky	differences		
		(n=311)	sexual behavior sexual behavior				
			(n=200)	(n=111)			
gender	female	119 (38.3 %)	58 (29.0 %)	61 (55.0 %)	$\chi^2=20.36; p<0.001$		
	male	192 (61.7 %)	142 (71.0 %)	50 (45.0 %)			
age	-	15.91 (1.43)	16.20 (1.22)	15.50 (1.59)	<i>t</i> =-3.96; <i>p</i> <0.001		
family income	very low	71 (22.8 %)	46 (23.0 %)	25 (22.5 %)	Mann-Whitney		
	low	122 (39.2 %)	87 (43.5 %)	35 (31.5 %)	U=10093.00		
	middle	78 (25.1 %)	43 (21.5 %)	35 (31.5 %)			
	high	23 (7.4 %)	13 (6.5 %) 10 (9.0 %)				
	very high	17 (5.5 %)	11 (5.5 %)	6 (5.4 %)			
TCQ total score		60.58 (19.29)	65.30 (16.78)	57.56 (20.06)	<i>t</i> =-3.45; <i>p</i> <0.05		
emotional abuse		12.59 (4.46)	13.33 (4.14)	12.35 (4.64)	<i>t</i> =-1.92; <i>p</i> >0.05		
physical abuse		11.56 (4.91)	12.66 (4.48)	10.63 (4.98)	<i>t</i> =-3.57; <i>p</i> <0.001		
sexual abuse		12.20 (5.29)	13.44 (4.59)	10.56 (5.58)	t=-4.64; p<0.001		
emotional neglect		12.81 (4.31)	13.13 (3.75)	13.46 (4.81)	t=0.62; p>0.05		
physical neglect		11.56 (4.41)	12.73 (4.13)	10.56 (4.24)	<i>t</i> =-4.41; <i>p</i> <0.001		

Considering the group differences in age and gender distribution, the data were analyzed using a hierarchical binary logistic regression to control for these two variables. Age and gender were considered as the first block and CTQ subscales were regarded as the second block. The results indicated that

after controlling for the effect of age and gender, sexual abuse and emotional neglect were the significant predictors of risky sexual behaviors and respectively explained 14.5% and 1.9% of the variance of these behaviors. The estimated regression coefficients of the variables are presented in Table 2.

 Table 2

 Binary logistic regression analysis for predicting risky sexual behaviors

model	predictor	β	standard error	Wald statistic	df	p	eβ (Odds ratio)	Nagelkerke R square	95% EXP(B)	C.I.for
1	sex	0.453	0.337	1.806	1	0.179	1.572		lower	upper
	age	0.131	0.111	1.399	1	0.237	1.140			
2	Sexual	0.106	0.030	12.683	1	0.000	1.112	0.126	1.044	1.174
	Abuse									
	Emotional	0.70	0.032	4.669	1	0.031	0.932	0.145	0.876	0.995
	Neglect									

Discussion

The current study aimed to investigate the predictive relationships between childhood traumatic experiences and risky sexual behaviors in a sample of Iranian adolescents. The results showed that even after controlling for age and gender differences, sexual abuse and emotional neglect could predict risky sexual behaviors.

Our results demonstrated a significant relationship between sexual abuse and risky sexual behaviors in Iranian adolescents. This finding is consistent with previous studies (21, 22). Majority of the studies investigating associations between childhood maltreatment and risky sexual behaviors has centered on sexual abuse in particular (23). Previous studies in various samples have been identified sexual abuse as a significant predictor of multiple risky sexual behaviors (24-26). A previous study in a sample of young women found that after controlling for other types of childhood maltreatment. childhood sexual abuse remained associated with risky sexual behaviors (27). Many factors may explain the relationship between sexual abuse and risky sexual behaviors. For example, a consistent association between sexual abuse and feelings of shame and low self-worth has been found for both male and female survivors (28, 29) which may place such individuals at a higher risk of risky sexual behaviors.

We also found a significant relationship between emotional neglect and risky sexual behaviors among adolescents. Neglect is the least investigated type of childhood maltreatment and different outcomes has been found following neglect in comparison to abuse (30). In general, individuals with a history of childhood maltreatment shape an insecure attachment which could lead to risky sexual behaviors (10). These attachment patterns may lead to difficulty trusting others or letting others get too close, which may lead to risky sexual behaviors (e.g., multiple sexual relationships) (11) .Although it has been demonstrated that childhood maltreatment at any age can lead to long-term consequences (31); however, timing and duration

of childhood traumatic experiences can mediate later risk for psychopathology (2).

Contrary to expectation, physical abuse, emotional abuse and physical neglect were not significant predictors of risky sexual behaviors. In general, the previous findings on the relationship between physical and emotional abuse and risky sexual behaviors are mixed. While some studies investigating physical or emotional abuse did not find a significant relationship between physical and emotional abuse and risky sexual behaviors (32, 33), longitudinal studies demonstrated particular effects of physical abuse and emotional maltreatment (24, 34) or neglect (35) even after controlling for sexual abuse. In addition, many factors (e.g. trauma symptoms) (23) may play a role in the relationship between childhood maltreatment and risky sexual behaviors. In other words, there may be some confounding variables which were not considered in the current study. More research on the role of factors mediating the relationship between childhood maltreatments and risky sexual behaviors are needed. According to the general effects model, all forms of childhood maltreatment are traumatizing and any childhood traumatic experience leads to impairment in psychological functioning. Our results is more consistent with differential effects model which suggest that specific types of childhood maltreatment are associated with special outcome (36).

Although our study provides new insights regarding risky sexual behaviors in adolescents, several limitations should be considered in interpreting findings. First, this study used retrospective reports of childhood traumas which may have been influenced by recall errors. It would be useful for future studies to incorporate other methods of assessment. Second, the cross-sectional design of the current study limits any causal conclusions. Longitudinal design is needed to evaluate the causal relationship between study variables. Third, although some subtypes of childhood maltreatment may be more closely related to risky sexual behaviors, it is clear that various subtypes of abuse and neglect may co-occur in the same individuals. Future studies should investigate the additive

effect of childhood maltreatment on risky sexual behaviors of adolescents.

Conclusion

The findings of the current study indicate that sexual abuse and emotional neglect could predict risky sexual behaviors among Iranian adolescents, even after controlling for age and gender. Our study expands current literature by investigating the role of childhood maltreatments on risky sexual behaviors of adolescents in a non-western culture. More studies are needed to investigate protective factors of risky sexual behaviors in Iranian adolescents.

Research funding

This research received no specific grant from any funding agency.

Ethical approval

The study was approved by the research ethics committee of school of medicine - Shahid Beheshti University of Medical Sciences, with IR.SBMU.MSP.REC.1399.787 ethics code.

Conflict of interests

The authors declare that there are no conflicts of interests **Funding / Support:** This paper is a part of the M.Sc. dissertation of the first author and was supported by Shahid Beheshti University of Medical Sciences.

Authors' Contribution: Farshad Aliyari designed the study, collected data and drafted the initial manuscript. Hoda Doos Ali Vand conceptualized the study, supervised the project, helped with interpretation of the data, and revised the manuscript critically for important intellectual content. Maryam Bakhtiari conceived and designed the study. Mohsen Saberi Esfidvajani verified the analytical methods and interpreted the data.

Acknowledgment

We thank the participants of this study for spending time to filling out the questionnaires.

Conflict of interests: The authors declare that there are no conflicts of interests

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