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Socioeconomic inequalities in health among school-aged adolescents in Tehran

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Abstract

Background: Socioeconomic status has been found to have a significant impact on the health as well as risk behaviors of adolescents across different contexts. This study was conducted to assess the effect of social relations adjusted by social class on physical and psychological well-being of adolescences in Teheran, Iran.

Methods: This was a cross- sectional study and carried out on 1,742 adolescences living in Tehran during 2011. Adolescences were selected, using proportional stratified sampling method and a questionnaire was filled over an interview for data gathering. Data were analyzed, using SPSS18 logistic regression.

Results: The prevalence of psychological symptoms was more than 24% and had a large range (24%-93%), while physical symptoms showed a lower prevalence with a smaller range (12%-33%). Furthermore, there was a significant relation between the adolescences gender and feeling the need for others' help ($p<0.001$). Factors related to feeling the need for others help, anxiety, and worrying were the most prevalent among both boys and girls. In the section of family social relations, talking to the mother and talking to the father had the lowest and the highest prevalence among girls and boys, respectively. With respect to relations, the number of close friends and after school gathering time with close friends had the highest prevalence among girls, while the number of close friends and E-communication with close friends had the lowest and the highest prevalence among boys, respectively.

Conclusion: The physical and psychological symptoms were common among adolescents from families with high socioeconomic status.

Keywords: Health Behaviors, School-aged Children, Adolescents, Tehran.

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Introduction

Socioeconomic status has been found to have a significant impact on the health of adolescents across different contexts and it is known to influence risk behaviors among adolescents (1). Health disparities arising from unequal distribution of socioeconomic resources are observed in different communities. Moreover, it has been reported that these disparities have lower research attraction in adolescents than among adults and children (2-4).

The necessity to study the effect of socioeconomic status on the health of teens has been expressed in several studies (5,6). Adolescence is usually accompanied by physical and psychological changes associated with puberty, stress and challenges posed by the controlling family and school, and these factors may lead to negative behaviors such as smoking and drinking (7,8). These risky behaviors in adolescents do not just pertain to that period of life, but in their adulthood and old age (6).

In fact, addressing the impact of socioeconomic status in school-aged adolescents is

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an important issue due to its impact on the adolescents' health and healthy behaviors (6,9). Economic, political, cultural, demographic and socioeconomic changes in each country can affect the socioeconomic factors related to adolescence's behaviors and health (5,6). For instance, a study across 33 European and North American countries showed a positive relationship between self-rated health and socioeconomic status among adolescences (5). In developing countries, few studies have been carried out on health inequalities among adolescents. A study found a positive relationship between socioeconomic status and BMI index among Iranian adolescence girls (10). Also, a positive relationship was found between socioeconomic status and obesity in both adolescences boys and girls in India (11).

The Iranian adolescent population makes up about 22% of the overall Iranian population, according to the last census by the Statistical Center of Iran (12). This indicates that addressing the determinants of health for this segment of the population is of prime importance. Available national research warns about the increase in the adolescents' obesity and overweight (13, 14) due to inappropriate nutritional patterns (15,16), and high prevalence of smoking (17,18). Additionally, there is an increasing trend in psychiatric disorders (19) and low levels of physical activity (20). However, the impact of parental socioeconomic status on health outcomes of Iranian adolescents is still unclear. Therefore, this study was conducted to assess the socioeconomic inequalities in health among school-aged adolescents in Tehran.

Methods

This was a cross- sectional study carried out in Tehran in 2011. The target population included students of first, second and third grades of junior high school in public and non-profit schools in 2010-2011 academic years. A sample of 1,742 students was selected, using proportional stratified sampling method. In the first step, Tehran was divided into 19 regions and they were categorized into four groups (north, south, east and west). The sample size of each region was determined based on the number of its students. Next, through scattered points of study regions and visits to the schools, some classes were selected randomly according to the number of students per course. The questionnaire was carried out through an interview.

Variable Measurement

Parental Socioeconomic Status

Socioeconomic status was assessed based on the social class of Weber's model (21). In the social class of Weber's model, three dimensions of family income, parent's occupation and parent's education are used. The three factors of housing status (owned or rented), and the neighborhood of the house and the father's occupation were used to estimate monthly income. In this case, the price of the house and average income of each job were used. Then, adolescents were categorized into four levels of high, moderate to high, moderate to low, and low based on parent's education, parent's occupation and average family income. Two stages were used for social class estimation. In the first stage, four levels of social class were merged into two groups (high and moderate to high social class were considered as group 1, and moderate to low and low social classes were merged to create group 2). In the second stage (modeling stage), four levels of social class were merged into three groups (high social class was put in group 1, moderate to high and moderate to low were put in group 2 and finally low social class was put in group 3).

Social Relations

Social relations were measured, using three groups**:** (a) Family relations (talking to the mother and father, talking to an older brother or sister, parents willingness to talk to the teacher, parents' help with homework); b) Friends relations (number of close friends, the time spent with close friends during week, evening after school

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time with close friends, talking to a close friend, E-communication with a close friend); and c) A relationip with school and teachers (thinking about school, teachers' opinion about education, homework, and thinking about a "kind classmate).

Health Status

Physical health included questions about headache, stomach pain, low back pain, insomnia and a feeling of laziness and lethargy. In addition, mental health encompassed questions on misconduct, anger, self-esteem, feeling the need for others' help and feelings of helplessness and misery.

Statistical Analysis

Data analysis was done, using descriptive statistics and regression analysis. Multiple logistic regressions analysis was used based on gender differences and adjusted age. The first effects of socioeconomic status on various aspects of social relation were assessed. Then, the effects of social relations on various aspects of physical and psychological symptoms of the adolescents were evaluated. Finally, the effect of parental socioeconomic status and different aspects of social relation were modeled on physical and psychological health of the adolescents. Furthermore, multiple regression analysis was carried to assess associations between exposures and outcomes. All analyses were performed, using SPSS 18. Results were presented as OR with 95% confidence interval.

Results

A total of 1,722 school adolescents were included in this study. The prevalence of all psychological symptoms was more than 24% and had a large range (24%-93%), while physical symptoms showed a lower prevalence with a small range (12%-33%) (Table 1). Furthermore, a significant relationship existed between feeling the need to others' help and gender ($p<0.001$). Factors related to feeling the need to others' help (93% and 42% in boys and girls, respectively), and anxiety and worrying (38% in both genders) were the most prevalent symptoms among boys and girls. In the family section of social relations, talking to the mother (39% and 36% of the girls and boys, respectively) and talking to the father (51% and 53% of the girls and boys, respectively) had the lowest and the highest prevalence among girls and boys, respectively. In the friends section of social relations, the number of close friends (22%) and spending after school time with close friends (64%) had the lowest and the highest prevalence in the girls, respectively, while the number of close friends (21%) and E-communication with close friends (72%) had the lowest and the highest prevalence among boys. Furthermore, with respect to the social relations in school and with teachers, the results revealed that to "think about school" (15% and 23% of the girls and boys, respectively) and to think about "kind classmates" (45% and 53% in the girls and boys, respectively) had the lowest and the highest prevalence among girls and boys, respectively. Moreover, there was a statistically significant relationship between talking to an older brother or sister ($p=0.03$), parents' interest in talking about school affairs ($p=0.03$), general thinking about school ($p<0.001$), thinking about close classmates ($p<0.001$), enjoy being with classmates ($p<0.001$) and being accepted by classmates ($p=0.05$) with gender (Table 1).

Socioeconomic Patterns of Social Relations

The effect of parental socioeconomic status on social relations among the studied adolescents is demonstrated in Table 2. Among boys, parental socioeconomic status had a significant effect on the studied boys' inability to talk to their older brother or sister (OR=1.41, 95% CI: 1.020-1.968, $p=0.038$), close friends (OR=1.47, 95% CI: 1.048-2.076, $p=0.026$), to communicate with friends via electronic devices (OR=1.48, 95% CI: 1.063-2.080, $p=0.021$), so that those from lower socioeconomic

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Table 1. Psychological Symptoms, Physical Symptoms, Parental Socioeconomic Status, and Social Relations by Gender among Adolescents in Teheran, Iran, 2011

	Variable	Groups and Elements	Girls(n = 1139		Boys (n = 605)		
			N	%	N	%	p
Socioeconomic	Socioeconomic status	High	150	13	76	12	0.68
		Middle	835	73	455	75	
		Low	154	13	74	12	
Health Status	Physical symptoms	Headache	300	26	157	25	0.86
		Stomachache	182	15	94	15	0.81
		Backache	195	17	76	12	0.01
		Difficulty sleeping	367	32	179	29	0.25
	Psychological symptoms	Feeling low	382	33	198	32	0.73
		Irritable or bad temper	432	37	235	38	0.70
		Feeling nervous	444	38	232	38	0.79
		Self confidence	332	29	151	24	0.06
		A need to others' help	489	42	566	93	<0.001
		Feeling dizzy	328	28	204	33	0.34
Social Relation	Family	Talking to mother	454	39	219	36	0.13
		Talk to the father	586	51	324	53	0.40
		Talking to the older brother or sister	509	44	315	51	0.03
		Parents willing to talk to the teachers	486	42	294	48	0.03
		Parents help with the homework	535	46	239	39	0.56
	Friends	Number of close friends	260	22	131	21	0.57
		Days with close friends during the week	697	61	359	59	0.45
		Spending after school times with close friends	737	64	392	64	0.97
		Talking with close friends	400	35	207	34	0.70
		E-communication with close friends	632	55	436	72	0.49
	School and Teachers	Thinking about school	182	15	141	23	<0.001
		Teacher's idea about your education	349	30	175	28	0.45
		Homework	349	30	191	31	0.69
		Thinking about a "kind classmate"	515	45	324	53	<0.001
		kind and helpful students	420	36	270	44	<0.001
		Students enjoy being together	260	22	178	29	<0.001
		Students accept me	401	35	263	43	<0.001

status were more at risk of having problems in these factors. Among girls, there was also a statistically significant relationship between three factors of parents' interest in talking about school affairs (OR=1.34, 95% CI: 1.059 - 1.703, p=0.015), general thinking about school (OR=1.38, 95% CI: 1.009-1.908, p=0.044) as well as being comforted among classmates (OR=1.37, 95% CI: 1.044 to 1.819, p=0.024). Girls with lower socioeconomic status were more at risk of facing negative aspects of these factors (Table 2).

Social Relations and Health

The effects of social relations adjusted by social class on physical and psychological symptoms are presented in Table 3. There was a statistically significant relationship between spending an afternoon with close friends after class and both physical and psychological symptoms in the boys, (OR=2.10, 95% CI: 1.475-2.98, p<0.001 & OR=1.67, 95% CI: 1.165-2.409, p=0.005, respectively). Moreover, poor social relations, in terms of spending an afternoon with close friends, caused more physical and psychological symptoms among boys. As shown in Table 3, poor social relations were associated with just one group of symptoms (physical or psychological). There was more physical (OR=1.63, 95% CI: 1.268-2.104, p<0.001) and psychological symptoms (OR=1.41, 95% CI: 1.095-1.82, p=0.008) with poor levels of parents' interest in talking with the schoolteachers among girls. There was also a statistically significant relationship between lacking proper relations with peers during the week and physical and psychological symptoms (OR=1.30, 95% CI: 1.019-1.674, p=0.035; OR=2.03, 95% CI: 1.55-2.66, p<0.001). Furthermore, the lack of a proper relationship with close friends among girls was significantly related to the incidence of physical and psychological symptoms

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Table 2. Age Adjusted Odds Ratios (95% CI) for Poor Relations with Parents, Friends and School by Parents' Socioeconomic Status

	Boy			Girl		
	p	OR	95% CI	p	OR	95% CI
Talking to the mother	.821	1.040	.738-1.466	.244	1.153	.908-1.465
Talking to the father	.077	1.347	.968-1.875	.169	1.179	.933-1.490
Talking to the older brother or sister	.038	1.417	1.020-1.968	.503	1.084	.856-1.372
Parents willing to talk to the teacher	.926	.984	.708-1.368	.015	1.343	1.059-1.703
Parents helping with homework	.255	1.208	.872-1.674	.513	.925	.731-1.169
Family Com.	.689	1.072	763-1.507	.242	1.150	.910-1.453
Number of close friends	.319	1.221	.824-1.809	.781	.961	.727-1.270
Days with close friends during the week	.728	.943	.676-1.314	.600	.938	.738-1.192
Spending after school times with close friends	.210	1.246	.883-1.757	.645	1.059	.829-1.353
Talking with close friends	.026	1.475	1.048-2.076	.280	.873	.683-1.116
E-communication with close friends	.021	1.487	1.063-2.080	.059	.797	.630-1.008
Friends Com.	.666	.927	.657-1.309	.299	1.135	.894-1.440
Thinking about school	.722	.932	.633-1.373	.044	1.387	1.009-1.908
Teacher's iopinion about your education	.477	.876	.609-1.261	.263	1.155	.897-1.488
Homework	.364	.849	.595-1.210	.288	1.147	.891-1.478
Thinking about a "kind classmate"	.271	.831	.597-1.155	.817	1.028	.813-1.300
Kind and helpful students	.522	.898	.645-1.249	.306	.881	.690-1.123
Students enjoy being together	.459	1.145	.800-1.638	.024	1.378	1.044-1.819
Student accept me	.715	1.063	.765-1.478	.901	1.016	.795-1.297
School and teachers Com	.684	1.071	.770-1.490	.615	.941	.746-1.192

(OR=1.40, 95% CI: 1.08-1.81, p=0.011; OR=1.88, 95% CI: 1.45-2.45, p<0.001). Furthermore, girls with improper relationship with their teachers and school were more at risk of physical (OR=1.43, 95% CI: 1.12-1.80, p=0.004) and psychological symptoms (OR=1.93, 95% CI: 1.49-2.52, p<0.001).

Socioeconomic Status, Social Relations and Health

The results for the relationship between parental socioeconomic status and physical and psychological health status of adolescent boys and girls are displayed in Table 4. In Model 1, boys with parents in the middle socioeconomic status had increased physical and psychological symptoms (OR=1.78, OR=1.66, p=0.024). In considering the effect of factors of family and socioeconomic status on health status, the middle socioeconomic status had a positive effect on the incidence of physical symptoms among boys, while lower socioeconomic status was associated with lower risk for the incidence of psychological symptoms among girls (Model 2). In all estimated models, there was a significant relationship between higher social status and the incidence of psychological symptoms among girls.

Adding friend relations in the Model 3, the middle socioeconomic status had a positive effect on the incidence of physical symptoms among boys (p=0.027), while among girls, low socioeconomic status had a negative relationship with the incidence of psychological symptoms (p=0.008).

Adjusting for the teachers and school relations in Model 4, there was a significant relationship between physical symptoms in both genders (OR=2.14, 95% CI: 1.512-3.047, p<0.001 & OR=1.42, 95% CI: 1.11-1.82, p=0.005, respectively), while a significant relationship was found between psychological symptoms among girls (OR= 1.92, 95% CI: 1.48-2.51, p<0.001). Model 5 shows a relationship between the socioeconomic status, relations with family, friends, school and teachers, with the incidence of physical and psychological symptoms among all school adolescents (p<0.05). In this model, higher socioeconomic status was associated with psychological symptoms in boys (p=0.049) and girls (0.002).

Results also showed that middle socioeconomic status (p=0.027) and poor relations with schools and teachers (p<0.001) had a significant positive relationship with the

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incidence of physical symptoms among boys, so that these factors increased the risk of physical symptoms. Furthermore, among girls, poor relations with school and teachers had a significant relationship with the incidence of physical symptoms (p=0.007). However, among girls, low socioeconomic status led to lower risk for psychological symptoms (p=0.007). Moreover, poor relations with friends among

Table 3. Age- Adjusted Odds Ratios (95% CI) for Physical and Psychological Symptoms by Social Relations and Connection to School among Adolescents in Teheran, Iran, 2011

Variable	Boys				Girls			
	Physical Symptoms		Psychological Symptoms		Physical Symptoms		Psychological Symptoms	
	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI
Talking to the mother	1.28	0.89-1.85	1.21	0.85-1.72	1.08	0.84-1.39	1.16	0.90-1.50
Talking to the father	0.94	0.67-1.32	1.23	0.87-1.73	1.06	0.83-1.36	1.15	0.89-1.48
Talking to the older brother or sister	1.04	0.74-1.46	1.13	0.81-1.59	1.21	0.95-1.55	1.11	0.86-1.43
Parents willing to talk to teachers	0.95	0.68-1.35	0.94	0.67-1.31	1.63	1.26-2.10	1.41	1.09-1.82
Parents helping with homework	1.33	0.95-1.88	1.29	0.92-1.80	1.17	0.91-1.49	1.14	0.88-1.46
Family.com	1.28	0.90-1.83	0.93	0.65-1.32	0.94	0.74-1.20	0.95	0.74-1.23
Number of close friends	1.24	0.81-1.89	1.31	0.88-1.96	1.21	0.90-1.62	2.38	1.77-3.21
Days with close friends during the week	2.20	1.55-3.12	1.24	0.87-1.75	1.30	1.01-1.67	2.03	1.55-2.66
Spending after school times with close friends	2.10	1.47-2.98	1.67	1.16-2.40	1.00	0.78-1.29	1.54	1.17-2.02
Talking with close friends	1.11	0.77-1.59	1.01	0.71-1.45	1.40	1.07-1.81	1.88	1.45-2.44
E-communication with close friends	1.87	9.87-22.61	1.31	0.70-.1.60	1.91	1.43-2.42	1.37	0.07-.1.36
Friends.com	1.29	0.90-1.86	1.13	0.79-1.61	1.08	0.84-1.39	1.16	0.90-1.50
Thinking about school	2.99	1.87-4.76	2.13	1.44-3.14	1.46	1.03-2.07	1.14	0.81-1.60
Teacher's opinion about your education	0.78	.53-1.14	1.43	0.98-2.07	0.84	0.64-1.09	1.11	0.84-1.45
Homework	1.29	0.89-1.87	1.70	1.19-2.44	1.12	0.86-1.47	1.38	1.06-1.81
Thinking about a "kind classmate"	.96	.68-1.35	1.58	1.12-2.24	1.14	0.89-1.46	1.16	0.90-1.49
Kind and helpful Students	1.01	0.72-1.42	1.06	0.75-1.49	1.11	0.86-1.43	1.04	0.80-1.35
Students enjoy being together	1.00	0.68-1.46	1.31	0.90-1.89	1.11	.82-1.48	0.96	0.71-1.30
Students accept me	0.75	0.53-1.06	0.94	0.67-1.32	1.16	0.89-1.50	0.88	0.68-1.15
School and teachers.com	2.12	1.50-3.01	1.18	0.84-1.66	1.43	1.12-1.83	1.93	1.49-2.52

Table 4. Age Adjusted OR and 95% CI for Psychological Symptoms, Physical Symptoms by Parental Socioeconomic Status among Adolescents in Teheran, Iran, 2011

Models		Boys				Girls			
		Physical Symptoms		Psychological Symptoms		Physical Symptoms		Psychological Symptoms	
		OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI
Model 1	SES I (high)	1.0		1.0		1.0		1.0	
	SES II (middle)	1.78	1.07-2.95	1.66	0.96-2.85	1.12	0.78-161	1.03	0.71-1.50
	SES III (low)	1.65	0.85-3.23	1.01	0.49-2.08	0.84	0.53-1.34	0.50	0.30-0.84
Model 2	SES I (high)	1.0		1.0		1.0		1.0	
	SES II (middle)	1.74	1.05-2.89	1.67	0.97-2.88	1.12	0.78-1.61	1.03	0.71-1.50
	SES III (low)	1.63	0.84-3.19	1.02	0.48-2.09	0.84	0.53-1.34	0.50	0.30-0.85
	Family	1.25	0.88-1.79	0.90	0.63-1.29	0.94	0.74-1.21	0.96	0.75-1.24
Model 3	SES I (high)	1.0		1.0		1.0		1.0	
	SES II (middle)	1.76	1.06-2.92	1.65	0.96-2.84	1.12	0.78-1.62	1.03	0.71-1.50
	SES III (low)	1.64	0.84-3.20	1.01	0.43-2.07	0.83	0.52-1.33	0.50	0.29-0.83
	Friends	1.28	0.89-1.84	1.12	0.78-1.60	1.09	0.85-1.40	1.19	0.92-1.54
Model 4	SES I (high)	1.0		1.0		1.0		1.0	
	SES II (middle)	1.81	1.09-3.02	1.66	0.96-2.86	1.11	0.77-1.60	1.00	0.68-1.46
	SES III (low)	1.71	0.87-3.38	1.02	0.49-2.09	0.84	0.53-1.34	0.50	0.29-0.84
	School and teachers	2.14	1.51-3.04	1.18	0.83-1.66	1.42	1.11-1.82	1.92	1.48-2.51
Model 5	SES I (high)	1.0		1.0		1.0		1.0	
	SES II (middle)	1.78	1.06-2.97	1.69	0.98-2.91	1.12	0.78-1.61	1.01	0.69-1.47
	SES III (low)	1.70	0.86-3.35	1.02	0.49-2.10	0.83	0.52-1.32	0.48	0.29-0.82
	Family	1.17	0.69-1.98	0.68	0.40-1.15	0.77	0.52-1.13	0.66	0.43-1.03
	Friends	1.17	0.68-1.99	1.48	0.87-2.50	1.36	0.92-2.02	1.71	1.09-2.67
	School and teachers	2.17	1.53-3.09	1.17	0.83-1.65	1.40	1.10-1.80	1.92	1.47-2.50

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girls led to higher risk of psychological symptoms (p=0.017) (Table 4).

Discussion

In this study, the prevalence of psychological symptoms was more than 24% and had a large range (24%-93%), while physical symptoms showed a lower prevalence with a smaller range (12%-33%). Furthermore, a statistically significant association existed between feeling the need to others' help and gender. Factors related to feeling the need for others help, anxiety and worrying were the most prevalent symptoms among both boys and girls. In the section of family social relations, talking to the mother and talking to the father had the lowest and the highest prevalence among girls and boys, respectively. In the friends section of social relations, the number of close friends and spending time after school with close friends had the highest prevalence among girls, while number of close friends and E-communication with close friends had the lowest and the highest prevalence among boys, respectively.

In school and teachers' section of social relations, thinking about school and thinking about a "kind classmate" had the lowest and the highest prevalence among girls and boys, respectively.

Results on the prevalence of reported physical and psychological health (over 20%) are in agreement with other studies carried out elsewhere (22,23). The most important disorder in boys and girls was having the feeling of worthlessness. In addition, feeling the need for others help was the most prevalent psychological health problem among boys and girls (24,25).

According to the results, socioeconomic status had a significant effect on boys' inability to talk to their older siblings or close friends, and to communicate with friends via electronic devices.

Among girls, there was also a statistically significant association between socioeconomic status and parents' interest in talking about school affairs, general thinking about school, and being comforted among classmates, indicating that girls from a lower socioeconomic background family are more at risk of facing negative aspects of these factors. Moreover, there was a significant relationship between social relations, adjusted with socioeconomic status, and physical and psychological symptoms between both sexes.

The impact of socioeconomic status on occurrence of psychological and physical health of the adolescents was significant. On the other hand, boys from low socioeconomic status were more at risk of physical and psychological symptoms compared to girls. However, psychological symptoms were most prevalent among girls from higher socioeconomic status. These results are contrary to those from a study carried out in Denmark where physical and psychological symptoms were common among adolescents from families with poor socioeconomic status (26). It is suggested that among families with higher socioeconomic status, psychologic symptoms can occur among adolescent girls as a result of other factors such as having working mothers, weakness in emotional communication between parents and children, lack of physical activity and eating behavior rather than material deprivation per se (27).

This study found a statistically significant relationship between spending an afternoon with close friends after class with both physical and psychological symptoms among boys. In addition, poor social relations in terms of spending an afternoon with close friends were related with more physical and psychological symptoms among boys. Furthermore, poor social relations were associated with just one group of symptoms (physical or psychological). There were more physical and psychological symptoms with poor levels of parents' interest in talking with their schoolteachers among girls. There was also a statistically significant relationship between lacking proper relations with the peers and more physical and psychological symptoms. The lack of a proper relationship with close friends among girl students was significant-

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ly related to the incidence of physical and psychological symptoms, and those girls with improper relationship with their teachers and school officials were more at risk of facing physical and psychological symptoms. Results also indicated that although some aspects of social relations of adolescents with family and among friends had a significant relationship with physical and mental health, the relationship with family and friends did not have a significant impact on the adolescents' health in both genders (Models 2 and 3). Awareness of teachers and school administrators about changes in adolescence period can contribute to the school being a safe and healthy environment for teenagers. Other studies are partly in agreement with the results of this study in a way that adolescents can experience much tension at school due to tests, competition with classmates, many tasks at home, the growing expectations of parents and school rules, which might be related to health outcomes such as headaches (28). For instance, a qualitative study carried out in Iran found that more than 50% of the study population had no appropriate skills for making healthy life choices, and also depression, anxiety and aggression were prevalent among adolescents, which contradicted our findings (29).

Strengths and Limitations

One of the strengths of this study was using a questionnaire, which contained well-validated instruments. In addition, the study included a large sample of adolescents living in the capital of the country. However, the study had a number of limitations, which should be considered when interpreting the results. Firstly, the study was conducted among a sample of adolescents residing in Tehran. Therefore, the findings might not be generalizable to the country's adolescent population. Secondly, self-reporting of relations and especially health status by adolescents may lead to a bias, which could result in over- or under-estimated results. Thirdly, the inability to ask some questions about family income and the exact relationship between parents and between parents and teachers or misreporting of them might have affected the estimation of social class and the exact relations. Finally, the study used a cross-sectional design, which does not allow estimation of causal relationships as well as their direction.

Conclusion

The findings of this study demonstrated a significant impact of parental social class on occurrence of psychological and physical health among adolescents. Physical and psychological symptoms were common among adolescents from families with high socioeconomic status. Moreover, adolescents with poor social relations with family and friends reported more physical and psychological symptoms. Nevertheless, longitudinal studies as well as studies, using qualitative approach are needed to help understand why adolescents from high socioeconomic status are at risk of poorer physical and psychological health in Iran.

References

1. Huurre T, Aro H, Rahkonen O. Well-being and health behaviour by parental socioeconomic status: a follow-up study of adolescents aged 16 until age 32 years. Soc Psychiatry Psychiatr Epidemiol 2003;38(5):249-55.

2. Currie C, Molcho M, Boyce W, Holstein B, Torsheim T, Richter M. Researching health inequalities in adolescents: the development of the Health Behaviour in School-Aged Children (HBSC) family affluence scale. Soc Sci Med 2008;66(6):1429-36.

3. Jung SH, Tsakos G, Sheiham A, Ryu JI, Watt RG. Socio-economic status and oral health-related behaviours in Korean adolescents. Soc Sci Med 2010;70(11):1780-8.

4. Case A, Paxson C, Vogl T. Socioeconomic status and health in childhood: a comment on Chen, Martin and Matthews, "Socioeconomic status and health: do gradients differ within childhood and adolescence?" (62:9, 2006, 2161-2170). Soc Sci Med 2007;64(4):757-61.

5. Richter M, Erhart M, Vereecken CA, Zambon A, Boyce W, Gabhainn SN. The role of behavioural factors in explaining socio-economic differences in adolescent health: A multilevel study in 33 countries. Social Science & Medicine 2009;69:396-403.

6. van Lenthe FJ, de Bourdeaudhuij I, Klepp KI,

[Downloaded from mjiri.iums.ac.ir on 2026-09-15]

Lien N, Moore L, Faggiano F, et al. Preventing socioeconomic inequalities in health behaviour in adolescents in Europe: background, design and methods of project TEENAGE. BMC Public Health 2009; 9:125.

7. Lazzeri G, Giacchi MV, Dalmasso P, Vieno A, Nardone P, Lamberti A, et al. The methodology of the Italian HBSC 2010 study (Health Behaviour in School-aged Children). Ann Ig 2013;25(3):225-33.

8. Harakeh Z, de Looze ME, Schrijvers CT, van Dorsselaer SA, Vollebergh WA. Individual and environmental predictors of health risk behaviours among Dutch adolescents: the HBSC study. Public Health 2012;126(7):566-73.

9. Hanson MD, Chen E. Socioeconomic status and health behaviors in adolescence: a review of the literature. J Behav Med 2007;30(3):263-85.

10. Maddah M, Nikooyeh B. Obesity among Iranian adolescent girls: location of residence and parental obesity. J Health Popul Nutr 2010;28(1):61-6.

11. Laxmaiah A, Nagalla B, Vijayaraghavan K, Nair M. Factors affecting prevalence of overweight among 12- to 17-year-old urban adolescents in Hyderabad, India. Obesity (Silver Spring) 2007; 15(6):1384-90.

12. Shahhosseini Z, Simbar M, Ramezankhani A, Majd HA. Supportive family relationships and adolescent health in the socio-cultural context of Iran: a qualitative study. Ment Health Fam Med 2012; 9(4):251-6.

13. Azizi F, Allahverdian S, Mirmiran P, Rahmani M, Mohammadi F. Dietary factors and body mass index in a group of Iranian adolescents: Tehran lipid and glucose study--2. Int J Vitam Nutr Res 2001; 71(2):123-7.

14. Mohammadpour-Ahranjani B, Rashidi A, Karandish M, Eshraghian MR, Kalantari N. Prevalence of overweight and obesity in adolescent Tehrani students, 2000-2001: an epidemic health problem. Public Health Nutr 2004;7(5):645-8.

15. Namakin K, Moasheri N, Khosravi S. Studying Birjand Girls' secondary school students'nutritional pattern. modern care(Scientific Quarterly of Birjand Nursing & Midwifery Faculty) 2013; 9(3):264-72.

16. Nobakht M, Dezhkam M. An epidemiological study of eating disorders in Iran. Int J Eat Disord 2000;28(3):265-71.

17. Ahmadi J, Motamed F. Treatment success rate among Iranian opioid dependents. Subst Use Misuse 2003;38(1):151-63.

18. Sarraf-Zadegan N, Boshtam M, Shahrokhi S, Naderi GA, Asgary S, Shahparian M, et al. Tobacco use among Iranian men, women and adolescents. Eur J Public Health 2004;14(1):76-8.

19. Emami H, Ghazinour M ,Rezaeishiraz H, Richter J. Mental health of adolescents in Tehran, Iran. J Adolesc Health 2007;41(6):571-6.

20. Kelishadi R, Razaghi EM, Gouya MM, Ardalan G, Gheiratmand R, Delavari A, et al. Association of physical activity and the metabolic syndrome in children and adolescents: CASPIAN Study. Horm Res 2007;67(1):46-52.

21. Smith K. Operationalizing Max Weber's probability concept of class situation: the concept of social class. Br J Sociol 2007;58(1):87-104.

22. Power C, Matthews S. Origins of health inequalities in a national population sample. Lancet 1997;350(9091):1584-9.

23. Sweeting H, West P. Health at age 11: reports from schoolchildren and their parents. Arch Dis Child 1998;78(5):427-34.

24. Grunbaum JA, Kann L, Kinchen S, Ross J, Hawkins J ,Lowry R, et al. Youth risk behavior surveillance--United States, 2003. Morbidity and mortality weekly report Surveillance summaries (Washington, DC: 2002) 2004;53(2):1-96.

25. Yarcheski A, Mahon NE, Yarcheski TJ. Anger in early adolescent boys and girls with health manifestations. Nurs Res 2002;51(4):229-36.

26. Due P, Lynch J, Holstein B, Modvig J. Socioeconomic health inequalities among a nationally representative sample of Danish adolescents: the role of different types of social relations. J Epidemiol Community Health 2003;57(9):692-8.

27. Shahhosseini Z, Simbar M, Ramezankhani A, Majd HA. An inventory for assessment of the health needs of Iranian female adolescents. East Mediterr Health J 2012;18(8):850-6.

28. Parvizy S, Ahmadi F, Mirbazegh SF .Concept and factors concerning to health in an adolescent's point of. Journal of Shahrekord Uuniversity of Medical Sciences 2012;14(3):107-19.

29. Parvizy S, Nikbahkt A, Pournaghash Tehrani S, Shahrokhi S. Adolescents' perspectives on addiction: qualitative study. Nurs Health Sci 2005; 7(3):192-8.

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