



## RESEARCH ARTICLE

# Relationship of pupils' quality of life and academic achievement with the employment status of their mothers

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## Keywords

Quality of life • Academic achievement • Mothers' employment

## Summary

**Introduction.** One of the most important environmental factors affecting academic achievement and performance is the family especially mothers. The purpose of this study was to determine the relationship between quality of life (QOL) and the academic achievement of pupils with the employment status of their mothers.

**Methods.** This cross-sectional study was conducted on 9th-grade students in Shiraz. A sample of 400 individuals was selected through a multi-stage sampling method from among the 9th-grade students and a questionnaire on academic achievement and quality of life was completed for them. Then data was entered into spss23 software and analyzed. The value of  $P < 0.05$  was considered a significant statistical level.

**Results.** There was no significant difference between students who have employed and Housewife mothers about the student's academic achievements and QOL score ( $P > 0.05$ ). According to the results of multivariate analysis, none of the variables was a significant predictor of the QOL and academic achievement in the students.

**Conclusion.** In spite of lack of association between the quality of life and academic achievement of students with their mothers' occupation but it should be regarded that more attention to students and spent more time by students can be very helpful in the academic achievement of students.

## Introduction

Pupils in any community comprise an efficient subpopulation and the builders of the future in any country. Pupils represent the subpopulation to whom most of the planning and budget in any country is allocated and whose academic achievement is greatly important to gaining success in the future; therefore, identifying the factors affecting academic achievement is a step towards sustainable development [1, 2]. Academic achievement refers to the amount of school learning or the degree to which students achieve educational goals that are measured by various examinations [3]. One of the most important environmental factors affecting academic achievement and performance is the family whose functional dimension has been investigated in various studies [4]. Another study indicated that the success of students in school has a significant relationship with the living conditions of parents such as their income and education level [5]. Investigating health-related quality of life (QOL) is used to predict health care needs for identifying the most important dimensions of children's health that are at risk, or for identifying children in need of support in the early stages of life [6]. Studies on healthy children are mainly necessary because the QOL of children and adolescents is directly related to their QOL in adulthood [7]. The results of Viira et al.'s study on Estonian adolescents to determine the difference in the QOL between boys and girls in physical, mental, and school-related

activities showed that the total score of adolescent females' QOL was lower than adolescent males' [8]. Several factors affect the QOL and the academic achievement of adolescents, including religion, social relationships, social participation, and mother-child attachment. Among these factors, the mother's employment, due to its growing growth, needs to be further explored. During adolescence, many behaviors affecting the health and lifestyle of individuals are shaped; attitudes and behaviors shaped during adolescence determine the healthy lifestyle habits of adulthood. Because of the behaviors and lifestyle of this period, leading to a huge burden of main diseases in the future, and because the pattern of illnesses has changed, and illnesses caused by the unhealthy lifestyle are the leading cause of death, and given the fact that by changing lifestyle, many risk factors that are one of the most important causes of mortality can be fought, the necessity of investigating the relationship of QOL and the academic achievement and mother's employment in pupils is intensified. Given the mentioned points the purpose of this study was to determine the relationship between quality of life (QOL) and the academic achievement of pupils with the employment status of their mothers.

## Materials and methods

In this analytical-cross-sectional study, the number of schools and the 9<sup>th</sup>-grade students based on the divisions

of the Education Organization with considering the education quality and different districts of the Education Organization was obtained from the Education Department of Shiraz.

Multistage sampling was used to select participants. To this end, girls' and boys' schools were selected by convenience random sampling and then some classes were randomly selected from the ninth grade classes of selected schools.

Selected classes were considered clusters and all eligible pupils of the class who fulfilled inclusion criteria (lack of suffering from hard-to-treat diseases, living with both parents, and being natives to Shiraz) were studied and the relevant questionnaires were completed for them.

Considering that the maximum standard deviation of QOL domains, according to the study by Nik Azin et al., was 21.3, and to reach a significant difference of at least 6.50 in the mean value of the pupils' QOL between employed and unemployed mothers, the sample size was determined to be 360 that increased to 400 due to the probability of subject attrition [9].

Data collection instruments were a researcher-developed checklist (including variables such as gender, birth order, number of children, the age difference between the mother and her child, parental education, parental occupation, parental Work Experience, working hours of parents, and time spent by parents), and the standard questionnaires of educational attainment and health-related QOL.

The standard questionnaire of the academic attainment of high school students has 60 items and aims to measure the students' academic achievement. The items of the questionnaire are two-choice (Yes/No) questions, which are scored from 0 to 1. The reliability of the questionnaire has been estimated to be 0.82 [10].

The questionnaire used to investigate QOL was the *Kidscreen Health-related Quality of Life Questionnaire* consisting of 27 items. The questionnaire has 5 dimensions: 1) Physical well-being (5 items; measuring levels of physical activity, energy, and fitness); 2) Psychological well-being (7 items; measuring positive emotions, life satisfaction, and emotionally balanced feelings); 3) Parental communication and autonomy (7 items; measuring relationships with parents, home atmosphere, having adequate age-proportionate freedom and an adequate degree of satisfaction with financial resources; 4) Social and peer support (4 items; measuring the nature of the respondent's communication with other peers); 5) School environment (4 items; measuring child and adolescent perception of cognitive capacity, learning and concentration, and feelings about the school). In the study by Nick Azin et al., the validity and reliability of the questionnaire were approved in students in Yazd, Iran [9]. To observe ethical considerations, the data were analyzed anonymously after informed consent was provided by the parents of students.

After data collection, the data were entered into SPSS version 23. Descriptive statistics (e.g., mean and standard deviation) were used to describe the data by using a t-test, ANOVA, Pearson correlation coefficient, and

univariate and multivariate linear regressions.  $P < 0.05$  was considered as a significance level.

## Results

The mean score of academic achievement among students with employed and Housewife mothers was  $27.24 \pm 4.87$  and  $26.62 \pm 5.42$  respectively ( $P = 0.25$ ). Also, the total score of quality of life among students with employed and Housewife mothers was  $95.05 \pm 0.76$  and  $95.65 \pm 1.07$  respectively ( $P = 0.65$ ). About the different dimensions of quality of life, there was no significant difference between students who have Employed and Housewife mothers ( $P > 0.05$ ) more details as shown in Table I.

In comparison student academic achievement score and Total quality of life score about different variables, in terms of student academic achievement, just the mean difference between different subgroup of mother education level (Primary:  $27.96 \pm 4.07$ , Diploma:  $27.81 \pm 5.37$ , Academic:  $26.51 \pm 5.05$ ) about this score was showed a significant difference ( $P = 0.03$ ). In other words, the students who had mothers with primary and diploma education levels had the highest academic achievement. But this index does not have a significant difference in the variables such as sex, birth order, Number of children, Mother's Work Experience, father's Work Experience, mother's education level, and father's education level.

About the total quality of life, the mean score of quality of life among males students was  $93.98 \pm 12.31$  and among females was  $96.53 \pm 12.39$  and this difference was significant ( $p = 0.04$ ). But there was no statistically significant difference in the variables such as mother education level, birth order, Number of children, Mother's Work Experience, father's Work Experience, mother's education level, and father's education level. The comparison of different diminutions of quality of life about different variables was shown in Table II.

According to the results of multiple linear regression, the effect of father job status on the total quality of life score was statistically significant ( $p < 0.05$ ). But the effect of other variables such as Time spent with mother, Mother's occupation status, Age difference with mother, Mother's occupation status, Birth order, Number of children, Mother's Work Experience, Mother working hours, Mother's education level and Father's education level not statistically significant ( $p > 0.05$ ). Also the effect of father job status, Time spent with mother, Mother's occupation status, Age difference with mother, Mother's occupation status, Birth order, Number of children, Mother's Work Experience, Mother working hours, Mother's education level and Father's education level on students' academic achievement not statistically significant ( $p > 0.05$ ) (Tab. III). In term of correlation between academic achievement and quality of life scores with some factors such as, Time spent with mother, Time spent with father, just the correlation between Parental communication and autonomy with Time spent with mother ( $r = 0.12$ ,  $P = 0.01$ ) and Time spent with mother ( $r = 0.09$ ,  $P = 0.04$ ) was statistically significant (Tab. IV).

**Tab. I.** Comparison of mean scores for quality of life and academic achievement of ninth-grade students at Employed and Housewife mothers in 2016.

Variable	Mean ± SD		P	
	Employed mothers (267)	Housewife mothers (133)		
Academic achievement	4.87 ± 27.24	5.42 ± 26.62	0.25	
The total score of quality of life	0.76 ± 95.05	1.07 ± 95.65	0.65	
Dimensions of quality of life	Physical well-being	4.06 ± 17.99	18.22 ± 4.09	0.6
	Psychological well-being	2.95 ± 21.83	21.93 ± 3.08	0.75
	Parental communication and autonomy	5.39 ± 26.74	26.65 ± 5.3	0.88
	Social and peer support	3.36 ± 14.13	13.86 ± 3.33	0.46
	School environment	3.03 ± 14.37	14.98 ± 2.88	0.06

**Tab. II.** Comparison of students' quality of life scores and academic achievement grade about some variables.

Variable		Mean ± SD						
		Academic achievement	The total score of quality of life	Dimensions of quality of life				
				Physical well-being	Psychological well-being	Parental communication and autonomy	Social and peer support	School environment
Sex	Male	26.84 ± 4.79	93.98 ± 12.31	17.28 ± 4.09	21.67 ± 3.01	26.33 ± 5.42	14.23 ± 3.44	14.48 ± 3.05
	Female	27.24 ± 5.32	96.53 ± 12.39	18.86 ± 3.89	22.06 ± 2.96	27.09 ± 5.27	13.86 ± 3.25	14.66 ± 2.94
	P	0.44	0.04	0.001	0.193	0.15	0.27	0.55
Birth order	1	26.88 ± 4.91	95.68 ± 11.76	18.42 ± 3.67	21.69 ± 3.19	26.89 ± 5.19	14.14 ± 3.32	14.54 ± 2.83
	2	27.04 ± 5.44	96.14 ± 12.37	18.22 ± 4.28	22.11 ± 2.69	26.93 ± 5.12	14.13 ± 3.5	14.75 ± 3.16
	> 3	27.67 ± 4.77	91.47 ± 14.37	16.27 ± 4.62	21.98 ± 2.81	25.49 ± 6.34	13.44 ± 3.08	14.29 ± 3.25
	P	0.58	0.05	0.002	0.44	0.19	0.36	0.62
Number of children	1	27.79 ± 5.27	95.39 ± 9.86	18.12 ± 3.28	21.69 ± 2.98	26.71 ± 4.77	13.93 ± 3.32	14.66 ± 2.71
	2	26.75 ± 4.96	96.02 ± 12.64	18.38 ± 3.95	21.74 ± 3.09	27.09 ± 5.34	14.26 ± 3.28	14.56 ± 2.96
	> 3	27.18 ± 5.14	93.81 ± 13.01	17.49 ± 4.55	22.04 ± 2.81	26.04 ± 5.61	13.71 ± 3.46	14.53 ± 3.19
	P	0.35	0.29	0.15	0.64	0.22	0.34	0.97
Mother's work experience	0	26.89 ± 4.57	95.19 ± 12.04	17.82 ± 3.94	21.69 ± 2.93	27.03 ± 5.11	14.12 ± 3.37	14.53 ± 2.93
	1-15	27.41 ± 5.54	96.12 ± 12.97	18.69 ± 4.19	22.41 ± 3.22	26.52 ± 5.75	14.23 ± 3.37	14.27 ± 3.07
	> 16	26.95 ± 5.51	94.52 ± 12.61	17.94 ± 4.16	21.66 ± 2.83	26.28 ± 5.42	13.7 ± 3.29	14.94 ± 3.03
	P	0.56	0.29	0.49	0.89	0.35	0.77	0.91
Mother working hours	0	26.89 ± 4.57	95.19 ± 12.04	17.82 ± 3.94	21.69 ± 2.93	27.03 ± 5.11	14.12 ± 3.37	14.53 ± 2.93
	1-7	27.21 ± 5.87	94.82 ± 12.54	18.18 ± 4.16	21.88 ± 2.96	25.31 ± 5.42	13.93 ± 3.35	14.53 ± 3.07
	> 8	27.11 ± 4.69	96.38 ± 13.33	15.59 ± 4.26	22.38 ± 3.2	26.59 ± 5.93	14.05 ± 3.32	14.78 ± 3.06
	P	0.08	0.58	0.41	0.87	0.43	0.84	0.19
Mother's education level	Primary	27.96 ± 4.07	93.02 ± 14.45	17.06 ± 4.65	21.88 ± 3.22	25.6 ± 5.86	13.58 ± 3.88	14.36 ± 3.36
	Diploma	27.81 ± 5.37	94 ± 11.52	17.53 ± 3.99	21.83 ± 2.96	26.22 ± 5.49	13.75 ± 3.09	14.67 ± 2.57
	Academic	26.51 ± 5.05	96.25 ± 12.27	18.39 ± 3.95	21.88 ± 2.97	27.15 ± 5.15	14.26 ± 3.34	14.57 ± 3.09
	P	0.03	0.12	0.13	0.99	0.09	0.25	0.83
Father's education level	Primary	27.79 ± 4.47	93.15 ± 14.35	17.85 ± 4.47	22.04 ± 3.13	25.29 ± 6.01	13.49 ± 3.74	14.47 ± 2.95
	Diploma	27.37 ± 4.86	95.33 ± 11.93	17.89 ± 4.14	21.92 ± 2.82	26.98 ± 5.34	14.09 ± 3.26	14.44 ± 2.99
	Academic	26.67 ± 5.28	95.65 ± 12.25	18.21 ± 3.94	21.79 ± 3.07	26.85 ± 5.19	14.12 ± 3.32	14.67 ± 3.01
	P	0.25	0.45	0.72	0.85	0.15	0.49	0.76

**Discussion**

This study aimed to identify the effective factor in students' QOL and academic achievement in Shiraz city in Iran.

The results showed that the student's QOL and academic achievement had no significant association with the mother's occupation. The physical well-being dimension of QOL was significantly associated with students' sex, the age

Tab. III. Effective factors on student's quality of life score and the academic achievement of the ninth grade students.

Variable		The total score of quality of life			Academic achievement		
		B	95% CI	P	B	95% CI	P
Time spent with mother		0.31	-0.21-0.83	0.24	0.08	-0.13-0.29	0.44
Age difference with mother		0.002	-0.28-0.28	0.99	0.03	-0.08-0.14	0.63
Mother's occupation status	Housewife	3.55	-1.71-8.81	0.19	-1.84	-3.97-0.29	0.09
Birth order	1						
	2	1.33	-1.82-4.48	0.41	0.12	-1.15-1.39	0.85
	> 3	-0.78	-6.32-4.75	0.78	0.13	-2.11-2.37	0.91
Number Of children	1						
	2	0.003	-3.79-3.79	0.99	-1.11	-2.65-0.42	0.15
	> 3	-0.62	-5.49-4.2	0.8	-1.23	-3.19-0.74	0.22
Mother's work experience	0						
	1-15	0.03	-6.27-6.32	0.99	2.39	-0.15-4.94	0.07
	> 16	-2.89	-9.69-3.89	0.4	2.42	-0.33-5.17	0.08
Mother working hours	0						
	1-7	-1.43	-5.29-2.43	0.47	-0.26	-1.83-1.29	0.74
	> 8	0	-	-	-	-	-
Mother's education level	Elementary						
	Diploma	-0.16	-5.04-4.72	0.95	-0.36	-2.33-1.61	0.72
	Academic	-1.2	-6.71-4.31	0.68	-0.47	-2.69-1.76	0.68
Father's education level	Elementary						
	Diploma	1.45	-3.31-6.22	0.55	0.15	-1.78-2.08	0.88
	Academic	4.7	-0.53-9.94	0.08	-0.68	-2.79-1.44	0.53
Father's job status	Jobless						
	worker	3.85	-0.4-8.09	0.08	-0.82	-2.54-0.89	0.35
	Employee	5.92	1.86-90.98	0.004	-0.07	-1.71-1.57	0.94
	Free	7.13	0.52-13/75	0.04	1.17	-1.51-3.85	0.39

Tab. IV. Correlation between academic achievement and quality of life with some factors.

Variables		Time spent with mother	Time spent with father
Academic achievement score	r*	0.002	-0.040
	P	0.969	0.430
	n	400	400
The total score of quality of life	r	0.084	0.065
	P	0.095	0.196
	n	400	400
Physical well-being	r	0.040	0.077
	P	0.425	0.122
	n	400	400
Psychological well-being	r	-0.079	-0.081
	P	0.113	0.108
	n	400	400
Parental communication and autonomy	r	0.120*	0.099
	P	0.016	0.048
	n	400	400
Social and peer support	r	0.082	0.010
	P	0.102	0.839
	n	400	400
School environment	r	0.066	0.055
	P	0.191	0.268
	n	400	400

\* Correlation coefficient.

difference between mother and child, birth order, and the average time spent by the mother. Also, there was a significant association between the parental communication and autonomy dimension and the average time spent by the mother and father's occupation.

Educational achievement had a significant association with the father's education level and occupation.

Some scholars consider the QOL of children and adolescents to be subjective and alterable in their health and believe that this feeling reflects their desires, hopes, expectations concerning their present and future life.

The results of various studies showed that physical and psychological health and QOL of female adolescents were more unfavorable than those of male adolescents [8, 11, 12], which is consistent with the results of our study.

In this study, students in the autonomy dimension attained the highest score. The autonomy domain addresses the freedom of choice, self-sufficiency, and independence of the adolescent, and considers the individual's opportunities for recreation and social activity. Contrary to the results of this study, Arsanjani et al reported the lowest score on the autonomy dimension [13]. the differences between the studies may be due to different study population also different socio-economic status and so on.

The results of a study showed that while parental education and occupation were associated with academic achievement significantly, the mother's occupation was significantly associated with students' academic achievement [14]. In the current study, there was no relationship between the mother's occupation and the students' QOL and academic achievement, but there was a significant association between father's occupation and academic achievement of students.

Alipour investigated the health-related QOL in high school students, according to their results, the understudied student's moderate QOL score.

In the current study, the highest mean value was related to the relationship with parents and the least for the physical well-being and psychological well-being dimensions. Based on the current study results there was a significant association between gender and physical well-being. The gender and selection of family members for living variables were an effective factor in psychological well-being. The mother's education, selection of family members for living, and composition of family members variables were significantly associated with parental communication. Father's occupation was a significant predictor for social support and age. According to another study results, the selection of family members for the living variable was a significant predictor of the school environment [15]. In comparison to our results, the study of Atadokht showed that neglect of academic work among male students was more than in female students [16].

In the study by Alipour et al., parents' education level had a significant impact on students' academic achievement and Students who living in fewer literate levels and illiterate families had academic procrastination [1]. Mohammadi et al. argued that the father's education level did not cause of the difference in the academic achievement among pre-high school, high school, and university students, but mother's education had a significant effect on students' success, the effect of mother education level on children academic success may be due to the greater control and more sensitivity of mothers to their children's education [17].

According to the results of the current study, the father's job status had a significant effect on the academic achievement of students. It seems the better job status of the father can improve the socio-economic status of the family and it can provide better conditions for the students.

In this study, academic achievement was correlated with Parental communication and autonomy.

The results of some studies have shown that there is a significant correlation between academic procrastination and QOL [18, 19], which is consistent with the results of the current study.

The main reason for the inconsistency in the results of the current study and similar studies is due to use of research instruments, the difference about the students' age and grade, the available facilities, and how they are managed in schools, as well as the differences in parental relationships among different societies.

According to the results of our study, students should pay more attention to improving their QOL in schools to increase their academic achievement.

## Conclusions

The results of this study showed that there was no significant association between quality of life and academic achievement of students with their mothers' occupation status. But this point should be considered that more attention to students and spent more time by students can be very helpful in the academic achievement of students. Finally, it should be considered that the mentioned association may be affected by different factors so it recommended similar studies by controlling the effect of a more probable confounder.

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## Conflicts of interest statement

The authors declare no conflict of interest.

## Authors' contributions

FP and MHL carried out the study, participated in the analysis and manuscript drafting, participated in analysis and manuscript drafting, collaborated in Collecting the raw data. MF and HF coordinated the study and participated in the analysis and manuscript drafting. All authors read and approved the final manuscript.

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