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The Effect of Family Characteristics of the Adolescents Upon Their Healthy Lifestyle Behaviors

Ergenlerin Aile Özelliklerinin Sağlıklı Yaşam Tarzı Davranışlarına Etkisi

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ABSTRACT Objective: The current study aimed at evaluating the effect of family characteristics of the adolescents upon their healthy lifestyle behaviors. **Material and Methods:** In this cross-sectional study, 378 high school students were evaluated. As data collection tools; descriptive characteristics form for adolescents and Healthy Lifestyle Behaviors Scale II were employed. Data related to characteristics of adolescents were evaluated by number, percentage and average. To examine the relationship between characteristics of adolescents and scale; variance analysis (ANOVA), t-test and TUKEY test were used as statistical methods. **Results:** According to the study findings; total mean score of the adolescents for Healthy Lifestyle Behaviors Scale II was 126.31±18.26. In the study; the highest score was obtained from spiritual development while the lowest score was obtained from physical activity. It was identified that there was a statistically significant correlation between family characteristics (family structure, educational status of mother and father, employment status of mother, monthly income level, family relations) ($p<0.05$). **Conclusion:** We are of the opinion that study results are important as basic data in demonstrating the effect of family characteristics upon adolescents' health behaviors while nurses are planning programs that will provide healthy lifestyle behaviors and promote health of adolescents. According to these results, we recommend that nurses, while planning health education programs that protect and improve the health of adolescents, first evaluate the family characteristics of this group and form the content of the training program in line with the evaluation results.

Keywords: Adolescents; family; lifestyle; nurses; health behavior

ÖZET Amaç: Bu araştırma, adölesanların ailesel özelliklerinin sağlıklı yaşam biçimi davranışları üzerindeki etkisini değerlendirmek amacıyla yapılmıştır. **Gereç ve Yöntemler:** Kesitsel özellikte olan bu araştırmada 378 lise öğrencisi değerlendirilmiştir. Veri toplama aracı olarak adölesanların tanıtıcı özelliklerini değerlendirme formu, Sağlıklı Yaşam Biçimi Davranışları Ölçeği II kullanılmıştır. Adölesanların tanımlayıcı özellikleri sayı, yüzde ve ortalama ile değerlendirildi. Tanımlayıcı özellikler ile ölçek arasındaki ilişkiyi incelemek için varyans analizi (ANOVA), t-testi ve TUKEY testi kullanıldı. **Bulgular:** Araştırmada elde edilen verilere göre adölesanların Sağlıklı Yaşam Biçimi Davranışları Ölçeği II toplam puan ortalaması 126,31±18,26'dır. Araştırma kapsamında Sağlıklı Yaşam Biçimi Davranışları II ölçek alt boyutlarından en fazla puan manevi gelişim alt boyutundan, en düşük puan ise fiziksel aktivite alt boyutundan almıştır. Adölesanların, ailesel özellikleri (aile yapısı, anne ve baba eğitimi, anne çalışma durumu, aylık gelir düzeyi, aile ilişkisi) ile sağlıklı yaşam biçimi davranışları ölçek puanları arasında istatistiksel olarak anlamlı ilişki bulunmuştur ($p<0,05$). **Sonuç:** Çalışma sonuçlarının benzer çalışmalara, hemşirelerin adölesan sağlığı geliştirme ve sağlıklı yaşam biçimi davranışlarını kazandırma programlarını planlarken, ailesel özelliklerin adölesanın sağlık davranışları üzerindeki etkisini göstermek için temel veri oluşturabilmesi açısından önemli olduğu düşünülmektedir. Bu nedenle, sağlıklı yaşam tarzı davranışları sağlayacak ve ergenlerin sağlığını geliştirecek periyodik ancak sürekli sağlık eğitimi programları öneriyoruz.

Anahtar Kelimeler: Adölesan; aile; yaşam tarzı; hemşire; sağlık davranışı

According to World Health Organization data, 38 million of 57 million deaths all over world in 2008 which means that 63% of the total number, results from non-communicable diseases especially cardiovascular diseases, diabetics, cancer and chronic respiratory tract diseases. It is indicated that a major part of non-communicable diseases could be prevented by reducing behavioral risk factors like insufficient physical activities, smoking and drinking alcohol, inadequate and unbalanced nutrition.[1] It is known that

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these risk factors are seen commonly in public and generally related to unhealthy lifestyle behaviours gained in infancy and adolescent periods.

Healthy and positive lifestyle in adulthood period is shaped in infancy and adolescent periods.[2] Formation of adolescents' health behaviours is directly related to family determinants (family type, relationships each other, education level of family, income status etc.). Within the scope of literature, a significant connection is discovered between adolescents' healthy lifestyle behaviours and family characteristics.[3-5] According to studies conducted, it is stated that dealing with stress or decreasing negative emotions, unhealthy dietary experiences and eating disorders may be seen during transition periods like divorcement of parents or death of a family member.[6,7] Besides, it is found that there is a positive correlation between family income status, family education level and adolescents' physical activity level, low prevalence of obesity.[8-11]

It is very fundamental that the nurse must evaluate the effects of family characteristics on adolescents' behaviours when s/he is scheduling programmes for adolescents to develop their health and to bring them healthy lifestyle behaviours. This study is conducted to analyze the effects of family characteristics over the healthy lifestyle behaviours of adolescents.

MATERIAL AND METHODS

SAMPLE

This study is practised as cross-sectional in Samsun province, Turkey with the aim of determining the effects of family characteristics on healthy lifestyle behaviours of adolescents. The universe of the study is composed of 27,402 high school students of 43 high schools located in Samsun province. To designate the sample size resembling the universe, the formula of "sample width knowing individual numbers in population" is used. Through this formula, sampling size is determined as 378 individuals. In the second stage, high schools are divided into three categories as vocational high school, state high school and private high schools and random schools are chosen from each category by sampling method. In the third stage, stratified sampling method depending on class variables is chosen as the best criterion to determine the age status of students since it is hard to ascertain the correct ages before the study started. The gender is taken as proportional school-wide.

PROCEDURE

The schools' subject matter of the study were informed by Provincial Directorate of National Education and permission forms were send to. Before the researcher started to collect data, principals of those schools were informed about the study by interviewing. A plan was developed about data collecting methods and days in accompany with guidance and counselling teachers.

Before to start to collect data, students were informed about the study and delivered to "Evaluation Form of Defining Characteristics of Adolescents" and "Healthy Lifestyle Behaviours Scale II (HLBS-II)". They were told about that it is not necessary to note their names on forms and they may not fill in if they're reluctant. Filling in every form lasted approximately 15-20 minutes.

ETHICAL APPROVAL

Before starting to collect data, an authorization was obtained from Governorship of Samsun Provincial Directorate of National Education. Ethic council authorization for study was obtained from Ondokuz Mayıs University Rectorship (06.01.2010)- Medical Research Local Ethics Council (TAYEK) (Decision no: 2009/109). Verbal consent was obtained from the participants. The study was conducted in accordance with the Declaration of Helsinki principles.

INSTRUMENTS

The data of the study have been collected by using Evaluation Forms of Defining Characteristics of Adolescents and HLBS-II. Evaluation Forms of Defining Characteristics of Adolescents is prepared by the researcher to identify family characteristics affecting health behaviours in respect of literature. The form includes such items on socio-demographic qualifications and family characteristics.

Healthy Lifestyle Behaviours Scale II (HLBS-II): The first version of Healthy Lifestyle Behaviours

Scale developed by Walker in 1987 includes 48 items and six factors.[12] The scale was reformulated and revised in 1996 and renamed as HLBS-II.[13] Turkish validity and reliability studies were conducted by Bahar et al. in 2008. The second scale includes 52 items and six factors. These are; interpersonal relations, nutrition, health responsibility, physical activity, stress management and spiritual improvement. Sub-factor named as interpersonal support in the first version of the scale was renamed this time as interpersonal relations, exercise renamed as physical activity and self-actualisation as spiritual improvement.[14] In the study of Bahar et al., the total Cronbach's alpha value was found to be 0.90. In this study, the total Cronbach's alpha value was found to be 0.89.

STATISTICAL ANALYSIS

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) software version 16. Data related to defining characteristics of adolescents were evaluated by number, percentage and average. For analysing the relation between these factors and scale total point, sub-dimension points; variance analysis (ANOVA), t-test, TUKEY test were used as statistical methods.

RESULTS

It is determined that 25.9% of adolescents are in the 16-aged group, 25.4% in 17-aged group and 24.6% in 15-aged group, on the other hand 50.3% of them are female. Of the adolescents participated to survey, 85.7% have nuclear family. In terms of education level of family; the mother of 21.7% and the father of 31.7% were graduated from university/college and the mother of 71.7% were not working and the fathers of 89.7% were working.

Considering monthly income status of families; it is understood that 57.4% of adolescents have equal income-expenditures balance and 51.9% of them interprets family relations as good (Table 1).

It is found that HLBS average total points of adolescents participated to survey is (126.31±18.26). The highest point of average sub-dimensions points is spiritual improvement (26.70±4.51); the lowest point is physical activity (17.09±5.06) (Table 2).

TABLE 1: Defining characteristics of adolescents and family characteristics.

Defining Characteristics of Adolescents	n	%
Gender		
Female	190	50.3
Male	188	49.7
Age		
14 years old	13	3.5
15 years old	93	24.6
16 years old	98	25.9
17 years old	96	25.4
18 years old	78	20.6
Family Characteristics		
Family type		
Nuclear family type	324	85.7
Extended family type	37	9.8
Fragmented family type	17	4.5
Education level of mother		
Primary school	126	33.3
Secondary school	54	14.3
High school	116	30.7
University/college	82	21.7
Employment status of mother		
Working	107	28.3
Not working	271	71.7
Education level of father		
Primary school	54	14.3
Secondary school	65	17.2
High school	139	36.8
University/college	120	31.7
Employment status of father		
Working	339	89.7
Not working	39	10.3
Family income status		
Lower income compared to expenditures	38	10.1
Equal income-expenditures balance	217	57.4
Higher income compared to expenditures	123	32.5
Family relations status		
Very good	167	44.2
Good	196	51.9
Bad and very bad	15	3.9
Total		100.0

In terms of family characteristics, the gap between adolescents' stress management, spiritual improvement sub-dimensions and HLBS average total points is considered as statistically significant ($p<0.05$). It is understood that adolescents having nuclear family structure got high average points on all sub-dimensions compared to those having extended and fragmented family structures. In terms of educa-

TABLE 2: Healthy Lifestyle Behaviours Scale average total points.

HLBS and subscale	Lower and Upper Value	Minimum-Maximum	Number of subgroups	X±SD
Interpersonal relations	9-36	14-36	9	25.22±4.34
Nutrition	9-36	10-32	9	19.54±3.80
Health responsibility	9-36	9-33	9	18.33±4.36
Physical activity	8-32	8-32	8	17.09±5.06
Stress management	8-32	9-32	8	19.44±3.77
Spiritual improvement	9-36	13-36	9	26.70±4.51
Total	52-208	79-185	52	126.31±18.26

HLBS: Healthy Lifestyle Behaviours Scale; SD: Standard deviation.

tion level of mother, it is evaluated that the gap between adolescents' interpersonal relations, spiritual improvement sub-dimensions and HLBS average total points as statistically significant ($p<0.001$). It is understood that adolescents whose parents graduated from university/college got high average points on all sub-dimensions when it is compared to those from other education groups.

According to mother's employment status, the gap between adolescents' interpersonal relations sub dimension and HLBS average total points is considered as statistically significant ($p<0.05$). It is understood that adolescents whose mother is working got high average points on interpersonal relations, nutrition, health responsibilities, stress management sub-dimensions when it is compared to adolescents whose mother is not working.

According to father's employment status, the gap between adolescents' spiritual improvement sub-dimension and HLBS average total points is considered as statistically significant ($p<0.05$). It is understood that adolescents whose fathers graduated from university/college got high average points on interpersonal relations, health responsibilities and spiritual improvement sub-dimensions when it is compared to adolescents whose fathers graduated from other education groups.

According to income status perceptions, the gap between adolescents' nutrition, physical activity sub-dimensions and HLBS average total points is considered as statistically significant ($p<0.05$). It is understood that adolescents supposed to have high income status got high average points on all sub- dimensions compared to other income status perceptions.

According to family relations status, the gap between adolescents' interpersonal relations, nutrition, health responsibilities, physical activity, stress management and spiritual improvement sub-dimensions and HLBS average total points is considered as statistically significant ($p<0.01$). It is understood that adolescents thinking their family relations status as very good got high average points on all sub- dimensions compared to other adolescents thinking their family relations status as good and bad/very bad (Table 3).

DISCUSSION

HLBS average total points of all adolescents participated is 126.31±18.26. It is discovered that adolescents got the highest average point from spiritual improvement sub-dimension with 26.70±4.51 and the lowest average point from physical activity sub-dimension with 17.09±5.06. It is found that in the results of the study conducted by Karadamar et al. about adolescents' healthy lifestyle behaviours, they got the highest point from spiritual improvement/self-realization sub-dimensions and the lowest point from physical activity sub-dimension.[15] The findings of other studies show similarity to these findings.[16,17]

Spiritual aspects of human beings are as important as physical, emotional and social aspects.[18] Spiritual improvement/self-realization designates individual's existence goals, self-improvement abilities, how s/he recognize and satisfied him/herself.[19] Adolescents' self-improvement ability, how s/he rec-

TABLE 3: Correlations between family characteristics and health-promoting lifestyle.

	Healthy Lifestyle Behaviours Scale						
Family Characteristics	**Interpersonal relations X±SD**	**Nutrition X±SD**	**Health responsibility X±SD**	**Physical activity X±SD**	**Stress management X±SD**	**Spiritual improvement X±SD**	**HLBS Total X±SD**
Family Characteristics							
Nuclear family type	25.4±4.3	19.7±3.8	18.5±4.3	17.3±5.0	19.6±3.8	26.9±4.5	127.6±18.1
Extended family type	23.8±4.6	19.0±4.0	17.1±4.7	16.0±5.1	18.3±3.6	25.6±4.9	119.8±17.8
Fragmented family type	24.1±3.9	17.6±3.7	17.5±4.7	14.9±4.5	18.2±3.0	24.7±4.1	116.9±16.1
Test statistic value	F=3.018	F=2.983	F=2.071	F=2.862	F=3.037	F=3.168	F=5.461
	p=0.050	p=0.052	p=0.127	p=0.058	p=0.049	p=0.043	p=0.005
Education Level of Mother							
Primary school	24.5±4.4	18.9±3.6	18.0±3.9	16.2±4.8	18.9±3.7	25.6±4.8	122.1±17.2
Secondary school	24.1±4.6	19.1±3.9	17.5±4.6	17.0±5.6	19.6±4.3	26.5±4.8	123.8±20.7
High school	25.5±4.0	20.0±3.7	18.6±4.3	17.4±4.9	19.6±3.4	27.0±3.9	128.0±17.4
University/college	26.6±4.2	20.2±4.1	19.0±4.9	18.1±5.2	20.0±4.0	28.1±4.2	132.1±17.7
Test statistic value	F=5.597	F=2.747	F=1.734	F=2.461	F=1.356	F=5.823	F=5.796
	p=0.001	p=0.430	p=0.160	p=0.062	p=0.256	p=0.001	p=0.001
Employment Status of Mother							
Working	25.9±4.4	19.6±4.0	18.6±4.7	16.9±5.1	19.5±3.5	26.7±4.7	127.3±17.9
Not working	24.9±4.3	19.5±3.7	18.2±4.2	17.1±5.1	19.4±3.9	26.7±4.5	125.9±18.4
Test statistic value	t=2.050	t=0.256	t=0.686	t=-0.346	t=0.113	t=0.25	t=0.403
	p=0.041	p=0.798	p=0.493	p=0.730	p=0.910	p=0.980	p=0.526
Education Level of Father							
Primary school	24.9±4.6	18.5±3.7	18.0±4.5	15.7±5.1	18.3±4.3	25.3±5.3	120.8±20.2
Secondary school	24.3±4.3	19.2±3.6	18.2±4.3	17.0±4.5	19.2±3.1	26.1±4.9	124.0±16.4
High school	25.3±4.0	20.0±3.4	18.3±4.1	17.4±4.9	19.9±3.7	27.1±3.7	128.0±16.2
University/College	25.7±4.5	19.7±4.3	18.6±4.6	17.4±5.5	19.5±3.9	27.2±4.7	128.1±20.1
Test statistic value	F=1.680	F=2.165	F=0.319	F=1.580	F=2.620	F=2.992	F=2.813
	p=0.171	p=0.092	p=0.812	p=0.194	p=0.051	p=0.031	p=0.039
Employment Status of Father							
Working	25.2±4.4	19.6±3.7	18.4±4.4	17.2±5.1	19.5±3.7	26.7±4.5	126.6±18.5
Not working	25.5±3.3	19.4±4.3	17.6±3.8	15.8±4.0	19.2±4.0	26.7±4.4	124.2±16.0
Test statistic value	t=-0.485	t=0.220	t=1.075	t=1.689	t=0.413	t=0.50	t=0.565
	p=0.628	p=0.826	p=0.283	p=0.092	p=0.680	p=0.960	p=0.453
Family Income Status							
Lower income compared to expenditures	24.1±4.6	18.2±3.6	17.7±4.9	16.1±5.8	18.4±4.2	25.1±5.3	119.5±22.4
Equal income-expenditures balance	25.2±4.4	19.5±3.7	18.3±4.2	16.7±4.6	19.5±3.7	26.8±4.5	126.0±17.1
Higher income compared to expenditures	25.6±4.1	20.1±4.0	18.5±4.5	18.1±5.5	19.7±3.7	27.1±4.2	129.1±18.4
Test statistic value	F=1.846	F=3.724	F=0.514	F=3.847	F=1.571	F=3.013	F=4.137
	p=0.159	p=0.025	p=0.598	p=0.022	p=0.209	p=0.050	p=0.017
Family Relations Status							
Very good	26.3±4.2	20.0±3.7	19.1±4.4	18.1±5.0	20.7±3.4	28.2±4.1	133.0±17.9
Good	24.5±4.2	19.1±3.8	17.7±4.1	16.4±4.9	18.5±3.7	25.6±4.5	121.6±16.6
Bad and very bad	22.7±4.3	18.9±3.8	17.6±5.5	14.6±5.8	16.7±2.5	23.3±3.9	113.8±18.2
Test statistic value	F=10.762	F=8.253	F=5.242	F=7.571	F=22.434	F=21.575	F=23.801
	p=0.000	p=0.000	p=0.006	p=0.001	p=0.000	p=0.000	p=0.000

HLBS: Healthy Lifestyle Behaviours Scale; SD: Standard deviation.

ognizes and satisfies him/herself and his/her beliefs and value judgements are evaluated by healthy lifestyle behaviour scale spiritual improvement sub-dimension. It is understood from the results of the study conducted by Bebiş et al. in 2015, adolescents got the highest point from spiritual improvement/self-realization sub-dimension and the lowest point from stress management sub-dimension.[20] According to findings of other studies, similar to this study, the highest point belongs to spiritual improvement sub-dimension.[21,22]

Ölçücü et al. discovered that physical activity level of students is very low pursuant to the result of his study conducted with 13-19 aged students.[23] In our country, it is considered that the reasons of low average points of physical activity habit sub-dimension which is acquired by the studies on healthy lifestyle behaviors, like the results of this study, are wasting longer times in front of television, computer and video games and ignoring the positive impacts of physical activity on health.

Changes on family characteristics give us information about how family affects health improvement process.[24] Through the evaluations about the effects of family structures of adolescents on healthy lifestyle behaviors, it is determined that stress management and spiritual improvements sub-dimensions of adolescents living in nuclear family structures scores higher to be considered as statistically significant when it is compared to group of extended and fragmented family structures ($p<0.05$). Adolescents living with both of parents have higher behaviour standards on improving the heath than those living with only one of the parents according to the results of survey on health improvement behaviours of adolescent conducted by Musavian et al. and the results of survey on health behaviours of adolescent from different family structures conducted by Chen et al.[4,25] Swift changes in socio-cultural, economic, social and political fields affect the family structures and nuclear and fragmented family structures are added to conventional extended family structure.[26] During this mutation period, the insistence of family elders to continue habitual attitudes in extended families and on the other side the resistance of adolescent against to these habits causes conflictions within the family. Besides in fragmented family structures, growing responsibilities of mother or father may prevent them to allocate necessary time to the adolescents. For these reasons, it is an expected discovery that adolescents living with a family extended or fragmented got lower healthy lifestyle behaviour scores in comparison to adolescents living with nuclear family.

It is commonly known that the education level of parents plays a determinant role in adolescent's lifestyle. It is detected in this study that interpersonal relations sub-dimension of adolescent groups who has a mother graduated from university/college and spiritual improvement sub-dimension of those who has a father graduated from university/college scores higher to be considered as statistically significant compared to other groups ($p<0.05$). Under the survey conducted by Musavian et al., a positive correlation is found between health improvement behaviours of students and education status of parents.[4] Several relevant studies proved that education have positive effects on improvement of healthy lifestyle behaviours, as well as on all other fields.[3,27-31] It is considered as an expected result that higher education level of parents who has significant roles on adolescents' growth, education and health behaviours means higher knowledge on health issues, higher importance to attitudes on health improvement and better reflections of their role model behaviours to those of adolescent's.

In our study, it is detected that interpersonal relations sub-dimension of adolescents whose mother is working scores higher to be considered as statistically significant when it is compared to not working mothers ($p<0.05$). It is considered that working mothers can get better interpersonal communication skill by expanding social environment, and this will affect adolescent's interpersonal relations positively because of s/he is taking mother as a role model. Under relevant studies, it is discovered that adolescents who have working parents display positive behaviours on health improvement.[3,4,27]

It is discovered that HLBS average total points and nutrition, physical activity sub-dimensions average points of adolescents in higher income status scores higher to be considered as statistically significant when it is compared to adolescents in lower and

balanced income status ($p<0.05$). In the study conducted by Ünal ve Orgun, it is determined that there is a strong connection between the success of health improvement programmes and socio economic status.[32] Studies conducted in the field determines that income status affects to health position perception, taking responsibilities on health issues and health improvement behaviours, on the other hand average scores of healthy lifestyle behaviours rise when income status rises.[3,5,17,27,30,33] According to other studies and our study as well, it is considered that the increase in healthy lifestyle behaviours as an expected result due to spending life healthier and balanced, diverting food consumption, reaching opportunities for exercise and sports, dealing with health problems easier with the rise of income status.

Carter et al. indicates that in his study those who have good communication with the family and good friendships, in the mean time they eat well, have safe sex, not smoke, not use alcohol and drugs and exercise regularly.[34] In this study, like other relevant studies, it is determined that average scale total points and also nutrition, health responsibilities, physical activity, stress management and spiritual improvement sub-dimension averages of adolescents who have very good family relations scores high to be considered as statistically significant when it is compared to those who have good, bad and very bad family relations ($p<0.05$). In respect of health improvement model, interpersonal relations identify youngers' level of communication with his family, friends and inner circle and sustainability. To be in good interaction with family for youngers rises their abilities to gain health behavior.[35] However, unfavourable relations with parents and negative attitudes adversely affects the health behaviours and consequently the health. Therefore, positive correlation between adolescents' family relations and healthy lifestyle behaviours is considered as an expected finding.

CONCLUSION

In terms of this study, it is found that adolescents who have nuclear family characteristics, parents' high education level, both are working and very good family relations display positive health improvement behaviours. Nurses play a very significant role in promoting healthy lifestyle behaviors in adolescents. Based on these results, the nurse should first evaluate the family characteristics of this group while planning the health education programs that protect and improve the health of adolescents. Considering the evaluation results, the content of the training program should be prepared and implemented in line with the family characteristics.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Bahar Kefeli Çol, Birsen Atalay;* ***Design:*** *Bahar Kefeli Çol,Birsen Atalay;* ***Control/Supervision:****Birsen Atalay;* ***Data Collection and/or Processing:****Bahar Kefeli Çol;* ***Analysis and/or Interpretation:****Bahar Kefeli Çol, Birsen Atalay;* ***Literature Review:*** *Bahar Kefeli Çol, Birsen Atalay;* ***Writing the Article:*** *Bahar Kefeli Çol, Birsen Atalay.*

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