İnönü Üniversitesi Sağlık Hizmetleri Meslek Yüksekokulu Dergisi
ISSN: 2147-7892, Cilt 13, Sayı 1 (2025) 74-88
doi: 10.33715/inonusaglik.1574960

Journal of Inonu University Health Services Vocational School
ISSN: 2147-7892, Volume 13, Issue 1 (2025) 74-88
doi: 10.33715/inonusaglik.1574960

Original Article / Araştırma Makalesi

DETERMINATION OF HEALTHY LIFESTYLE BEHAVIORS OF ADOLESCENTS WORKING IN THE AUTOMOTİVE SECTOR

Otomotiv Sektöründe Çalışan Adolesanların Sağlıklı Yaşam Biçimi Davranışlarının Belirlenmesi

Fatma BOZDAĞ[1] *Serap BALCI*[2]
[1]*Harran University, Faculty of Health Sciences, Şanlıurfa*
[2]*Istanbul University-Cerrahpaşa, Faculty of Florence Nightingale Nursing, Istanbul*

Geliş Tarihi / Received: *29.10.2024* ***Kabul Tarihi / Accepted:*** *03.02.2025*

ABSTRACT

This study aims to determine the healthy lifestyle behaviors of adolescents working in the industry. The research was completed between May and December 2021 with 200 adolescents child aged 14-17 working in the auto industry site. Data were collected using an information form and the Adolescent Lifestyle Profile Scale. It was determined that the majority of adolescents working in the industry were 15 years of age or older, started working before the age of 14, had been working for less than 3 years, were continuing their education, worked more than 8 hours a day, received wages below those paid to apprentices, and were all male. When the scores of the adolescents on the healthy lifestyle behaviors scale and its sub-dimensions were examined, it was found that they had healthy lifestyle behaviors slightly above the moderate level. It was found that educational attendance, daily working hours, and break times significantly affected the healthy lifestyle behaviors of adolescents. To improve the healthy lifestyle behaviors of adolescents working in the auto industry, their educational attendance should be supported, and regulations regarding working conditions such as daily working hours and break times are necessary.

Keywords: Adolescent, Auto industry, Behavior, Healthy lifestyle, Working child.

ÖZ

Araştırma sanayide çalışan adolesanların sağlıklı yaşam biçimi davranışlarının belirlenmesi amacıyla yürütülmüştür. Araştırma Mayıs-Aralık 2021 tarihleri arasında otomotiv sanayi sitesinde çalışan 14-17 yaş arasındaki 200 adolesan çocuk ile tamamlanmıştır. Veriler, Bilgi Formu ve Adolesan Sağlıklı Yaşam Biçimi Davranış Ölçeği ile toplanmıştır. Sanayide çalışan adolesanların çoğunluğunun 15 yaş ve üzeri olduğu, çalışmaya 14 yaşından önce başladıkları, 3 yıldan daha az süredir çalıştıkları, eğitim sürecine devam ettikleri, günlük 8 saatin üzerinde çalıştıkları, çıraklara ödenmesi gereken ücretin altında ücret aldıkları ve hepsinin cinsiyetinin erkek olduğu saptanmıştır. Adolesanların sağlıklı yaşam biçimi davranışları ölçeği ve alt boyutlarından aldıkları puanlar incelendiğinde, orta düzeyin biraz üzerinde sağlıklı yaşam biçimi davranışına sahip oldukları bulunmuştur. Eğitime devam etme durumunun, günlük çalışma ve mola saatlerinin adolesanların sağlıklı yaşam biçimi davranışları üzerinde anlamlı bir etkisi olduğu belirlenmiştir. Otomotiv sanayide çalışan adolesanların sağlıklı yaşam biçimi davranışlarının iyileştirilebilmesi için eğitime devamlılıkları desteklenmeli, günlük çalışma saati ve mola saatleri gibi çalışma şartlarına ilişkin düzenlemeler gereklidir.

Anahtar kelimeler: Adolesan, Çalışan çocuk, Davranış, Otomotiv sanayi, Sağlıklı yaşam biçimi.

Fatma BOZDAĞ ✉, fatosbozdag42@gmail.com
Harran University, Faculty of Health Sciences, Şanlıurfa

Bu makaleye atıf yapmak için (How to cite this article): Bozdağ, F. & Balcı, S. (2025). Determination of Healthy Lifestyle Behaviors of Adolescents Working in The Automotive Sector. *İnönü Üniversitesi Sağlık Hizmetleri Meslek Yüksekokulu Dergisi*, 13(1), 74-88. doi: 10.33715/inonusaglik.1574960

INTRODUCTION

The first article of the United Nations Convention on the Rights of the Child states that "Every human being under the age of eighteen is considered a child, except in cases of majority at an earlier age" (Convention on the Rights of the Child, 1989). Child labor is defined as work that is mentally, physically, socially or morally dangerous and harmful to children, prevents them from attending school, or makes them difficult to undertake their studies in school (ILO, 2021). It is known that one in every 10 children worldwide is a child worker and the latest figures have increased to 160 million. Approximately half of all working children are employed in hazardous work that directly risks their development and health. In poor countries, at least one in every five children is forced to work in the streets, construction sites, brick factories, industries, fields, mines, factories or markets in conditions that are not suitable for their health (ILO, 2021; UNICEF, 2023). When we look at the distribution of child labor by region, Africa (with 92 million child workers, that is, one in every five children) ranks first, the Asia-Pacific Region (49 million children and 5.6% of all children) ranks second, and the remainder of the child labor population is in the Americas (8.3 million), Europe and Central Asia (8.3 million), and Arab Countries (2.4 million). When we look at the sectoral distribution of child labor, the agricultural sector ranks first by far, followed by the service and industry sectors (ILO, 2021).

Child labor is perceived as cheap by employers, and unregistered child workers are often unable to defend their rights (Ozpolat and Aktuna, 2023). One of the main problems that causes child labor is poverty. Due to poverty, especially in some societies, children are forced to take on the responsibility of contributing to the household economy, or their families employ their children to escape poverty (Ibrahim et al., 2019). A United Nations Children's Fund (UNICEF) report warned that global progress towards ending child labor worldwide had stopped for the first time in 20 years with the COVID-19 pandemic, and that 9 million more children were at risk of being pushed into child labor because of economic reasons through practices such as school closure (UNICEF, 2021). It is thought that child labour will increase further due to reasons such as recent conflicts, natural disasters and migration.

Child labor has negative effects on children's health by preventing their physical, intellectual and emotional development (Radfar et al., 2018). It causes many physical and psychological problems that continue to affect them even in adulthood (Posso et al., 2021; Aransiola and Justus, 2018). In studies examining the effects of child labor on health, it is seen that common health problems in child workers include vision problems, fainting, sunstroke, poisoning, work accidents, sprains, fractures, burns, cuts, injuries, falls, musculoskeletal and

respiratory system problems, malnutrition and delayed growth and development (Batomen et al., 2018; Ibrahim et al., 2019). Adolescence is one of the most suitable periods in which positive or negative healthy lifestyle behaviors can be acquired. Adolescents' acquisition of healthy lifestyle behaviors has an impact on many areas of their lives, especially nutrition, physical activity, stress management, and interpersonal relationships. For this reason, the healthy lifestyle behaviors acquired by adolescents during this period will positively affect their growth and development (Cicek and Cetinkaya, 2017). It is very difficult for adolescents who work under difficult conditions and have negative childhood experiences to have healthy lifestyle behaviors. This research was conducted to determine the healthy lifestyle behaviors of children working in industry during adolescence. The following study questions were examined:

- What is the level of healthy lifestyle behaviors of adolescents working in the auto industry?
- How do factors such as age, years of work, daily working hours affect the healthy lifestyle behaviors of adolescents working in the auto industry?
- What is the relationship between the total score averages and subscale score averages of healthy lifestyle behaviors of adolescents working in the auto industry?

MATERIAL AND METHOD

Design

The research was conducted in a descriptive and cross-sectional manner with the aim of determining the healthy lifestyle behaviors of adolescents working in the auto industry.

Setting/Population

Children of parents who worked in the auto industry, were between the ages of 14-17, could read and write, and agreed to participate in the study were included in the study. Children who did not meet the inclusion criteria were excluded from the study. The population of the study consisted of all adolescents between the ages of 14-17 who worked in the auto industry site between May and December 2021 and met the inclusion criteria, while the sample consisted of a total of 200 adolescents who worked between the specified data collection dates and volunteered to participate in the study. After the data were collected, Post-hoc power analysis was performed in the "G. Power-3.1.9.2" program. In the evaluation made based on the One Sample Test on the total score of children's healthy lifestyle behaviors, it was seen that the sample of the study was sufficient with 95% confidence, 100% test power and 6.925 effect size.

Data Collection Instrument

Information Form

This form, prepared by the researchers in line with the literature, consisted of questions about the child and his/her family's age, income level, education status, and working conditions (Bozdag and Balcı, 2023; Kaur and Byard, 2021).

The Adolescent Lifestyle Profile Scale

The Turkish validity and reliability study of the scale, which was developed in 1997 based on Nola Pender's Health Promotion Model to evaluate the healthy lifestyle behaviors of adolescents, was conducted by Ardıc and Esin (2015). The scale has seven subgroups including "Health responsibility," "Nutrition," "Physical activity," "Positive life perspective," "Interpersonal relations," "Stress management," and "Spiritual health" behaviors. The scale has 40 items and is a 4-point Likert-type scale. Adolescents can score between 40 and 160 on the scale. The scale does not have a cut-off point; as the score increases, the level of positive health behavior increases. The Cronbach alpha coefficient of the total scale was reported as 0.87 (Ardıc and Esin, 2015). In our research, the Cronbach alpha coefficient of the total scale was found as 0.85.

Data Collection

The purpose of the research was explained to the adolescents working in the automotive industry by the researcher, and the data were collected from the adolescents who agreed to participate in the research using an information form and the Adolescent Lifestyle Profile Scale (ALPS).

Data Analysis

The IBM SPSS Statistics 22 (IBM Corp., Armonk, New York, USA) statistical package was used to evaluate the research data. Percentage values, arithmetic mean, standard deviation, median, minimum and maximum values are given as descriptive statistics of the data. The suitability of the research data to normal distribution was based on the Kolmogorov-Smirnow test. The independent sample t-test was used in cases where the effect of two independent variables on the dependent variable was normally distributed, and the Mann-Whitney test was used for data that were not normally distributed. One-way anylysis of variance (ANOVA) was used for data showing normal distribution in three or more variables, and the Kruskall-Wallis test was used for data that were not normally distributed. A linear regression method (Enter)

was used in the model in which ALPS of children working in the automotive industry was examined and the significance level was accepted as $p<0.05$.

Ethical Considerations

Before collecting the data of the study, a study permit was obtained from the governorship with the approval of the clinical research ethics committee of a university (Date: 29.03.2021, Number: HRU/21.07.26). The contact information of the parents of the adolescents who agreed to participate in the study was obtained, verbal permission for their children's participation was obtained, and the adolescents signed an informed consent form. The study was conducted in accordance with the principles of the Declaration of Helsinki.

RESULTS

It was determined that the majority of adolescents of the sample were aged 15 years and over, their starting age was under 14 years, they had been working for 3 years or less, they continued their education, they worked more than 8 hours per day, they worked for wages below the wage that should be paid to apprentices, they gave most of their income to their families, their families' income was less than their expenses, and all were male. It was found that the majority of the adolescents did not receive apprenticeship training and did not receive a tetanus vaccine when they started working, they did not use protective equipment at work, and 24.5% had a work accident and were treated for this reason (Table 1).

The average total ALPS score was found as 104.09±15.03, and the average total scores they received from the subscales of health responsibility, nutrition, physical activity, positive life perspective, interpersonal relations, stress management and spiritual health were 10.15±2.91, 15.89±2.73, 14.20±3.69, 23.11±4.44, 14.54±2.70, 13.62±2.64, and 12.56±2.81, respectively. When the average total ALPS and its subscales scores of the adolescents working in the automotive industry were examined, it was seen that they had healthy lifestyle behaviors slightly above the average level (Table 2).

Table 1. Demographics of Sample *(n=200)*

Features		**n**	**%**
Gender			
	Male	200	100
Age			
	14	47	23.5
	15 years and older	153	76.5
Education attendance status			
	Continuing	144	72.0
	Not continuing	56	28.0

Apprenticeship training			
	Educated	36	18.0
	Uneducated	164	82.0
Tetanus vaccination status			
	Vaccinated	68	34.0
	Unvaccinated	132	66.0
Age at first time to work			
	Under 14 years old	163	81.5
	14 years	21	10.5
	15 years and older	16	8.0
Working time in auto industry			
	3 years or less	112	56.0
	4 years and above	88	44.0
Daily working hour			
	8 hours or less	21	10.5
	9 hours or more	179	89.5
Lunch break			
	Less than 1 hour	74	37.0
	1 hour	126	63.0
Average monthly earnings			
	Below 30% of the minimum wage	126	63.0
	More than 30% of the minimum wage	74	37.0
Using income status			
	Giving all or most of it to the family	66	69.5
	Spend it all on oneself	27	13.5
	After using some of the money, saving the rest	34	17.0
Having a work accident and receiving treatment			
	Yes	49	24.5
	No	151	75.5
Economic status of the family *			
	Income less than expenses	106	53.0
	Income equals expense	79	39.5
	Income more than expenses	15	7.5
Protective equipment			
	User	72	36.0
	Not user factors	128	64.0

* According to the children's statements.

Table 2. ALPS Scores of Adolescents Working in Auto Sector *(n=200)*

ALPS (Min-Max)	***x̄ ±SS***	***M (Min-Max)***
Health responsibility subscale (5-20)	10.15±2.91	10.00 (5.00-18.00)
Nutrition subscale (6-24)	15.89±2.73	16.00 (9.00-24.00)
Physical activity subscale (6-24)	14.20±3.69	14.00 (6.00-22.00)
Positive life perspective subscale (8-32)	23.11±4.44	23.00 (10.00-32.00)
Interpersonal relations subscale (5-20)	14.54±2.70	15.00 (7.00-20.00)
Stress management subscale (5-20)	13.62±2.64	14.00 (7.00-20.00)
Spiritual health subscale (5-20)	12.56±2.81	13.00 (5.00-20.00)
ALPS total score (40-160)	104.09±15.03	105.00 (58.00-149.00)

x̄: Mean, SS: Standard Deviation, M: Medyan, Min: Minimum, Max: Maximum.

The age of the adolescents and their years of working in the auto industry had no significant effect on any subscale of the healthy lifestyle behavior scale. It was found that as adolescents' daily working hours increased, their average health responsibility and physical activity subscale scores decreased significantly; as their lunch break hours shortened, their

average health responsibility subscale scores decreased; continuing education significantly increased their average health responsibility and stress management subscale scores, and higher incomes of families than expenses significantly decreased the mean scores of the nutrition subscale, but it significantly increased the mean scores of the physical activity subscale (Table 3).

There was a moderate positive statistically significant relationship between the healthy lifestyle behavior total score of adolescents working in the auto industry and the subscales of health responsibility, nutrition, and physical activity, and there was a highly positive statistically significant relationship between the subscales of positive life perspective, interpersonal relationship, stress management, and spiritual health (r=0.533, r=0.659, r=0.677, r=0.731, r=0.705, r=0.750, and r=0.738, respectively) (Table 4).

The model based on the total score of the healthy lifestyle behavior scale of adolescents working in the auto industry was found to be statistically significant (F=4.432; p=0.037). It was revealed that adolescents' families' income status and healthy lifestyle behaviors explained 14.8% of their total scores. A one-unit increase in the income of children's families provided a 148-unit increase in healthy lifestyle behaviors (B=0.148; p=0.037). Other descriptive features were also included in the model but were removed because they were not significant (Table 5).

Table 3. Comparison of ALPS Scores According To Demographics Characteristics of Adolescents Working in Auto Sector *(n=200)*

Features	N	Health responsibility		Nutrition		Physical activity		Positive life perspective	
		x̄±SS	***M (Min-Max)***	***x̄±SS***	***M (Min-Max)***	***x̄±SS***	***M (Min-Max)***	***x̄±SS***	***M (Min-Max)***
Age									
14	47	10.59±2.95	11.00 (5.00-18.00)	16.36±2.94	16.00 (9.00-24.00)	14.02±3.66	14.00 (6.00-21.00)	23.51±4.23	23.00 (14.00-31.00)
≥15	153	10.01±2.90	10.00 (5.00-18.00)	15.74±2.65	16.00 (10.00-22.00)	14.26±3.71	14.00 (6.00-22.00)	22.99±4.51	23.00 (10.00-32.00)
Test*		*U=3180.500 p=0.229*		*U=3234.500 p=0.295*		*U=3472.500 p=0.722*		*t=0.697 p=0.487*	
Working time in auto industry (year)									
≤3	112	10.14±2.80	10.00 (5.00-18.00)	16.16±2.83	16.00 (10.00-24.00)	14.00±3.65	14.00 (6.00-21.00)	23.21±4.70	23.00 (12.00-32.00)
≥4	88	10.15±3.06	10.00 (5.00-17.00)	15.54±2.56	16.00 (9.00-21.00)	14.45±3.76	15.00 (6.00-22.00)	22.98±4.10	23.00 (10.00-31.00)
Test*		*U=4915.000 p=0.974*		*t=1.588 p=0.114*		*U=4508.500 p=0.300*		*t=0.356 p=0.722*	
Daily working (hour)									
≤8	21	11.61±2.33	12.00 (6.00-14.00)	16.00±2.38	16.00 (11.00-20.00)	15.90±2.30	16.00 (10.00-20.00)	22.33±2.70	22.00 (18.00-27.00)
≥9	179	9.97±2.93	10.00 (5.00-18.00)	15.87±2.77	16.00 (9.00-24.00)	14.00±3.78	14.00 (6.00-22.00)	23.20±4.60	23.00 (10.00-32.00)
Test*		***U=1200.500 p=0.006***		*U=1751.500 p=0.607*		***U=1276.000 p=0.016***		*U=1593.000 p=0.252*	
Economic status of the family**									
Income is low	106	9.77±2.74	9.00 (5.00-16.00)	15.72±2.59	16.00 (10.00-24.00)	13.50±3.57	14.00 (6.00-21.00)	22.89±4.64	23.00 (12.00-31.00)
Equal	79	10.46±2.83	11.00 (5.00-18.00)	16.35±2.71	16.00 (10.00-23.00)	15.06±3.62	15.00 (7.00-22.00)	23.55±4.00	23.00 (10.00-31.00)
Income is high	15	11.13±4.12	11.00(5.00-18.00)	14.60±3.33	15.00 (9.00-22.00)	14.66±4.13	15.00 (6.00-20.00)	22.33±5.24	23.00 (15.00-32.00)
Test*		*KW=3.924 p=0.141*		***F=3.070 p=0.049***		***F=4.311 p=0.015***		*KW=1.228 p=0.541*	
Lunch break (hour)									
<1	74	9.54±2.84	9.00 (5.00-17.00)	15.52±2.97	15.00 (9.00-23.00)	13.86±3.37	14.00 (6.00-20.00)	23.45±4.50	24.00 (10.00-31.00)
1	126	10.50±2.91	10.00 (5.00-18.00)	16.10±2.56	16.00 (10.00-24.00)	14.40±3.87	15.00 (6.00-22.00)	22.91±4.50	15.00 (6.00-22.00)
Test*		***U=3736.000 p=0.018***		*U=4116.500 p=0.164*		*U=4201.500 p=0.242*		*t=0.840 p=0.402*	
Education attendance status									
Yes	144	10.40±2.95	10.00 (5.00-18.00)	10.06±2.80	16.00 (9.00-24.00)	14.36±3.71	15.00(6.00-21.00)	23.34±4.41	23.50 (10.00-32.00)
No	56	9.50±2.73	9.00 (5.00-16.00)	15.44±2.48	15.50 (10.00-20.00)	13.78±3.65	14.00(6.00-22.00)	22.53±4.50	22.00 (12.00-31.00)
Test*		***U=3285.000 p=0.041***		*U=3580.500 p=0.216*		*U=3585.500 p=0.223*		*U=3542.000 p=0.181*	

x̄: Mean, SS: Standard Deviation, M: Medyan, Min: Minimum, Max: Maximum, U: Mann-whitney, KW: Kruskal Wallis, F: Anova, t: Indepentent sample t test.

Table 3. Continued

Features	N	Interpersonal relations		Stress management		Spiritual health	
		$\bar{x}$±SS	M (Min-Max)	$\bar{x}$±SS	M (Min-Max)	$\bar{x}$±SS	M (Min-Max)
Age							
14	47	14.19±2.85	14.00 (9.00-20.00)	13.89±2.89	14.00 (8.00-20.00)	12.59±2.87	13.00 (6.00-18.00)
≥15	153	14.64±2.65	15.00 (7.00-20.00)	13.54±2.57	14.00 (7.00-19.00)	12.55±2.80	13.00 (5.00-20.00)
Test*		*U=3240.500 p=0.303*		*U=3408.000 p=0.587*		*t=0.085 p=0.932*	
Working time in auto industry (year)							
≤3	112	14.28±2.76	14.00 (7.00-21.00)	13.65±2.73	13.50 (7.00-20.00)	12.75±2.91	13.00 (7.00-20.00)
≥4	88	14.86±2.60	15.00 (7.00-20.00)	13.59±2.53	14.00 (7.00-19.00)	12.31±2.68	12.50 (5.00-17.00)
Test*		*U=4334.500 p=0.141*		*U=4895.000 p=0.935*		*U=4583.000 p=0.393*	
Daily working (hour)							
≤8	21	15.14±2.22	15.00 (10.00-19.00)	13.52±1.60	14.00 (10.00-16.00)	12.85±1.68	13.00 (9.00-16.00)
≥9	179	14.46±2.75	14.00 (7.00-20.00)	13.63±2.74	14.00 (7.00-20.00)	12.53±2.92	13.00 (5.00-20.00)
Test*		*U=1596.000 p=0.255*		*U=1824.500 p=0.825*		*t=0.764 p=0.450*	
Economic status of the family**							
Income is low	106	14.41±2.55	14.50 (8.00-20.00)	13.29±2.73	14.00 (7.00-20.00)	12.39±2.92	12.50 (6.00-19.00)
Equal	79	14.87±2.77	15.00 (7.00-20.00)	14.03±2.46	14.00 (8.00-19.00)	12.81±2.67	13.00 (5.00-18.00)
Income is high	15	13.29±2.73	14.00 (7.00-20.00)	13.80±2.73	14.00 (10.00-19.00)	12.46±2.87	13.00 (7.00-20.00)
Test*		*KW=3.113 p=0.211*		*F=1.848 p=0.160*		*F=0.497 p=0.609*	
Lunch break (hour)							
<1	74	14.74±2.64	14.00 (7.00-20.00)	13.40±2.57	13.50 (8.00-20.00)	12.72±2.91	13.00 (5.00-19.00)
1	126	14.42±2.74	15.00 (7.00-20.00)	13.75±2.68	14.00 (7.00-19.00)	12.46±2.76	13.00 (6.00-20.00)
Test*		*U=4470.000 p=0.625*		*U=4227.500 p=0.269*		*U=4389.00 p=0.487*	
Education attendance status							
Yes	144	14.54±2.75	15.00 (7.00-20.00)	13.86±2.68	14.00 (7.00-20.00)	12.69±2.89	13.00 (5.00-20.00)
No	56	14.53±2.59	14.50 (8.00-20.00)	13.01±2.47	13.00 (7.00-18.00)	12.23±2.60	12.00 (6.00-18.00)
Test*		*U=4028.000 p=0.991*		***U=3292.000 p=0.043***		*t=1.043 p=0.298*	

$\bar{x}$: Mean, SS: Standard Deviation, M: Medyan, Min: Minimum, Max: Maximum, U: Mann-whitney, KW: Kruskal Wallis, F: Anova, t: Indepentent sample t test.

Table 4. Correlation Between ALPS Total Score and Subscale of Adolescents Working in Auto Sector (*n=200)*

		Health responsibility subscale	Nutrition subscale	Physical activity subscale	Positive life perspective subscale	Interpersonal relations subscale	Stress management subscale	Spiritual health subscale
ALPS Total	**r**	,533**	,659**	,667**	,731**	,705**	,750**	,738**
Health responsibility subscale	**r**		,229**	,408**	0,091	,202**	,349**	,387**
Nutrition subscale	**r**			,323**	,458**	,422**	,449**	,337**
Physical activity subscale	**r**				,214**	,338**	,484**	,393**
Positive life perspective subscale	**r**					,536**	,504**	,519**
Interpersonal relations subscale	**r**						,428**	,494**
Stress management subscale	**r**							,429**

*Pearson or Spearman correlation? ** Correlation is significant at the 0.01 level (2-tailed).

Table 5. ALPS Regression Model Created For Total Score (Stepwise) *(n=200)*

	B (%95)	Beta	t	p	Zero-order	Partial
(Constant)	97.553 (91.087- 104.02)		29.750	0.000		
Economic status of the family	4.447 (0.281- 8.612)	.148	2.105	0.037	.148	.148

B (%95): Unstandardized Coefficients, Beta: Standartlaştırılmış Katsayılar, R^2:0.148, F:4.432, P=0.037, S.E: 14.909

DISCUSSION

Child labor is a global phenomenon that occurs predominantly in countries with low socioeconomic status and resources (Kaur and Byard, 2021). Poverty, inadequate social assistance, war or conflicts are among the main causes of child labor. Currently, in Africa, one of the continents with a high poverty rate, 70% of child laborers work in agriculture and 30% in the industrial sector. In Malawi, approximately half of 5.6 million children work due to poverty, 2 million of whom work in agriculture under inappropriate weather conditions and approximately 100,000 children work in tobacco fields, which negatively affect their health (Jones, 2018; Wondimu, 2022). Similarly, in the present study, the majority of children working in the auto industry drew attention to poverty by stating that their family's income was low and that they gave all or most of the money they earned to their families (Table 1). A one-unit increase in the income of children's families provided a 148-unit increase in healthy lifestyle behaviors (Table 5). At the same time, it was determined that although the improvement of the family's income status positively affected children's physical health behaviors, it negatively affected their nutritional behaviors (Table 3). However, it is known that poverty has negative effects on children's nutrition (Pradhan et al., 2022). The fact that there was a significant relationship between the improvement of the family's income status and children's negative eating habits suggested that this might be due to the lack of knowledge of families and adolescents about healthy nutrition.

Even though education is not a luxury but a necessity for children in high-income households, children in poor households may have to give up their education to work to contribute to the family economy, or families may become dependent on child labor for their livelihood (Luckstead et al., 2019; Kaur and Byard, 2021). It was determined in the present study that the majority of adolescents working in the auto industry continued their education (Table 1). It was thought that this situation might be affected by the fact that education and training were conducted online and there was no compulsory attendance within the scope of the measures taken against the COVID-19 pandemic in Turkey between the dates the research was conducted. It was determined that adolescents who continued their education had better health responsibility and stress management than those who did not (Table 3). Research suggests that even a 3-hour workload can negatively impact school performance and attendance. Studies have reported that adolescents who spend time working instead of socializing with their peers are more prone to developing problematic social behaviors such as depression, drug use, and

physical aggression due to social isolation (Kaur and Byard, 2021; Meyer et al., 2020; Mohammadi et al., 2023; Fanton et al., 2022).

Evidence shows that child labor has negative effects on children's physical health, with musculoskeletal system problems coming first, and on their psychosocial health. It has been determined that stress levels and abuse rates are higher in working children than in non-working children, and their happiness, hopefulness, emotional well-being, and self-efficacy levels are lower (Bozdag and Balcı, 2023; Feeny et al., 2021; Moayad et al., 2021). Similarly, we found that there was a positive significant relationship between the total score of ALPS of adolescents working in the auto industry and the scores they received from all subscales (health responsibility, nutrition, physical activity, positive life perspective, interpersonal relationship, stress management and spiritual health). According to this result, the positive behavior in the subscales showed that adolescents had a healthier lifestyle (Table 4).

The physical, chemical, biologic, and psychological effects of working children vary depending on the sector they work in (Kaur and Byard, 2021; Scott and Pocock, 2021). In the agricultural sector children are exposed to all kinds of adverse weather conditions, toxic pesticides or fertilizers, especially during harvest times (Bliznashka et al., 2022). Children are exposed to chemicals in waste labor (Sara et al., 2022), and in addition to chemicals in mining, there is a risk of mine collapse, ingestion of mineral dusts or explosives (Amon et al., 2012). In the construction sector, children are exposed to carrying heavy loads and toxic chemicals such as paint. In the industrial sector, they are exposed to carrying heavy loads, sharp instrument injuries, doing repetitive work for hours in painful positions. Children also risk injury and death by selling goods from stalls next to busy roads, in markets or even at traffic lights (Omorogiuwa, 2020). They often work without adequate ventilation, without access to any protective equipment, clean water or food (Bozdag and Balcı, 2023; Kaur and Byard, 2021). Similarly, according to our results, the majority of adolescents working in the auto industry started working at ages younger than 14 years, their daily working hours were more than 8 hours, they took a 1-hour break at most during lunch, they did not use any special equipment at work, they did not receive apprenticeship training when starting work, and they did not receive a tetanus vaccination. Despite all this, it was determined that they were working for less than the wage they should receive (Table 1). It was found that health responsibility was negatively affected by decreasing break times, and both health responsibilities and physical activity were negatively affected by increasing daily working hours (Table 3). It was determined that children started working on tobacco farms in Southern Brazil before the age of 14 years, worked for long

periods in inappropriate positions, and experienced many health problems (Fassa et al., 2021). Similarly, in India, it was reported that children were seen as cheap labor and had a huge workforce in auto repair and agricultural work, and at the same time, their health was negatively affected through exposure to machines, pesticides, dust, fumes, chemicals, acids, cotton and wool fibers (Srivastava, 2019). The fact that adolescents are still undergoing physical and mental development makes them even more vulnerable to these conditions and prevents them from fully comprehending the dangers they face. With their small bodies, they struggle to survive in dangerous jobs using machines in environments designed for adults.

CONCLUSION

It was determined that adolescents working in the automotive industry had healthy lifestyle behaviors slightly above the middle level, and that educational attendance and daily working and break hours had a significant effect on the healthy lifestyle behaviors of adolescents. Therefore, to improve healthy lifestyle behaviors, these young people's educational attendance should be supported, and regulations regarding working conditions such as daily working hours and break times are necessary. Public health and child health nurses should take into account the possible risk situations of working children during routine health screenings, physical examinations, and anthropometric measurements. Adolescents should be evaluated to determine their sleep, nutrition, and physical activity habits, as well as substance tendencies or mental distress. Problems observed in working adolescents should be identified at an early stage, intervention plans should be made, and they should be directed to the relevant units.

REFERENCES

Amon, J. J., Buchanan, J., Cohen, J. & Kippenberg, J. (2012). Child labor and environmental health: government obligations and human rights. *International Journal of Pediatrics*, *2012*(1), 938306. https://doi.org/10.1155/2012/938306

Aransiola, T. J. & Justus, M. (2018). Child labor hazard on mental health: Evidence from Brazil. The *Journal Mental Health Policy Economics*, *21*(2), 49-58.

Ardıc, A. & Esin, M. N. (2015). The adolescent lifestyle profile scale: Reliability and validity of the Turkish version of the instrument. *The Journal of Nursing Research, 23*(1), 33-40. https://doi.org/10.1097/jnr.0000000000000052

Batomen Kuimi, B. L., Oppong-Nkrumah, O., Kaufman, J., Nazif-Munoz, J. I. & Nandi, A. (2018). Child labour and health: A systematic review. *International Journal of Public Health*, *63*, 663-672. https://doi.org/10.1007/s00038-018-1075-9

Bliznashka, L., Roy, A. & Jaacks, L. M. (2022). Pesticide exposure and child growth in low-and middle-income countries: A systematic review. *Environmental Research*, *215*, 114230. https://doi.org/10.1016/j.envres.2022.114230

Bozdag, F. & Balcı, S. (2023). Prevalence of musculoskeletal system problems in children working in Turkey's automotive industry. *Public Health Nursing*, 40(6), 876-884. https://doi.org/10.1111/phn.13243

Cicek, E. & Cetinkaya, F. (2017). Healthy lifestyle behaviours of high school students in selected county town. *Journal of Health Sciences*, 26(1), 29-38.

Convention on the Rights of the Child. (1989). https://www.ihd.org.tr/ble-mletler-cuk-haklarina-da-slee/

Fanton d'Andon, C., Greene, C., Pellenq, C., Yilma, T. M., Champy, M., Canavera, M. & Pasquini, C. (2022). Child labor and psychosocial wellbeing: Findings from Ethiopia. *International Journal of Environmental Research and Public Health*, 19(13), 7938. https://doi.org/10.3390/ijerph19137938

Fassa, A. G., Faria, N. M. X., Szortyka, A. L. S. C., Meucci, R. D., Fiori, N. S. & Carvalho, M. P. D. (2021). Child labor in family tobacco farms in Southern Brazil: Occupational exposure and related health problems. *International Journal of Environmental Research and Public Health*, *18*(22), 12255. https://doi.org/10.3390/ijerph182212255

Feeny, S., Posso, A., Skali, A., Jyotishi, A., Nath, S. & Viswanathan, P. K. (2021). Child labor and psychosocial wellbeing: Findings from India. *Health Economics*, 30(4), 876-902. https://doi.org/10.1002/hec.4224

Ibrahim, A., Abdalla, S. M., Jafer, M., Abdelgadir, J. & De Vries, N. (2019). Child labor and health: A systematic literature review of the impacts of child labor on child's health in low-and middle-income countries. *Journal of Public Health*, 41(1), 18-26. https://doi.org/10.1093/pubmed/fdy018

International Labour Organization (ILO). (2021). Child labour. https://www.ilo.org/ankara/areas-of-work/child-labour/lang--tr/index.htm

Jones, A. (2018). Malnutrition, poverty, and climate change are also human rights ıssues in child labor. *Health and Human Rights, 20*(2), 249.

Kaur, N. & Byard, R. W. (2021). Prevalence and potential consequences of child labour in India and the possible impact of COVID-19–a contemporary overview. *Medicine, Science and the Law*, 61(3), 208-214. https://doi.org/10.1177/0025802421993364

Luckstead, J., Tsiboe, F. & Nalley, L. L. (2019). Estimating the economic incentives necessary for eliminating child labor in Ghanaian cocoa production. *Plos One*, 14(6), e0217230. https://doi.org/10.1371/journal.pone.0217230

Meyer, S. R., Yu, G., Rieders, E. & Stark, L. (2020). Child labor, sex and mental health outcomes amongst adolescent refugees. *Journal of Adolescence*, *81*, 52-60. https://doi.org/10.1016/j.adolescence.2020.04.002

Moayad, S. J., Kamal, S. H. M., Sajjadi, H., Vameghi, M., Harouni, G. G. & Alamdari, S. M. (2021). Child labor in Tehran, Iran: Abuses experienced in work environments. *Child Abuse & Neglect*, *117*, 105054. https://doi.org/10.1016/j.chiabu.2021.105054

Mohammadi, F., Oshvandi, K., Shamsaei, F., Khodaveisi, M., Khazaei, S. & Masoumi, S. Z. (2023). Child exposure to domestic violence, substance dependence and suicide resilience in child laborers. *BMC Public Health, 23*(1), 1-10. https://doi.org/10.1186/s12889-023-15367-7

Omorogiuwa, T. B. (2020). Troubling childhood: The physical and health ıssues experienced by child labourers. *Social Work in Public Health, 35*(8), 679-688. https://doi.org/10.1080/19371918.2020.1823928

Ozpolat, A. O. & Aktuna, E. (2023). An assessment of child poverty in Turkey. *Ahi Evran University Social Sciences Institute Journal, 9*(1), 204-223. https://doi.org/10.31592/aeusbed.1213348

Posso, A., De Silva Perera, U. & Mishra, A. (2021). Community-level health programs and child labor: Evidence from Ethiopia. *Health Economics*, *30*(12), 2995-3015. https://doi.org/10.1002/hec.4429

Pradhan, J., Ray, S., Nielsen, M. O. & Himanshu. (2022). Prevalence and correlates of multidimensional child poverty in India during 2015–2021: A multilevel analysis. *Plos One*, *17*(12), e0279241. https://doi.org/10.1371/journal.pone.0279241

Radfar, A., Asgharzadeh, S. A. A., Quesada, F. & Filip, I. (2018). Challenges and perspectives of child labor. *Industrial Psychiatry Journal*, *27*(1), 17-20. https://doi.org/10.4103/ipj.ipj_105_14

Sara, H. H., Bayazid, A. R. & Quayyum, Z. (2022). Occupational health sufferings of child waste workers in South Asia: A scoping review. *International Journal of Environmental Research and Public Health, 19*(14), 8628. https://doi.org/10.3390/ijerph19148628

Scott, N. B. & Pocock, N. S. (2021). The health ımpacts of hazardous chemical exposures among child labourers in low-and middle-income countries. *International Journal of Environmental Research and Public Health, 18*(10), 5496. https://doi.org/10.3390/ijerph18105496

Srivastava, R. N. (2019). Children at work, child labor and modern slavery in India: an overview. *Indian Pediatrics*, *56*, 633-638.

UNICEF. (2021). *Child labour: Global estimates 2020, trends and the road forward.* Retrieved December, 15, 2023, from https://data.unicef.org/resources/child-labour-2020-global-estimates-trends-and-the-road-forward/

UNICEF. (2023). Child labour. https://data.unicef.org/topic/child-protection/child-labour/#status

Wondimu, H. (2022). A cultural syndicate of society and ngos challenges to deter child labour manipulation in Addis Ababa. *Journal of Mother and Child, 25*(4), 285-300. https://doi.org/10.34763/jmotherandchild.20212504.d-21-00032