Are Hairdressers a Threat to Children's Health?

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Abstract

Aim: In this study, the impact of hair salon employees' health literacy on their approach to factors affecting children's health has been examined.

Method: This cross-sectional descriptive study was conducted with 200 hair salon employees who agreed to participate in the research. The research data were collected using a Personal Information Form and the Health Literacy Scale, both prepared by the researchers based on the literature.

Results: Seventy-four percent of hair salon employees reported that they performed procedures on "pregnant women". 39.5% stated that they only used protective equipment for the "mother" during the procedure. In addition, 91.5% reported that they performed procedures on "breastfeeding mothers". 77.5% stated that they did not use "protective equipment". 72.5% of the employees believed that cosmetic products did not negatively affect newborns. The average total score of the Health Literacy Scale for the hair salon employees participating in the study was found to be 41.90 ± 5.41.

Conclusion: Our research found that hair salon employees have a low level of health literacy. To increase the health literacy level of hair salon employees, training sessions should be conducted, and educational videos, posters, brochures, and public service announcements should be prepared.

Keywords: Hairdresser, child, child health.

Kuaförler Çocuk Sağlığı İçin Bir Tehdit Midir?

Öz

Amaç: Bu çalışmada, kuaför salonu çalışanlarının sağlık okuryazarlığının çocukların sağlığını etkileyen faktörlere yaklaşımları üzerindeki etkisi incelenmiştir.

Yöntem: Bu kesitsel tanımlayıcı çalışma, araştırmaya katılmayı kabul eden 200 kuaför salonu çalışanı ile yürütülmüştür. Araştırma verileri, araştırmacılar tarafından literatür doğrultusunda hazırlanan "Kişisel Bilgi Formu" ve "Sağlık Okuryazarlığı Ölçeği" kullanılarak toplanmıştır.

Bulgular: Kuaför salonu çalışanlarının %74'ü "hamile kadınlar" üzerinde işlem yaptıklarını bildirmiştir. %39,5'i ise işlem sırasında sadece "anne" için koruyucu ekipman kullandıklarını belirtmiştir. Ayrıca, %91,5'i "emziren anneler" üzerinde işlem yaptıklarını bildirmiştir. %77,5'i ise "koruyucu ekipman" kullanmadıklarını ifade etmiştir. Çalışanların %72,5'i kozmetik ürünlerin yenidoğanları olumsuz etkilemediğini düşünmektedir. Araştırmaya katılan kuaför salonu çalışanlarının "Sağlık Okuryazarlığı Ölçeği" toplam puan ortalaması 41,90±5,41 olarak bulunmuştur.

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ETHICAL STATEMENT: This study has been approved by the Ethics Committee of the Faculty of Medicine (Ethics Committee No: 12.02.2024-01.30) Türkiye within which the study was undertaken.

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Sonuç: Araştırma, kuaför salonu çalışanlarının sağlık okuryazarlığı düzeyinin düşük olduğunu ortaya koymuştur. Kuaför salonu çalışanlarının sağlık okuryazarlığı düzeyini artırmak için eğitimler düzenlenmeli, eğitici videolar, posterler, broşürler ve kamu spotları hazırlanmalıdır.

Anahtar Sözcükler: Kuaför, çocuk, çocuk sağlığı.

Introduction

The enclosed nature of hair salons and inadequate ventilation lead to the accumulation of chemicals from the products used, adversely affecting the health of both employees and customers in the salons[1-3].

Although most cosmetic products are applied to the skin, the substances they contain can penetrate the skin barrier and enter systemic circulation. Systemic exposure can also occur through contact with mucous membranes, oral intake, or inhalation[4,5].

Exposure of women using hair salons to harmful chemicals through transdermal absorption or inhalation during sensitive stages of growth and development, such as pregnancy and breastfeeding, negatively affects the health of children during these periods[5].

Exposure to harmful chemicals in hair salons during sensitive periods of development can lead to birth defects in the fetus and developmental disorders in multiple systems, particularly the endocrine system, as well as an increased risk of disease in later stages of life[6].

Research has identified a correlation between exposure to harmful chemicals and various adverse outcomes, including miscarriage, birth defects, stillbirth, small-for-gestational-age (SGA) births, impaired fetal development, low birth weight (LBW), preterm birth (PTB), as well as an increased risk of leukemia, neuroblastoma, Wilms tumor, and allergic rhinitis associated with asthma[7-9]. Due to these circumstances, it is essential for hairdressers to have a high level of awareness regarding the negative effects of the products they use on the health of pregnant women and their babies.

Health literacy is defined as the knowledge, motivation, and skills individuals possess to make informed decisions about protecting and improving their health, accessing information, understanding and evaluating it, and applying it in their daily lives[10]. Limited health literacy can affect various health conditions, increasing the risk of negative health outcomes and costs. Low health literate people are less knowledgeable about their own health status. They also have limited knowledge about the general importance of preventive measures in health protection and management[11].

Based on this information, this study examined the impact of hair salon employees' health literacy on their approach to factors affecting children's health.

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Material and Methods

Research design

A cross-sectional descriptive study design was employed.

Collection of data

Data collection was conducted over a period of five months (February to June 2024). The data was gathered through individual interviews with each hairdresser, with each interview lasting approximately 20 to 30 minutes.

Population/ Sample of the Study

The research was conducted in a province in southeastern Turkey with hair salon employees who agreed to participate in the research.

The sample size was determined using the A-priori Sample Size Calculator for Multiple Regression (alpha level = .05, effect size = 0.15, number of variables = 17, and desired statistical power = 0.95). The calculation indicated that a minimum of 100 individuals should be included in the study. The research was completed with 200 hair salon employees who met the inclusion criteria.

Inclusion Criteria for the Study:

- The hair salon employee must be 18 years of age or older.
- The employee must be literate.
- The employee must be willing to participate in the research.
- The employee must be open to communication and cooperation.

Being under 18 years of age or illiterate are exclusion criteria for the research.

Data collection

The research data was collected using a Personal Information Form and the Health Literacy Scale (HLS-14), both prepared by the researchers based on the literature.

Personal Information Form: The descriptive information form, created based on the literature, consists of 17 questions. It includes questions about hair salon employees' "age, educational background, professional experience, the procedures they perform, and the effects of these procedures on the health of babies, pregnant women, and children".

Health Literacy Scale (HLS-14): The Health Literacy Scale was developed by Suka et al. (2013) in Japan to assess the health literacy levels of adults and was originally created in 2010. This scale, consisting of a total of 14 questions and using a five-point Likert type, has three sub-dimensions: functional health literacy, interactive health literacy, and critical health literacy. The scale yields a minimum score of 14 and a maximum score of 70. As the score obtained from the scale increases, the level of health literacy also increases. The reliability analysis revealed that the Cronbach's Alpha value of the developed scale was 0.85[12], and in this study, it was found to be 0.84.

Data analysis

A computer program was used to evaluate the research data. Descriptive analyses were conducted using percentage, mean, and standard deviation. The Kolmogorov-Smirnov

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test was used to examine the normal distribution of the scales used in the study. The Mann-Whitney U test was used to examine differences between two independent groups based on the normality of the variables, while the Kruskal-Wallis test was employed to assess differences among three or more independent groups. A statistical significance level of $p<0.05$ was considered.

Ethical Statement

Before starting the research, ethical approval was obtained from the Clinical Research Ethics Committee (Ethics Committee No: 12.02.2024-01.30), and permission for the use of the scale employed in the study was obtained via email from the author of the scale.

The researchers provided participants with information about the study, assured them that their individual information would be kept confidential, and obtained their verbal and written consent in accordance with the principle of voluntariness.

Results

The average age of hair salon employees is 30.77±6.98 years, with 80.0% being female and 18.0% currently pregnant while continuing to work. Among the women, 47.0% reported that they had continued working during previous pregnancies. Additionally, 75.5% are single, 58% are high school graduates, and 35% have 6-10 years of professional experience. Furthermore, 99% have received training or courses, 58% work as skilled workers/apprentices, 80.5% have a designated area for preparing chemical products in their salons, 87.5% perform keratin treatments in their salons, and all employees reported that their salons are well-ventilated (Table 1).

Table 1. Demographic characteristics of hair salon employees (n=200)

Characteristics		**n**	**%**
Gender	Female	160	80.0
	Male	40	20.0
Marital Status	Married	151	75.5
	Single	49	24.5
Graduated School	Primary/Secondary School	48	24.0
	High School	116	58.0
	Vocational High School	25	12.5
	University	11	5.5
Professional experience	1-5 year	58	29.0
	6-10 year	70	35.0
	11-15 year	36	18.0
	16 and over	36	18.0
Receiving Training/Courses	Yes	198	99.0
	No	2	1.0
Employment status	Salon owner	84	42.0
	Master/apprentice	116	58.0

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The presence of a separate area for preparing chemical products in the salon	Yes	39	19.5
	No	161	80.5
The provision of keratin treatments in the salon	Yes	175	87.5
	No	25	12.5

74% of hair salon employees reported that they provide services to pregnant women in the salon, 39.5% stated that only the mother uses protective equipment during the process, 91.5% mentioned that they offer services to breastfeeding mothers, and 77.5% indicated that they do not use protective equipment. Hair salon employees believe that 80% of them believe that cosmetic products have a negative effect on pregnant women and 77% believe that cosmetic products have a negative effect on unborn babies. On the other hand, 72.5% of hair salon employees think that cosmetic products do not adversely affect newborns (Table 2).

Table 2. Characteristics of hair salon employees regarding child health (n=200)

Characteristics		**n**	**%**
The provision of services to pregnant women in the salon	Yes	148	74.0
	No	46	23.0
	I do not question it	6	3.0
The use of protective equipment during procedures for pregnant women	For the mother only	79	39.5
	For both the mother and myself	17	8.5
	I do not use	58	29.0
The provision of services to breastfeeding mothers in the salon	Yes	183	91.5
	No	7	3.5
	I do not question it	10	5.0
The use of protective equipment during procedures for breastfeeding mothers	For myself only	2	1.0
	For the mother only	8	4.0
	For both the mother and myself	28	14.0
	I do not use	155	77.5
The impact of cosmetic products on pregnant women	Yes	160	80.0
	No	14	7.0
	I don't know	26	13.0
The impact of cosmetic products on unborn babies	Yes	154	77.0
	No	20	10.0
	I don't know	26	13.0
The impact of cosmetic products on newborns	Yes	44	22.0
	No	145	72.5
	I don't know	11	5.5

The average total score of health literacy for hair salon employees participating in the study was determined to be 41.90 ± 5.41 (Table 3).

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Table 3. The distribution of average scale and sub-dimension scores of hair salon employees

Scale and sub-dimensions	Number of Items	Min-Max	Median	X ± SD
Functional health literacy	5	5-25	7	9.61±5.24
Interactive health literacy	5	13-25	17	16.68±2.66
Critical health literacy	4	12-20	16	15.60±1.31
Health literacy scale total	14	32-56	41	41.90±5.41

X : Mean, SD: Standard Deviation

There is a statistically significant difference between the health literacy scale and male hair salon employees who are not working while pregnant, single employees, salon owners, and those who do not provide services to pregnant women ($p < 0.05$) (Table 4).

Table 4. The distribution of health literacy scale average scores according to the demographic characteristics and child health-related features of hair salon employees

Characteristics		Health Literacy Scale X±SD
Gender	Female	41.47±0.42
	Male	43.87±0.78
	Test Statistics/p	-2.778[a]**/0.005**
The status of continuing work while pregnant	Yes	40.23±0.54
	No	43.31±0.62
	Test Statistics/p	**-3.564[a]/0,000**
Marital Status	Married	41.10±0.42
	Single	44.34±0.76
	Test Statistics/p	**-3.424[a]/0,001**
Employment status	Salon owner	44.11±0.54
	Master/apprentice	40.29±0.47
	Test Statistics/p	**-4.912[a]/0.000**
The provision of services to pregnant women in the salon	Yes	41.23±0.43
	No	44.16±1.53
	I do not question it	43.73±0.80
	Test Statistics/p	8.263 [b]**/0.016**
The provision of services to breastfeeding mothers in the salon	Yes	41.69±0.40
	No	45.57±0.71
	I do not question it	43.00±1.93
	Test Statistics/p	4.807[b]/0,090

[a]Mann Whitney U Test, [b] Kruskal Wallis Test

Discussion

This study examined how hairdressers' health literacy influences their approaches to factors affecting child health. In the literature, there has been no study that investigates

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the approaches of hair salon employees towards factors affecting child health and their health literacy.

People mostly prefer hair salons to feel better and to take care of their personal grooming[13]. Hair salons are places where people receive services such as hair and skin care, manicure-pedicures, waxing, makeup, and similar treatments. In addition to providing all these services in an enclosed environment, the materials used during the procedures and the chemical odors pose a serious health threat to both hair salon employees and customers[14,15]. Most of the employees in these salons are of reproductive age and can continue working while pregnant[2,6]. In this study, similar to the literature, it was found that women working in hair salons continue to work while pregnant. These adverse working conditions can also lead to fetal exposure[6]. In the study conducted by Babić et al.[16] an increased risk of ventricular septal defect, poor neonatal, or maternal health indicators was found in the newborns of hair salon employees.

Frequent exposure of pregnant women receiving treatments in hair salons to hair dye, through transdermal absorption or inhalation, can negatively impact fetal development[17,18]. Ooka et al.[5] found an association between maternal occupational exposure to hair dye for more than one week during pregnancy and an increased risk of stillbirth.

In our study, the health literacy levels of hairdressing salon employees were also examined. Health literacy requires reading written health information and acting accordingly. In the workplace, individuals with a good level of health literacy can assess how their health relates to their occupation and take appropriate actions to help reduce occupational accidents, diseases, and adverse exposures[19].

This study determined that the health literacy levels of hair salon employees were low. In addition, in our study, it was found that the majority of hair salon employees performed procedures on pregnant and breastfeeding women, and although those who thought that these procedures would harm pregnant women and the unborn baby were in the majority, the use of protective equipment during the procedure was very low, and the rate of those who thought that cosmetic products did not adversely affect the newborn was high. These findings were interpreted as the result of low health literacy among hair salon employees.

Cosmetic products used during pregnancy are known to cause stillbirth, miscarriage, and developmental damage in endocrine and other systems[20]. The fetus can be exposed to many substances through the placenta. Heavy metals ingested through diet and cosmetic products affect the fetus, and exposure to these substances may continue after birth through breastfeeding. Many studies reveal the presence of heavy metals in breast milk[4,21]. In order to eliminate the negative effects of chemicals used in hairdressing salons on children's health, both mothers and hair salon employees should have a high level of health literacy[22].

Most of the studies evaluating the health literacy of different groups in Turkey and in the world report that health literacy is at inadequate levels and that initiatives should be taken to improve it[23-27].

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Conclusion

74% of hair salon employees reported that they provide services to pregnant women in the salon, 39.5% stated that only the mother uses protective equipment during the process, 91.5% mentioned that they offer services to breastfeeding mothers, and 77.5% indicated that they do not use protective equipment. Also, 72.5% of hair salon employees think that cosmetic products do not adversely affect newborns.

According to the results of this study, it was determined that hair salon employees have a low level of health literacy.

Recommendations

The high level of health of a society is an indicator of the development of that country. Protecting and improving child health is essential for a healthy society. The high level of health literacy of hair salon employees, where women receive services during pregnancy and breastfeeding, will lead to the protection of the health of the pregnant woman and the mother, and therefore the child. In order to increase the level of health literacy of hairdressing salon employees, trainings should be provided, and educational videos, posters, brochures, public spots, and television programs should be prepared.

Limitations of the Study: The research is limited to the findings obtained from hair salon employees in only one province. The data obtained are limited to the approaches of the hair salon employees participating in the research; generalisation should not be made.

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