



Occupational Risks and Safety Practices of Auto Paint Workers: A Qualitative Study

Oto Boya İşçilerinin Mesleki Riskleri ve Güvenlik Uygulamaları: Nitel Bir Çalışma

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ABSTRACT

Aim: The aim of this study was to identify the occupational risks, working conditions, health problems, and protective practices related to worker health among auto paint workers.

Materials and Methods: This research was designed as a qualitative study using a phenomenological approach. A total of 13 auto paint workers participated in the study. Data were collected through face-to-face, semi-structured, and in-depth interviews.

Results: Participants primarily reported exposure to chemical hazards as their main occupational risk. In addition, long working hours and working in cold environments, particularly during the winter months, were identified as additional occupational risks. The most commonly reported health problems were respiratory diseases and dermatological conditions. The findings also revealed that occupational training activities and protective practices were inadequate. Furthermore, participants expressed concerns about the lack of new apprentices in industrial areas, emphasizing the potential shortage of skilled auto paint workers in the future.

Conclusion: The respiratory and dermatological health problems observed among auto paint workers were largely associated with chemical exposure and insufficient protective measures. These findings indicate a clear need for systematic interventions aimed at increasing risk awareness and ensuring the effective and consistent use of personal protective equipment.

Keywords: Employee, safety, auto paint, chemical, occupational

ÖZ

Amaç: Bu çalışmanın amacı, oto boyacıların mesleki risklerini, çalışma koşullarını, sağlık sorunlarını ve çalışan sağlığını korumaya yönelik uygulamalarını belirlemektir.

Gereç ve Yöntem: Araştırma, fenomenolojik yaklaşım temelinde tasarlanmış nitel bir çalışmadır. Çalışmaya toplam 13 oto boyacı dahil edilmiştir. Veriler, yüz yüze gerçekleştirilen yarı yapılandırılmış ve derinlemesine görüşmeler aracılığıyla toplanmıştır.

Bulgular: Katılımcılar, başta kimyasal maddeler olmak üzere çeşitli mesleki risklere maruz kaldıklarını belirtmiştir. Uzun çalışma saatleri ile özellikle kış aylarında soğuk ortamlarda çalışma, ek mesleki riskler olarak ifade edilmiştir. En sık bildirilen sağlık sorunları solunum sistemi hastalıkları ve deri rahatsızlıklarıdır. Bulgular, mesleki eğitim faaliyetlerinin ve koruyucu uygulamaların yetersiz olduğunu ortaya koymuştur. Ayrıca katılımcılar, sanayi bölgelerinde yeni çırağların yetişmemesinin gelecekte nitelikli oto boyacı eksikliğine yol açacağına ilişkin endişelerini dile getirmiştir.

Sonuç: Oto boyacılarda gözlenen solunum ve dermatolojik sağlık sorunlarının büyük ölçüde kimyasal maruziyet ve yetersiz koruyucu uygulamalarla ilişkili olduğu görülmüştür. Bu bağlamda, risk farkındalığını artıran ve kişisel koruyucu ekipman kullanımını teşvik eden sistematik müdahalelere ihtiyaç bulunmaktadır.

Anahtar Kelimeler: Çalışan güvenliği, güvenlik, oto boyası, kimyasal, mesleki

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INTRODUCTION

Automotive painting is a significant sector in Türkiye, encompassing the surface preparation and painting processes of both metal and non-metal motor vehicle parts. Due to its inherent characteristics, this sector is classified as hazardous under the Occupational Health and Safety Regulation for Workplaces¹. The automotive industry, which is classified as a hazardous sector, ranks fourth among European countries in terms of production volume, with Türkiye being one of the leading producers. Approximately 60,000 workers are employed in this sector; however, occupational subcategories such as painting, bodywork, and assembly are not systematically distinguished in workforce statistics².

In large-scale enterprises, occupational health and safety (OHS) practices are actively implemented in accordance with legal regulations³. However, outside these enterprises, workers engaged in automotive repair, maintenance, and servicing activities who are often self-employed or employed in small-scale enterprises frequently have limited access to and inadequate implementation of protective OHS measures. The workforce in these enterprises typically ranges from one to five employees⁴. Due to their small size, these enterprises are classified as micro-workplaces, where OHS practices are often insufficient³.

In small-scale automotive painting operations, spray painting is the most commonly used technique. In Türkiye, automobile painting is frequently performed in workshops located within industrial zones, often without the use of specialized spray booths. Instead, spray guns are commonly operated in open environments or, in some cases, within paint ovens. This practice of open spraying poses a substantial chemical hazard to both workers and the surrounding environment².

Automotive paints, which are widely used across various applications, generally consist of five main components: binders, solvents, fillers, additives, and pigments. In this sector, hazardous substances such as toluene, xylene, heptane, methanol, polyurethane, ethylbenzene, and benzene are extensively used. Volatile organic compounds (VOCs) present in paints—particularly solvents—are known to cause persistent and potentially fatal damage to the respiratory tract and mucous membranes^{4,6}. Moreover, both acute and chronic exposure to these chemicals may result in systemic effects involving multiple organs and physiological systems^{7,8}.

The most significant health effects associated with VOC exposure include lung cancer, acute and chronic respiratory diseases, neurological toxicity, and irritation of the eyes and throat^{3,8,9}. In addition, heavy metals such as chromium, lead, and mercury found in paints exert systemic toxic effects. Lead exposure can impair the central nervous system and disrupt

hemoglobin synthesis, whereas chromium exposure may cause chrome ulcers on the skin and is strongly associated with lung cancer¹⁰. Furthermore, exposure to thinners and gasoline, which are frequently used in paint removal processes, further exacerbates these health risks⁴.

The automotive sector represents a rapidly growing industry both in Türkiye and globally. In Türkiye alone, approximately 28 million vehicles are registered¹¹. The increasing number of vehicles has expanded the workload in this sector, thereby intensifying labor demand across related fields and sub-sectors. Despite this growth, research focusing on OHS risks in the auto painting industry remains limited^{5,8,9}. Existing studies indicate that auto painters often work under conditions that are detrimental to health, do not consistently adopt preventive measures, and place insufficient emphasis on periodic medical examinations^{5,8}.

Therefore, this study aims to systematically identify OHS risks in the auto painting sector, evaluate exposure to physical, chemical, and ergonomic hazards, and develop evidence-based preventive measures to reduce the risk of occupational accidents and work-related diseases.

MATERIALS AND METHODS

Study Type

This study was conducted using a qualitative phenomenological research design to explore the occupational exposures of auto painters working in an industrial site. Phenomenology is a qualitative research approach that enables individuals to express their perceptions, interpretations, perspectives, and emotions related to a specific phenomenon, thereby revealing their lived experiences. Rather than focusing on social norms or generalized attitudes, phenomenological research concentrates on phenomena that are recognized but not yet fully or deeply understood, with an emphasis on individual experiences and meanings attributed to those experiences. This approach facilitates an in-depth understanding of participants' lived experiences related to occupational exposure¹².

Permission was obtained from the Trakya University Non-Interventional Clinical Research Ethics Committee with (decision number: 2023.13/15, date: 11.09.2023). Informed consent was obtained from the participants, and throughout the research process, the principles of the Helsinki Declaration were adhered to. Participants were assured of the confidentiality of their identities and audio recordings.

Study Population and Sample

In qualitative research, purposive sampling is commonly employed to obtain rich and in-depth data. Because qualitative studies aim to explore specific experiences rather than achieve

statistical generalizability, sample size calculation is not required. Data collection continues until data saturation is achieved that is, when no new themes or insights emerge from the interviews. In this study, data saturation was reached after interviewing 13 auto painters working in the industrial site, at which point data collection was concluded¹³.

Inclusion Criteria

Auto painters who were able to read, understand, and express themselves clearly and who voluntarily agreed to participate in the study were included.

Data Collection Tools: The semi-structured interview form was pilot-tested with three auto painters who were not included in the main study sample. The pilot interviews were conducted to assess the clarity, relevance, and flow of the questions. Based on feedback from the pilot process, minor revisions were made to improve wording and to expand selected questions related to occupational risks, preventive measures, and perceived health effects. The pilot and final versions of the interview form are provided as Supplementary File 1.

Data were collected using a Personal Information Form and a Semi-Structured Interview Form.

Personal Information Form: This form consisted of five questions addressing the participants’ socio-demographic and occupational characteristics, including age, gender, education level, years of work experience, and weekly working hours.

Semi-Structured Interview Form: The semi-structured interview form was developed by the researchers based on a review of the relevant literature. The draft interview guide was reviewed by three field experts to ensure content validity and methodological appropriateness. The final interview form included seven open-ended questions focusing on working conditions and occupational exposures of auto painting workers. The interview questions related to working conditions and occupational exposures are presented in Table 1.

Research Procedure

The research was conducted between September and November 2023. Data were collected through face-to-face interviews using an in-depth interview technique by a researcher. The researcher holds a doctoral degree in OHS and has conducted studies in the field of employee health. Prior to data collection, participants were provided with information and their consent was obtained. Interviews were conducted when the paint workers felt suitable and ready for the interview, in the office section of the workshop. The interviews were recorded using an audio recording device. Participants were specifically informed that the data and recordings obtained from the study would only be used for scientific purposes. Individual, in-depth, and semi-structured face-to-face interviews were conducted until data saturation was reached, that is, until no new information or themes emerged. The duration of the interviews varied between 30-45 minutes depending on the responses provided.

Statistical Analysis

Descriptive analysis and content analysis were used to analyze the data. Audio recordings obtained during the interviews were transcribed verbatim. The transcribed data were then analyzed using content analysis, a widely used qualitative data analysis method.

Descriptive analysis was employed to organize and interpret the data obtained from interviews in a systematic manner. Within this approach, the findings were presented as closely as possible to their original form, and direct quotations from participants were included where appropriate to reflect their perspectives. Content analysis, in contrast, aimed to identify underlying concepts and relationships that could explain the data obtained from the participants. Data summarized and interpreted through descriptive analysis were further examined in depth using content analysis, during which concepts were derived from the data and relationships among these concepts were identified. The findings were subsequently organized into concepts, categories, and themes to enhance interpretability¹³.

Table 1. Interview questions
When and how did you start this profession?
Did you receive any training before or after starting auto painting?
Do you have any standards for preventive measures and implementation guidelines to protect your health?
What are the occupational risks you are exposed to in this profession?
Do you think you have developed any health problems due to your profession? If yes, what is the reason for this belief, and what suggestions do you have?
Are you satisfied with your working conditions? (employee safety, working conditions, salary, training, health checks, etc.)
Have you experienced any work-related accidents in your profession? If yes, what was the cause and result of the accident? And what are your suggestions for the situation?

In this study, auto paint workers’ perceptions of occupational risks were initially described using descriptive analysis and subsequently evaluated in terms of conceptual relationships through content analysis. Participants’ direct quotations were included under relevant categories to support the findings¹³.

To ensure internal consistency and reliability of the coding process, inter-coder agreement was calculated using the formula proposed by Miles and Huberman: $\Delta = C \div (C + D) \times 100$, where Δ represents the reliability coefficient, C denotes the number of coding agreements, and D represents the number of disagreements. An inter-coder agreement of at least 80% is considered acceptable¹⁴. In this study, inter-coder agreement among the researchers was calculated as 89%. In cases of disagreement, consensus was reached by considering the majority opinion.

SPSS version 21 was used for the analysis of quantitative data, and MAXQDA version 24 was utilized for qualitative data analysis.

RESULTS

The mean age of the participants was 45.07 ± 8.44 (29-59 years), all of whom were male. The average years of work experience were 31.30 ± 9.41 (8-42), and the mean weekly working hours were 77.07 ± 13.15 (60-102). When examining the educational backgrounds of the auto painters, it was found that 76.9% had completed primary school (n=10), 15.4% had completed middle school (n=2), and 7.7% had completed high school (n=1), (Table 2).

Following the interviews conducted with auto paint workers, the analyzed statements were categorized under four main themes: occupational risk factors, employee safety, health issues, and concerns about the future (Table 3). Figure 1 shows the codes for these themes as word clouds.

Occupational Risks

Under this main theme, participants predominantly emphasized chemical risk factors among their occupational hazards. They reported frequent and direct use of substances such as paint, thinner, primer, and varnish, and expressed concern about the potential health effects of these chemicals. Participants also identified dust generated during surface preparation with sandpaper and the abrasive effects of sanding on the hands as additional risk factors. Furthermore, long working hours and exposure to cold working conditions particularly during the winter months were described as challenging aspects of their work.

“I’ve been a painter for about 30 years. We constantly use chemicals like paint, thinner, primer, and so on... all of these are poisonous.” (P5)

Table 2. Descriptive characteristics of participants (n=13)

Participant Number	Age/ gender	Average years of working	Education level
P1	52/Male	40	Primary school
P2	55/Male	42	Primary school
P3	44/Male	31	Primary school
P4	34/Male	20	Middle school
P5	42/Male	29	Primary school
P6	45/Male	33	Primary school
P7	29/Male	14	Middle school
P8	47/Male	35	Primary school
P9	40/Male	27	Primary school
P10	50/Male	38	Primary school
P11	38/Male	8	High school
P12	59/Male	42	Primary school
P13	48/Male	36	Primary school

Table 3. Themes and subthemes

Main themes	Subthemes
Occupational risk factors	Chemicals and thermal conditions
Health issues	Respiratory system diseases and skin diseases
Employee safety	Working conditions, Protective measures, Work accidents
Concerns about the future	Lack of new workers

“We use paints knowing that they harm our health. What else can I do?” (P2)

“We used to paint cars inside the shop, but later industrial-type ovens were introduced, and now we paint inside an enclosed oven cabin. The space is completely closed, and the paint settles on us. I do not always wear overalls or an appropriate mask. I have health problems, and I am afraid.” (P1)

“The most important materials in this job are paint, thinner, primer, and sandpaper. However, all of these are chemicals, and I do not know much about their effects on our health.” (P11)

“Our region has a Mediterranean climate, but in winter it can get very cold. We work outside, especially during sanding, and sometimes I cannot feel my fingers.” (P4)

“I especially dislike working in the cold during winter because my hands crack due to the cold.” (P9)

“If we were civil servants, we might have regular leave. We work day and night, summer and winter.” (P7)

"I started working in the industry at the age of 12, right after finishing primary school. My family was experiencing financial difficulties, so I could not continue my education." (P12)

"The painting process is very delicate, and ideally you should wear a mask and goggles, but I cannot say that I always use them... Some parts of this job should be done by robots, not humans." (P11)

"I cannot use protective equipment. We started this job when we were children, and back then our master did not use anything either. I never got used to it. Look at my hands now—they have eczema, which is very uncomfortable, but still I cannot use protective equipment." (P10)

"I know that not wearing gloves or a mask is harmful, but we are just not used to it. Our master never used any protective equipment, so I do not either." (P7)

"When we do oven painting, we definitely need to use a proper mask. However, good-quality masks are very expensive, so it is difficult for us to afford them. At least I started using the masks we had during the COVID-19 pandemic." (P8)

"After the painting process, I have difficulty breathing, so I especially wear a mask in the oven. However, I do not use it in the workshop because it is an open area." (P3)

"I started this job at the age of 11. I wish I had known some things beforehand, as I had painful experiences. In my early years, an acid container spilled on my finger by accident, and the wound on my index finger did not heal for months." (P13)

"I did not receive any training related to this profession. I learned everything from my master—whatever I saw and heard from him." (P12)

"If we had at least used masks and gloves when we first started this profession, I would not be sick at such a young age. Those entering the workforce should first be taught how to protect themselves. However, nobody starts with education here, and nobody knows how to protect themselves. Painting processes should be carried out in accordance with occupational health and safety regulations." (P1)

Fear of the Future

All participants expressed concern that new apprentices are no longer entering the profession, resulting in a lack of trained future masters. A shared concern was that within the next 10-15 years, the number of skilled masters in the sector will decline further, while those who remain will be required to work under increasing workloads. In addition, participants emphasized that health problems typically emerge between the ages of 40 and 50 in this profession, and therefore called for early retirement rights based on occupational wear and tear to be granted by the government.

"This job is very demanding and requires detailed skills, so learning it is not easy. However, apprentices are no longer coming, and in the future the number of people doing this job will decrease even further. There are only 17 auto painters in this industrial area, but approximately 17,000 vehicles in this district, so it is impossible for us to keep up. Moreover, because this is a tourist area, the number of vehicles doubles during the summer months." (P6)

"We earn well only when we work excessively, but we cannot always protect ourselves. We are losing our health because of overwork, and we want to be granted the right to early retirement." (P9)

"Considering that we work from morning until evening in this profession, our income is low. At the same time, we are losing our health, so what will our future look like?" (P3)

"There are no new masters being trained for the future, and the number of apprentices is very low. Unfortunately, this profession is disappearing." (P7)

"I am 55 years old, and this is the first time I have encountered someone who is interested in our problems. My request to you, doctor, is to please convey our statements to the authorities and the ministry. Please emphasize the need for education, support for the working environment, retirement rights, and especially the assignment of a physician to address our health problems." (P2)

DISCUSSION

The population of the district where the study was conducted is approximately 123,000, with an average of one vehicle for every two individuals¹¹. However, due to tourism during the summer months, vehicle traffic in the region increases by approximately two to three times. Despite this substantial demand, there are only 17 auto painters working across the two industrial sites in the district. Through in-depth interviews with these auto painters, the present study examined occupational risks associated with auto painting. The most prominent finding is that workers are exposed to intensive chemical hazards, experience significant health problems, and that adequate OHS measures are not sufficiently implemented.

The findings indicate that auto painters frequently use painting materials as an inherent requirement of their work and commonly describe these substances as toxic. To facilitate spray application, paint fluidity is increased through the extensive use of solvents such as toluene, xylene, ethylbenzene, and benzene. During application, these solvents largely evaporate, as they are not incorporated into the final paint structure⁴. Several substances used in the automotive painting sector (e.g., benzene and talc) are classified as Group 1 carcinogens (carcinogenic to humans) by the International Agency for Research on Cancer, while others (e.g., toluene and certain solvents) are classified as Group 2B carcinogens (possibly carcinogenic to humans)¹⁵.

In line with this classification, workers in the present study expressed particular concern regarding respiratory symptoms and the fear of developing lung cancer in the future. These concerns are consistent with findings reported in previous studies¹⁶. The literature also indicates that eye-related health problems are common among auto painters⁵. Acute exposure to chemicals such as toluene is known to irritate the mucous membranes of the respiratory tract, while chronic exposure may lead to fluid accumulation in the lungs and long-term respiratory damage¹⁷⁻¹⁹.

Consistent with existing evidence, lung cancer has been identified as the most prevalent type of occupational cancer, followed by skin cancer, bladder cancer, and leukemia²⁰. To mitigate these health risks, the use of personal protective equipment particularly appropriate respiratory protection—is essential. However, almost all participants in this study reported not using masks regularly, despite acknowledging the harmful effects of chemical exposure. This lack of personal protective equipment use not only increases the risk of respiratory diseases but also heightens the likelihood of systemic health problems. Therefore, the findings underscore the urgent need for improved OHS practices, including access to appropriate protective equipment, worker training, and regulatory enforcement in small-scale automotive painting workplaces.

It was determined in this study that not all painting processes are performed inside paint booths. Due to the cost of using paint booths operated by external companies, some master painters carry out certain vehicle painting procedures in open areas within their workshops. From an OHS perspective, automotive painting should be conducted exclusively in paint booths (also referred to as ovens) specifically designed for this purpose. Aromatic hydrocarbons such as toluene and benzene are heavier than air; toluene has a density approximately 3.2 times that of air, while benzene is 2.8 times heavier²¹. Conventional top-down ventilation systems pose additional risks, as they may carry harmful chemicals heavier than air directly into the worker's breathing zone. In contrast, bottom-up ventilation systems may fail to provide sufficient suction due to the large working area. Moreover, achieving optimal paint quality requires a constant temperature and a controlled environment^{4,16}. Automotive paint booths are designed to meet these requirements by providing appropriate ventilation and environmental control.

However, findings from this study indicate that auto painters do not frequently use paint booths. When combined with inadequate ventilation and poor temperature regulation in the working environment, this significantly increases occupational exposure risks. Supporting this finding, a study conducted in Nigeria reported that spray painters were exposed to VOCs at levels far exceeding the permitted limit of 1.9 ppm, reaching

up to 13.4 ppm⁵. Similarly, a study conducted in Türkiye found that indoor air measurements for both toluene and benzene among auto paint workers exceeded legal limit values. In one enclosed-space measurement, toluene concentration was reported as 203.87 mg/m³, and in another, 301.44 mg/m³, both surpassing the limit value of 192 mg/m³. Additionally, the same study reported that white blood cell counts among auto paint workers were 26.3% higher than reference values. Workers with elevated white blood cell levels also had significantly higher phenol values ($p=0.014 < 0.050$), suggesting that paint products may lead to notable hematological changes⁴. Considering these findings, it can be concluded that auto painters operate in environments that do not meet established standards and that their health is under serious threat.

Despite all workers reporting exposure to chemical substances and the auto painting sector being classified as hazardous, the majority stated that they do not use personal protective equipment and have not received any formal OHS training. Alarming, some workers reported using basic dust masks instead of gas-filtered respirators, which offer minimal protection. Such masks do not provide protection against toluene or benzene exposure. Furthermore, exposure to these chemicals can also occur through dermal absorption²². These substances readily interact with fat cells in the skin, making it essential to completely prevent skin contact during painting activities²³. As observed in Image 1, workers do not use gloves during vehicle preparation or painting processes. This study particularly highlighted the high prevalence of skin-related health problems. In addition, the use of sandpaper may significantly increase skin irritation, while dust exposure during sanding can elevate the risk of respiratory diseases²⁴.

In a previous study, 92.5% of spray painters reported not using any personal protective equipment. Despite nearly half of these workers reporting a chemical taste in their mouths and even observing paint residues in their sputum immediately after painting, their continued failure to use protective equipment remains a serious concern⁵.

Although workers expressed awareness of various occupational risks and reported experiencing health problems, it was found that auto painters do not undergo regular periodic medical examinations. Some participants indicated that they sought medical care only when health complaints became severe. This situation may be attributed to the absence of a workplace health unit within the industrial site and the workers' limited knowledge regarding OHS services. Despite acknowledging workplace hazards, their failure to adopt appropriate protective measures suggests insufficient or incorrect knowledge about occupational risks. In this context, professionally designed and effectively delivered training programs are needed to motivate workers and promote lasting positive behavioral change.

From an employee safety perspective, the lack of formal education further exacerbates occupational risks. Workers reported learning the profession solely through the master–apprentice relationship without any structured training. Although this relationship plays a critical role in vocational skill development, it should be supported by formal education programs. Workers must be able to recognize occupational hazards and implement appropriate OHS measures to protect both their own health and the environment²⁵. Workplace observations revealed considerable disorder, as illustrated in Image 2, indicating the presence of multiple hazards, including

electrical risks. However, such conditions were perceived as normal by the workers.

As emphasized during interviews, workers’ reluctance to use protective equipment, particularly masks, was influenced by their masters’ behaviors, as their mentors also did not use such equipment. The persistence of unsafe working conditions and behaviors among auto painters is thought to be associated with starting work at a very young age, insufficient education on occupational risks, and the absence of positive role models. Child labor is especially concerning in hazardous



Image 1. Vehicle preparation and painting process in the paint booth



Image 2. Photos related to the working areas of auto painters

work environments, as prolonged exposure combined with limited education increases the likelihood of early-onset health problems. While mentors play a crucial role in shaping apprentices' work attitudes and behaviors, the effects of negative mentoring on the development of professional responsibility and craftsmanship have not been adequately explored²⁶. These findings not only reveal deficiencies in existing legal regulations and inspection mechanisms but also underscore the need for further research in this field.

Study Limitations

A primary limitation of qualitative research is the limited generalizability of its findings, as results are often context-specific and shaped by the social and cultural characteristics of the study setting. Accordingly, the findings of this study reflect the experiences of a relatively small group of auto paint workers employed at a single industrial site in Türkiye. Although the study yielded rich and in-depth information regarding the phenomenon under investigation, the time elapsed between some occupational experiences and the interviews may have introduced recall bias, potentially affecting the accuracy of participants' accounts.

Despite these limitations, this study has notable strengths. Previous research on OHS in the auto painting sector has largely concentrated on quantitative exposure measurements, whereas workers' lived experiences, perceptions of risk, and everyday coping strategies—particularly in small-scale industrial settings have remained insufficiently explored. In this respect, the present phenomenological study provides an in-depth understanding of auto paint workers' perspectives and fills an important gap in the literature. Although conducted at a single industrial site, the study offers valuable insights that can inform future research, policy development, and intervention strategies aimed at improving OHS practices in similar settings.

CONCLUSION

This study demonstrates that auto paint workers are exposed to hazardous chemical substances associated with respiratory, dermatological, and potentially cancer-related health risks, while the use of personal protective equipment and awareness of OHS measures remain inadequate. Addressing these challenges requires further research that integrates qualitative findings with environmental exposure measurements and structured educational interventions.

Expanding OHS services across all sectors, ensuring universal access to basic OHS training, and increasing the number of workplace health professionals—particularly occupational health nurses are essential steps toward improving worker protection. In addition, strengthening regular inspections

and providing governmental support for the training of new artisans with a strong emphasis on occupational safety will contribute not only to the protection of workers' health but also to the sustainability of skilled craftsmanship in the auto painting sector.

Ethics

Ethics Committee Approval: Permission was obtained from the Trakya University Non-Interventional Clinical Research Ethics Committee with (decision number: 2023.13/15, date: 11.09.2023).

Informed Consent: Informed consent was obtained from the participants. Participants were assured of the confidentiality of their identities and audio recordings.

Footnotes

Authorship Contributions

Concept: Ü.Ç., Design: Ü.Ç., D.H.Y., A.C.Y., G.E., Data Collection or Processing: Ü.Ç., D.H.Y., Analysis or Interpretation: Ü.Ç., D.H.Y., A.C.Y., G.E., Literature Search: Ü.Ç., A.C.Y., Writing: Ü.Ç., D.H.Y., A.C.Y., G.E.

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