

# Protection Convergence

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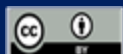
# Protection Convergence

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## Improvement Measures for Tattooer Law

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### Abstract

**Purpose:** On September 25, 2025, the Tattoo Law was passed, allowing non-medical professionals to practice tattooing. The purpose of this study is to examine the positive and negative functions (problems) of the Tattoo Law and discuss future improvement measures.

**Method:** This study's methodology is to examine Supreme Court precedents and Constitutional Court decisions regarding the reasons for past tattoo bans and to explore solutions for future tattooing. Therefore, this study will analyze past research papers on current tattooing practices and examine the laws governing tattooing in each country.

**Results:** Tattooing, previously considered a medical practice following a 1992 Supreme Court ruling, was legalized with the enactment of the Tattooist Act. Licensed tattooists, or "tattooists," who pass the national exam are now permitted to perform tattoos and use over-the-counter medications within the scope set forth in the Ministry of Health and Welfare Ordinance. This measure aims to bridge the gap between law and reality and ensure the safety of those receiving tattoos. While tattoo laws can bring about various benefits, such as maintaining social order, resolving disputes, and promoting public welfare, they can also have negative consequences due to problems in the legislative process or unexpected side effects, and we must seek ways to improve them.

**Conclusion:** The law and system have failed to reflect the reality that tattooing by non-medical professionals has become popular. However, the Tattoo Law was enacted after a long period of social discussion and deliberation, and has laid the foundation for the tattoo industry to operate safely and soundly within an institutional framework and for the rights of users and practitioners to be protected. However, even before implementation, various issues remain, including conflicts with the medical community and insufficient detailed standards, raising the need for improvement. These improvements should be considered to ensure the Tattoo Law becomes a reality, protect the rights of tattooists, and safeguard the public's health and safety.

**Keywords:** Tattooer, Medical Practice, Grace Period, Generally-Accepted Idea in the Society, Health Hygiene

## 1. Introduction

On September 25, 2025, the Tattoo Law, which allows non-medical professionals to obtain tattoos, passed the National Assembly plenary session. Today, tattoos have evolved from being objects of disgust to be concealed, into an artistic medium expressing individuality and aesthetic sensibility. Since most people receive their tattoos at tattoo parlors rather than medical institutions, this law aims to bridge the gap between norms and reality.

The 'Medical Law', which previously prohibited non-medical professionals from getting tattoos, was similar to the Prohibition law in the United States. As the number of people abusing the law increased, social order collapsed, and it was difficult to completely control it. In addition, it encouraged corruption, so rather than solving social problems, it ended up creating new ones.

This marks a turning point, the first in 33 years since the Supreme Court ruled tattooing a medical practice in 1992. According to data from the Korea Evidence-based Healthcare Collaborating Agency, as of 2021, an estimated 13 million people have received tattoos, and over 300,000 are working in the tattoo industry.

Of course, the enactment of the Tattooist Act will allow tattooists to practice legally if they meet certain qualifications, thereby ensuring public health and the effectiveness of the law. However, the enacted Tattooist Act has some issues and requires improvement, so further discussion is necessary[1][2][3].

## **2. Previous opinions of the Supreme Court and Constitutional Court**

### **2.1. Previous supreme court rulings on the illegality of tattooing**

The Supreme Court's 1992 decision(Supreme Court Decision 91do3219, May 22, 1992 [Violation of the Special Measures Act on the Punishment of Health Crimes]), 91do3219, rendered on May 22, 1992, [Violation of the Special Measures Act on the Punishment of Health Crimes], deemed tattooing a "medical practice." In other words, the Supreme Court interpreted "medical practice" to include not only disease prevention and treatment, but also any practice that, if not performed by a medical professional, could pose a risk to public health and hygiene [4][5].

The Supreme Court ruled that the act of tattooing eyebrows or eyelashes by injecting pigment into the skin of the customer's eyebrow or eyelash area with an automatic tattoo machine is not a medical act because the procedure does not cause pain or bleeding or other side effects by injecting pigment into the epidermis, and therefore, it cannot be considered an act that poses a close and serious risk to human life, body, or general public health if not performed by a medical professional.

However, the Supreme Court did not examine whether permanent tattooing is possible by injecting pigment only into the epidermis and what the procedure is, and overlooked the possibility of touching the dermis or injecting pigment into the dermis due to the worker's mistake, and the risk of disease transmission due to tattoo needles, and thus overturned the decision on the grounds of illegality such as misinterpretation of the law, violation of the principle of evidence collection, and insufficient examination.

According to Korean medical law, "medical practice" is only permitted to be performed by "medical professionals." Those caught tattooing without a medical license face penalties of up to five years in prison or a fine of up to 50 million won [6].

### **2.2. Previous constitutional court ruling**

Since a 1992 Supreme Court ruling, tattooing has been considered illegal under the Medical Act. Tattooists have filed a constitutional appeal, claiming that this regulation infringes on their freedom of occupational choice. The Constitutional Court, following its decision on October 27, 2016 (Decision 2016 Heon-Ba 322), upheld the constitutionality of the current Medical Act provision punishing non-physicians for tattooing. On March 31, 2022 (Decision 2022 Heon-Ba 3), the Court again upheld the constitutionality of the current provision punishing non-physicians for tattooing[7].

This was because tattooing violates the integrity of the skin, carries a risk of adverse effects, and the medical knowledge and skills required to perform tattooing make it difficult to guarantee the same level of safety as medical professionals. The decision was constitutional, with a 5-4 majority[8][9].

## **2.3. Tattooing legislation in each country**

### **2.3.1. Tattooing regime and perception in the United States**

In the United States, tattooing is widely recognized as a form of personal expression, and social perception is relatively tolerant. However, restrictions may still exist in some public areas (e.g., restrictions on tattoo exposure for police hiring). Tattooing is not regulated at the federal level in the United States; each state governs and regulates it[10][11].

Most states recognize tattooing as legal "body art" and have established a legal framework for it. Each state strictly regulates licensing requirements for practitioners and establishments, as well as hygiene standards (sterilization methods, waste disposal, bloodborne disease prevention, etc.). Furthermore, age restrictions apply: most states prohibit tattooing for minors (generally under 18), though some allow tattooing with parental consent. The U.S. Food and Drug Administration (FDA) regulates the dyes, pigments, and other substances used in tattooing [12].

### **2.3.2. Tattooing in the UK**

The UK does not consider tattooing itself a medical practice, but rather a legitimate beauty/art industry. Its regulatory approach focuses on facility and hygiene management, as well as the protection of minors. While practitioners are not required to have a separate nationally recognized qualification, tattooing is regulated through business registration and strict hygiene regulations.

Tattooing minors is also prohibited by law. Under the Tattooing of Minors Act 1969, tattooing anyone under 18 is prohibited, regardless of parental consent. While practitioners are not issued a separate national license or certification, local systems require tattooists to complete at least one year of training in tattooing techniques, hygiene, and safety at a local government-registered establishment before performing the procedure [13][14].

To practice tattooing, businesses must register with local authorities in accordance with relevant regulations. Establishments must meet strict hygiene and safety standards stipulated by the Public Health Act and other relevant laws and regulations, and adhere to regulations regarding the use of tools, chemicals, and waste disposal [15].

Practitioners are responsible for fully informing clients of the potential risks associated with the procedure and, depending on the region, may be required to sign a consent form [16][17].

### **2.3.3. German tattoo law**

In Germany, regulations regarding the health and hygiene of tattooing are less clear than in Korea, contrasting with Korea's system, which views tattooing as an "unlicensed medical practice." Tattooing is subject to different penalties depending on age (18 and above), and there are penalties for certain symbols. Tattooing by minors under 18 is prohibited by law, and tattoos that incite racial or religious hatred, such as Nazi symbols or Holocaust denial, are punishable by fines or imprisonment of up to three years under the criminal code [18][19].

### **2.3.4. French tattooing system**

France recognizes tattooing as a legitimate profession and operates a strict licensing and hygiene management system to ensure the health and safety of its citizens. Following the 2008 European Ministerial Conference on Health, relevant regulations were established. In February 2008, a new tattoo law was enacted, establishing national regulations governing hygiene, practitioners, and dyes.

Tattooing is governed by national regulations, and non-medical professionals are permitted



to perform the procedure if they meet certain qualifications. Tattooists must register their practice with the regional health agency in each region. They must also complete at least 21 hours of mandatory hygiene and health training and submit proof of completion when registering.

Strict hygiene guidelines are in place, including procedures, sterilization methods, waste disposal, the use of protective equipment, and the prevention of bloodborne diseases. For minors (under 18), at least one parent must be present and provide proof of parental authority to receive a tattoo. Simple written permission is not sufficient. Since January 2014, regulations regarding tattoo dyes have been in place, including a ban on the use of certain colored inks [20][21].

### **2.3.5. Tattoo system and perception in Japan**

In Japan, tattoos still carry a strong negative image, often associated with organized crime (yakuza). Because of this historical background, most hot springs, public bathhouses, some beaches, and gyms often prohibit people with tattoos from entering.

It's also a common perception that tattoos can lead to exclusion from employment and hiring processes. However, with the recent increase in foreign tourists and shifting perceptions among younger generations, some establishments are moving to be more flexible, easing regulations or providing tape to cover up tattoos.

Historically, tattooing was considered a medical procedure, making it illegal for non-medical professionals to perform it. However, a 2020 ruling by the Supreme Court of Japan recognized tattooing as an artistic practice, rather than a medical procedure, paving the way for its legalization. The Ministry of Health, Labor and Welfare also removed tattooing devices from the medical device category. While non-medical professionals can now perform tattooing, a unified, national system for practitioner qualifications and hygiene standards remains in place [22][23].

## **2.4. Summary**

It is true that the Supreme Court and Constitutional Court's consistent interpretation of the scope of medical practice has excessively restricted the freedom of non-medical professionals to practice tattooing. If this situation persists, conflicts between tattooists and other similar professions are expected to increase, driven by the rising awareness of rights protections brought about by advanced societal development.

Tattooing requires the utmost care, as it intentionally irritates and alters the skin. While the degree of impact on the body may not necessarily require the advanced skills and qualifications of a doctor, the emphasis on hygiene in tattoo facilities and tools is a crucial and non-negotiable value. The passage of the Tattooing Act by the National Assembly has provided an opportunity to ensure the effectiveness of tattooing. Therefore, it is crucial to examine and address any issues that arise.

## **3. Problems and Improvement Measures in Tattooing Law**

The bill defines both tattooing and semi-permanent makeup as "tattooing," and grants the exclusive status of tattooist to those who have passed a national exam and obtained a license. However, tattoo removal is prohibited. Furthermore, tattooing minors without parental consent is prohibited, and to protect the health and safety of the public, tattooists are required to undergo mandatory hygiene and safety management training [24].

Records and storage of information such as the date of tattooing, the type and amount of dye used, and the tattooed area are also mandatory. The law will take effect two years after its promulgation, and special privileges such as temporary registration and licensing will be granted for up to two years. The following are some of these issues and potential solutions [25].

### 3.1. Clarifying the definition and scope of tattooing

This bill broadly defines "tattooing," including tattooing and semi-permanent makeup, leaving the specific definitions of tattooing unclear, including the area, method, and materials used.

Therefore, it is necessary to clearly define specific areas (scalp, eyebrows, lips, etc.) and methods (machine, hand needle, etc.) for tattooing. Furthermore, licensing and training standards should be differentiated based on the difficulty and safety risk of the procedure.

The Supreme Court interprets the term "medical practice" broadly in the Medical Act.

In other words, from an actor-centered perspective, rather than a nature-based one, it broadly defines "an act that, if not performed by a medical professional, could pose a health and hygiene risk." It also takes a parallel approach, defining it not only as "an act that could pose a health and hygiene risk if not performed by a medical professional with medical skills and knowledge," but also as "an act unrelated to disease prevention and treatment." Therefore, it is necessary to clarify the concept and scope of tattoos[26].

### 3.2. Improving the scope of permitted tattoo removal procedures

The current law clearly stipulates restrictions on tattoo procedures. First, tattoo removal is prohibited. Second, tattooing by minors without parental consent is prohibited. Third, tattooing is prohibited in non-registered tattoo parlors[27].

Tattoo removal is only permitted for medical professionals, and tattoo artists are prohibited from performing the procedure. The Tattoo Artists Act explicitly excludes tattoo removal from the scope of tattoo artists' duties, interpreting it as a medical practice.

Tattoo removal is an invasive procedure using lasers and other techniques, and involves a long recovery period, pain, and high costs, reflecting the medical community's argument that professional medical response is necessary in emergency situations.

Therefore, tattoo removal procedures remain a medical procedure that can only be performed by medical professionals (doctors, oriental medicine doctors, etc.) in medical institutions. Therefore, procedures that require medical judgment, such as the use of laser equipment, should be left to the domain of medical professionals, and the possibility of allowing some removal procedures (such as pigment lightening) that are possible within the scope of tattooists' expertise should be considered, and a separate safety education and qualification system for tattoo removal procedures should be specifically established to ensure thorough safety management.

### 3.3. Strengthening safety management of dyes and equipment

Concerns are being raised about the safety and side effects of tattooing equipment, including dyes and needles. Therefore, standards for acceptable dyes and equipment should be established, regular inspections should be mandated, and safety certification procedures should be strengthened[28].

First, regarding the strengthened management of tattoo dyes, starting June 14, 2025, tattoo dyes will be designated and managed as new sanitary products under the "Hygiene Products Management Act" under the Ministry of Food and Drug Safety. Accordingly, the management system for tattoo dyes manufactured, imported, and distributed domestically, including business reporting, import inspection standards, and hygiene training for business operators, has been strengthened. Furthermore, as previous investigations by the Korea Consumer Agency revealed that many tattoo dyes contained hazardous substances such as nickel, lead, and arsenic above standard levels, content standards for these substances (e.g., arsenic, a Group 1 carcinogen) have been established.

Under the mandatory hygiene management of tattoo equipment, tattoo artists must complete annual hygiene and safety training and undergo a health checkup. All used equipment must be disinfected and sterilized, and waste with a risk of infection must be disposed of appropriately in accordance with the Waste Management Act. Furthermore, tattoo needles must be managed by the Ministry of Health and Welfare as medical devices.

### **3.4. Establishing specific guidelines to prevent confusion during the grace period**

With a two-year grace period remaining until the law takes effect, concerns are growing about potential confusion and safety gaps in tattooing practices during this period.

The law is scheduled to take effect after a two-year grace period following its promulgation (September 25, 2025), and thus remains in a transitional period. Until the law takes effect, non-medical practitioners may still be considered in violation of the Medical Act based on existing precedents. However, recent lower courts have, reflecting societal changes, issued not-guilty verdicts.

With regard to damage relief, a state-managed licensing system will be introduced after the law goes into effect. Therefore, the qualifications and hygiene practices of practitioners will become crucial criteria for judgment.

Therefore, a temporary registration system should be introduced for existing tattooists operating during the grace period. Hygiene and safety training should be prioritized for these practitioners. Furthermore, detailed guidelines covering key aspects of the Tattooist Act, such as mandatory treatment documentation and hygiene management, should be distributed to minimize confusion in the field[29].

### **3.5. Ongoing consultation and conflict resolution efforts with the medical community**

The medical community has consistently opposed legalizing tattooing for non-medical professionals, citing safety concerns such as infection and side effects. Therefore, to address the medical community's concerns, we must strengthen dye safety and hygiene management standards. Furthermore, a consultative body involving the tattoo industry, medical professionals, and the government should be formed to communicate regularly and resolve potential conflicts.

### **3.6. Strengthening regulations and public relations regarding tattooing of minors**

While regulations prohibiting tattooing minors without parental consent have been included, questions are being raised about its effectiveness in practice. Therefore, strict administrative sanctions, including license revocation, should be imposed for tattooists caught tattooing minors. The severity of penalties should be increased. Furthermore, a public awareness campaign should be actively promoted to raise awareness of the risks and illegality of tattooing minors.

### **3.7. Tattooist professionalism and qualification management**

Verification procedures, including practical exams, should be strengthened to assess whether tattooists have sufficiently mastered the hygiene and infection control skills required for actual practice. In other words, tattooists' hygiene and safety training should be substantially enhanced, and regular continuing education should be mandated to maintain their expertise.

### **3.8. Legal disputes and damage relief**

**Mandatory Liability Insurance:** Tattooists should be required to purchase liability insurance to ensure prompt compensation for any adverse effects resulting from tattooing. A separate dispute resolution or damage relief system should be established to ensure prompt and fair compensation for adverse effects.

First, the types of legal disputes related to tattoos can arise from legal issues such as unlicensed medical practice, damage caused by side effects of the procedure, dissatisfaction with the procedure, and whether or not the legal representative consents when tattooing a minor.

To seek redress for damages resulting from tattooing, first, you must secure evidence, such as before-and-after photos, hospital records, conversations with the practitioner (messages, etc.), and payment details. Second, you can notify the practitioner of the damage and send a certified letter demanding compensation for treatment costs, removal costs, and consolation money, and attempt to reach a settlement. Third, if the practitioner's actions are determined to constitute unlicensed medical practice (violation of the Medical Act) or negligent homicide, you can file a criminal complaint with the police.

**Civil Litigation:** Separate from criminal charges, you can file a lawsuit in civil court to seek compensation for actual losses (medical expenses, compensation, etc.). Criminal proceedings can be advantageous for securing evidence and often lead to civil settlements.

**Consumer Protection Agency Consultation:** You can apply for damage relief or request consultation from the Korea Consumer Agency for assistance [\[30\]](#).

## 5. Conclusion

On September 25, 2025, the National Assembly passed the "Tattoo Law," legalizing tattooing by non-medical professionals.

Non-medical professionals began being punished for violating the Medical Act following a 1992 Supreme Court ruling that deemed tattooing a "medical practice." However, most tattoos are performed for cosmetic purposes rather than medical purposes, and few practitioners are actually medical professionals, raising concerns about a gap between the law and reality.

The law and system have failed to reflect the reality that tattooing by non-medical professionals has become popular. However, the Tattoo Law was enacted after a long period of social discussion and deliberation, and has laid the foundation for the tattoo industry to operate safely and soundly within an institutional framework and for the rights of users and practitioners to be protected.

However, even before implementation, various issues remain, including conflicts with the medical community and insufficient detailed standards, raising the need for improvement. These improvements should be considered to ensure the Tattoo Law becomes a reality, protect the rights of tattooists, and safeguard the public's health and safety.

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## 7. Appendix

### 7.1. Author's contribution

Initial name		Contribution
Author	KP	<ul style="list-style-type: none"><li>-Set of concepts <input checked="" type="checkbox"/></li><li>-Design <input checked="" type="checkbox"/></li><li>-Getting results <input checked="" type="checkbox"/></li><li>-Analysis <input checked="" type="checkbox"/></li><li>-Make a significant contribution to collection <input checked="" type="checkbox"/></li><li>-Final approval of the paper <input checked="" type="checkbox"/></li><li>-Corresponding <input checked="" type="checkbox"/></li><li>-Play a decisive role in modification <input checked="" type="checkbox"/></li><li>-Significant contributions to concepts, designs, practices, analysis and interpretation of data <input checked="" type="checkbox"/></li><li>-Participants in Drafting and Revising Papers <input checked="" type="checkbox"/></li><li>-Someone who can explain all aspects of the paper <input checked="" type="checkbox"/></li></ul>

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## Occupational Health Risks Associated with Inhalation Exposure to Ammonia and Safety Management Strategies in the Beauty Industry

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### Abstract

**Purpose:** The purpose of this study was to analyze occupational health risks associated with ammonia inhalation exposure among beauty industry workers and to propose integrated safety management strategies. Although ammonia-based products are frequently used in small, enclosed beauty salons, systematic occupational health assessments remain insufficient. This study therefore examines the physiological effects of ammonia exposure and identifies practical control measures, including engineering controls and standardized operating procedures(SOPs).

**Method:** A comprehensive literature review and case analysis of epidemiological studies on ammonia exposure in the hairdressing industry were conducted. International safety standards from organizations such as AC-GIH and NIOSH were reviewed alongside toxicological data on respiratory and mucosal effects. In addition, current work-place practices in beauty salons were analyzed to identify gaps between existing guidelines and actual field conditions, particularly regarding ventilation and personal protective equipment.

**Results:** The analysis indicated that chronic inhalation of ammonia in poorly ventilated environments is associated with respiratory disorders such as chronic bronchitis and reduced lung function. While acute mucosal irritation is well documented, long-term exposure presents an elevated risk of occupational asthma among stylists. Many salons were found to lack localized exhaust ventilation and adequate chemical-resistant protective equipment, under-scoring deficiencies in current safety practices.

**Conclusion:** Mitigating ammonia exposure in the beauty industry requires an integrated approach combining engineering controls, worker education, and institutionalized safety policies. The implementation of localized exhaust ventilation(LEV) and clear SOPs is essential for reducing inhalation risks. Regular safety training to improve hazard awareness is also critical. These measures provide a foundational framework for promoting sustainable and healthy working environments in the beauty industry.

**Keywords:** Ammonia Exposure, Hairdressing Industry, Occupational Health Risks, Respiratory Irritation, Safety Management

## 1. Introduction

### 1.1. Research background

The hairdressing industry is a professional sector in which various chemical processes—such as hair dyeing, bleaching, perming, and styling—are routinely performed. As a result, workers are frequently placed in environments with a high potential for repeated exposure to airborne chemicals throughout their daily work. In particular, beauty salons are typically small, enclosed spaces where multiple procedures are conducted simultaneously, and both stylists and customers remain in close proximity for extended periods. These environmental characteristics structurally imply the accumulation of hazardous substances and an increased likelihood of

inhalation exposure. Nevertheless, the beauty industry is often not classified as a high-risk industrial environment, and systematic occupational safety management is therefore frequently insufficient[1][2][3].

Previous studies have reported that beauty workers experience respiratory health problems—such as airway irritation, respiratory symptoms, and changes in lung function—more frequently than the general population[2][4][5][6]. These adverse health outcomes are generally attributed not to single episodes of high-concentration exposure, but rather to repeated and cumulative inhalation of low-level irritant substances[7][8][9]. Such exposure patterns differ from the accidental or acute chemical exposures commonly observed in other industrial settings, indicating the need for a tailored occupational health approach that reflects the specific working conditions of the beauty industry[10][11][12].

## **1.2. Research methodology and analytical procedures**

To address the limitations of conventional qualitative literature reviews, this study adopted a multi-layered analytical framework consisting of three sequential stages designed to reflect both regulatory standards and real-world workplace practices in the beauty industry.

### **Stage 1: Comparative Analysis of Global Regulatory Standards**

First, a systematic review was conducted of occupational exposure limits and safety guidelines for ammonia, including time-weighted average (TWA), short-term exposure limit (STEL), and immediately dangerous to life or health (IDLH) values. Regulatory documents published by international organizations such as ACGIH, NIOSH, and OSHA were examined, with particular attention to their applicability to small-scale, service-oriented work environments rather than large industrial settings[13][14].

### **Stage 2: Analysis of Practical Workplace Practices (Field Practice Analysis)**

To move beyond purely theoretical exposure models, this study analyzed representative workplace practices commonly observed in beauty salons. This analysis focused on the frequency of chemical mixing, the average duration of hair coloring and treatment procedures, and spatial characteristics such as ventilation conditions and proximity between chemical sources and the worker's respiratory zone. Data for this stage were derived from industry-standard technical manuals, vocational training materials, and established salon operation SOPs. The findings from this stage provided the empirical foundation for the peak exposure scenarios discussed in Section 2.2.1.

### **Stage 3: Integration of Epidemiological and Toxicological Evidence**

Finally, epidemiological studies concerning health outcomes among hairstylists were integrated with toxicological data describing ammonia's interaction with mucosal moisture[15]. This synthesis enabled a comprehensive risk assessment that bridges the gap between consumer safety evaluations and occupational health considerations, thereby supporting a more context-sensitive interpretation of exposure risks in beauty salon environments.

## **1.3. Purpose and scope of the study**

The purpose of this study is to examine the occupational health risks associated with ammonia inhalation exposure among beauty industry workers and to systematically analyze the hazardous characteristics of beauty salon work environments, with a particular focus on respiratory irritation and related health effects. To achieve this objective, the study comprehensively reviews the physicochemical properties of ammonia, its biological mechanisms of mucosal irritation, and the acute and chronic health effects associated with inhalation exposure. In addition, findings from previous occupational exposure studies

conducted among beauty workers are critically examined[1][7][4][6][9].

Furthermore, this study evaluates the limitations of applying existing industrial safety standards to the beauty industry and seeks to propose practical safety management improvements that reflect the specific work processes and environmental characteristics of beauty salons. By deriving prevention-oriented safety management strategies—such as improved ventilation, work process control, appropriate use of personal protective equipment, safety education, and strengthened institutional management—this research aims to reframe the beauty industry from an occupational health perspective and to provide foundational evidence for protecting the health rights of beauty industry workers.

## **2.1. Theoretical Background**

### **2.1.1. Physical and chemical properties of ammonia**

Ammonia ( $\text{NH}_3$ ) is a colorless alkaline gas with a strong, pungent odor, characterized by high volatility at room temperature and strong solubility in water[15][16]. Due to its molecular weight being lighter than air, ammonia rapidly disperses within indoor environments, and its airborne concentration may increase within a short period under conditions of inadequate ventilation[12].

Ammonia reacts with water to form ammonium ions ( $\text{NH}_4^+$ ) and hydroxide ions ( $\text{OH}^-$ ), resulting in strong alkalinity. This chemical property constitutes a major factor underlying the potential for chemical irritation and tissue damage upon contact with human mucosal tissues[7][9]. In particular, owing to its high water solubility, inhaled ammonia readily dissolves in the moist mucous membranes of the upper respiratory tract, triggering immediate irritant responses.

Although ammonia is generally recognized as a substance with a readily detectable odor, repeated low-level exposure may induce olfactory fatigue, leading to reduced odor perception over time[15]. This phenomenon may cause workers to continue tasks without adequately recognizing actual exposure risks, representing an important challenge in occupational exposure management.

Taken together, these physical and chemical properties create conditions under which ammonia can easily disperse and persist in enclosed or poorly ventilated beauty salon environments. This provides a theoretical basis for understanding how ammonia may act as an occupational health hazard through repeated inhalation exposure.

### **2.1.2. Characteristics of ammonia-containing products used in beauty salons**

Among the chemical products used in beauty salons, ammonia-containing formulations are primarily found in oxidative hair dyes, bleaching agents, and related products. These products utilize ammonia to swell the hair cuticle, thereby facilitating the penetration of dye precursors or the effective degradation of melanin pigments[17][18]. Despite the development of alternative ingredients, ammonia-containing products continue to be widely used in practice due to their effectiveness and operational efficiency[19].

Although these products are typically formulated as liquids or creams, ammonia readily volatilizes into the air upon contact with the atmosphere during application. In particular, the opening and mixing of containers can cause a rapid increase in airborne ammonia concentrations, while continuous volatilization occurs during application and processing stages[7][8]. Consequently, hairdressers are repeatedly exposed to ammonia through inhalation throughout the entire treatment process.

Furthermore, beauty salons often conduct multiple dyeing and bleaching procedures



consecutively within a single working day, creating an environment in which individual exposure events accumulate. Such exposure characteristics should be understood not merely in terms of the toxicity of a single product, but as a structural occupational exposure pattern shaped by work frequency and environmental conditions[1][4][20]. In small salons with insufficient ventilation, ammonia may remain suspended in indoor air, resulting in sustained low-level inhalation exposure[6][21].

Although cosmetic safety assessments may classify ammonia as relatively safe for dermal application within regulated concentration ranges[17], these evaluations are primarily based on consumer use scenarios. They therefore inadequately reflect occupational environments in which workers experience prolonged and repeated exposure[15]. Accordingly, ammonia-containing products used in beauty salons require reevaluation from the perspective of occupational inhalation exposure rather than general cosmetic safety.

### **2.1.3. Inhalation toxicity of ammonia and biological response mechanisms**

The primary route of human exposure to ammonia is inhalation, making respiratory exposure a particularly important risk pathway in occupational settings such as the beauty industry, where volatile chemicals are frequently used indoors[7][9]. Ammonia is a highly water-soluble alkaline gas that reacts immediately with moisture in the nasal cavity, pharynx, and bronchial mucosa upon inhalation, inducing chemical irritation.

Inhaled ammonia ( $\text{NH}_3$ ) reacts with water ( $\text{H}_2\text{O}$ ) on mucosal surfaces to form ammonium hydroxide ( $\text{NH}_4\text{OH}$ ), which exhibits strong alkalinity with a pH range of approximately 11–13. This alkaline reaction denatures structural proteins within epithelial cells and disrupts phospholipid bilayers of cell membranes, leading to cellular necrosis. Unlike acidic substances, alkaline agents penetrate beyond the tissue surface into intercellular spaces and deeper tissue layers, often resulting in more extensive damage and delayed recovery.

Damaged mucosal tissues release inflammatory mediators such as histamine and pro-inflammatory cytokines, producing acute symptoms including burning sensations, throat irritation, coughing, and chest discomfort[7][15]. With repeated or prolonged exposure, the integrity of the mucosal barrier may be compromised, promoting chronic inflammatory states, increasing airway hyperresponsiveness, and weakening respiratory defense mechanisms[8][9][20]. Although ammonia is predominantly absorbed in the upper respiratory tract, increased exposure concentrations or sustained low-level exposure may extend its effects to the bronchi and alveoli, thereby potentially leading to severe respiratory outcomes such as chemical pneumonitis or pulmonary edema[15][16][17][22][23][24][25]. Given these structural risks, the implementation of systematic health protocols is essential to enhance the public value of occupational safety[26][27].

Furthermore, beauty salon environments are characterized by prolonged low-level chemical exposure, limited ventilation, and close worker–client proximity, which collectively create structural conditions that increase the risk of chronic inhalation exposure beyond individual behavioral control[28][29].

Given these structural risks inherent in the beauty industry, such physiological impacts necessitate a comprehensive medical management approach to protect the health rights of workers[28]. Therefore, safety management for beauty industry workers should extend beyond simple ventilation measures to include systematic health monitoring and standardized emergency response protocols at the institutional level.

The eyes are also highly susceptible to ammonia toxicity. Ammonia reacts with tear fluid to form ammonium hydroxide, which may induce necrosis and opacity of corneal epithelial cells. Due to the penetrative nature of alkaline injury, damage may extend into deeper corneal layers,

increasing the risk of visual impairment if exposure is intense or immediate irrigation is not performed.

Although ammonia's strong odor allows for relatively rapid detection during initial exposure, repeated low-level exposure can result in olfactory fatigue, diminishing odor perception[15]. This sensory adaptation may prevent workers from adequately recognizing ongoing exposure risks, representing a significant challenge in managing occupational inhalation exposure within the beauty industry.

Overall, these inhalation toxicity mechanisms indicate that ammonia should not be regarded merely as a transient irritant. Rather, depending on workplace conditions and exposure patterns, ammonia may function as a chronic occupational health hazard. In beauty salon environments, where repeated low-concentration exposure is more common than accidental high-level exposure, occupational health evaluations must extend beyond acute toxicity and incorporate a chronic exposure perspective.

## **2.2. Work environment of the beauty industry and characteristics of ammonia exposure**

The beauty industry is a service sector in which chemical procedures such as hair dyeing, bleaching, and perming are routinely performed, placing hairdressers in work environments with a high potential for repeated exposure to volatile chemicals. Beauty salons are typically operated as small-scale businesses and are characterized by limited indoor spaces where multiple procedures are conducted simultaneously. Under such conditions, insufficient air circulation facilitates the accumulation of volatile substances such as ammonia in indoor air[1][3][20].

In addition, beauty salons are shared environments in which hairdressers and clients remain in close proximity for extended periods and are exposed to the same indoor air. Unlike industrial facilities, the boundary between workers and non-workers is not clearly defined. As a result, ammonia exposure is not confined to specific tasks or time periods but tends to occur continuously throughout the service process[4][5]. When hair dyeing and bleaching procedures are performed repeatedly over the course of a day, ammonia exposure generated during individual treatments may accumulate, thereby increasing the total inhalation exposure of hairdressers[6].

These exposure patterns differ from accidental high-concentration incidents and are instead characterized by repeated exposure to relatively low concentrations of ammonia, reflecting the unique occupational exposure profile of the beauty industry. Accordingly, ammonia exposure in beauty salons requires an occupational health approach that considers the overall work environment rather than focusing solely on individual tasks or isolated processes.

### **2.2.1. Quantitative limitations of existing exposure limits in the beauty industry**

Existing occupational exposure limits for ammonia, including the time-weighted average (TWA) and short-term exposure limit (STEL), were primarily established to regulate continuous emissions in large-scale industrial environments[13][14]. As a result, these criteria may not adequately reflect the irregular and task-based exposure patterns characteristic of beauty salon workplaces.

The American Conference of Governmental Industrial Hygienists (ACGIH) defines the 8-hour TWA for ammonia as 25 ppm and the 15-minute STEL as 35 ppm[14]. However, hairstylists are primarily exposed to ammonia during short-duration tasks such as product mixing and initial application, which typically last approximately 10–15 minutes per session. Under these conditions, the calculated 8-hour average concentration may remain below regulatory limits even when short-term exposure levels in the immediate breathing zone substantially exceed recommended thresholds[28][29].

Similarly, the STEL framework averages exposure over a 15-minute window, which may dilute sharp concentration peaks occurring immediately after product mixing[15][30]. Several studies have reported that peak ammonia concentrations measured during the initial stages of hair dyeing can exceed STEL values in small or inadequately ventilated salons, despite overall compliance with TWA limits[28][29][30].

In addition, hairstylists prepare chemical products in close proximity to their faces and perform procedures near the client's scalp, resulting in direct inhalation of ammonia vapors before sufficient dispersion occurs[29]. From a quantitative risk assessment perspective, these findings indicate that conventional TWA and STEL metrics may underestimate actual exposure intensity in beauty salon environments, highlighting the need for exposure management approaches that prioritize short-term peak control[13][14][27]. The quantitative discrepancies between regulatory limits and actual salon exposure patterns are summarized in <Table 1>.

**Table 1.** Illustrative comparison of regulatory limits and reported ammonia exposure scenarios in hair salons.

Assessment Indicator	Regulatory limit (ACGIH/NIOSH)	Reported salon exposure scenario*	Associated physiological implications
8-h TWA	25 ppm	< 25 ppm (time-weighted average)	May fail to reflect cumulative mucosal and respiratory irritation under repeated daily exposure
15-min STEL	35 ppm	> 50 ppm (short-term peak during initial mixing/application phase)	Associated with acute irritation of ocular and upper respiratory mucosa
Local exhaust ventilation (LEV)	No specific ppm limit**	Capture velocity $\approx$ 0.5 m/s at source	Reduces short-term peak concentration and secondary inhalation exposure

Note: \*Reported salon exposure scenarios are based on previously published measurements and observational studies of ammonia concentrations during hair dyeing and bleaching procedures conducted in enclosed or inadequately ventilated salon environments.

\*\*While no regulatory ppm limit exists for LEV systems, recommended capture velocities are provided in industrial hygiene guidelines (e.g., ACGIH Industrial Ventilation Manual).

## 2.2.2. Health effects of ammonia exposure among beauty industry workers

Ammonia is a highly water-soluble alkaline gas that readily dissolves in the moist mucosal surfaces of the eyes and upper respiratory tract upon inhalation[7][15]. In beauty salon environments, repeated exposure to airborne ammonia primarily affects the ocular surface, nasal cavity, pharynx, and upper airways, leading to irritation-related health effects.

Acute symptoms commonly reported among beauty industry workers include burning sensations in the eyes and throat, lacrimation, nasal irritation, coughing, and transient dyspnea during hair dyeing and bleaching procedures[4][6][9]. Notably, such symptoms have been observed even when measured average exposure levels remain within established occupational limits, indicating that short-term peak concentrations may play a critical role in symptom development[28][29].

From a biological perspective, inhaled ammonia readily reacts with water on mucosal surfaces to form ammonium hydroxide, a strongly alkaline compound capable of denaturing proteins and disrupting epithelial cell membranes[7][15]. This mucosal damage triggers the release of inflammatory mediators, including histamine and pro-inflammatory cytokines, resulting in acute irritation and increased local sensitivity of the affected tissues[8][9].

Repeated exposure to such irritant concentrations may compromise mucosal integrity and contribute to cumulative inflammatory responses. Notably, individuals with pre-existing

respiratory conditions exhibit heightened susceptibility to ammonia-induced airway hyperresponsiveness, necessitating more stringent monitoring and preventive measures[31][32][33]. Epidemiological studies among hairdressers have reported higher prevalence of respiratory symptoms and reduced lung function compared with the general population[4][5][6][34]. Individuals with pre-existing respiratory conditions, such as asthma or chronic rhinitis, may experience exacerbated symptoms under exposure conditions commonly encountered in beauty salons[35][36].

### **2.2.3. Occupational Risks Associated with Repeated and Cumulative Ammonia Exposure**

In the beauty industry, ammonia exposure typically occurs in a repetitive and cumulative manner rather than as a single acute event [1][3]. Hairdressers often perform multiple chemical treatments consecutively throughout the workday, resulting in repeated short-term exposure episodes with limited recovery time between tasks[6][20].

Even when individual exposure events do not exceed regulatory thresholds, repeated mucosal irritation may contribute to chronic inflammatory conditions of the upper respiratory tract and increased airway sensitivity[4][6]. Several studies have demonstrated that longer employment duration and higher frequency of hair dyeing and bleaching procedures are associated with more pronounced respiratory symptoms among hairdressers[4][6][11].

Furthermore, apprentices and junior hairdressers are exposed to airborne chemical substances from the early stages of employment, suggesting that cumulative occupational risk may begin to develop early in a professional career[11]. Poor ventilation and inadequate engineering controls further exacerbate cumulative exposure by allowing ammonia to persist in indoor air during repeated chemical procedures[21][31][35].

Taken together, these findings indicate that reliance solely on compliance with short-term exposure limits may be insufficient to adequately protect beauty industry workers. Occupational risk assessment should therefore consider exposure frequency, duration, and cumulative burden, thereby framing repeated ammonia exposure as a structural occupational health hazard in beauty salon environments[1][6][20].

## **2.3. Analysis of previous studies on ammonia exposure among hairdressers**

### **2.3.1. Research trends on chemical exposure among hairdressers**

Research on occupational chemical exposure among hairdressers has primarily focused on airborne exposure to volatile substances and associated respiratory health outcomes. The International Agency for Research on Cancer has classified hairdressers as an occupational group exposed to chemical agents, emphasizing their potential exposure to various irritant substances during hair dyeing and bleaching procedures[25].

Recent studies have identified the presence of ammonia, formaldehyde, and volatile organic compounds (VOCs) in indoor air within beauty salons, reporting that these substances may be associated with respiratory irritation and inflammatory responses among hairdressers[1][2]. In particular, the issue of repeated exposure in small, enclosed service environments has been consistently emphasized as a characteristic risk factor of the beauty industry.

### **2.3.2. Association between ammonia exposure and respiratory symptoms and lung function changes**

The relationship between ammonia exposure and respiratory health outcomes has been reported in multiple epidemiological studies. A cross-sectional study involving female hairdressers demonstrated a significant association between ammonia exposure levels and

increased markers of airway inflammation, with a higher prevalence of respiratory symptoms compared to the general population[4].

In addition, pulmonary function test results from several studies indicated reductions in forced vital capacity (FVC) and forced expiratory volume in one second (FEV<sub>1</sub>), suggesting that repeated inhalation exposure may contribute to long-term declines in respiratory function[5][6]. These findings support the interpretation that ammonia functions as more than a transient irritant and may act as an occupational health hazard in professional hairdressing environments.

### **2.3.3. Differences in exposure according to employment duration and work characteristics**

Previous studies have consistently reported that longer employment duration and higher frequency of hair dyeing and bleaching procedures are associated with more pronounced health effects related to exposure to ammonia and other chemical substances[4][6]. This pattern indicates that the concept of cumulative exposure is a relevant and important evaluation framework in the beauty industry.

Furthermore, studies involving apprentices and junior hairdressers have shown that exposure to airborne hazardous substances occurs from the early stages of employment, despite lower levels of work experience[11]. This evidence underscores the need for prevention-oriented safety management strategies that begin at the onset of a hairdresser's career, rather than relying solely on experience-based risk reduction.

## **2.4. Safety management of ammonia exposure and policy improvement strategies in the beauty industry**

Ammonia exposure in the beauty industry should be understood not merely as a consequence of individual negligence, but as a structural occupational health issue shaped by product composition, work practices, and regulatory limitations. Information regarding the cosmetic use and regulatory status of ammonium hydroxide is provided in the European Commission's CosIng database, which serves as an official reference for cosmetic ingredient safety in the European Union[30]. Despite these regulatory frameworks, effective prevention and control of ammonia inhalation exposure require a multilayered approach that integrates workplace engineering controls, medical surveillance, and policy-level interventions[13][14].

### **2.4.1. Exposure reduction strategies focused on the work environment**

Beauty salon workspaces are typically small and enclosed, making ventilation conditions a decisive factor in determining ammonia exposure levels. Previous studies have demonstrated that workplaces equipped with effective local exhaust or general ventilation systems exhibit significantly lower concentrations of airborne volatile chemicals[20][21]. However, in many salons, ventilation systems—when present—are not operated continuously during chemical procedures, and the inflow of outdoor air is often limited.

Local exhaust ventilation (LEV) systems are most effective when operated in close proximity to the emission source. Industrial hygiene guidelines recommend positioning the exhaust inlet within approximately 20–30 cm of the contaminant source and maintaining a capture velocity of around 0.5 m/s, which has been shown to effectively suppress the dispersion of volatile alkaline gases. In beauty salon settings, placing LEV inlets above or adjacent to the client's head represents a practical and feasible application strategy.

Accordingly, exposure reduction strategies in beauty salons should include enhanced ventilation in areas where dyeing and bleaching procedures are performed, intensified ventilation during peak service hours, and, where feasible, spatial separation between chemical treatment areas and general styling zones[1][6]. Such environmental improvements are



expected to mitigate not only ammonia exposure but also combined exposure to multiple chemical agents commonly present in beauty salons.

#### **2.4.2. Practical application of personal protection and work process control**

The use of personal protective equipment (PPE) is a fundamental component of occupational chemical exposure management. However, in the beauty industry, PPE use is often limited by concerns regarding work efficiency and client interaction. Nevertheless, appropriate respiratory protection during processes with concentrated ammonia volatilization—such as product mixing and the initial application phase—can meaningfully reduce inhalation exposure[13][25].

From a work process perspective, relatively simple control measures—such as minimizing container opening time during product mixing, applying products immediately after preparation, and storing residual products in sealed containers—can substantially reduce the release of ammonia into indoor air[7][8]. These process controls are particularly advantageous because they can be readily implemented without additional infrastructure investment, enhancing their practical applicability in small-scale salons.

#### **2.4.3. Importance of safety education and risk awareness**

Although ammonia's pungent odor often leads to its perception as an immediately recognizable hazard, repeated low-level exposure may result in olfactory fatigue, causing its health risks to be underestimated over time[15]. Therefore, safety education for hairdressers should extend beyond basic ingredient information and emphasize the cumulative risks and potential chronic health effects associated with repeated inhalation exposure.

In particular, apprentices and junior hairdressers frequently participate in chemical procedures from the early stages of employment, underscoring the need for prevention-oriented safety education from the outset of their careers[11]. Such educational interventions not only protect individual workers but also serve as a foundation for improving occupational health standards across the beauty industry in the long term.

#### **2.4.4. Institutional management systems and policy improvement directions**

Current occupational exposure limits for ammonia are primarily designed for large-scale industrial facilities and do not adequately reflect the unique working conditions of service industries such as beauty salons[12][14]. As a result, hairdressers may remain within a blind spot of institutional management and legal protection.

Future policy improvements should therefore include the development of tailored exposure assessment criteria for service industry workers, strengthened indoor air quality management guidelines that consider small-scale workplaces, and the formal inclusion of the beauty industry within occupational health management systems[1][6][13]. Such policy-level interventions would shift ammonia exposure management from an issue of individual workplace responsibility to a broader public health concern, thereby contributing to more equitable and effective protection of hairdressers' occupational health.

#### **2.4.5. Summary**

The management of ammonia exposure in the beauty industry cannot be addressed through a single measure, but requires an integrated approach in which workplace environmental improvements, personal protection, education, and institutional management are organically combined. Given the industry-specific characteristics of repeated and cumulative inhalation exposure, prevention-oriented management strategies tailored to beauty salon environments are needed rather than the direct application of conventional industrial safety standards. Such an approach will serve not only to protect the occupational health of hairdressers but also to

provide an essential foundation for the long-term sustainability of the beauty industry.

### **3. Conclusion**

#### **3.1. Summary of findings**

This study examined the potential occupational health risks associated with inhalation exposure to ammonia originating from ammonia-containing products used in the beauty industry, from an occupational health perspective. Ammonia is a highly volatile and water-soluble alkaline gas that readily disperses into the air during hair dyeing and bleaching procedures. In work environments with limited ventilation, these properties facilitate repeated and cumulative inhalation exposure among hairdressers.

Through an analysis of theoretical background and toxicological mechanisms, this study confirmed that ammonia reacts with moisture in mucosal tissues to form ammonium hydroxide with a pH range of approximately 11–13. This strong alkaline reaction induces protein denaturation and disruption of cell membranes, constituting a core mechanism of tissue injury. Such biological responses are not limited to upper airway irritation but may extend to the bronchi and alveoli depending on exposure conditions, with repeated exposure potentially leading to chronic inflammation and declines in respiratory function.

The review of previous studies further indicated that hairdressers experience respiratory symptoms—such as coughing, throat irritation, and dyspnea—more frequently than the general population, and that these effects become more pronounced with longer employment duration and higher frequency of chemical treatments. These findings suggest that ammonia exposure in the beauty industry should be understood as a structural occupational hazard arising from the interaction between work environment characteristics and exposure patterns, rather than as an isolated or incidental risk factor.

#### **3.2. Occupational health and industrial implications**

The findings of this study indicate that ammonia exposure in the beauty industry is not merely a consequence of individual carelessness or the use of specific products, but rather a multifactorial occupational health issue shaped by small and enclosed workspaces, repeated chemical procedures, and insufficient institutional management. Existing occupational safety systems and exposure standards, which are largely designed for large-scale industrial facilities, do not adequately reflect the repeated low-level exposure patterns characteristic of beauty salons.

Considering the biological mechanisms of ammonia toxicity, repeated inhalation exposure may result in cumulative tissue damage even when short-term symptoms appear mild. This underscores the need for a chronic exposure-oriented occupational health approach tailored to the beauty industry. Moreover, ammonia exposure should be recognized not only as a risk to hairdressers but also as a concern for clients who remain in the same indoor environment for extended periods.

Accordingly, ammonia exposure management in the beauty industry should move beyond general warnings or reliance on individual vigilance, and be translated into practical and actionable control strategies applicable at the workplace level. From this perspective, a multilayered approach encompassing engineering controls, work process management, and worker education is essential.

#### **3.3. Policy recommendations and future research directions**

Effective management of ammonia exposure in the beauty industry must extend beyond individual protective measures and be systematically supported through standardized management systems and policy interventions at the industry level. As demonstrated in this study, ammonia reacts with moisture on mucosal surfaces to form strongly alkaline ammonium hydroxide (pH 11–13), and the resulting protein denaturation and cell membrane damage provide scientific evidence for the cumulative potential of chemical injury comparable to chemical burns under repeated exposure conditions. This evidence highlights the necessity of recognizing ammonia exposure as a structural health hazard rather than a minor irritant.

Accordingly, the establishment of practical policy guidelines and management standards is urgently required. Beauty salons should be encouraged or mandated to maintain simple monitoring devices capable of periodically assessing indoor ammonia concentrations. In addition, standard operating procedures (SOPs) should require the operation of local exhaust ventilation (LEV) systems during procedures with high exposure potential, such as hair dyeing and bleaching. SOPs should further incorporate specific work process controls—including minimizing container opening time during product mixing, applying products immediately after preparation, and storing residual products in sealed containers—to effectively reduce airborne ammonia dispersion without requiring substantial additional investment.

Alongside engineering and institutional measures, human-centered occupational health strategies aimed at improving risk awareness among hairdressers are equally important. Regular occupational health education programs should be implemented to ensure that workers understand the chronic toxicity and cumulative risks associated with repeated ammonia inhalation exposure. Work environments and safety cultures should also be fostered to support the voluntary use of appropriate protective equipment, such as chemical respirators and nitrile gloves. These educational and awareness-based interventions have the potential to enhance long-term safety standards across the beauty industry.

Nevertheless, this study has limitations in that it focused primarily on the inhalation toxicity and occupational health risks of ammonia. Future research should therefore include comparative analyses of the long-term health effects of ammonia substitute ingredients, such as monoethanolamine (MEA). In addition, quantitative field studies measuring airborne ammonia concentrations in actual beauty salon environments, comparisons of exposure characteristics according to procedure type and ventilation conditions, and longitudinal respiratory health follow-up studies among long-term hairdressers are needed to strengthen the empirical evidence base.

In summary, this study demonstrates that ammonia exposure in the beauty industry constitutes a significant threat to the occupational health rights of hairdressers and highlights the necessity of engineering, institutional, and educational countermeasures. The findings provide foundational evidence for establishing chemical safety management and occupational health standards within the beauty industry and are expected to contribute to the creation of safer environments not only for workers but also for clients. Ultimately, the development of an integrated safety management system—combining low-irritation ingredient substitution, optimized ventilation engineering, and institutionalized occupational health guidelines—is essential[37].

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## 5. Appendix

### 5.1. Author's contribution

	Initial name	Contribution
Author	YL	<ul style="list-style-type: none"><li>-Set of concepts <input checked="" type="checkbox"/></li><li>-Design <input checked="" type="checkbox"/></li><li>-Getting results <input checked="" type="checkbox"/></li><li>-Analysis <input checked="" type="checkbox"/></li><li>-Make a significant contribution to collection <input checked="" type="checkbox"/></li><li>-Final approval of the paper <input checked="" type="checkbox"/></li><li>-Corresponding <input checked="" type="checkbox"/></li><li>-Play a decisive role in modification <input checked="" type="checkbox"/></li><li>-Significant contributions to concepts, designs, practices, analysis and interpretation of data <input checked="" type="checkbox"/></li><li>-Participants in Drafting and Revising Papers <input checked="" type="checkbox"/></li><li>-Someone who can explain all aspects of the paper <input checked="" type="checkbox"/></li></ul>

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## From Patient to Artist: Reauthoring Identity and Human Protection in Parkinson's Disease through Artistic Agency

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### Abstract

**Purpose:** This study explores how artistic engagement empowers individuals with Parkinson's disease (PD) to reframe their identities, enhance social connections, and reclaim their dignity. It proposes a conceptual model of "Artistic Protection," advocating for a paradigm shift from viewing people with PD solely as clinical subjects to recognizing them as creative agents.

**Method:** A narrative review was conducted, synthesizing interdisciplinary literature on art-based interventions—including visual art, clay therapy, group singing, and mind-body practices such as Tai Chi, Qigong, and Argentine Tango—alongside neurobiological and psychosocial theories of vulnerability.

**Results:** The medical gaze often reduces PD to a cluster of pathological deficits, exacerbating the erosion of self-worth and social isolation. In contrast, artistic engagement provides a potential space that mediates between biological reality and subjective experience. Biological insights into selective neuronal vulnerability and the psychosocial vulnerable self are reframed through art as sources of authentic expression rather than functional failure. Specifically, rhythmic interventions like Tai Chi and tango demonstrate superior efficacy in improving postural stability and motor scores by re-contextualizing clinical symptoms into aesthetic choices within a shared social interstice. This shift redefines protection as a relational act of mutual recognition and safe exposure through aesthetic distance.

**Conclusion:** Reframing individuals with PD as artists facilitates a transformative pathway toward identity reconstruction and existential resilience. By integrating artistic expression as a vital component of positive protection, this paradigm moves beyond symptom management toward a holistic framework of care. Ultimately, it affirms the radical freedom of individuals to be seen as whole human beings, fostering a more inclusive and compassionate community for those living with chronic neurodegeneration.

**Keywords:** Parkinson's Disease, Creative Agency, Human Dignity, Biopsychosocial Vulnerability, Human Protection

## 1. Introduction

Parkinson's disease (PD), a chronic neurodegenerative condition, is often defined by its visible symptoms: tremor, rigidity, bradykinesia, and postural instability[1]. Yet, for those living with PD, the challenges extend far beyond physical impairments. They face profound threats to their sense of self, and encounter stigma, isolation, loneliness, and the gradual erosion of personal identity[2][3]. The medical model tends to frame individuals with PD primarily as patients: recipients of care, subjects of rehabilitation, or cases to be managed. This perspective, while necessary for clinical interventions, may overlook the rich complexity of human experience: the need for self-expression, agency, and connection[4][5].

The concept of "patienthood" imposes limits on how individuals are seen and how they see themselves. It reinforces a passive identity, where the individual is positioned as an object of

treatment rather than a subject of creativity[6][7]. In contrast, art—whether through painting, dance, theater, or storytelling—offers an alternative lens. The creative process allows people to express their inner worlds[8], and engage with others in meaningful ways[9][10]. Art therapy can provide a psychologically safe environment where patients can explore difficult emotions while making choices about their artwork[11]. The non-judgmental nature of art therapy encourages individuals to express themselves without criticism, providing a space where imperfection is not a flaw to be corrected but a trace of authenticity[12][13].

This paper asks: (1) Can individuals with PD be recognized not only as patients but also as artistic creators who contribute their unique perspectives to the world? (2) How can art provide a form of protection and healing that extends beyond symptom management to include identity reconstruction and social belonging? (3) What meaning and change does it bring to individuals with PD when they are recognized not only as patients but also as artists, particularly in a society that often marginalizes those with chronic illness?

This paper aims to explore how artistic engagement can empower individuals with PD to re-frame their identities, foster social connection, and reclaim their dignity. By reviewing existing literature and case studies on art-based interventions, this paper proposes a conceptual model in which art serves as a medium for identity reconstruction and human protection. Ultimately, it advocates for a paradigm shift: from viewing individuals with PD solely as patients in need of therapy to recognizing them as creative agents who contribute meaningfully to their communities and the broader cultural landscape. Rather than focusing on quantitative clinical outcomes, this study aims to explore the existential transformation of PD patients. By integrating clinical insights from field experiences with interdisciplinary literature, we propose a new conceptual framework of artistic agency as a tool for reauthoring identity.

## 2. Methods

This study employs a conceptual review approach. Unlike a systematic review that aims for exhaustive data aggregation, this study focuses on synthesizing interdisciplinary literature to construct a theoretical framework for artistic agency in PD.

A comprehensive search was conducted across databases, including PubMed and Google Scholar, using keywords such as ‘Parkinson’s Disease’, ‘patient’s perspective’, ‘unmet needs’, ‘vulnerability’, and ‘art therapy’. The initial search focused on capturing the multifaceted experiences of PD patients.

The literature selection process was informed by purposive sampling based on clinical insights. The authors derived core themes—such as ‘reauthoring identity’ and ‘artistic agency’—through extensive experience in interviewing PD patients and facilitating art-based interventions. Consequently, specific studies were selected not merely for their clinical outcomes, but for their relevance in illustrating the transformative process from patient to artist as observed in actual clinical settings.

## 3. Art as a Medium of Protection

The concept of art has often been narrowly defined as traditional disciplines such as music, painting, dance, and literature. However, in the context of human protection and dignity, a broader understanding of art is necessary. Art is not merely a set of technical skills or aesthetic products, but a mode of expression that enables individuals to externalize their inner experiences, connect with others, and assert their unique identity in the world[14]. For individuals living with PD, artistic expression can take forms beyond conventional categories. The tremor of a hand, the slowness of movement—these are not simply symptoms, but can be reinterpreted as authentic marks of human presence[15]. In addition, everyday acts—such as sharing a meal, offering encouragement, or inhabiting one’s body with conscious awareness—transcend mere

routine to become social interstices. These acts function as relational and performative art forms that prioritize inter-subjective encounters over clinical management[16]. This paradigm shift reflects a move toward positive protection, which, according to the capabilities approach, requires creating an environment that provides affirmative support for the freedom of expression and meaningful human functioning beyond basic clinical care [17].

This expanded view of art aligns with the core principles of protection convergence: promoting human dignity, fostering inclusivity, and recognizing diverse forms of expression. By acknowledging art as a medium for protection, we shift the focus from therapy as a corrective tool to art as a relational space for authentic expression and mutual recognition. Such a perspective invites us to reconsider the support for individuals with PD, reframing them not merely as patients in need of care, but as creative agents endowed with the capability to contribute to their communities through unique, expressive acts. Moving from theory to practice, the following section examines how these insights are applied in real-world cases, where individuals with PD utilize artistic expression as a practical model for self-discovery and social connection.

## **4. Reauthoring Identity and Human Protection through Artistic Agency**

### **4.1. Beyond the medical gaze: reauthoring identity through artistic agency**

Conventionally, PD is reified into a cluster of clinical symptoms—tremor, bradykinesia, rigidity, and postural instability—viewed through what Michel Foucault calls the ‘medical gaze’ [1][18]. This reductive perspective objectifies the body as a mere site of pathological observation, effectively silencing the unique existential narratives of those living with the condition and confining them within the restrictive labels of ‘patienthood’ and functional deficiency[6][15]. In contrast to this passive categorization, individuals living with PD are far more than recipients of care; they are narrative agents whose identities are woven from a complex interplay of biopsychosocial factors. By honoring the unique stories of their illness, we recognize them as creative beings endowed with inherent capabilities and existential depth, shaped by both their biological predispositions and the rich, subjective texture of a lifetime of lived experiences[19][20].

Chronic degenerative diseases such as PD emerge from a complex biopsychosocial interplay of genetic factors and long-standing lifestyle patterns[20]. These patterns, often ingrained over decades, can be difficult to change, especially for older adults. Yet, paradoxically, the diagnosis of a chronic illness can also serve as a critical narrative juncture—a moment for reflection, confrontation, and potential transformation. It invites individuals to re-author their illness stories[19], forcing them to face the realities of aging, bodily change, and the limitations of their habitual ways of being. In this light, the diagnosis is not merely a clinical conclusion but a catalyst for narrative reconstruction, where the individual begins to find new meaning with their changed embodiment.

In this context, artistic expression offers a unique and powerful pathway for narrative self-exploration. It invites individuals to examine their embodied experiences, question the medicalized assumptions of their condition, and actively re-author their identities[19]. For individuals with PD, art is not confined to traditional visual categories; it encompasses dance, theater, music, and storytelling, where movement and voice become vital mediums of relational communication[16]. As Westheimer et al.[21], demonstrate, the Dance for PD program transcends physical exercise by integrating professional dance training, which allows participants to experience their bodies through an artistic and aesthetic lens rather than a purely clinical one, significantly enhancing their quality of life. Similarly, theatrical interventions, as demonstrated by the study of Modugno et al.[22], provide a biopsychosocial framework in which participants utilize acting, voice projection[20], and performance to re-author their identities[19]. This performative engagement allows individuals with PD to move beyond the ‘medical gaze’ [18], and

regain control over their bodies, effectively facilitating a narrative reconstruction of their self-image. Through the creative process of impersonating characters, they find new meaning in their lives and reclaim a sense of agency that transcends the clinical boundaries of their symptoms[19][22].

#### **4.2. Reclaiming the body: transforming clinical deficits into creative form**

The ExplorArtPD program at New York University exemplifies the integration of professional art therapy as a comprehensive neurorehabilitative treatment[23][24][25]. This initiative specifically addresses the visuospatial abnormalities often under-recognized in PD, demonstrating that structured artistic engagement can significantly improve visual exploration, motor function, and overall quality of life[23][24]. Building upon this visuospatial focus, clay therapy provides a unique avenue for embodied reconstruction through haptic feedback[26][27]. As Elkis-Abuhoff et al.[26], and Bae and Kim demonstrate, the tactile nature of manipulating clay allows individuals to re-conceptualize their ailing bodies—not as sources of dysfunctional tremor, but as ‘the hands that create form’[28]. Their research has shown significant improvements in somatic symptoms, hand dexterity, and self-expression, effectively reframing the physical challenges of PD as necessary elements of a creative process. This shift further affirms the aesthetic value of the disabled body[15], facilitating a profound narrative reconstruction where individuals project their resilience through a tangible medium[19][27]. The case study by Chatterjee et al. provides a clinical yet profound testament to this evolution; despite manifest motor impairments, a patient with PD demonstrated unprecedented creative drive, evolving his style into one characterized by fluid and sinuous movements[29]. This transformation effectively reclaims the body from clinical labels, turning involuntary physical limitations into an authentic form of artistic agency and resilience[15][29].

#### **4.3. From isolation to community: reclaiming social agency through shared performance**

The transition from a passive recipient of care to an active social agent is most vividly realized through shared artistic performance, which creates a “social interstice”[16]. In this relational space, the aesthetic experience serves as a mediator that mitigates the isolation inherent in neurodegeneration.

The relational dimension of art is clinically validated through the Parkin-Song program and international collaborative studies[30][31][32]. Controlled trials and cross-cultural investigations involving participants from the UK and South Korea demonstrate that group singing significantly improves vocal loudness, emotional well-being, and social support[30][32]. Beyond these physiological gains, group singing functions as a relational practice where participants reclaim their social agency. By engaging in shared vocal performance, individuals with PD move beyond their clinical labels, transitioning from isolated patients into active members of a creative community. As Irons et al. emphasize, the improvement in quality of life (as measured by the PDQ-39) across different cultural contexts highlights the universal potential of group singing as a relational practice[32].

This relational agency is further extended through Argentine tango, which acts as a bridge between physical rehabilitation and artistic performance[33][34][35][36]. While various dance models exist, comparative research indicates that tango may preferentially improve mobility and motor sign severity—specifically MDS-UPDRS motor scores—when compared to multi-style models like “Dance for PD”. This superior efficacy is primarily attributed to tango’s unique structural elements, such as backward walking, frequent pivots, and rapid stops, which specifically target the postural instability and bradykinesia inherent in PD. Furthermore, the partnered nature of tango provides essential external cues and sensory-motor feedback within a supportive “moving frame,” allowing participants to safely explore their limits of stability while maintaining high-level interpersonal coordination[33][36].



Tango necessitates meticulous weight shifting and controlled displacement of the center of mass, yet it transcends simple exercise by fostering a sense of self-efficacy and social confidence[33][36]. By re-contextualizing physical impairments as vital elements of a shared aesthetic dialogue, tango empowers individuals to see their bodies not as sites of dysfunction, but as instruments of creative agency. This transition from disciplined mindfulness to relational creativity highlights a fundamental change in the therapeutic paradigm, suggesting that true protection lies in recognizing the radical freedom of the individual to be seen as a whole human being.

#### **4.4. Integrative healing arts: East Asian traditions as a path to existential resilience**

While Western art-based interventions often focus on outward expression and relational aesthetics, East Asian traditions offer a distinct paradigm of integrative healing art that internalizes the creative process. These practices—such as Tai Chi and Qigong—function not merely as physical exercises but as a form of disciplined mindfulness, where the patient becomes an artist of their own internal energy and bodily movement. Traditional mind-body practices like Tai Chi, which can be viewed as a form of structured, mindful movement, have shown significant benefits for balance and well-being in individuals with PD. A landmark study by Li et al. demonstrated that a tailored Tai Chi program—emphasizing rhythmic weight shifting and controlled movements near the limits of stability—consistently outperformed resistance training and stretching in improving maximum excursion and directional control[37]. Most notably, Tai Chi training was found to reduce the incidence of falls by 67% compared to stretching, with these therapeutic gains maintained for months after the intervention. From a narrative perspective, this suggests that the patient reclaims agency by meticulously mastering the “limits of stability”, transforming a precarious body into a site of intentional balance.

Furthermore, Qigong integrates various postures and breathing techniques with meditation to foster existential resilience. According to a systematic meta-analysis by Chen et al.[38], Qigong-based exercises significantly improve clinical motor symptoms, walking ability, and balance in PD patients. By alleviating muscle tension and promoting functional recovery without adverse events, Qigong allows individuals to transcend the clinical boundaries of their symptoms. In the East Asian context, these traditional practices empower individuals to see their bodies not as sites of pathological failure but as instruments of harmony, thereby enhancing their overall quality of life.

#### **5. Rethinking Protection: From Clinical Intervention to Expressive Agency**

Traditionally, therapeutic interventions for chronic neurodegenerative conditions such as PD have been governed by a focus on symptom management and functional restoration. While these clinical approaches remain foundational, they often inadvertently reinforce the “medical gaze,” framing individuals primarily as patients defined by their deficits rather than as complex beings with evolving identities. In this restrictive context, “protection” has predominantly meant minimizing physical harm or mitigating decline. However, such a narrow definition fails to acknowledge the full spectrum of the human experience—most notably the profound need for self-expression, recognition, and agency[15][18][19].

Artistic engagement invites a radical reconsideration of what it means to truly “protect” an individual. Genuine protection is not merely about shielding a person from the progression of symptoms; it is about creating communal spaces where their unique voice can emerge, and their presence is acknowledged beyond their clinical diagnosis. For individuals with PD, artistic expression—whether through the tactile manipulation of clay, the vocal resonance of group singing, or the rhythmic dialogue of tango—offers a pathway to move beyond the confines of therapy into the realm of authentic, embodied communication[26][30][32][33].

The comparative efficacy of interventions like Argentine tango provides a vital insight into this shift. As demonstrated by Hackney et al. [33], the very movements that challenge the pathological limitations of PD—such as backward walking, pivots, and sudden stops—are not merely clinical exercises but become deliberate, aesthetic choices within a shared “moving frame.” In this light, the tremor in a brushstroke, the deliberate slowness of a gesture, or the unpredictability of a spoken line are no longer viewed as “flaws” to be corrected. Instead, they are reclaimed as authentic traces of a life fully lived, transforming involuntary symptoms into intentional acts of artistic agency[15][19][29].

Art thus challenges the societal tendency to view chronic illness solely through a lens of loss. When a person with PD shares their creation—be it a dance, a poem, or a painting—they invite the observer to see them not as a recipient of care, but as a creator and a communicator with profound insights to offer. This shift fosters empathy, promotes social inclusion, and redefines the community by expanding the narrative of whose voice matters[16][32]. Ultimately, art becomes a medium through which individuals reclaim their identities and resist marginalization. It is a form of protection that empowers rather than shelters—a dynamic process of witnessing and connecting that reaffirms the inherent dignity of every human being.

## 6. Vulnerability as a Shared Space of Artistic Care

Vulnerability is traditionally regarded as a condition to be managed, minimized, or concealed, particularly within clinical environments where strength and control are prioritized. However, in PD, vulnerability is not merely a psychological state but a fundamental biological reality. As Surmeier et al. demonstrate, the disease originates from “selective neuronal vulnerability,” where specific populations of neurons within complex cellular networks are physiologically predisposed to degeneration due to their intricate architecture and high metabolic demands[39]. This inherent vulnerability within the brain’s circuitry drives the onset and progression of the disease, which eventually manifests as what Vann-Ward et al. describe as “the vulnerable self”[40]. In this state, the emotional pain of witnessing continuous physical changes and the fear that future circumstances might worsen perpetuate a profound sense of helplessness. For many, the instinct to protect this vulnerable self leads to social disconnection; yet, while isolation may be adopted as a “best strategy” or temporary shield, it often results in paralyzing anxiety and the erosion of self-worth[40].

Within the domain of artistic practice, this multi-layered vulnerability—biological, psychological, and social—is transfigured from a deficit into a source of authenticity and connection. Art allows individuals to reveal the most fragile dimensions of their existence through the protective filters of metaphor, symbol, and aesthetic distance. As Scheff (1979) suggests, this distance creates a “safe exposure” where the overwhelming fear of helplessness can be explored without causing further trauma[41]. In this context, the involuntary tremor or the faltering speech—direct consequences of neuronal vulnerability—are reclaimed as narrative tools. Frank (1995) posits that by becoming “wounded storytellers,” patients transform their suffering into a testimony that resists the erosion of self[42]. A tremor becomes a kinetic brushstroke, and a pause becomes a poetic silence, reshaping the experience of vulnerability into something visible and communicable.

This process reveals a profound kinship between the artist and the patient, both of whom navigate the uncertainties of embodiment and the risk of exposure. Drawing upon Winnicott’s (1971) framework[43], the artistic encounter functions as a “potential space”—a third area of experiencing that mediates between the patient’s subjective internal reality and the objective external world of clinical diagnosis. In this sanctuary, the individual with PD is neither a passive

object of the “medical gaze” nor isolated by their internal grief; instead, they engage in a creative dialogue where physical tremors and rigidities are re-authored as aesthetic choices rather than functional failures. This space serves as a transitional zone where the paradox of the ailing-yet-creating body is accepted without the pressure of clinical correction. By playing within this space, participants can bridge the gap between their pre-diagnostic identity and their present embodiment, facilitating a narrative synthesis that allows them to reconnect with a fragmented self and envision a future defined by agency and possibility rather than inevitable decline.

This paradigm shift also extends to healthcare professionals, who carry their own hidden vulnerabilities, such as the emotional toll of caring for incurable conditions. Following the principles of narrative medicine[19], when clinicians witness the artistic process, they enter an “interstitial space” where shared humanity takes precedence over hierarchical roles. Art dissolves the binary between “helper” and “helped,” creating a relational field where all participants are acknowledged as both fragile and creative. In this shared space of artistic care, vulnerability is not a weakness to be eliminated but a presence to be honored. It is within this sanctuary that protection evolves into its highest form. It aligns with Butler’s ethics of interdependency, where recognizing our shared precariousness becomes the basis for true community[44]. Protection, in this sense, is no longer just about physical safety; it becomes mutual recognition, compassion, and the radical freedom to be seen as a whole human being.

## 7. Limitations and Suggestions for Future Research

This paper presents a conceptual framework for reframing individuals with PD as artistic agents to restore identity and dignity. However, significant limitations remain. First, while emphasizing the transformative potential of art, this study does not fully explore the physical and cognitive barriers rooted in selective neuronal vulnerability that may make artistic engagement less accessible for some[39]. Future research should empirically validate the proposed model of identity reconstruction through diverse qualitative and quantitative case studies to specify its practical applicability and measure its long-term impact on the “vulnerable self”[40].

Second, given the heterogeneity of PD symptoms and life backgrounds, subsequent studies must develop personalized artistic strategies tailored to individual stages and prior creative experiences. Finally, to realize the paradigm shift from patient to artist, concrete measures at the systemic level are essential. This requires developing sustainable funding models, such as integrating art interventions into public health insurance, and establishing interdisciplinary training curricula for both artists and healthcare professionals to navigate clinical and creative spaces effectively.

By addressing these structural and practical constraints through subsequent research, we can foster a collaborative ecosystem that affirms the inherent dignity and creative agency of every individual living with PD through the sanctuary of artistic care.

Furthermore, a critical practical challenge remains the securing of sustainable funding for art-based interventions. Currently, many programs rely on the voluntary efforts of specialized researchers and graduate students, which limits their long-term scalability within private-led healthcare systems. To overcome this, future studies should not only focus on clinical efficacy but also provide economic evidence, such as cost-benefit analyses demonstrating how artistic agency can reduce long-term social costs by preventing falls and social isolation. By establishing a ‘social prescribing’ model that connects hospital care with community-based public health budgets, we can transition from a volunteer-dependent pilot stage to a more resilient and institutionalized framework of care.

## 8. Conclusion

This paper has presented a conceptual framework for reframing individuals with PD as artistic agents, challenging the reductive medical gaze that often confines them to the restrictive labels of patienthood and functional deficiency[6][18]. While traditional therapeutic interventions remain foundational for symptom management, they risk overlooking the existential depth of the individual by treating them as passive recipients of care. By recognizing individuals with PD as artists, we move beyond clinical definitions to acknowledge their inherent capacity to transform the biological precariousness of selective neuronal vulnerability into a narrative of creative resilience and agency[39].

Through diverse artistic mediums—from the potential space of clay therapy to the rhythmic[43], relational dialogue of Argentine Tango—individuals with PD are empowered to re-author their illness stories [19][38]. These practices provide a sanctuary of safe exposure through aesthetic distance[41], allowing the vulnerable self to explore difficult emotions and confront identity dilemmas within a supportive creative community[40]. In this context, involuntary symptoms such as tremors or bradykinesia are no longer viewed as flaws to be corrected; instead, they are reclaimed as authentic, aesthetic marks of human presence—intentional acts of artistic agency that reaffirm the value of the disabled body[15][29].

Ultimately, this paper calls for a profound paradigm shift: from viewing individuals with PD as subjects of therapy to recognizing them as creators who contribute meaningfully to the cultural and social fabric of society. True protection, in this sense, transcends the mere minimization of physical harm or functional decline. It aligns with an ethics of interdependency[45], where protection is redefined as the creation of spaces for mutual recognition, compassion, and the radical freedom to be seen as a whole human being. By embracing art as a form of positive protection[17], we move toward a more inclusive and compassionate understanding of chronic illness—one that honors the dignity of the individual and celebrates the enduring power of the creative spirit.

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## 10. Appendix

### 10.1. Author's contribution

	Initial name	Contribution
Lead Author	MSP	-Set of concepts <input checked="" type="checkbox"/> -Design <input checked="" type="checkbox"/> -Getting results <input checked="" type="checkbox"/> -Analysis <input checked="" type="checkbox"/>
Corresponding Author*	HY	-Make a significant contribution to collection <input checked="" type="checkbox"/> -Final approval of the paper <input checked="" type="checkbox"/> -Corresponding <input checked="" type="checkbox"/> -Play a decisive role in modification <input checked="" type="checkbox"/>
Co-Author	SP	-Significant contributions to concepts, designs, practices, analysis and interpretation of data <input checked="" type="checkbox"/> -Participants in Drafting and Revising Papers <input checked="" type="checkbox"/> -Someone who can explain all aspects of the paper <input checked="" type="checkbox"/>

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## Analysis of the Types of Attitudes of the Korean MZ Generation to Use Beauty Health Multi-shop: Using Grounded Theory

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### Abstract

**Purpose:** This study applied grounded theory, a qualitative research method, to identify the essence and constitutive factors of beauty and health multishop usage experiences perceived by the MZ generation, a key consumer group in today's rapidly changing society. Ten participants were selected, five men and five women, using both purposeful and snowball sampling.

**Method:** Data collection began with a preliminary interview to establish a theoretical sample, followed by a second round of in-depth interviews. All interview data were transcribed and cross-referenced with the raw data to ensure reliability. Data analysis was conducted in a step-by-step manner, following the procedures proposed by Strauss A & Corbin, including open coding, axial coding, and selective coding.

**Results:** As a result of the analysis, 'Genderless perception of appearance management and shift in perception of beauty and health multi-shops' were derived as the core categories, and three types were identified based on usage experience and acceptance attitude: 'appearance management-centered type', 'experiential consumption type', and 'convenience-seeking type'.

**Conclusion:** This study theorized the MZ generation's experience of using beauty and health multi-shops as a processual structure in which perception and attitude are formed through experience accumulation, rather than as a simple consumption choice. Through this, it aims to present the changing beauty consumption paradigm of Korean society in depth from an experiential perspective and to contribute to expanding the understanding of overseas researchers interested in K-beauty and Korean consumer culture.

**Keywords:** Beauty Health Multishop, MZ Generation, Experience, Acceptance Attitude, Grounded Theory

## 1. Introduction

In Korean consumer society, beauty and health are no longer separate areas of care, but rather interconnected practices within the context of everyday self-care and identity formation. This shift is accelerating, intertwined with digital transformation, lifestyle restructuring, and shifting values centered on the younger generation. With the expansion of the K-beauty industry, it is establishing itself as a sociocultural paradigm[1][2]. In particular, the MZ generation, a key player in this shift in beauty and health consumption, values experiential value and personalized choices while also displaying a relatively flexible attitude toward gender norms inherent in appearance management[3][4]. For them, appearance management is transcending mere aesthetics to become a form of self-care and identity expression, and is being redefined as a form of daily health practice.

Amidst this shift in consumer perception, beauty and health multishops are gaining attention as convergent consumption spaces that integrate skin care, body care, and wellness services.

Unlike traditional beauty salons or medical-focused spaces, beauty and health multishops offer experience-oriented services in a non-medical, open environment, aligning with the consumer preferences of the MZ generation, which values convenience and autonomy[5][6]. Furthermore, the spread of genderless beauty culture has led both men and women to naturally embrace appearance management services, fostering a shift in attitudes toward multishop use [7].

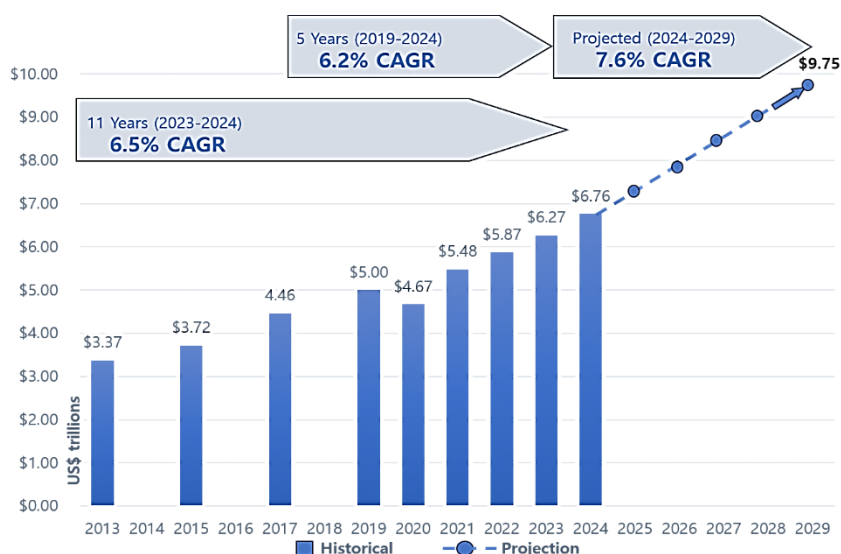
However, previous research has primarily analyzed beauty consumption based on fragmentary variables such as purchase intention, satisfaction, and media influence, and has lacked an adequate explanation of the process by which consumers construct meaning and develop attitudes through their experiences. In particular, qualitative exploration of the social and cultural context within which beauty and health multishop experiences are structured into cognitive shifts and attitude types is limited. Therefore, this study applies grounded theory to explore the nature of beauty and health multishop experiences and the process of attitude formation as perceived by the MZ generation in contemporary society, and aims to identify attitude types based on these experiences. Through this, we aim to explain the shift in the beauty paradigm in Korean society from an experiential perspective, while also presenting the contextual characteristics of Korean consumer culture to overseas researchers interested in the K-beauty and wellness industries.

## 2. Theoretical Background

### 2.1. The convergence of beauty and health consumption and the expansion of the wellness paradigm in Korean society.

Korea, with its advanced digital infrastructure and rapidly adopting technology, has been rapidly restructuring its daily lives into a data-driven, platform-centric structure. This shift is evident not only in finance, education, and healthcare, but also in beauty services, fueling the expansion of the traditional, face-to-face beauty industry into an ICT-driven, smart beauty and healthcare convergence industry[2][5][8]. <Figure 1> shows the size and growth prospects of the global wellness economy market. While Korean beauty services in the past relied on the experience and intuition of skilled professionals, they are now rapidly transitioning to a data-driven management system that combines AI, big data, IoT, and skin diagnostic sensor technology. This represents a redefinition of how Korean society manages "beauty" itself, going beyond the mere adoption of technology[9][10].

**Figure 1.** Global wellness economy market size and growth projections(2013-2029).



This shift is also evident in industry indicators. The Global Wellness Institute reports that the global wellness economy will grow from approximately \$4.9 trillion in 2019 to over \$6 trillion by 2023, with personal care and appearance-related services experiencing the fastest growth[11]. This demonstrates that services combining beauty and health have emerged as a key growth driver on a global scale. This trend is also evident in the Korean beauty industry[3][5]. According to a market analysis by Euromonitor[12], the Korean beauty and personal care market remains stable overall, but services and management-focused sectors, male grooming, and digital-based management services are entering a period of sustained growth[13]. This contrast demonstrates the shift in Korea's beauty consumption structure from product-centric consumption to experience- and management-centric consumption[3][4][14].

## **2.2. Generation MZ's experience-driven consumption and gender-neutral beauty culture**

Generation MZ, a term encompassing both Millennials and Generation Z, has grown up in a digital environment, developing distinct consumption values and lifestyle attitudes compared to previous generations[3][15]. They perceive digital technology not as a mere tool but as a fundamental element of daily life, and they tend to express their identity and lifestyle through consumption. This characteristic serves as the background for viewing consumption as an experiential and meaningful practice, rather than a functional choice.

The core experiential values they share can be summarized as "quality of experience," "personalized choice," and "self-directedness." Appearance management is also being reframed as a practice of self-satisfaction and daily self-care, moving beyond the conscious consideration of others' gazes[14][9]. In other words, it is increasingly being perceived as part of an integrated practice of managing quality of life.

This shift in perception is accelerating, coupled with the weakening of gender norms. Men's skin care, wellness care, and digital beauty content use are no longer exceptional behaviors, but are increasingly accepted as natural self-care practices[13][7][16]. This shift demonstrates that appearance management is expanding beyond the traditional perception of being a gender-specific activity into a daily self-care practice. Therefore, the MZ generation's experience using beauty and health multi-shops can be understood as an important clue that goes beyond simple consumption behavior and reveals a shift in society's overall perception of beauty and beauty management methods[3][4].

## **2.3 Grounded theory methods for understanding beauty and health consumption**

This study adopted grounded theory, a qualitative research method, to gain an in-depth understanding of the complex and dynamic phenomenon of the MZ generation's experience using beauty and health multishops. Unlike quantitative research, which tests hypotheses established by the researcher, grounded theory is an inductive approach that derives concepts and categories from collected data and constructs theories based on these concepts[1]. This approach is well-suited to building substantive theories by analyzing individuals' subjective experiences, cognitive changes, and the social interactions formed during service use.

Previous research on beauty services has primarily focused on quantitative analyses based on surveys, limiting its ability to fully explain the context of consumers' meaning-making processes and attitude changes during service use[3][17]. Therefore, this study systematically analyzed the data through open coding, axial coding, and selective coding. It aims to elucidate the types of attitudes and their meaning structures formed by the MZ generation during their experience using beauty and health multishops. Through this, this study aims to present an experience-centered theory of the beauty paradigm shift in Korean society.

### 3. Research Methods

#### 3.1. Research participants

This study, based on theoretical sampling, targeted Generation MZ consumers who use a beauty and health multi-shop located in J-do. A total of 10 participants were selected based on the research objectives, using a non-probability sampling method called purposeful sampling. In qualitative research, purposeful sampling is considered an effective method for selecting cases that facilitate a deeper understanding of the research phenomenon.

The data collection process employed both purposeful and snowball sampling. In-depth interviews were conducted with initial participants, followed by recommendations from existing participants to secure additional participants who were contextually relevant to the research topic. This enhanced the depth and contextual relevance of the data. Participants were limited to those who met the selection criteria established through a preliminary expert meeting. Eight participants were initially selected for the initial in-depth interview among those who had consistently used various programs at the beauty and health multi-shop for at least six months. Two additional participants with high relevance to the research context were subsequently added, bringing the total number of participants to ten. The general characteristics of the participants are presented in <Table 1>.

**Table 1.** General characteristics of study participants.

Participant	Occupation	Gender	Years	Program	Period of use	Number of uses over 6 months
1	Hotel service worker	Male	34	Skin/Waxing/Scalp/Whitening/ Semi-permanent eyebrow tattoo	1 year 2 months	24+
2	College student	Male	23	Skin/Whitening	1 year 6 months	30+
3	Military enlistment candidate	Male	21	Skin/Eyebrow waxing/Skin planning	1 year 6 months	30+
4	Electrical contractor	Male	27	Skin/Scalp circulation	1 year 10 months	20+
5	Police officer	Male	28	Skin/Waxing/Skin planning	1 year 6 months	25+
6	Accounting firm	Female	31	Skin/Whitening/Eyelash perm/ Semi-permanent eyebrow tattoo	1 year 8 months	28+
7	Childcare teacher	Female	27	Skin/Body/Eyelash extensions/ Whitening	2 years 6 months	24+
8	Health trainer	Female	30	Skin/Body/Eyelash extensions	2012-present	30+
9	Nurse	Female	37	Skin	1 year 2 months	20+
10	Schoolmaster	Female	33	Skin/Waxing/Eyelash extensions	1 year 4 months	30+

#### 3.2. Research data collection and analysis process

This study utilized a semi-structured interview method to deeply explore the experiences and perceptions of MZ generation participants using beauty and health multishops. All participants had been using the multishop for at least six months. Prior to the interview, they received a thorough explanation of the research purpose, procedures, and the recording and transcription process. Participants were informed in advance that the researcher could flexibly adjust the order and content of questions based on the situation to ensure contextual richness.

The interview questions focused on topics such as motivation for visiting, duration of use, changes in perceptions during the use process, responses from those around them, pros and cons of the service, and future plans for use, to provide a multi-layered understanding of the beauty and health multishop experience. The interviews began with questions about the participants' backgrounds, sequentially exploring their usage process and experiences, and concluded with questions aimed at further exploring the meaning of their experiences. All collected interview data were transcribed and analyzed.

Following the grounded theory analysis procedure proposed by Strauss A & Corbin, open coding, axial coding, and selective coding were applied stepwise. Data collection and analysis were conducted in parallel, and to ensure the reliability of the analysis and the validity of the interpretation, the data was continuously reviewed and supplemented with the advice of two doctoral students with extensive qualitative research experience. The structure and main contents of the interview questions are presented in <Table 2>.

**Table 2.** Grounded theory interview questionnaire.

Number	of Questions Order	of Questions Question content
1	Participant Background	<ul style="list-style-type: none"> <li>What is your gender and age?</li> <li>Where do you live?</li> <li>Please briefly introduce yourself.</li> </ul>
2	Beauty & Health Multishop Usage Process	<ul style="list-style-type: none"> <li>Do you know what a Beauty Health Multishop is?</li> <li>When was your first visit to a Beauty Health Multishop?</li> <li>What prompted you to visit a Beauty Health Multishop?</li> <li>How did you learn about a Beauty Health Multishop?</li> <li>Who recommended a Beauty Health Multishop to you?</li> </ul>
3	Beauty & Health Multishop Usage Experience	<ul style="list-style-type: none"> <li>How many times do you use Beauty Health Multishop in six months? (Number of uses)</li> <li>How do people around you (friends, coworkers) react to Beauty Health Multishop?</li> <li>What are the main treatments offered at Beauty Health Multishop?</li> <li>What type of Beauty Health Multishop did you receive your treatment at?</li> <li>Are you satisfied with the products used?</li> <li>What are your thoughts on the cost of using Beauty Health Multishop?</li> <li>Are you satisfied with the facilities at Beauty Health Multishop?</li> <li>What is your opinion of Beauty Health Multishop's service?</li> </ul>
4	Closing Questions	<ul style="list-style-type: none"> <li>Do you plan to continue using Beauty Health Multishop?</li> <li>If you intend to continue using it, why?</li> <li>If you do not intend to continue using it, why not?</li> <li>Please tell us about the positive aspects of your experience.</li> <li>Please tell us about any inconveniences you experienced.</li> <li>If there's anything else you'd like to share about using Beauty Health Multishop, please let us know.</li> </ul>

### 3.3. Ensuring the validity and reliability of the study

In qualitative research, validity and reliability are determined by how faithfully and accurately the research results reflect actual phenomena. This concept is similar to internal validity in quantitative research, and the objectivity and persuasiveness of the research are secured by the procedures and standards according to which the researcher interprets and theorizes the data[18]. In this study, validity and reliability were established as key analytical criteria throughout the data interpretation process to deeply understand the participants' perceptions of their experiences using beauty and health multishops.

To achieve this, the flip-flop technique was applied to derive concepts and categories within the beauty and health domain as perceived by the participants. This technique aims to more clearly reveal the inherent meaning and properties of the data by repeatedly examining the same phenomenon from opposing perspectives or contrasting situations. This approach avoids



linear interpretations and reflects the diverse contexts and interpretability of the participants' experiences.

During the data analysis process, open coding was used to identify concepts from meaningful statements in the transcripts, and subcategories were formed through continuous comparisons between similar concepts. The axial coding stage then examined the relationships between the derived categories, confirmed that the attributes and dimensions fit the paradigmatic model, and comprehensively analyzed the structure and process. Finally, the selective coding stage constructed a situation model centered on core categories and derived typologies based on participants' experiences and perceptions of their use. This analysis process can be considered the final stage, explaining the structure and semantic structure of participants' perceived experiences of using beauty and health multishops.

## 4. Research Results

### 4.1. Categorization process of open coding data

In this study, we conducted ongoing questioning and comparative analysis based on data collected from participants, naming concepts and systematically examining the attributes and dimensions of categories. As a result, a total of 86 concepts, 34 subcategories, and 16 categories were identified. The key details of the categorization process, achieved through open coding, are presented in <Table 3>.

**Table 3.** Concepts and categorization according to the paradigm of grounded theory.

Paradigm	Category	Subcategory	Concept
Causal conditions	Low self-esteem due to appearance	Concerns about skin care	<ul style="list-style-type: none"> <li>• Self-care causes scarring.</li> <li>• Occupational factors cause skin sensitivity.</li> <li>• Feeling overwhelmed by the limited care offered at hospitals.</li> <li>• People around me tell me to go to a dermatologist or plastic surgeon.</li> </ul>
		Interpersonal difficulties	<ul style="list-style-type: none"> <li>• I can't focus on my studies because of my appearance.</li> <li>• Wearing a mask due to COVID-19 is actually more comfortable.</li> <li>• I regret not being able to take preventative measures.</li> </ul>
	Increased use of social media due to changing perceptions of beauty	Changed perception of beauty and health multi-shops	<ul style="list-style-type: none"> <li>• You'll learn about the differences between skin care shop professionals and dermatological hospital prescriptions and treatments.</li> <li>• You'll learn about the treatments offered by Beauty Health Multishop.</li> </ul>
		Building trust through social media reviews	<ul style="list-style-type: none"> <li>• Reviews are discovered through social media searches.</li> <li>• Recommendations from friends play a crucial role in establishing trust.</li> <li>• Before-and-after photos of actual customers on social media create trust.</li> </ul>
	Increased interest in appearance	Gender discrimination in skin care	<ul style="list-style-type: none"> <li>• There's a bias against men's skin care, but I believe it's absolutely necessary.</li> <li>• I have a positive view of men's appearance care.</li> </ul>
		A desire to show off	<ul style="list-style-type: none"> <li>• Seeing others invest in their appearance makes me want to do the same.</li> <li>• Seeing people flaunting their looks on social media makes me envious.</li> </ul>
Central phenomenon	Ease of use	Time convenience	<ul style="list-style-type: none"> <li>• Convenient because you can receive care in one place without having to travel.</li> <li>• Reduces the time spent on appearance care.</li> <li>• Convenient because it allows for better use of your time.</li> </ul>
		Space convenience	<ul style="list-style-type: none"> <li>• Receive one-on-one, focused care.</li> <li>• Convenient because you can receive multiple treatments in one place.</li> </ul>

		Cost savings	<ul style="list-style-type: none"> <li>• Costs are adjusted based on improvement through step-by-step, personalized management.</li> <li>• Management costs can be significantly reduced compared to one-time management.</li> <li>• Satisfied with the additional management services provided by the flat-rate plan.</li> </ul>
	Satisfaction with customized appearance management	Satisfaction with customized care	<ul style="list-style-type: none"> <li>• Experience a unique, personalized transformation tailored to your image and style.</li> <li>• Convenient, reservation-based service and personalized service.</li> </ul>
		Professionalism and systematic system	<ul style="list-style-type: none"> <li>• Consideration given to the professionalism and systematic nature of the management.</li> <li>• The excellent post-treatment feedback instilled trust.</li> <li>• The home care regimen was helpful.</li> </ul>
		Investment as stress relief	<ul style="list-style-type: none"> <li>• The music playing in the salon alone is healing.</li> <li>• It's great to be able to receive various treatments in a private room.</li> <li>• It's nice not having to worry about other people's eyes during the treatment.</li> <li>• I somehow find myself falling into a deep sleep whenever I visit the salon.</li> <li>• The soothing color of the walls in the salon helps relieve stress.</li> </ul>
	Trustworthiness of beauty and health expert advice	Changed attitude after in-person consultation	<ul style="list-style-type: none"> <li>• I was worried about the abundance of misinformation exploiting social media, so I decided to visit.</li> <li>• I gained confidence from the unique consultation and advice, which differed from the typical advice offered by other shops.</li> </ul>
		Developed self-respect	<ul style="list-style-type: none"> <li>• In modern society, appearance seems to be a priority.</li> <li>• I'd rather invest in my face than my body.</li> <li>• I've heard people say my personality seems brighter.</li> </ul>
	Contextual conditions	Pursuit of ongoing care	<ul style="list-style-type: none"> <li>• Desire for ongoing, personalized care and appearance management.</li> <li>• Prefer intensive care in one location, rather than traveling to a different salon or location.</li> <li>• Requested a second location in their neighborhood.</li> </ul>
			<ul style="list-style-type: none"> <li>• I thoroughly maintain my skincare routine to receive special care at the salon.</li> <li>• I visit the salon more frequently for intensive care.</li> <li>• I believe that my skin itself determines my first impression.</li> </ul>
		Positive response to the effectiveness of multi-shop programs	<ul style="list-style-type: none"> <li>• I've already researched and visited this shop, so I don't have to worry about the cost.</li> <li>• I'd like to keep going if it improves my appearance.</li> </ul>
			<ul style="list-style-type: none"> <li>• Be amazed by the variety of programs and cutting-edge systems.</li> <li>• Focus on sustained treatment rather than immediate results.</li> </ul>
Arbitration conditions	Limitations of continued use due to financial burden	Regret over using up memberships	<ul style="list-style-type: none"> <li>• The more diverse the services, the more disappointing it is that memberships seem to run out quickly.</li> <li>• The financial burden has led me to deliberately delay appointments for salon visits.</li> </ul>
		Anxiety about appearance after discontinuing care	<ul style="list-style-type: none"> <li>• I want to maintain my appearance by working part-time, even if it means getting regular treatment.</li> <li>• I'm worried that I won't be able to receive any further feedback once the treatment is over.</li> </ul>
	Inconvenience of shared rooms	Inconvenience of multi-person rooms	<ul style="list-style-type: none"> <li>• I'm worried that my snoring might bother others.</li> <li>• Sometimes I find the sound of people talking in the next bed annoying.</li> </ul>
		Preference for single-person care	<ul style="list-style-type: none"> <li>• The shop I used to go to has changed to a one-person shop due to financial difficulties.</li> <li>• It's difficult to reserve a single room for personal convenience.</li> </ul>

Action/ Interaction Strategy	The truth about information on social media	Misperception of skin type	<ul style="list-style-type: none"> <li>• My skin turned into sensitive and inflamed after following home care methods suggested on YouTube or blogs.</li> <li>• I misunderstood my skin type.</li> </ul>
		Search for incorrect information	<ul style="list-style-type: none"> <li>• Information obtained from social media was later found to be inaccurate.</li> <li>• Most people assume that beauty and health multi-shops lack expertise.</li> </ul>
	Enjoyment of using beauty shops	Hygiene and cleanliness are the basics	<ul style="list-style-type: none"> <li>• It seems like many new shops these days have simple yet luxurious interiors.</li> <li>• Cleanliness is a given, and the friendly service makes me feel good.</li> </ul>
		Satisfaction and trust in products used	<ul style="list-style-type: none"> <li>• It's gentle because it also contains natural ingredients.</li> <li>• Products for improving skin are displayed step by step.</li> <li>• It's from a trustworthy company with a long history and tradition.</li> </ul>
	Changes in social activities	Interest in beauty and health multi- shops	<ul style="list-style-type: none"> <li>• Gain a new understanding of the differences between hospitals and other medical institutions.</li> <li>• Focus on consistent, safe care rather than one-time results.</li> </ul>
		Improved self- esteem	<ul style="list-style-type: none"> <li>• People around you notice changes in your appearance.</li> <li>• You start to want to go on blind dates.</li> <li>• You start to initiate gatherings you've been avoiding.</li> <li>• You start to enjoy the attention of others.</li> </ul>
	Perception of experiential value in consumption	Separately saving for appearance investment	<ul style="list-style-type: none"> <li>• Considering current prices, it's a reasonable investment.</li> <li>• I wanted to try a variety of investment experiences that others are pursuing.</li> </ul>
		Pursuing rationality in appearance care	<ul style="list-style-type: none"> <li>• Pursuing rationality by considering the cost and effectiveness of appearance management.</li> <li>• Consumer decisions are made based on experience.</li> </ul>
Result	Sharing and understanding information with peers	Sharing information with those interested in appearance	<ul style="list-style-type: none"> <li>• Recommend the experience to others.</li> <li>• Share the results of your treatment at Beauty &amp; Health Multishop on social media.</li> </ul>
		Using beauty and health multi- shops Change in Perception	<ul style="list-style-type: none"> <li>• I became interested in the Beauty &amp; Health Multishop.</li> <li>• My perception changed after learning about the necessary knowledge for appearance management.</li> <li>• I asked about the various programs offered at the Beauty &amp; Health Multishop.</li> </ul>
	Changes in lifestyle habits	Change in Habits to Maintain Appearance	<ul style="list-style-type: none"> <li>• I started applying cosmetics I hadn't used before, step by step, thoroughly.</li> <li>• Even if I came home late from a meeting, I always cleansed my skin before going to bed.</li> </ul>
		Change in Lifestyle	<ul style="list-style-type: none"> <li>• I've cut down on drinking to improve my skin.</li> <li>• I'm aware of the close relationship between diet and skin health, so I'm adjusting my diet accordingly.</li> <li>• I'm trying to get enough sleep.</li> </ul>

A category analysis based on the paradigm model identified three causal conditions: decreased self-esteem due to appearance, increased SNS use due to changing perceptions of beauty, and increased interest in appearance. The central phenomena identified were convenience of use, satisfaction with customized appearance management, and trust in beauty and health expert advice. Contextual conditions influencing these central phenomena included a desire for continuous care and a positive perception of the effectiveness of multi-shop programs. Intervening conditions included limitations in continued use due to financial burden and inconveniences experienced during shop use. Action and interaction strategies identified three categories: awareness of the truthfulness of SNS information, enjoyment of shop use, and changes

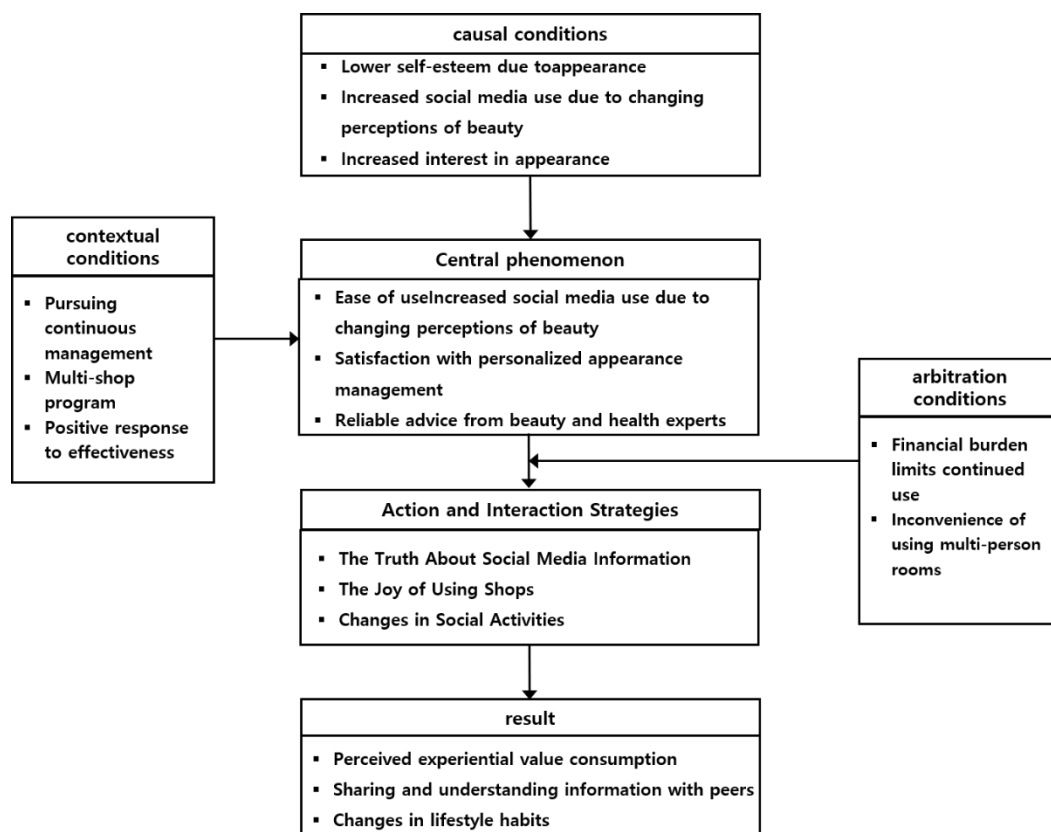
in social activities. Finally, the consequences stage identified three categories: awareness of experiential value consumption, information sharing and mutual understanding with peers, and changes in lifestyle habits.

## 4.2. Axial coding

Axial coding is an analytical step that reassembles data decomposed through open coding into categories, explaining phenomena and structuring the relationships among categories. In other words, it is a process of building a paradigm model by interconnecting previously categorized concepts and categories. Strauss A & Corbin J suggested that utilizing a paradigm model in grounded theory research can uncover categories and systematically connect relationships among causal conditions, central phenomena, contextual conditions, mediating conditions, action/interaction strategies, and outcomes [1][18][19].

Causal conditions, among these, are categories that explain the causes or background of a specific phenomenon, referring to events or situations that influence the phenomenon. Contextual conditions represent the temporal and spatial environments in which the phenomenon occurs, while mediating conditions refer to factors that interact between the central phenomenon and action/interaction strategies and influence outcomes. These conditions form a structure that leads to the final outcome through the selection and implementation of strategies [20]. During the axial coding process, the researcher explored relationships between categories, focusing on the questions "why," "when," "how," and "what results does this lead to?" and connected key elements to form an analytical structure. As a result, the researchers were able to confirm how the attributes of concepts and subcategories were systematically combined within paradigmatic categories, which led to the derivation of a paradigm model proposed in grounded theory. <Figure 2> presents the paradigm model that explains the MZ generation's process and experiences of using beauty and health multi-shop.

**Figure 2.** A paradigm model of the MZ generation's beauty and health multi-shop usage process and experience



### 4.3. Selective coding and typology analysis

Selective coding is the final step in grounded theory analysis. It integrates relationships between categories and refines the theory, focusing on core categories. This stage allows for the theoretical systematization of analysis results through the construction of narrative outlines, analysis of participant typologies, and presentation of situational models. In this study, narrative outlines were developed based on the MZ generation's experiences using beauty and health multishops, and core categories were derived through typological analysis. Typological analysis in grounded theory involves continuously comparing data to identify relationships between category attributes and dimensions, and categorizing experience patterns based on these relationships. This study identified three typologies based on recurring relationships and participants' experiences and attitudes toward acceptance.

The first type is the "Appearance Management-Oriented Type," which emphasizes customized and ongoing appearance management. The second type is the "Experiential Consumption Type," which values experiential consumption, a systematic management system, and the expertise of managers. The third type is the "Usability-Seeking Type," which prioritizes time convenience, spatial efficiency, and cost savings.

<Table 4> presents the results of a type-specific analysis of participants' attitudes toward the process and experiences of using a beauty and health multishop. This analysis systematically identified the intensity of participants' perceptions, differences in attitudes toward acceptance, and active or passive acceptance patterns, based on the causal conditions, contextual conditions, central phenomenon, mediating conditions, action/interaction strategies, and outcomes of the paradigm model.

**Table 4.** Types of visits to beauty and health multi-shops by the MZ generation.

Paradigm	Category	Participant Type		
		Appearance-focused	experiential consumption	convenience-seeking
Causal Conditions	Loss of self-esteem due to appearance	High	Average	Average
	Expansion of social media use due to changing perceptions of beauty	High	High	High
	Increased interest in appearance	Strong	Strong	Average
Central phenomenon	Convenience of use	Average	High	High
	Satisfaction with customized appearance management	Strong	Strong	Low
	Reliability of beauty and health expert advice	High	Medium	High
Contextual conditions	Pursuit of ongoing management	Strong	Strong	Average
	Positive response to the effectiveness of multi-shop programs	High	High	High
Intermediary conditions	Limited use due to financial burden	Low	Medium	High
	Inconvenience of using multi-person rooms	Strong	Medium	Strong
Action and interaction strategies	Controversy about the truth and falsehood of information on social media	High	High	Low
	Enjoyment of using shops	Medium	High	High

	Changes in social activities	Active	Active	Medium
Outcomes	Perceived experiential value in consumption	Passive	Active	Active
	Sharing and understanding of information with peers	Medium	High	High
	Changes in lifestyle habits	Active	Active	Active
Participant number for that type		Paradigm 4, 5, 10	Paradigm 1, 3, 7, 9	Paradigm 2, 6, 8

## 5. Conclusion and Suggestions

This study sought to understand the MZ generation's appearance management experience, formed through their use of beauty and health multishops, not as a simple choice or consumption behavior, but as a processual structure accumulating continuous self-management practices and cognitive shifts[21]. Qualitative analysis using grounded theory revealed that appearance management experiences are not limited to one-time satisfaction or immediate effects, but rather are structured into attitude types through repeated experiences and the attribution of meaning. This interpretation is significant in that it reveals the contextual and temporally cumulative nature of experiences, which has not been sufficiently explored in previous research.

Previous domestic research has also reported that MZ generation's appearance management and beauty consumption are closely linked to personal identity formation and daily practices, transcending mere external concerns. Yoo & Yang found that MZ generation's interest in beauty content significantly influences their appearance management behavior, and that the content's interestingness and informativeness, in particular, reinforce this behavior[14]. This suggests that social media and digital platforms go beyond mere information dissemination and serve as important environmental factors that trigger and legitimize appearance management practices. Participants' statements also revealed that while SNS served as a starting point for initial interest in appearance management and information seeking, they simultaneously recognized the limitations of non-professional information and shifted toward more systematic and professional management services.

Meanwhile, Jung's study analyzed the MZ generation's beauty consumption as being driven by value consumption and funsumer tendencies, demonstrating a consumption pattern that combines environmental and ethical standards with a desire for self-expression[22]. This finding aligns with the "experiential consumption" identified in this study, which emphasized the satisfaction and meaning of the beauty care process, as well as its alignment with personal values, rather than simply price-to-benefit ratios. Furthermore, as Park & Song demonstrated in a questionnaire-based study, perceptions of service quality and practitioner expertise were key factors in determining intentions to use beauty services[23][24]. This shares the experiences and context in which participants have used expert advice and systematic management systems as a basis for continued use.

Overseas research has also explained MZ generation consumption through the lens of digital media-based self-expression and value consumption. Previous research has argued that exposure to social media enhances perceptions of appearance and consumer behavior[25][26]. However, this study expands on this argument by revealing that social media not only amplifies the desire for appearance management, but also acts as a transformative medium that fosters awareness of professionalism and ongoing care[27]. In other words, rather than leading to immediate imitative consumption, SNS information served as a catalyst for participants to choose systematic and sustainable appearance management practices.



In this context, beauty and health multishops can be reinterpreted not simply as complex service spaces or consumption spaces for experiential design, but as a field of self-care where appearance management accumulates through repeated practice and relationship building. In particular, the "gender-neutral perception of appearance management" identified in the analysis suggests a new interpretation of gender-neutral self-care practices, transcending the traditional perspective of appearance management that dichotomously divides men and women. This suggests the need for a shift in perception, moving beyond existing beauty and wellness consumption research that has focused on gender differences and instead prioritizing experiences and meaning formation.

Furthermore, the three types of usage attitudes—appearance management-focused, experiential consumption, and convenience-seeking—show that the MZ generation's use of beauty and health services is not a fixed choice, but rather a consumption cognitive structure gradually formed through the intersection of accumulated experiences and value judgments. This perspective complements existing approaches focused on satisfaction or usage intentions and holds academic significance in that it expands appearance management behavior into a process-centered consumption phenomenon that reflects changes in an individual's lifestyle and self-perception.

The MZ generation's experience of using beauty and health multi-shops can be understood within the framework of the interplay of experience, perception, and attitude formation. This demonstrates that appearance management transcends a single consumption choice and becomes a practice of self-management reconstructed in everyday life. In particular, this study highlights the need to reinterpret existing discussions on value consumption, the SNS-based information environment, and service selection factors within the context of a qualitative experiential structure, rather than simply listing individual variables. This approach contributes to explaining the shifting direction of the beauty consumption paradigm in Korean society from an empirical perspective.

Rather than aiming for generalizations based on statistical representativeness, this discussion focuses on conceptually deepening and theorizing consumption experiences formed within specific socio-cultural contexts. The core categories and types of usage attitudes derived through this process provide a conceptual framework applicable to groups in similar cultural contexts where self-care and wellness consumption are combined in a digital environment. Future research could expand the transferability of the experiential structure and concepts presented in this study through comparative analyses across diverse regions and cultural spheres, thereby contributing to broader theoretical research on global beauty and wellness consumption.

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## 7. Appendix

### 7.1. Author's contribution

	Initial name	Contribution
Lead Author	SK	-Set of concepts <input checked="" type="checkbox"/> -Design <input checked="" type="checkbox"/> -Getting results <input checked="" type="checkbox"/> -Analysis <input checked="" type="checkbox"/>
Corresponding Author*	JL	-Make a significant contribution to collection <input checked="" type="checkbox"/> -Final approval of the paper <input checked="" type="checkbox"/> -Corresponding <input checked="" type="checkbox"/> -Play a decisive role in modification <input checked="" type="checkbox"/>
Co-Author	CL	-Significant contributions to concepts, designs, practices, analysis and interpretation of data <input checked="" type="checkbox"/> -Participants in Drafting and Revising Papers <input checked="" type="checkbox"/> -Someone who can explain all aspects of the paper <input checked="" type="checkbox"/>

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# Protection Convergence

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## A Study on the Development of Beauty-Related Services for the Elderly (60 Years and Older) in Korean Society

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### Abstract

**Purpose:** This study systematically explored research on beauty and massage services provided and utilized by seniors aged 60 and older in Korean society through a scoping review to map research trends and key issues. Specifically, the study aimed to comprehensively identify the need and significance of beauty services in older adults, perceptions and attitudes toward appearance management, usage patterns, and supply and delivery systems. These systems include market, welfare, long-term care, and home-based services. Furthermore, the study aimed to suggest future directions for policy, education, and service model development. Specifically, this study sought to highlight older adults not only as welfare recipients but also as active users and consumers who pursue self-care, social participation, and an improved quality of life through appearance management.

**Method:** This study employed a scoping review design to comprehensively summarize the scope and characteristics of the literature on beauty services for older adults. Based on the PCC framework, inclusion and exclusion criteria were established and domestic academic papers and reviews were selected. The PCC framework comprises the following components: Participants were elderly individuals aged 60 years or older. The concept encompasses beauty services, including hair, skin care and aesthetics, makeup, nail and foot care, massage, and manual therapy. The context encompasses local communities, private markets, welfare institutions, long-term care facilities, and home-visiting services within Korean society.

**Results:** Research on domestic elderly beauty services was categorized into seven themes. Specifically, first, concerns about appearance and the perception and meaning of beauty in old age were identified. Second, appearance management behaviors and service use characteristics were identified. These service use characteristics included frequency, expenditure, decision-making, and location of use. Third, service quality and related factors, satisfaction, and intention to continue use were identified. Fourth, psychological and emotional effects were identified. These psychological and emotional effects included reduced depression, improved self-esteem, and improved life satisfaction. Fifth, physiological and functional effects and the diversification of measurement indicators were identified. Sixth, gaps in access to the local community, market, welfare, long-term care, home-visiting delivery systems were identified. Gaps in access included information insufficient, the presence of local systems, and mobility restrictions. Seventh, the research was organized into policy, education, standardization, and service model innovation, including public-private partnerships and technology-based customized care.

**Conclusion:** The results of this comprehensive exploration of research on beauty services for seniors aged 60 and older in Korean society confirmed that they are justified by multifaceted needs, and expectations of professionalism were prominent in usage patterns and selection factors. Furthermore, beauty welfare services targeting vulnerable groups were strongly characterized by public nature, linked to the care system. This study presents practical implications that integrate the public and market aspects of beauty services for seniors. However, causal inference and cross-study comparability are limited due to the female-dominated sample, cross-sectional design bias, and heterogeneity in outcome indicators and measurement.

**Keywords:** Elderly, Beauty Services, Beauty Welfare, Appearance Management, Protection

## 1. Introduction

### 1.1. Purpose of the study

Due to the rapid aging of the population, Korean society is projected to enter a super-aged society by 2025. Consequently, the elderly population is emerging as a key player in the consumer market[1][2]. While the elderly were previously viewed simply as objects of support, today's older adults, particularly the baby boomer generation, are characterized by "active seniors" who prioritize self-realization and quality of life based on economic capabilities and high levels of education. They actively invest in appearance management to maintain social relationships and express their individuality, and they view beauty services not only as a means of maintaining hygiene but also as a measure of social competitiveness and self-management. Appearance is recognized as a key asset[3], and influences many people. The beauty industry for appearance management is expanding into multi-care[4][5], combining beauty and health, natural healing[6], and hair and scalp care [7], as it is linked to wellness. The use of these services is not limited to a specific age group. Especially for older women, concern about their appearance is closely correlated with self-esteem and quality of life [8]. Therefore, beauty services for the elderly are expanding into an essential area that supports psychological well-being and social participation in old age. Recently, efforts are moving beyond subjective satisfaction to objectively demonstrate the effectiveness of beauty services using scientific tools. Furthermore, by quantitatively verifying skin improvement effects using AI-based skin analysis technology, beauty services have the potential to serve as a non-pharmacological intervention for maintaining cognitive function and promoting brain health in older adults[9].

For vulnerable older adults, such as those in long-term care facilities or living alone, beauty services offer a welfare benefit, combining care with well-being. While the aging population trend brings with it social issues such as increased welfare and care spending, it also raises the prospect of increased consumption by the older generation due to the growing number of economically powerful older consumers. Amidst these changes, the elderly can emerge as a promising consumer segment in the consumer market. In particular, the financially capable elderly are considered a "golden generation" with purchasing power in the fashion and beauty industries[10]. Therefore, understanding senior beauty services solely as welfare services fails to adequately capture the reality.

Currently, the Korean senior beauty service market is divided into two sectors: the paid beauty service industry, targeting seniors with purchasing power, and the beauty welfare sector, which caters to the physically and economically vulnerable. In the paid beauty service market, professionalism and quality are key factors in choosing a beauty salon, and senior consumers are willing to pay for professional skills. Conversely, beauty welfare services for seniors with mobility issues or economic vulnerability still rely on volunteers, leading to limitations such as a lack of continuity and expertise. In contrast, Japan, which has been providing systematic home-visiting beauty services since 1999 through the institutionalization of a training program for beauty social workers, still lacks a legal definition of beauty welfare and a professional training system. Therefore, to improve the overall quality of life for seniors, institutional measures are needed to foster a balanced development of market-based services and welfare-focused care services. In summary, senior beauty services must consider both aspects. First, beauty services are consumed for reasons such as self-expression, social participation, and self-satisfaction. Second, beauty services serve as interventions and care for physical and mental health.

Despite rapidly evolving social demands and research trends regarding geriatric beauty, existing studies have tended to be limited to specific regions or single services (e.g., hair, skin), or to address industrial and welfare aspects in a fragmented manner. In particular, comprehensive analyses encompassing emerging neuroscience-based efficacy verification studies and the latest

research trends incorporating Fourth Industrial Revolution technologies (AI, smart beauty care) are scarce. Because the topics, targets, and types of beauty services are dispersed, there has been a lack of comprehensive research on the needs and future directions of geriatric beauty services in Korean society. Therefore, this study systematically explores and categorizes domestic literature through a scoping review to address this academic gap and identify future directions for beauty services, education, and policy development.

This study systematically examines research on beauty services (including hair, skin, makeup, nail, and massage) provided and utilized by seniors aged 60 and older in Korean society, using a scoping review method. Through this comprehensive analysis, we aim to explore the multifaceted needs of senior beauty services, the current state and perception of beauty service use, scientifically proven intervention effects, and the future direction of beauty welfare systems and policies. This analysis aims to provide fundamental data for developing a Korean-style senior beauty service model and effective policies in preparation for a super-aged society.

## **1.2. Theoretical background**

### **1.2.1. Appearance management and beauty service consumption desire of the elderly**

Aging increases the burden of caregiving while also transforming the consumer market structure through the rise of economically capable elderly consumers [11]. Seniors pursue self-development and self-fulfillment, and based on their economic capabilities, they are attracting attention as a group with purchasing power in the fashion and beauty industries. This perspective expands the understanding of senior beauty services not only as a welfare provision but also as a self-care consumption behavior. Empirically, older women spend a certain amount of money on beauty treatments and exhibit a proactive beauty attitude toward beautifying themselves [12]. This suggests the potential for beauty to become integrated into the lifestyle of older adults. Furthermore, research on the senior beauty market reveals that beauty consumption manifests in specific consumer behaviors, such as online purchases and monthly spending of less than 50,000 won, and that beauty interest, consumption tendencies, and market desires can vary depending on demographic characteristics.

### **1.2.2. The diverse effects of geriatric beauty services**

The use of beauty services by older adults extends beyond improving their appearance and is linked to areas of quality of life, including psychological well-being, self-esteem, and mitigation of social isolation [9]. In Heo Yun-jeong's study, the most common reason for seeking skin care was mental relaxation and psychological stability [13]. Geriatric beauty services have the potential to facilitate emotional intervention. A study of customized facial beauty care for elderly women living alone found that changes in appearance can lead to decreased self-esteem and depression, highlighting the need for programs to alleviate these effects [9]. Beauty services have the psychosocial benefits of reducing depression and enhancing self-esteem and life satisfaction in older adults [12]. Physical changes and loss of social roles associated with aging exacerbate depression and loneliness in older adults, and beauty care can alleviate these negative emotions and contribute to the establishment of a positive self-image [14].

### **1.2.3. Paid beauty service use**

A study of pre-elderly women (aged 60-74) found that the most common reason for seeking skin care was mental relaxation and psychological stability. The majority of women chose general skin care salons, and the cost per session was between 60,000 and 90,000 won. The expertise and technical skills of the therapist were reported as the most important factors in selecting a secondary care center for these women, demonstrating their expectations of professionalism and effectiveness [13]. The most common reason for using paid hair care services among pre-elderly women was to support economic and social activities. The study also found that self-



satisfaction and economic and social activities varied depending on average monthly income. Furthermore, a small percentage of respondents felt burdened by the cost of hair care [15]. The technical skills of the stylist were also identified as a key consideration in hair care. This suggests that senior customers value professionalism as a key quality element of service, suggesting that senior-friendly services should go beyond mere friendliness and include the ability to enhance service quality.

#### **1.2.4. Beauty welfare services for vulnerable elderly**

Beauty services for long-term care recipients can become a niche industry beyond simply satisfying aesthetic needs [16]. Within the care system, issues such as service accessibility, standards, human resources, and financial resources must be addressed together. Research on the introduction of beauty welfare systems emphasizes the theoretical foundation for institutionalizing beauty welfare within the context of social welfare in an aging society and the development of specialized workforce training [17].

## **2. Research Method**

### **2.1. Identifying the research question**

This study systematically examined the trends, characteristics, and key findings of research on geriatric beauty services in Korea, using a scoping review methodology for individuals aged 60 and older. Scoping reviews are more appropriate for comprehensively organizing research topics, concepts, methods, outcome indicators, application contexts, and policy proposals in areas where research has accumulated, rather than estimating the effect size of specific interventions (meta-analysis). To map research on geriatric beauty services in Korea, this study identified research trends (RQ0) and seven questions: Appearance Interest and Perception (RQ1), Usage Characteristics (RQ2), Quality and Relationship Factors (RQ3), Psychological and Emotional Effects (RQ4), Physiological and Functional Effects and Indicators (RQ5), Delivery Systems and Access Gaps (RQ6), and Policy, Education, and Industry Development Directions (RQ7).

RQ0. What is the overall distribution of publication years, research designs, subject characteristics, service types, and provision contexts in research on geriatric beauty services in Korea?  
RQ1. How have appearance management and beauty services been conceptualized and interpreted among older Koreans? Furthermore, what framework explains older Koreans' perceptions of beauty?

RQ2. What are the usage patterns of older Koreans' appearance management behaviors and services by service type (hair/skin/makeup/nail/massage)? What factors promote and inhibit their use?

RQ3. What is the relationship between service quality and related factors in elderly beauty services and satisfaction, reuse, and word-of-mouth intentions?

RQ4. What effects do beauty services have on older Koreans' psychological and emotional indicators?

RQ5. What effects do beauty services have on older Koreans' physiological and functional indicators? What are the characteristics of the measurement tools and research design?

RQ6. What is the delivery system of elderly beauty services in Korea, and what are the accessibility gaps for vulnerable older Koreans?

RQ7. What are the directions for policy, education, and service model development suggested by the included literature?

## 2.2. Establishing the research scope

The scope of this scoping review is defined as follows, based on the PCC framework: Population: Elderly individuals aged 60 and older in Korean society (including those aged 60–74, the early elderly). This includes those whose research is based on the age of 65 and older, as well as those whose average age or analysis subjects are 60 and older. Vulnerable elderly individuals, such as those in institutional settings, those receiving long-term care, and those living alone, are also included. The concept encompasses total beauty services (including hair, skin, makeup, nails, massage/manual therapy, beauty care programs, and beauty welfare) and interventions. The context encompasses communities, shelters, long-term care facilities, and the market for visiting and paid beauty services within Korean society.

### 2.2.1. Search strategy and data sources

The databases used are major domestic academic databases such as RISS, KISS, and DBpia. From 2000 to 2025, we searched and selected academic journal articles and dissertations on beauty-related topics targeting Korean seniors (aged 60 and older) using the following keywords: "elderly + beauty," "elderly + beauty," "elderly + massage," "beauty welfare," and "beauty care."

## 3. Results

### 3.1. Characteristics of literature information

As a result of analyzing the literature included in this scoping review, research on beauty-related services targeting seniors aged 60 and older in Korean society was categorized into seven themes. These themes were organized into (1) older adults' interest in appearance and awareness of beauty, (2) appearance management behaviors and usage characteristics, (3) service quality, satisfaction, and intention to continue using services, (4) psychological and emotional effects of beauty services, (5) physical and physiological effects of beauty services, (6) service supply and delivery systems, and (7) beauty welfare policies and education, as well as future development directions for the beauty service industry. The bibliographic information and characteristics of the literature used in the overall analysis are presented in <Table 1>.

**Table 1.** Characteristics of literature information.

	Author (Year)	Research type/design	Target (Age/Gender/N)	Beauty services provided and covered (scope)	Key Variables/Results (Key Summary)
1	Park Sim-hun (2006)	qualitative (in-depth interviews)	76–82 years old / 2 men, 4 women / N=6	To solve the problem of increasing elderly population Hair, foot massage (foot reflexology), hand and foot (nail), skin and makeup, etc.	Exploring the meaning of appearance concerns and beauty practices in old age (self-expression, emotions, and relationship maintenance). -> Redefining the social value and utility of beauty
2	Kim Bo-kyun et al. (2008)	Quasi-experimental (nonequivalent control group pre-post)	Women aged 65 or older/90 recruited (45 control, 45 experimental), final analysis: 45 control, 43 experimental	Hand, foot, scalp/hair, skin care, hair setting, makeup, dyeing, beauty health exercises	After self-beauty education, depression decreased, self-esteem and life satisfaction improved (program effectiveness confirmed).
3	Oh Eun-jung et al. (2010)	Mediation (pre- and post-treatment comparison)	65 years of age or older elderly women/ N=50	Cuts, perms, dyeing and combination treatments (focused on hair, with some mentioning skin care as a preferred option)	Decreased depression and increased self-esteem in elderly women after treatment; discussion of differences in effects by item (perm/composite, etc.).

4	Heo Yun-hoe & Bae Hyeon-suk (2012)	Survey (cross-sectional)	Elderly/ N=401	Appearance management behavior (hair, skin, makeup, etc.)	Analysis of differences in appearance management behavior by lifestyle type (basis for demand segmentation).
5	Park Yeon-hee & Kwon Oh-sook (2012)	Survey (cross-sectional)	60 years old or older Elderly women/ N=217	Hairstyle behavior/Hair satisfaction Financial and psychological status are also important.	The relationship between hair behavior characteristics and hair satisfaction (providing service planning and consultation points).
6	Heo Hong-im (2016)	Systematic literature review + meta-analysis	A total of 19 studies were selected, and 6 were meta-analyzed (massage effects).	Massage (including seniors and adults, health and psychological benefits)	For the elderly A quantitative synthesis of studies showing that massage has a significant effect on health/psychological indicators.
7	Shim Hyeon-tae et al. (2017)	Survey (cross-sectional)	Women aged 65 years or older / N=400 Classification by level of beauty activity	Beauty activities (perms, hair dyeing, makeup, skin care efforts, etc.)	Differences in life satisfaction depending on the characteristics of beauty activities (self-care, attitude, skin care efforts, etc.).
8	Park Sam-hwa & Lee Myeong-ju (2017)	Discussion of concept/current status (lighting)	Long-term care elderly (empirical sample NR)	From the user's perspective Demand and necessity of beauty services in long-term care settings	Presenting the gaps in demand/supply and institutional needs in the context of facilities and long-term care.
9	Kang Myeong-ju (2017)	Review (Literature Review) - Domestic: 43 articles searched, 11 used - Japan: 94 articles searched, 12 used	A synthesis of studies including people aged 60–85 years and older.	Makeup education, beauty care (hair, makeup, nails), hand and foot manual techniques, beauty treatments, etc.	We summarize the evidence that beauty therapy has a positive effect on depression relief, life satisfaction/happiness, self-esteem, and some physiological responses (blood pressure, pulse, hormones, etc.)**.
10	Lee Seung-ja & Lee Soon-hee (2018)	Survey (cross-sectional)	60 years of age or older / N=439 (470 copies distributed)	Use of beauty welfare services (hair, skin, hands/feet, massage, etc.)	Presentation of the correlation between usage status (experience, location, content, future intention) and life satisfaction.
11	Ryu Su-jeong (2020)	Arbitration (single-group pre-post)	Elderly women/Recruitment N=50	Beauty manual therapy (manual/massage-focused, program-based)	Suggestion of improvement in functional indicators such as cognitive function/autonomic nervous system (HRV) after intervention.
12	Lee Soon-hee & Lee Seung-ja (2020)	Survey (cross-sectional)	60 years of age or older / N=439 (151 males, 288 females)	Satisfaction with beauty welfare services (content/overall) Maintaining mental and physical health in old age	The impact of service satisfaction on life satisfaction (explanatory power of satisfaction/policy implications).
13	Park Jeong-su (2020)	Industry/Trend Analysis (Review)	Aging and the Fourth Industrial Revolution (Sample NR)	IT-based Smart Beauty Care/Skin Care Market	Expanding senior-friendly consumption and ICT Discussion on the scalability of technology-based service models (market and education direction).
14	Ahn Ji-young (2021)	Survey (cross-sectional)	Senior women/ N=679	Cosmetic surgery (attitude/intention), appearance/aging anxiety context	Aging anxiety-college plastic surgery attitude/intention (consumption/psychological factors of older women).
15	Choi Geum-ju & Woo Mi-ok (2021)	Survey (cross-sectional)	Women aged 65 years or older/ N=334 (350 Analysis of 334 parts of the book (Part 334)	Beauty salon service relationship benefits (consultation, trust, special treatment, etc.)	Relationship benefits → relationship quality → continued use intention path (elderly customer management strategy).

16	Song Hye-in (2022)	Survey (cross-sectional)	Women aged 60–74 (early elderly) / sample size: approximately 250	Hair and Beauty Service Usage Status (Expenditure, Selection, Satisfaction/Demand) Not just cosmetic, but also psychological and mental impact	Hair service spending/usage patterns, preferences/inconveniences, and needs (basis for community service design).
17	Kim Hyun-sook et al. (2022)	Theory/Institutional Review	Aging society in general (sample NR) Searched 190 articles, analyzed 30 articles	Through analysis of Japan's beauty welfare system and research on Korea's beauty welfare system, introduction of a beauty welfare system (policy, professional personnel, delivery system)	Summary of the rationale for introducing a Korean-style beauty welfare system, the necessity of the operating entity, personnel, and standard model.
18	Heo Yun-jeong (2023)	Survey (cross-sectional)	Elderly women (60–74 years old) / N=298	By demographic characteristics, use and satisfaction with skin care services and psychological stability analysis	Skin care use/satisfaction factors and reuse/satisfaction structure (basis for improving services targeting the elderly).
19	Jeong Yu-rim (2024)	Japan and Korea Literature review/current status summary	General elderly beauty welfare (sample NR)	Beauty services and welfare linkage for the elderly	Service status/issues (accessibility/personnel/standardization) and future direction (policy/education/model).
20	Kim So-jin (2024)	Research trend analysis	2012–2022 Academic Research (Sample NR)	Senior-friendly industries (including beauty)	Presentation of research trends and gaps in senior-friendly industries (used to derive follow-up research topics).
21	Lee Myeong-ju et al. (2025)	Arbitration (pre-post)	Elderly women living alone / N=10	Using an AI-based digital skin analysis system that applies deep learning technology and skin analysis algorithms, customized facial beauty care	Improvement of skin condition after service (based on indicators), suggesting the possibility of a visit/customized model.
22	Choi Esther et al. (2025)	Case-based intervention/analysis	Female elderly living alone / N=10	Personalized Skincare	Analysis of post-intervention brainwave (brain function) changes based on cases (interpreted as indicators related to emotion, relaxation, and cognition).

Note: NR=not reported in the available text extracted for this table.

### 3.2. Appearance interest and beauty perceptions of the elderly

The literature, rather than presuming older adults as a single vulnerable group, demonstrates that appearance interest and motivations for appearance management are heterogeneously differentiated based on lifestyle and economic and social conditions. In particular, a study analyzing appearance management behaviors of individuals aged 60 and older according to lifestyle type revealed that overall appearance management is not an "inevitable regression due to aging," but rather a practice chosen within the context of self-expression, daily routine maintenance, and social relationships[18]. This context suggests the need to expand the understanding of beauty services for the elderly beyond simply focusing on welfare to encompass consumption, leisure, and identity management.

The need for beauty services among the elderly is diverse, encompassing psychological stability, health management, social activities and relationships, and self-satisfaction and self-expression[13]. The finding that economic and social activities account for the largest proportion of reasons for using hair and beauty services demonstrates that older adults can actively utilize appearance management for social roles and external activities, moving beyond the perspective of viewing older adults solely as welfare recipients[15]. Furthermore, recent studies have clearly

demonstrated that the changing consumer values and leisure activities of the elderly are creating a new consumer group in the beauty industry[19]. This leads to the logic that services targeting the elderly require market segmentation and customized service design that reflect the diverse needs of the elderly, rather than simply addressing deficiencies. As the elderly gain recognition as a powerful consumer group, this suggests the need to discuss the development of senior beauty services in conjunction with industry and market strategies.

In other words, the need for senior beauty services is multifaceted, encompassing health and welfare perspectives, improved quality of life through appearance, and the selective consumption of economically powerful seniors.

### **3.3. Appearance Care Behaviors and Usage Characteristics of the Elderly**

Studies on appearance care behavior have identified hair services as the most routine and repetitive service among older adults. An analysis of the hairstyle behaviors of older women revealed that the overwhelming majority of services were provided at beauty salons (77.9%), the most frequent visit frequency was every 45 days (53.9%), and the majority of hairstyle decisions were made on their own initiative (55.8%)[20].

This demonstrates that older adults perceive beauty services not only as a form of care provided by others, but also as a daily service driven by their own preferences and satisfaction. Concurrently, the use of beauty welfare services has been observed, with reports indicating that access to welfare services is limited by structural factors such as lack of information, regional implementation, and a lack of desired services. In a survey of elderly women using senior centers or welfare centers, the most common frequency of using hair salons was once every two to three months. The most common factor limiting use was financial difficulties (57.3%). The most common reason for not receiving volunteer beauty services was "not knowing where to find free services" (60.0%)[21]. These results suggest that the need for senior beauty services is not simply a matter of awareness or necessity, but rather a need for easily accessible information and the need to expand the scope of services to include a variety of locations.

In terms of hair service cost and selection factors, the most common spending for a single hair dye session among prematurely aged women was less than 30,000–50,000 won (45.0%), and the top priority when choosing a hair salon was the skill of the stylist (66.5%). Furthermore, a minority of respondents indicated they felt "burdened" by hair care expenses[15], supporting the assumption that older adults with financial means choose services based on a certain level of spending. In the area of skin care, a survey targeting the elderly (ages 60–74) posits that skin care can be linked to psychological well-being beyond simply improving appearance. This study attempts to structurally examine the relationship between skin care characteristics and satisfaction and psychological variables[13]. In other words, in both hair and skin services, older adults should be viewed as decision-makers and consumers of beauty services, rather than as recipients of care.

### **3.4. Quality of geriatric beauty services, related factors, and satisfaction**

Studies on beauty services for older adults go beyond simple satisfaction to analyze the pathways through which service relationships (relationship benefits and relationship quality) influence intentions to continue using the service. A study analyzing the relationship benefits of beauty salons for women aged 65 and older found that relationship benefits, relationship quality, and continuance intentions were significantly positively correlated. Among the relationship benefits, psychological benefits significantly impacted customer satisfaction, while economic, psychological, and customerization benefits significantly impacted trust[19].

Furthermore, relationship quality was reported to significantly influence reuse intentions and word-of-mouth intentions, demonstrating the need for senior beauty services to be designed as

a service industry built on long-term relationships, rather than one-time support. This finding is significant because older adults not only perceive service providers as technicians but also value their relationship experiences with them.

### **3.5. Psychological and Emotional Effects of Grooming Services for the Elderly**

The most recurring finding in the included literature is that beauty services for the elderly are linked to emotional indicators (depression, self-esteem) and life satisfaction [22][23]. Studies analyzing beauty welfare service usage and life satisfaction found that a majority of users were satisfied with the services, and indicators related to life satisfaction were also presented [24].

Studies analyzing the impact of beauty welfare service satisfaction on life satisfaction found that service satisfaction was significantly related to life satisfaction [25], suggesting that beauty services for the elderly can be linked to subjective evaluations of overall life, beyond a temporary mood change. This trend undermines the common belief that older adults are less concerned with their appearance and supports the idea that appearance management experiences can influence psychosocial factors such as self-efficacy, social participation, and interpersonal confidence.

### **3.6. Physiological and functional effects of grooming services for the elderly**

Studies that address physiological and functional changes beyond psychological effects are also included [26]. A meta-analysis on the effects of massage therapy reported positive effects of massage interventions on some health and functional indicators in older adults, but raised concerns about the need for improved quality of evidence [27].

Furthermore, a study examining the effects of beauty therapies applied to older adults found that beauty programs such as makeup, skincare, and massage induced positive psychological and behavioral changes. Furthermore, the study suggested the possibility of positive physiological responses [28]. This suggests that the evaluation of the effectiveness of beauty services for older adults should expand beyond subjective satisfaction to include multi-level assessments that include functional and physiological indicators.

Recent studies have also attempted to objectify the effects of massage therapy, such as AI-based skin analysis, personalized care, and electroencephalography (EEG)-based assessments. A study of customized facial care for 10 elderly women living alone, using AI-based skin analysis before and after treatment, showed a significant decrease in skin age and statistically significant improvement in hydration [9]. The same study, recognizing that skin aging (wrinkles, pigmentation, etc.) can lead to lowered self-esteem and depression, discusses the possibility that appearance management interventions can positively impact emotional well-being.

Furthermore, a case-based study analyzing brainwave changes in elderly women living alone before and after facial skincare treatment raised the issue of the lack of objective physiological response indicators in evaluating the effectiveness of beauty services, arguing that EEG measurement is a scientific approach to exploring the effects of emotional interventions [29]. This trend suggests that future research on elderly beauty services could evolve beyond satisfaction surveys to include standardized functional and physiological indicators, digital-based measurements, and long-term follow-up designs.

### **3.7. Delivery systems and access gaps in elderly beauty services**

Studies examining the current state of services demonstrate that elderly beauty services are provided through facilities such as social welfare centers and senior centers, private beauty salons in the community, and home-visiting home care services [30]. However, actual utilization varies significantly depending on information accessibility and regional institutional gaps. The fact that a previous survey of senior centers and welfare centers reported that not knowing



where to find free services was the most common reason symbolizes the disconnect between service provision and reach[21].

Furthermore, the experience of using hair and beauty services for older women was very low (5.2% of respondents had used the service), with the main reasons for non-use being "lack of information on beauty services" (68.1%) and "lack of beauty services in the area" (19.3%) [15]. This suggests that future policies for senior beauty services should not simply focus on expanding programs, but also address promotion and guidance, reducing regional disparities, and providing training for beauty service providers.

The most frequently requested location for support was a nearby beauty salon (82.9%), followed by public institutions (15.1%) and home visits (2.0%). In the paid beauty service market, skin care services are primarily located at general skin care centers[13], while hair care is analyzed based on cost and selection factors, assuming the use of beauty salons. On the other hand, beauty services for vulnerable elderly populations are being discussed as a combination of long-term care and institutional care. Therefore, beauty services for long-term care elderly individuals can also present new opportunities for the industry. A perspective on beauty services that combines the paid beauty service market with welfare-based care is presented[16].

This suggests that many elderly individuals may prefer accessible support from private service providers close to their homes, rather than services centered on welfare institutions. Therefore, the delivery system for senior beauty services should not only strengthen programs within welfare facilities but also enhance user satisfaction by supporting collaborations with private beauty salons through vouchers. Furthermore, a more complex model is needed, including a refined visitor model for individuals with mobility difficulties.

### **3.8. Future directions for policy, education, and industry for geriatric beauty services**

The literature on policies and systems discusses the rationale and necessary elements for incorporating beauty services into the welfare system in Korea's aging society. Theoretical considerations for the introduction of a beauty welfare system are primarily focused on this. Future tasks include legalizing the beauty welfare system, revitalizing professional personnel and organizations, introducing the concept of beauty welfare, providing customer-centered beauty services, and improving awareness. Regarding the institutional aspect, the discussion raises the importance of institutionalizing beauty welfare as a social welfare intervention and fostering professional workforce training to support this approach[17]. Regarding the industry aspect, the potential shift of the primary consumer base to seniors due to the aging population, the need for institutionalized market development, and the shared growth of products and services in the anti-aging industry are discussed[10].

In short, senior beauty services cannot be sustained solely through individual volunteer efforts. They require institutional support and financial support, along with expertise and the establishment of a standardized operating system. In terms of the beauty service industry, the possibility of expanding scientific smart beauty care in the context of aging and the 4th industrial revolution is being discussed[10], and studies on customized skin analysis and management for the elderly are emerging[9][29], so there is room for senior-friendly beauty tech to develop into an integrated care technology beyond simple convenience technology in the future.

## **4. Discussion and Conclusion**

### **4.1. Summary of results**

This study systematically explored research on beauty-related services (including hair, skin, makeup, nail, massage, and manual therapy) provided and utilized by people aged 60 and older in Korean society through a scoping review. This comprehensively summarized the research landscape and key issues in this area. The literature analysis identified seven categories of domestic research on beauty services for the elderly. Specifically, the following topics were summarized: first, older adults' interest in appearance, awareness of beauty, and aging experiences; second, appearance management behaviors and usage characteristics, including the daily service focus on hair and skin; third, service quality and related factors, satisfaction, and intention to continue using services; fourth, the psychological and emotional effects of beauty services, focusing on depression, self-esteem, and life satisfaction; fifth, the physiological and functional effects of massage, beauty therapy, customized skincare, and the use of biomarkers; sixth, the service supply and delivery system encompassing facilities, communities, and visits, as well as access gaps; and seventh, the future development directions of policies, education, and industry infrastructure, including beauty tech.

The overall literature suggests that older adults should be re-evaluated as active users who select and consume services for self-care, social activities, and emotional vitality, rather than remaining passive recipients of beauty services. In addition, it was confirmed that the trend of diversifying the evaluation of the effectiveness of beauty services was expanded to include not only psychological indicators (depression, self-esteem, and satisfaction) but also functional and physiological indicators centered on massage, manual therapy, and customized skin care research[31]. On the other hand, the fact that the reason for low utilization of welfare or free services was that there were cases where people were not aware of the existence of the service or the system itself was absent in the region shows that the problem of information, linkage, and accessibility, as well as the supply itself, is a key barrier.

## 4.2. Implications

The academic implications are as follows. First, this study systematizes the fragmented domestic research by not limiting research on senior beauty services to the category of beauty welfare, but instead presenting an integrated category encompassing consumer behavior, service relationships, psychological and functional effects, and delivery systems across segmented groups. This reinforces the need to theorize senior beauty services not as a dichotomy between welfare and market services, but as a domain where publicness, centered on care and accessibility, coexists with marketability, centered on choice, willingness to pay, and relational experiences.

This approach demonstrates that senior beauty services cannot be simply divided into welfare support and commercial transactions. On the public side, the value of care and physical and informational accessibility are crucial. On the market side, consumer voluntary choice, willingness to pay, and relationship experiences with service providers are key elements. Therefore, senior beauty services should be understood as a complex domain where these two dimensions interact in a complementary manner. Second, the study results demonstrate that older adults repeatedly use services such as hair and skin care [32], and that skill, expertise, and relationship experience play a significant role in service selection, suggesting the potential application of a service marketing perspective to the study of geriatric beauty services. This perspective academically supports the need for future geriatric beauty services to evolve beyond short-term support toward sustainable service design.

Third, recent personalized skincare and biomarker-based approaches suggest that effectiveness assessments are expanding beyond subjective satisfaction to include functional and physiological indicators. This highlights the need for methodological advancements to ensure measurement objectivity and causality in future research. Specifically, this requires the development and application of standardized indicators, a repeated-measures design that measures the same

individuals multiple times over time, and long-term follow-up studies that track the effects of treatment over an extended period.

Practical implications include the following:

First, it is important to recognize that older adults are also interested in their appearance and choose services for life satisfaction. Under this premise, customized services should be designed for segmented groups based on age and environmental factors. The pre-elderly population is relatively predisposed to self-care in a fee-based market dominated by beauty salons and skin care centers. Therefore, personalized consultations, skill-based quality control, and relationship management strategies are essential. Conversely, for those in later stages of life, long-term care, or those with mobility issues, accessibility-focused models, such as safety, hygiene, fall prevention, and on-site services, are more important.

Second, considering that lack of information about service locations and the absence of local systems were reported as major barriers to service use, field work should focus on strengthening promotion, guidance, and connection as much as program provision itself. This connection should encompass collaborative systems among welfare organizations, private beauty salons, and local governments.

In other words, a multi-layered approach is needed to address the lack of service utilization despite its existence. First, a referral system must be established through welfare centers, senior centers, and public health centers. Second, a network of designated beauty salons and skin care centers must be established. Third, reservation and transportation assistance services must be provided in parallel. This integrated support system can substantially improve service accessibility.

Third, in terms of education and human resources, senior-friendly beauty services require a standard competency system for professional personnel. This system must encompass not only technology but also various areas. Specifically, it should include an understanding of the characteristics of aging, communication skills that respect the personality and lives of the interlocutor, ethical awareness, safety and hygiene management, infection control, and facility and outreach capabilities.

Furthermore, research findings showing that relationship benefits and trust lead to continued use offer important implications. This demonstrates that consultation, explanation, and respectful attitudes can be key elements of service quality in services targeting older adults. This human-centered approach is even more crucial in age-friendly environments.

Fourth, from an industry and technology perspective, as the expansion of the age-friendly market and the potential introduction of smart beauty care and customized measurement technologies are discussed, future practice requires a shift from simply introducing digital measurement technologies to linking them with age-friendly interfaces, privacy protection, and standardized, indicator-based consultations.

### **4.3. Study limitations**

First, this study was a scoping review aimed at mapping the scope and characteristics of research. It did not conduct a meta-analysis to rigorously assess effect sizes or causality of the included studies[33]. Second, many of the included studies had cross-sectional designs and predominantly female-centered samples, limiting generalizability across gender, age, and residential status. Third, some intervention studies had small sample sizes and focused on short-term interventions, making it difficult to sufficiently examine long-term effects (e.g., reuse, health changes, and changes in social relationships). Fourth, outcome indicators varied across service

types, limiting direct comparisons based on the same indicators. Fifth, limited research systematically comparing and organizing the supply of community, institutional, long-term care, and home-based services has limited the accumulation of evidence for delivery system evaluation.

#### 4.4. Future research directions

First, rather than treating the "elderly" as a single category, research on beauty services for the elderly should segment the population by criteria such as early to late and very old age, living alone to cohabitation and facilities, and income and health status to examine differences in demand, usage patterns, and effectiveness.

Second, effectiveness studies should go beyond cross-sectional surveys and utilize quasi-experiments with control groups, repeated measures, and long-term follow-up designs to verify the sustained effects of beauty services. Interventions such as massage and manual therapy should provide standardized protocols and enhance the quality of evidence by increasing the fidelity of research reporting.

Third, on the measurement front, we need to move beyond satisfaction-focused indicators and utilize standardized psychological scales and objective indicators to assess multi-level effects. Digital-based assessment technologies should be combined with age-friendly design, including ease of use, interpretation support, and privacy protection.

Fourth, delivery system research should go beyond simply assessing "where and who provides what," to comprehensively identify accessibility barriers that hinder service use. These include lack of information about services, difficulties in physical transportation, financial burdens, and trust issues in service providers. Furthermore, the effectiveness of various linkage models aimed at overcoming these barriers needs to be compared and evaluated. For example, systematic analysis is needed of collaborative systems between welfare organizations and private beauty salons, local government-led service networks, home-visit service delivery for elderly people with mobility difficulties, and ways to improve service accessibility through voucher systems or designated business systems.

Fifth, policy and educational research should develop a standard competency model for age-friendly beauty services. This model should include competencies in ethics, safety, hygiene, counseling, understanding aging, facilities, and home-visiting practices. System designs that link these competencies with qualifications, curricula, and field training should be reviewed.

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## 6. Appendix

### 6.1. Author's contribution

	Initial name	Contribution
Author	EC	<ul style="list-style-type: none"> <li>-Set of concepts <input checked="" type="checkbox"/></li> <li>-Design <input checked="" type="checkbox"/></li> <li>-Getting results <input checked="" type="checkbox"/></li> <li>-Analysis <input checked="" type="checkbox"/></li> <li>-Make a significant contribution to collection <input checked="" type="checkbox"/></li> <li>-Final approval of the paper <input checked="" type="checkbox"/></li> <li>-Corresponding <input checked="" type="checkbox"/></li> <li>-Play a decisive role in modification <input checked="" type="checkbox"/></li> <li>-Significant contributions to concepts, designs, practices, analysis and interpretation of data <input checked="" type="checkbox"/></li> <li>-Participants in Drafting and Revising Papers <input checked="" type="checkbox"/></li> <li>-Someone who can explain all aspects of the paper <input checked="" type="checkbox"/></li> </ul>

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## Qualitative Study for Semi-permanent Makeup Infection Prevention and Continuous Management Measures

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### Abstract

**Purpose:** Semi-permanent makeup in Korea has become an essential beauty treatment for people of all ages and genders. However, due to the invasive nature of some semi-permanent makeup procedures, there is a risk of infection, and systematic regulations and education systems to prevent this risk are lacking. Therefore, this qualitative study was conducted to gain an in-depth understanding of how semi-permanent makeup professionals are implementing infection prevention and ongoing management strategies.

**Method:** This study employed the Colaizzi method, a phenomenological research method. Specifically, semi-permanent makeup practitioners with over 15 years of experience were selected as participants for data collection. To enhance theoretical orientation, data were systematically analyzed using Colaizzi's six-step analysis method.

**Results:** The study identified key themes in the infection prevention category, including workplace management, infection cases and response methods, and education and information acquisition. The ongoing management strategy category highlighted the need for post-procedure management and safety guidelines. Furthermore, the professional pathway category highlighted the importance of reliable information and the need for ongoing retraining.

**Conclusion:** This study confirmed that thorough adherence to basic hygiene practices can effectively prevent infection risks. Specifically, basic elements such as thorough hand hygiene before and after procedures, sterilization and disinfection of equipment, proper use of personal protective equipment, and maintaining a clean work environment were identified as key factors in infection prevention. It is hoped that these findings will serve as valuable data for enhancing safety and enhancing hygiene management expertise in the Korean semi-permanent makeup market, which is expected to undergo significant changes.

**Keywords:** Semi-Permanent Makeup, Infection, Prevention, Qualitative Study, Continuous

## 1. Introduction

Semi-permanent makeup has recently become an essential beauty method for modern people regardless of gender or age. Middle-aged men, in particular, prefer semi-permanent makeup to restore confidence and create a sophisticated image, while women prefer it for shorter makeup times and convenience [1]. Furthermore, demand for semi-permanent makeup is increasing across various generations, driven by trends such as imitating idol makeup and the appearance-focused culture spread through social media. Semi-permanent makeup is gaining recognition as an effective way to replace cosmetics by injecting pigments into the skin, helping overcome appearance complexes and boost self-confidence [2][3].

However, semi-permanent makeup carries a risk of infection due to some invasive procedures, and the lack of systematic regulations and education systems to prevent such infections has led

to legal restrictions. Currently, semi-permanent makeup in Korea relies on the hygiene standards of individual practitioners, resulting in a lack of standardized infection prevention practices. Infections can lead to skin damage and systemic health problems, undermining trust in beauty treatments. Therefore, a standardized hygiene management manual and institutional arrangements for sterilization and disinfection of equipment and waste disposal are necessary, and we have reached a point where systematic management is required to prevent infection.

Thus, the legal status of semi-permanent makeup and tattooing in Korea will reach a major turning point in September 2025, leaving behind decades of controversy over their "illegibility." While tattooing had been defined as a "medical practice" in Korea based on a 1992 Supreme Court ruling, the enactment of the Tattooing Act in 2025 brought non-medical practitioners into the legal system. Passed by the National Assembly on September 25, 2025, the Tattooing Act defines both tattooing and semi-permanent makeup as "tattooing practices" and establishes a legal basis for granting licenses to those who have passed a national examination. Qualification requirements include requiring completion of specialized training and passing the national licensing exam, and mandatory hygiene and safety management training. The future management system will be overseen by the Ministry of Health and Welfare, with strengthened regulations in place, including collaboration with the Ministry of Food and Drug Safety regarding procedures such as the reporting and hygiene inspection of treatment sites and the safety management of dyes used[4][5].

The Korean semi-permanent makeup market is expected to undergo various changes. Approximately 13 million people use semi-permanent makeup in Korea, with a market size estimated at over 1 trillion won. Therefore, legalization is expected to bring hundreds of thousands of practitioners into the spotlight, fostering both legalization and market expansion. This trend is expected to extend beyond simple procedures and lead to specialized areas such as SMP (scalp tattooing), scar coverage, and medical tattooing. Furthermore, the institutionalization of specialized training institutions for licensing is expected to lead to qualitative growth in the education market. Currently, Korea's semi-permanent makeup techniques, such as natural eyebrow texture, are already world-class. Therefore, the removal of legal restrictions that have hindered development will further increase the number of international medical tourists, strengthening the global competitiveness of K-beauty. This, in turn, is expected to accelerate the overseas expansion of related academies and the export of educational content[6][7].

The key change in the semi-permanent makeup market, highlighted in this study, is expected to be the standardization of hygiene and safety practices. Future legal regulations will mandate the maintenance of records regarding procedures, dye types, and areas of use. Furthermore, stricter crackdowns on the distribution of unverified pigments and illegal anesthetic creams will enhance consumer trust.

Consequently, this study sampled participants who had professionally performed semi-permanent makeup procedures and explored their field experiences with infection prevention and ongoing management using a qualitative phenomenological method. Participants in this study were managers with extensive experience in the semi-permanent makeup market. Therefore, this study will provide valuable insights into practical approaches to infection prevention and ongoing management, as well as the voices of users. Therefore, the results of this study are expected to serve as a foundation for the introduction of a standardized hygiene and safety management system for semi-permanent makeup.

## **2. Research Background**

### **2.1. Basic rules for preventing infection in Semi-permanent makeup and hygiene management of tools**

Infection occurs when pathogenic microorganisms invade and proliferate within the body. To prevent infection, a hygienic treatment environment and proper disinfection and sterilization management are essential. Before a semi-permanent makeup procedure, the client's health status should be assessed. Patients with hemophilia, pregnancy, or viral infections should avoid the procedure [8][9][10]. Practitioners must strictly adhere to hand hygiene, use personal protective equipment, use disposable items, and sterilize and maintain tools. In particular, used disposable items should be immediately discarded, and the treatment area and tools should be cleaned and disinfected according to the degree of contamination. Semi-permanent makeup involves injecting pigment into the skin, and an understanding of skin structure and function is fundamental to infection prevention. Practitioners should minimize the risk of infection by providing infection prevention and precautions before and after the procedure. Practitioners should also be aware of potential side effects, such as pain, swelling, infection, and allergies.

In semi-permanent makeup procedures, thorough disinfection and sterilization of equipment and the environment are essential to preventing infection. Equipment such as machine hand-pieces, stainless steel containers, and embossing pens should be handled according to their respective disinfection methods, and sterilized equipment should be stored separately to prevent contamination. Sterilized embossing needles, machine needles, and gloves should be opened and used immediately before the procedure and maintained hygienically after use. The treatment area should be cleaned and disinfected according to the level of contamination, and personal protective equipment such as masks, gloves, goggles, and gowns should be worn to prevent contamination from blood and body fluids. Furthermore, thorough hand hygiene and the maintenance of a hygienic environment should be achieved through measures such as disinfectable flooring, ventilation systems, and replacement of work bed covers [9][11][12].

## **2.2. Infectious diseases requiring attention in semi-permanent makeup and basic methods of ongoing care**

The Bloodborne infections, which require special attention during semi-permanent makeup procedures, are transmitted through blood or body fluids and can be transmitted through contaminated needles, reused instruments, mucous membranes, or damaged skin. Common infections include HIV, hepatitis B and C, herpes labialis, staphylococcus aureus, and nontuberculous mycobacteria (NTM). Keloids, dermatitis, and allergic reactions are also important to watch out for. Hepatitis B is a major cause of cirrhosis and liver cancer, and prevention and treatment are crucial. Hepatitis C is transmitted through reused medical devices, contaminated instruments, and blood transfusions, necessitating thorough hygiene during the procedure. Semi-permanent makeup can also cause rare complications, such as edema, bleeding, infection, and allergic reactions, as well as granulomas, foreign body reactions, and malignant melanoma. Therefore, infection prevention and side effect management are essential [13][14].

Constant maintenance is crucial for semi-permanent makeup to maintain the results and prevent infections and side effects. After the procedure, pigmentation may gradually fade depending on the individual's skin type, lifestyle, and UV exposure. Therefore, regular color reinforcement and sunscreen use are essential [15]. Furthermore, the area immediately following the procedure is sensitive and at high risk of infection, so it's important to keep it clean and minimize irritation. It's also crucial to thoroughly follow the practitioner's aftercare instructions. Ongoing care includes basic hygiene, such as avoiding touching the treated area and using ointments to aid wound healing. These measures impact the quality and safety of the treatment results, and cooperation between the practitioner and the client is essential [16][17].

### 3. Research Methods

This study employed a phenomenological approach, a qualitative research method. Phenomenological research aims to derive and describe shared meanings from the individual experiences of research participants. It is a research methodology developed from Husserl's philosophical perspective. Researchers eliminate their own preconceptions and immerse themselves in the participants' world of experience to explore the essential structure of human experience[18][19][20]. This study selected the Colaizzi method, a phenomenological research method. This method involves extracting meaningful statements, reorganizing them, and then categorizing and thematizing them to comprehensively describe the results[21][22][23]. The Colaizzi method enhances the validity of the results by incorporating participant ratings. This study focused on participants' descriptions of their experiences, rather than the researcher's interpretations, to deeply understand and describe the infection prevention experiences of semi-permanent makeup artists.

#### 3.1. Research participant information

This study aimed to deeply explore infection prevention and ongoing management strategies in semi-permanent makeup procedures. This study selected practitioners with at least 15 years of experience. This approach is based on their extensive practical experience, which provides practical expertise in infection prevention and ongoing management. The study subjects were selected using purposive and snowball sampling methods. Purposive sampling initially selected four individuals most closely related to the research topic. Snowball sampling then recruited four additional individuals, bringing the total number of participants to eight. Snowball sampling utilizes participant networks to gather diverse perspectives and in-depth experiences, broadening the scope of the study. The eight final participants provided diverse experiences and insights regarding infection prevention and ongoing management strategies in semi-permanent makeup procedures. The participants' general background characteristics are presented in <Table 1>.

**Table 1.** General background characteristics of study participants.

No.	Gender	Age	Career	Region
Participant 1	Female	50s	22years	Gyeonggi-do
Participant 2	Female	50s	25years	Seoul
Participant 3	Female	50s	19years	Gyeonggi-do
Participant 4	Female	40s	18years	Ulsan
Participant 5	Female	50s	20years	Seoul
Participant 6	Female	40s	17years	Gyeonggi-do
Participant 7	Female	50s	22years	Seoul
Participant 8	Female	40s	17years	Incheon

#### 3.2. Data collection process

This study's data collection was conducted in two stages to identify infection prevention and ongoing management strategies for semi-permanent makeup. The first stage involved a literature review to establish a theoretical basis for data collection. The second stage involved in-depth interviews and descriptive observations. The study was conducted from September to November 2024. The interview questions were modified and structured based on a hygiene guideline manual from a previous study, focusing on exploring participants' experience with the procedure and their knowledge of infection prevention and ongoing management.

Participants fully understood the purpose and procedures of the study and consented to participate. The interview time and location were adjusted to ensure a comfortable environment where they could freely express their opinions. Interviews were recorded using the Naver Clova recording function, and transcripts were created using the Hangul word processor. The in-depth interviews were conducted twice per person in an open-ended, semi-structured format. Insufficient responses were supplemented with follow-up questions. The collected data consisted of recorded transcripts and researcher notes, and included in-depth discussions about the participants' treatment process and management methods. <Table 2> below presents the open-ended questionnaire administered to the study participants.

**Table 2.** Open-ended questionnaire on infection prevention and ongoing management of semi-permanent makeup.

Section	Question Items
Introductory Questions	<ul style="list-style-type: none"> <li>① Please provide a brief self-introduction.</li> <li>② Please tell us about your career duration in semi-permanent makeup.</li> </ul>
Questions on Infection Prevention in Semi-permanent Makeup	<ul style="list-style-type: none"> <li>① Why is infection prevention important in semi-permanent makeup?</li> <li>② Do you check the customer's health status during consultation?</li> <li>③ How do you manage pigment (safety, expiration date)?</li> <li>④ How is the hygiene of the procedure space (bed, workbench, environment, etc.) managed?</li> <li>⑤ How are you preparing for personal hygiene (gloves, disposables, masks, hand sanitization, etc.)?</li> <li>⑥ How are disposable tools managed and disposed of after use (waste, etc.)?</li> <li>⑦ How do you use non-sterile reusable puncture needles?</li> <li>⑧ What do you know about emergency response methods during procedures?</li> <li>⑨ How do you think education or information for infection prevention is being provided?</li> <li>⑩ What additional education or information do you feel is necessary?</li> </ul>
Questions on Infection Cases and Post-Procedure Management	<ul style="list-style-type: none"> <li>① Are you aware of bacterial infections among infection cases?</li> <li>② Are you aware of viral infections among infection cases?</li> <li>③ Are you aware of fungal infections among infection cases?</li> <li>④ Are you aware of blood-borne infections among infection cases?</li> <li>⑤ Have you ever encountered infection cases during or after a procedure?</li> <li>⑥ If so, what kind of education should be added based on that experience?</li> <li>⑦ How do you understand hygiene management after the procedure for infection prevention?</li> <li>⑧ Do you think using designated ointments helps prevent infection?</li> <li>⑨ How do you understand the face-washing method after the procedure?</li> <li>⑩ What are your thoughts on using sunscreen during recovery?</li> <li>⑪ Do you know the skin protection management methods during the recovery process?</li> <li>⑫ How do you think moisturizing, strong friction, peeling, and chemical products affect the results?</li> <li>⑬ What is the typical period for a touch-up to maintain color?</li> <li>⑭ What information or guidelines are needed for effective hygiene management and safety procedures?</li> <li>⑮ What measure do you think is most important before and after the procedure?</li> </ul>
Closing Questions	<ul style="list-style-type: none"> <li>① What additional measures are needed for infection prevention in semi-permanent makeup?</li> <li>② Do you have any opinions or suggestions you would like to share from the actual procedure and educational field?</li> </ul>

### 3.3. Data analysis process

To ensure the reliability of qualitative research, this study focused on eliminating researcher bias and enhancing theoretical orientation. To this end, triangulation was utilized and the criteria for factual value, applicability, consistency, and neutrality were applied to conduct an in-depth data analysis. Specifically, to explore infection prevention and ongoing management strategies for semi-permanent makeup, data were systematically collected and analyzed using Co-laizzi's six-step analysis method. In Step 1, the treatment experiences and cases of participants

with over 15 years of experience were collected. In Step 2, redundant information was removed from the interview content, meaningful information was extracted, and further discussion was conducted through a second in-depth interview. In Step 3, the cases and management methods were reorganized into general forms. In Step 4, infection prevention and ongoing management strategies were grouped into themes and thematic clusters were created. In Step 5, thematic clusters were categorized to identify key elements of infection prevention and ongoing management. In Step 6, participants' experiences were synthesized to identify constituent factors. The collected data were analyzed through transcription and territorialization, based on which research findings were derived and recommendations for future research were presented. <Table 3> below outlines the six stages of the participant interview content analysis process.

**Table 3.** Analysis process of interview content of research participants.

Step	Analysis content
Step 1	▸ Grasp the descriptions of research participants' experiences in infection prevention and continuous management of semi-permanent makeup.
Step 2	▸ Remove duplicate content from participants' statements and derive meaningful statements.
Step 3	▸ Find meaningful statements regarding universality and differentiation in terms of infection prevention and continuous management, and reconstruct them into a general form.
Step 4	▸ Create themes centered on infection prevention and continuous management and compile them into theme clusters.
Step 5	▸ Organize theme clusters (Workplace management environment, Infection cases and coping, Education and information, Continuous preventive management and skin protection, Need for hygiene and safety guidelines) into categories to derive major elements.
Step 6	▸ Synthesize the experiences of practitioners and managers regarding semi-permanent makeup infection prevention and continuous management to produce the final report.

## 4. Research Results

### 4.1. Categorization and theme classification of data based on in-depth interviews

This study conducted in-depth interviews, categorized, and analyzed the data to identify infection prevention and ongoing management strategies for semi-permanent makeup. The results were categorized into three categories: infection prevention, ongoing management, and professional training pathway suggestions. Each category contained a theme cluster and sub-theme elements. In the infection prevention category, key elements included recognizing the importance of infection prevention, monitoring client health, pigment management, and maintaining hygiene in the treatment space and for practitioners. Other key elements included understanding the use and disposal of disposable tools, infection types (bacterial, viral, fungal, and bloodborne), and emergency response methods. Participants identified the need for regular education and information.

In the ongoing care category, the importance of post-procedure skin protection and hygiene was emphasized. Using prescribed ointments, providing guidance on cleansing techniques, applying sunscreen, and moisturizing were identified as key post-procedure care methods for maintaining results and preventing infection. Participants recognized the importance of avoiding harsh friction or using chemicals and maintaining a safe follow-up period. In the professional education pathway suggestion category, participants requested the acquisition of credible hy-



giene practices and official safety procedure information, emphasizing the importance of learning new skills and providing practical suggestions for practical application in the field. Such training was believed to enhance practitioners' expertise and contribute to a safer treatment environment. A summary of these findings is provided in <Table 4>.

**Table 4.** Categorization and thematic classification based on research participant interviews.

Category	Subject	Content
Infection prevention	Workplace management environment	Awareness of the importance of infection prevention
		Practicing customer health checks
		Checking pigment management and expiration dates
		Awareness of hygiene management in the procedure space
		Implementation of personal hygiene by the practitioner
		Use and disposal of disposable tools.
	Infection cases and coping methods	Understanding bacterial, viral, fungal, and blood-borne infections
		Awareness of emergency response methods
		Experience with infection cases
Continuous management	Education and information acquisition	Regular infection prevention education
		Conducting additional education when necessary.
	Post-procedure management measures	Skin protection methods after procedure
		Effectiveness of using designated ointments
		Guidance on face-washing methods
		Awareness of sunscreen use and its effects
		Guidance on post-procedure hygiene practices
		Necessity of moisturizing
Professional education route / proposal	Necessity of safety guidelines	Impact of friction and use of chemical products
		Appropriate re-procedure (touch-up) period for color maintenance
	Acquisition of credible information	Learning credible hygiene management methods
		Requesting ways to obtain official safety procedure information
		Requesting ways to obtain official safety procedure information
	Continuous re-education	Necessity of acquiring new additional information
		Accepting suggestions from the educational field

## 4.2. Experience with semi-permanent makeup infection prevention and ongoing management

Semi-permanent makeup specialists with over 15 years of experience who participated in this study unanimously emphasized the importance of infection prevention and hygiene. They believed that despite the invasive nature of semi-permanent makeup, thorough adherence to basic manuals and maintaining a clean work environment can effectively reduce the risk of infection. They emphasized that disinfection and sterilization of tools, hygiene management of the workspace, and the use and safe disposal of disposable needles are crucial for infection prevention. They noted that simply following these basic principles prevents major problems.

Study participants also emphasized the importance of pre-treatment consultations and checking the client's health status. They noted that pre-treatment safety was enhanced by identifying vulnerable factors such as medications, diabetes, and skin conditions, and taking appropriate

measures. They also noted that such pre-treatment care contributed to building trust with clients. Regarding post-treatment care, participants emphasized the importance of clearly communicating the essential precautions for clients and providing appropriate aftercare tailored to their skin type. They recommended using moisturizers or specialized products to prevent dryness and irritation. Many also recommended using sunscreen to maintain pigmentation and prevent discoloration. However, some participants expressed somewhat different opinions on the necessity of sunscreen. Systematic guidance on skin condition changes, moisturizing care, and timing of repeat treatments through communication between practitioners and clients was also highlighted as important.

An interesting finding from this study was that professionals who adhered to basic infection prevention principles experienced no significant problems. However, in some cases, the practice of reusing disposable needles after sterilization was observed, raising concerns about increased infection risk. This raised the need for education and legal standards regarding this practice. Participants emphasized the importance of regular and practical hygiene education. They suggested that education should go beyond simple theory and include textbooks and practical training based on real-world cases. They also suggested the introduction of ongoing education methods, such as online training. <Figure 1> below visualizes the essential experiences related to infection prevention and ongoing management of semi-permanent makeup.

**Figure 1.** Experience with semi-permanent makeup infection prevention and ongoing management.



## 5. Discussion

The results of this study confirmed that despite the popularity of semi-permanent makeup and its rapid market growth in Korea, systematic legal regulations and education on infection prevention and hygiene management are lacking. Based on these findings, the participants' perceptions of infection prevention and hygiene management are as follows. First, regarding the perception of infection prevention in semi-permanent makeup, a common consensus emerged that thorough adherence to basic manuals, maintaining a clean work environment, and maintaining constant vigilance can effectively reduce the risk of infection. Consistent with previous studies, basic precautions such as disinfection and sterilization of tools, maintaining a clean workspace, wearing personal protective equipment, and using and disposing of disposable needles were emphasized as key to infection prevention. The importance of pre-consultation and client health monitoring was also highlighted[24][25][26].

Furthermore, identifying and appropriately addressing vulnerable factors such as long-term

medications, skin conditions, and diabetes played a crucial role in enhancing the safety of the procedure. However, differences in perception among experts existed in some areas, such as pigment storage methods and expiration date management, suggesting the need for accurate management guidelines[27][28]. Most study participants also showed differences in their awareness of emergency response and infection cases. While they were well-versed in blood-borne infections, their understanding of various types of infection, including bacterial, viral, and fungal infections, was low. This suggests that while information on specific types of infection is sufficiently shared, comprehensive infection control training is lacking. Participants agreed on the need for practical, case-based, specialized training on infection prevention, believing that such training could go beyond simply addressing hygiene issues and strengthen trust between clients and practitioners. Consistent with previous studies, experts who strictly adhered to basic infection prevention guidelines experienced no major problems even after long-term practice, highlighting the importance of consistently practicing the core principles of infection prevention in semi-permanent makeup[29][30].

Secondly, regarding the ongoing maintenance of semi-permanent makeup, participants strongly recognized the importance of ongoing post-procedure care in addition to infection prevention. Recent studies have also shown that while infection prevention should be thoroughly implemented before and after the procedure, systematic post-procedure care is also crucial to enhance client satisfaction and the sustainability of results[31][32]. Participants recommended using moisturizers or specialized products to keep skin from drying out and minimize irritation after the procedure, and emphasized the importance of clearly providing patients with post-procedure care. Designated ointments were deemed effective for wound healing, infection prevention, and pigment maintenance. While sunscreen was generally recommended to prevent discoloration and pigmentation, some participants did not feel it was necessary and therefore did not recommend it.

Participants also recognized the need for regular post-procedure checkups and guidance on retouch timing. They believed this would allow for customized care by assessing the patient's skin condition and pigment retention. Participants viewed infection prevention and ongoing care as complementary. While infection prevention ensures the safety of the procedure, ongoing care plays a crucial role in maintaining and improving the results, highlighting its importance.

Thirdly, the opinions regarding the proposed professional training pathway emphasized the need for regular hygiene education, practical case-based teaching materials, and practical training courses. To increase educational accessibility, study participants suggested non-face-to-face methods, such as online video training, and emphasized the development of specialized programs for pre- and post-procedure management and infection prevention through training programs based on the National Competency Standards (NCS). In other words, they recognized the need for systematic and practical educational materials and processes that can be applied in the field.

## 6. Conclusion and Suggestions

In Korea, demand for semi-permanent makeup has steadily increased across all age groups, from the elderly to teenagers, establishing it as an essential beauty treatment for modern people. Middle-aged men seek out the treatment to regain confidence through a sophisticated look, while women seek out the procedure to reduce makeup time and maintain a clear facial image. However, since semi-permanent makeup involves injecting pigment into the dermal-epidermal interface using a needle, both users and managers agree that thorough hygiene is essential.

This study utilized a phenomenological research method to explore practical infection prevention and ongoing management strategies for semi-permanent makeup. Participants were eight professional practitioners with over 15 years of experience. Data was collected through in-depth interviews and analyzed using Colaizzi's six-step process. The study identified key themes in the infection prevention category, including workplace management, infection cases and response strategies, and education and information acquisition. The ongoing management category highlighted the need for post-procedure management and safety guidelines. Furthermore, the professional pathway category highlighted the importance of credible information and the need for ongoing retraining.

In Korea, the legal status of semi-permanent makeup and tattooing is currently reaching a historic turning point, leaving behind decades of controversy over its "illegibility" and commencing with the National Assembly's passage of the Tattoo Law in September 2025. 2026 marks an "administrative gap" before the law takes effect, during which the government is establishing a national examination system, developing hygiene guidelines, and refining temporary license issuance standards. Therefore, future measures to prevent infection in semi-permanent makeup will undoubtedly include mandatory national certification and hygiene training, mandatory pigment safety verification, and pre-procedure screening of clients for drug reactions. Furthermore, monitoring of the environmental management and systematic post-procedure management of semi-permanent makeup treatment facilities is expected to be strengthened and implemented.

This study confirmed that thorough adherence to basic hygiene rules can effectively prevent infection risks. Specifically, fundamental elements such as thorough hand hygiene before and after procedures, sterilization and disinfection of equipment, proper use of personal protective equipment, and maintaining a clean work environment were identified as key factors in infection prevention. We hope that these research results will serve as useful data for strengthening safety and enhancing hygiene management expertise in the Korean semi-permanent makeup market, which is expected to undergo significant changes.

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## 8. Appendix

### 8.1. Author's contribution

	Initial name	Contribution
Lead Author	KK	-Set of concepts <input checked="" type="checkbox"/> -Design <input checked="" type="checkbox"/> -Getting results <input checked="" type="checkbox"/> -Analysis <input checked="" type="checkbox"/> -Make a significant contribution to collection <input checked="" type="checkbox"/>
Corresponding Author*	JL	-Final approval of the paper <input checked="" type="checkbox"/> -Corresponding <input checked="" type="checkbox"/> -Play a decisive role in modification <input checked="" type="checkbox"/> -Significant contributions to concepts, designs, practices, analysis and interpretation of data <input checked="" type="checkbox"/>
Co-Author	UB	-Participants in Drafting and Revising Papers <input checked="" type="checkbox"/> -Someone who can explain all aspects of the paper <input checked="" type="checkbox"/>

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