Consumer Awareness and Behavior toward the Risks of Harmful Ingredients in Skincare Products: A Thematic Analysis in the Digital Era

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Abstract: This study examines consumer awareness regarding the risks of hazardous ingredients in widely used skincare products in Indonesia. The research background highlights the high usage of skincare products, often without adequate understanding of their composition and potential dangers. The objective of this study is to analyze how consumers identify harmful ingredients, their experiences with unsafe products, and behavioral changes that follow. This research employs a qualitative method through thematic analysis of open-ended responses from skincare users. The results indicate that consumers are increasingly selective, prioritizing product legality and ingredient transparency, and utilizing social media, ingredient-checking applications, and professional consultations as sources of information. Moreover, negative experiences such as skin irritation and other side effects contribute to a more cautious and critical attitude toward product claims. The study concludes that education, transparent information, and consumer protection are key elements in fostering safe and responsible skincare consumption practices.

Keyword: Consumer Awareness, Hazardous Ingredients, Skincare Safety, Qualitative Study, Behavioral Change

INTRODUCTION

The introduction contains the research background in a concise, concise, and clear In recent years, the beauty industry has experienced rapid growth in line with increasing public awareness of skincare (Johnson & Lee, 2022). Skincare products have now become a part of the daily routine for many individuals, both men and women, who aim to maintain the health and beauty of their skin. However, behind this popularity lies growing controversy surrounding the use of harmful ingredients in skincare products, such as mercury, hydroquinone, and parabens, which can negatively impact skin and overall health (Smith et al., 2023). Cases of counterfeiting and illegal distribution of skincare products are also on the rise, raising concerns among consumers.

Various studies have shown that the use of hazardous chemicals in beauty products can cause skin irritation, hormonal disturbances, and even serious health risks such as cancer (Williams & Brown, 2021). One notable example is the discovery of skin-whitening products containing high levels of mercury, which have been banned by numerous global health regulatory bodies due to their dangerous effects. Nevertheless, the demand for whitening products remains high, prompting irresponsible manufacturers to continue marketing them illegally.

Furthermore, public awareness of the importance of understanding skincare ingredient compositions remains low. Many consumers are drawn solely to instant results without considering the long-term effects. Yet, numerous studies indicate that prolonged use of skincare products with harmful chemicals can damage the skin's structure and lead to premature aging (Anderson et al., 2020). Therefore, it is essential to understand how government regulations, consumer awareness, and producer responsibility contribute to ensuring the safety of skincare products circulating in the market.

METHOD

This study uses a qualitative approach with thematic analysis method to understand consumer awareness of the risks of hazardous ingredients in skincare products in Indonesia. Data were obtained through an open-ended questionnaire distributed online to purposively selected skincare users, namely individuals who have experience using skincare products and have experienced side effects or are aware of risky ingredients. Respondents' answers were analyzed systematically by identifying emerging patterns, then categorized into relevant main themes. To increase data validity, researchers also triangulated sources by comparing information from social media, skincare ingredient checker applications, and informal interviews with dermatologists. This analysis aims to describe how consumers recognize hazardous ingredients, respond to negative experiences, and experience behavioral changes in choosing safe and legal products.
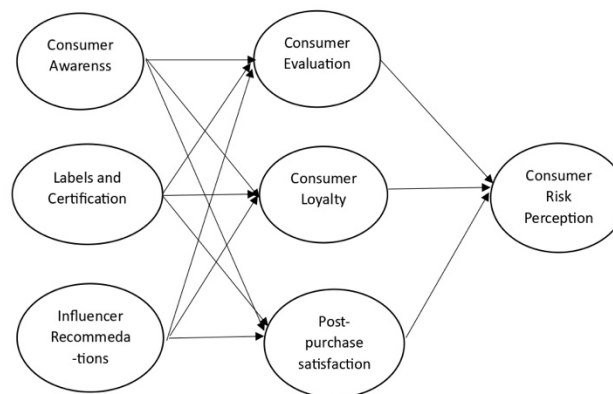
Theoretical framework

RESULTS AND DISCUSSION

QUESTION 1: How do you ensure that the skincare products you use do not contain harmful ingredients that could have long-term adverse effects on your skin? Why did you answer that way?

In an era where public awareness of the importance of skincare is increasing, choosing safe and appropriate skincare products has become crucial. Consumers today not only consider instant results but also place great emphasis on the long-term safety of the products they use. Therefore, it is important to understand the behaviors and strategies consumers use

to ensure that the skincare products they use are free from harmful ingredients that could potentially damage the skin.

This thematic analysis aims to explore more deeply the mindset, habits, and approaches used by consumers in selecting safe skincare products. Data was obtained from open-ended questions posed to respondents: "How do you ensure that the skincare products you use do not contain harmful ingredients that could have long-term adverse effects on your skin? Why did you answer that way?" Responses from the participants were analyzed qualitatively to identify emerging key themes. Through this approach, the study aims to provide a comprehensive overview of the key factors influencing consumer decisions regarding skincare product safety. This analysis not only illustrates consumer behavior trends but also serves as a valuable reference for beauty industry players to improve product quality and build transparent, educational communication with consumers.

1. Ingredient Check and Product Label Review

The analysis shows that one of the theories supporting this finding is the Health Belief Model (HBM), which explains that individual decisions regarding health maintenance, including skincare product choices, are strongly influenced by perceived risks and benefits (Rosenstock et al., 2021). In this context, awareness of harmful ingredients such as mercury, hydroquinone, parabens, and phthalates encourages consumers to be more selective and cautious in their choices.

Furthermore, research by Ahmed et al. (2022) notes a significant increase in consumer awareness regarding harmful ingredients in cosmetics in recent years, driven by the rise of skincare health campaigns and improved cosmetic literacy. This research also highlights that labels such as "paraben-free," "fragrance-free," or "phthalate-free" are highly attractive to consumers who wish to avoid skin irritation and hormonal disruptions.

According to Yusof et al. (2023), the illegal use of ingredients like mercury and hydroquinone in cosmetics is still found in some developing countries, posing a major challenge for drug and food regulatory agencies. These substances can have carcinogenic and toxic long-term effects, underscoring the importance of public education about reading labels and choosing officially registered products.

Meanwhile, the Consumer Protection Theory is also relevant in this context. This theory emphasizes the need for strong regulation and transparency in product information to protect consumers from harmful industry practices. This is supported by a study by Lee and Park (2021), which found that consumer behavior changes significantly when they have clear access to information about ingredient risks in skincare products.

Additionally, Ghazali et al. (2021) found that consumers tend to be more loyal to brands that provide honest and complete information about their ingredients. This suggests that transparency is important not only for safety but also for building long-term trust between producers and consumers.

Example responses:
- "I find out the function and benefits of each ingredient in the skincare product."
- "I read the ingredients and check user reviews."
- "I always check the ingredient list on the packaging."
- "I look at the composition and reviews from TikTokers."
- "I prefer skincare products made with natural ingredients and transparent ingredient lists."

2. Checking BPOM Licenses or Official Certifications

The analysis shows that consumers tend to choose skincare products based on a combination of personal knowledge, product legality, digital information sources, and

empirical experience. These findings align with the Health Belief Model (HBM), which suggests that individual behavior to prevent health risks is influenced by perceptions of vulnerability, benefits, barriers, and cues to action (Champion et al., 2021). In this context, consumers who actively read labels, check BPOM certification, and look up product reviews demonstrate a perception of risk regarding the long-term effects of harmful ingredients in skincare.

These findings also correlate with the Consumer Decision-Making Process theory, especially in the stages of information search and evaluation of alternatives (Solomon et al., 2022). When respondents search for ingredient information, look at influencer reviews, or use cosmetic ingredient scanning apps, they are actively engaging in high-involvement decisions related to skincare purchases. This aligns with a study by Kamboj et al. (2022), which states that today's consumers tend to critically evaluate products before making a purchase, especially in health and beauty categories.

Respondents' reliance on influencer reviews and online communities shows that social proof and electronic word of mouth (e-WOM) are highly influential information sources. According to Nguyen et al. (2021), e-WOM significantly affects consumer trust and product quality perception, ultimately impacting purchasing decisions. Moreover, the tendency to conduct patch tests and monitor skin reactions represents a form of self-regulation behavior in health-oriented consumption (Zhao et al., 2023). This indicates that consumers do not solely rely on external information but also depend on personal experiences and bodily responses as safety indicators.

Finally, the use of technology such as ingredient scanning apps reflects a shift toward tech-enabled consumer empowerment, as described by Lim et al. (2021), where digital technology enhances consumer control over the products they use.

Example responses:
- "Make sure the product has a BPOM or other safety certification."
- "When there is a BPOM code, I verify it on the official website."
- "It's already registered with BPOM."
- "Ensure the product has a BPOM distribution license."
- "Choose products from brands that are transparent about ingredient sourcing."

3. Reviews, Testimonials, and Personal Experience
The analysis shows that decision-making in skincare product selection is highly influenced by consumer knowledge of ingredients, product legality, and trusted sources such as reviews and personal experiences. This aligns with the Consumer Decision-Making Process theory, which explains that consumers go through stages of information search, evaluation of alternatives, and risk assessment before making a purchase (Solomon et al., 2022). Consumers who actively check ingredients and conduct patch tests are demonstrating a risk evaluation process regarding the long-term effects of skincare use.

According to Lee and Kim (2021), increased cosmetic literacy encourages consumers to be more critical in product selection, thereby minimizing health risks. Additionally, the tendency to verify BPOM licensing or product safety certification is associated with Perceived Risk Theory. Park & Yoo (2022) argue that perceived risk in cosmetic products drives consumers to seek authenticity and safety guarantees, often represented through official certifications.

Consumers also rely on reviews and testimonials from other users as a form of social proof, which, according to Social Influence Theory, can shape beliefs and influence purchasing behavior (Ajzen, 2021). In this context, digital platforms such as social media, TikTok, and cosmetic ingredient scanning apps act as educational tools and decision-making references (Rizwan et al., 2023).

Additionally, reliance on scientific and technological tools like CosDNA or INCI Decoder reflects the rise of digital consumer behavior, where consumers use technology to access credible product information (Hasan et al., 2023). Consulting dermatologists also indicates a trend toward health consciousness behavior in skincare consumption (Widyaningtyas & Arumsari, 2022). Thus, this thematic result shows that modern consumers are increasingly aware of the importance of safety, quality, and science-based information in choosing skincare products.

Example responses:
- "From influencer reviews, because they explain that the product is safe to use."
- "Looking at online reviews, ingredients, and checking ingredient compatibility."
- "Other people's reviews and the ingredient list."
- "I learned from experience that you can't randomly try skincare."
- "TikToker reviews."

4. Patch Test and Monitoring Skin Reactions

The analysis shows that consumer strategies in choosing skincare products tend to be influenced by ingredient safety awareness, product legality, personal experience, and digital knowledge. This is in line with Consumer Perceived Risk Theory, where consumers are more cautious in choosing products that directly affect the body, such as skincare, due to perceived long-term health risks (Chang et al., 2021). When respondents mention checking active ingredients and ensuring BPOM licensing, they reflect the functional risk and safety concern dimensions of perceived risk theory.

The Health Belief Model (HBM) also explains this behavior: decisions are influenced by perceived susceptibility and perceived benefits (Zhou et al., 2022). Choosing natural products, reading labels, and doing patch tests are preventive actions based on perceived risk.

The use of online reviews and influencer recommendations as references is supported by Electronic Word of Mouth (e-WOM) Theory. According to Sun et al. (2021), e-WOM significantly shapes consumer perceptions, especially for experience-based products like skincare. Platforms like TikTok, YouTube, and online marketplaces have become trusted sources for modern, critical, and digital-savvy consumers.

Consumer Empowerment Theory is also evident here. Today's consumers are no longer passive; they actively seek information, use ingredient-analysis apps, and compare products across platforms. This is supported by Lin et al. (2023), who found that empowered consumers tend to research more deeply before making a purchase.

Lastly, consulting dermatologists or beauty clinics reflects evidence-based decision-making, where choices are based on data, scientific validity, and professional advice. A study by Nguyen et al. (2021) confirms that consumers concerned with long-term health prefer consultation over trial and error.

Example responses:
- "If on the first day there's no burning or itching, the product is suitable."
- "Doing a patch test before full application."
- "Monitoring skin reactions after a few weeks of use."
- "Comparing skin reactions before and after use."
- "Stopping use if any negative signs appear."

5. Education and Professional Consultation

The analysis shows consumer behavior patterns based on risk awareness and information-seeking behavior in skincare usage. One main theme is the checking of ingredients and product labels, which reflects the concept of cosmetic literacy. This includes the consumer's ability to understand ingredient compositions and their potential effects,

aligning with Putri et al. (2021), who found that higher ingredient literacy reduces the risk of unknowingly using harmful products.

Respondents also frequently mentioned product legality, such as BPOM certification, as a primary safety indicator. This demonstrates the importance of regulation and trust in government agencies, which, according to Nurhasanah & Kusumawardhani (2022), significantly influences consumer perceptions of skincare safety.

Moreover, purchasing decisions influenced by online reviews and user experiences reflect Social Influence Theory, in which digital word-of-mouth strongly impacts buying decisions, as discussed by Rahmawati & Damayanti (2023) in their research on digital WOM in the beauty industry.

The tendency to perform patch tests or observe skin reactions directly also reflects preventive behavior based on empirical experience. This is consistent with the Health Belief Model, which states that perceived vulnerability and health consequences encourage individuals to take preventive action (Handayani & Rachmawati, 2021).

Consulting experts or using ingredient-checking apps also indicates a shift toward self-regulated consumer behavior. According to Wijayanti et al. (2022), modern consumers are increasingly independent in educating themselves and making data-based decisions.

Example responses:
- "Consulting with the store admin."
- "Using platforms like CosDNA, EWG, or INCI Decoder."
- "Using scanning apps like Think Dirty."
- "Consulting on dosage and usage for more effective results."
- "Visiting a dermatologist to find suitable products."

QUESTION 2: How was your experience when you discovered that a skincare product contained harmful ingredients? Please explain why.

In an era where skincare trends are booming, consumers are increasingly pampered with various products offering instant results and promising radiant, smooth, and problem-free skin. However, behind this euphoria, many individuals have faced unpleasant experiences from using skincare products that turned out to contain harmful substances. This has become a serious concern, not only affecting skin health but also causing psychological trauma and shaping new perceptions and behaviors in selecting beauty products. Through this open-ended question posed to respondents, this thematic analysis aims to explore in-depth the real experiences of skincare users when they discovered the products they used were unsafe. The responses reveal various forms of reactions, impacts felt, and strategies employed in response to such experiences. Additionally, the analysis reflects consumer awareness of the importance of product safety and shifts in their attitudes toward the rapidly evolving cosmetic trends.

1. Discontinuation of Product Use

Findings indicate that respondents generally stopped using skincare products once they found out the products contained harmful substances. This action reflects a form of coping behavior in response to health threats. According to the Health Belief Model (HBM), an individual's decision to cease a risky behavior is influenced by their perception of the severity and susceptibility of the threat (Champion et al., 2021). Once consumers become aware of harmful ingredients, they tend to take preventive action as a form of self-protection. Furthermore, the decision to stop using the product can be understood through the Consumer Risk Perception Theory, where consumers' perceived risk plays a dominant role in determining purchase and consumption discontinuation decisions (Wang et al., 2022).

From a consumer behavior perspective, the decision to discontinue use represents a post-purchase evaluation process, particularly when the product fails to meet expectations or poses danger (Solomon et al., 2022). In such cases, negative disconfirmation occurs—meaning a mismatch between expectations and reality—leading to discontinuation. Moreover, the self-protective behavior aligns with Protection Motivation Theory (PMT), which suggests individuals are motivated to take protective action when they perceive a serious threat and believe they are capable of avoiding it (Prasetyo et al., 2021). Discontinuing the product thus becomes a tangible act of self-preservation. This behavior also supports the principle of information avoidance reversal, where previously unaware consumers become more active in seeking and responding to information after a negative experience (Kim et al., 2023). In other words, bad experiences trigger more cautious and selective behavior.

Sample responses:
- "Stopped using skincare products that turned out to contain harmful ingredients because they could further damage my skin."
- "I decided to stop using it even though I hadn't yet experienced any direct effects."
- "If the product turns out to contain harmful substances, I'll stop using it because it doesn't suit me."
- "Stopped using it and immediately consulted a doctor for recovery."
- "I no longer use the product."

2. Negative Reactions and Skin Effects

Findings reveal that most respondents experienced negative skin reactions from using skincare products containing harmful substances, such as irritation, redness, acne, or other side effects. This can be explained by consumer behavior theory and risk perception. According to Kotler & Keller (2021), consumer risk perception greatly affects purchasing decisions, especially for health and beauty products. When consumers experience adverse effects, their perceived risk of similar products increases, making them more cautious in future choices.

Additionally, the cognitive-affective theory of consumer behavior explains that negative experiences create strong emotional associations that influence future decisions (Schiffman et al., 2022). This is evident in respondent narratives expressing trauma or discomfort with skincare products, even after discontinuation. Emotional dissonance arises due to the mismatch between expectation and product performance, contributing to product rejection and a shift toward more selective approaches.

From the HBM perspective, consumer perception of susceptibility and severity of side effects plays a role in altering consumption behavior (Rosenstock et al., as cited by Glanz et al., 2021). Those affected directly become more vigilant about checking labels, ingredients, and selecting safer products. A study by Wang et al. (2022) affirms that increased digital information access also raises consumer awareness of cosmetic hazards, prompting the adoption of green skincare behavior—choosing products based on safety and sustainability. Research by Kim & Seock (2023) shows that negative experiences with harmful chemicals push consumers toward natural and organic alternatives, even if they are more expensive.

The concept of consumer trust recovery is also key in explaining behavioral changes after negative experiences. According to Zhang et al. (2021), brands must rebuild consumer trust through transparency, education, and product credibility. Otherwise, consumers will abandon the brand and opt for psychologically and physically safer options.

Sample responses:
- "My skin became very dry and peeled after using a brightening product that turned out to contain mercury."
- "After years of using fake whitening creams, my skin ended up permanently damaged."
- "My skin became very irritated and red after using a product that claimed to smooth skin."
- "Used a night cream that made my face flawless, but once I stopped, I had a rebound effect that caused panic."
- "My skin became darker and more sensitive to sunlight."

3. Awareness and Selectivity in Product Choices

Analysis shows that respondents' experiences with harmful skincare products increased their awareness and selectivity in future purchases. This phenomenon can be explained using the Theory of Planned Behavior (TPB) proposed by Ajzen. In this context, negative experiences act as external factors that strengthen attitude toward behavior (i.e., being cautious in purchases) and influence perceived behavioral control—the individual's belief in their ability to make informed decisions (Ajzen, 2021).

The tendency to scrutinize ingredients, seek information from credible sources, and compare products before purchasing aligns with the Consumer Decision-Making Process Model, particularly in the information search and evaluation of alternatives stages (Kotler et al., 2021). Bad experiences become important references in the evaluation process, indicating increased cosmetic literacy among users. This aligns with perceived risk theory, where consumers who experience adverse effects tend to perceive higher risks from ambiguous or instant-result products (Bauer et al., 2022). Heightened perceived risk encourages preventive behavior through more critical product verification.

In consumer psychology, reactions such as trauma and distrust toward influencers and trends relate to affective response theory, which explains how negative emotions shape long-term perceptions (Solomon, 2021). Consumers who feel disappointed tend to form avoidance behavior toward similar products in the future. This critical attitude is also influenced by consumer empowerment, where individuals gain more control over consumption decisions through access to information and awareness of their rights (Nardo et al., 2021). Hence, bad experiences serve as a catalyst to strengthen consumer positioning in a complex market.

Sample responses:
- "Since that incident, I always check BPOM before buying new skincare."
- "I've learned to understand ingredients before deciding to use skincare."
- "Now I'm more meticulous and always check reviews before buying."
- "After joining a skincare community, I learned that my products weren't safe."
- "Now I focus more on products that give gradual and safe results."

4. Consulting Dermatologists or Clinics

Findings show that consumers tend to lose trust in skincare trends, influencers, and instant product claims after experiencing harmful product effects. This can be explained using consumer trust and skepticism theories. According to Chen et al. (2021), consumer trust in a product is greatly influenced by the credibility of information sources, whether ads or influencers. When there's a mismatch between claims and actual effects, consumers develop skepticism and lose trust in similar promotions.

The psychological reactance theory is also relevant. Research by Kim and Lee (2022) shows that when consumers feel an ad is overly persuasive or unrealistic, they tend to resist or reject the product. Based on consumer socialization theory, disappointing personal

experiences reinforce selective behavior and information-seeking habits (Wu et al., 2023). In this context, negative skincare experiences act as turning points, prompting consumers to be more critical of information sources, product composition, and regulations.

Risk perception theory explains how consumers evaluate risks based on personal experience and social cues. A study by Ahmad et al. (2021) shows that perceived risk increases significantly after direct negative experiences, affecting purchase decisions and brand loyalty. Post-purchase behavior theory also supports this, where negative experiences cause dissonance between expectations and reality, resulting in product rejection. According to Zhang and Lin (2021), dissonance leads consumers to be more cautious and selective in future purchases.

Sample responses:
- "Stopped using the product and immediately consulted a doctor for recovery."
- "After consulting a dermatologist, I found out the product contained ingredients unsafe for sensitive skin."
- "I was advised to consult a dermatologist."
- "I now regularly consult a doctor before trying new products."
- "At first, I didn't realize it, but after consulting a doctor, I found out my skincare contained harmful ingredients."

5. Distrust of Trends, Influencers, and Instant Claims

Findings show a growing consumer distrust toward skincare trends, influencer recommendations, and instant claims frequently seen in beauty product marketing. This phenomenon can be explained through consumer literacy theory, which emphasizes individuals' ability to understand, evaluate, and make critical consumption decisions. Kaczmarek et al. (2022) state that increasing digital consumer awareness fosters skepticism toward manipulative marketing practices, especially unverified endorsements.

Additionally, consumer advertising skepticism theory is relevant here. According to Vafeiadis et al. (2021), modern consumers increasingly resist ads deemed exaggerated or unscientific, particularly in the beauty sector. When consumers experience negative effects from widely promoted products, their trust in promotional sources—including influencers—significantly declines.

Consumer trust theory also supports this. Sari et al. (2023) emphasize that trust is shaped by consistent experiences and credible information. In this case, bad experiences with influencer-promoted products push consumers to rely more on personal experience or expert recommendations. Strategic consumer behavior theory (Choi & Kim, 2022) suggests that today's consumers behave strategically, evaluating risks and avoiding impulsive purchases, especially those lacking safety certification or scientific backing. Cognitive dissonance theory explains how consumers who suffer negative effects from overly marketed products experience internal conflict, leading to a revised perception that avoids untrustworthy sources (Wulandari & Astuti, 2021). These findings indicate a consumer preference shift toward more critical, rational, and credibility-based decision-making.

Sample responses:
- "I was deceived by a product labeled 'dermatologically tested' but it wasn't registered with BPOM."
- "Trusted an influencer without doing my own research, and my skin got damaged."
- "No longer easily influenced by product advertisements."
- "Regret not checking more thoroughly on a product claimed to be natural, but actually contained harmful chemicals."
- "After using a harmful product, I don't want to buy such products again."

QUESTION 3: How Do You Know If a Skincare Product Contains Harmful Ingredients?

The rapid growth of the skincare industry has encouraged the public to become more aware of the importance of choosing safe products that suit their skin needs. However, amid the abundance of products on the market, concerns about the presence of harmful ingredients in skincare products have also grown. Therefore, it is important to understand how consumers recognize and identify dangerous components in the products they use. In this context, thematic analysis was conducted to explore in depth the various perspectives, knowledge, and experiences of consumers in detecting the risks of harmful ingredients in skincare products.

Through a qualitative approach, various patterns in the responses were analyzed and grouped into specific themes that represent common consumer perceptions and behaviors. These findings not only illustrate the level of consumer literacy regarding cosmetic product safety but also serve as a foundation for developing more effective consumer education and protection strategies.

1. Checking Labels, Ingredients, and Product Registration Numbers

One of the prominent themes from the thematic analysis is the practice of checking skincare labels and compositions directly by consumers. Many respondents mentioned that they are accustomed to reading the ingredient list on the packaging, comparing it with trusted sources such as the national drug agency (e.g., BPOM in Indonesia), and ensuring the product has official licensing labels. Respondents also highlighted the importance of recognizing high-risk ingredients such as mercury, hydroquinone, parabens, formaldehyde, and SLS/SLES as part of early caution against harmful contents.

This finding aligns with **Consumer Empowerment Theory**, which refers to consumers' ability to make informed decisions based on accessible knowledge and information (Wang et al., 2021). Consumers who actively seek information and verify product content demonstrate higher health literacy. According to **Health Literacy Theory**, the ability to access, understand, and use health information is crucial in shaping safe consumption behaviors (Nutbeam, 2021). In the skincare context, this is reflected in behavior such as reading labels, understanding chemical terms, and avoiding products without legal distribution permits.

Furthermore, **Risk Perception Theory** by Slovic (2021) explains that consumers' perceived risk of certain ingredients strongly affects their decision-making. Those with a higher perception of risk tend to be more cautious and selective. Kim & Kim (2022) also found that transparent labels and easy-to-understand ingredient compositions increase consumer trust and loyalty in skincare products.

Behavioral Decision Theory suggests that decision-making is based on a combination of cognitive information (such as ingredient facts) and affective experiences (such as previous skin reactions) (Sridhar & Srinivasan, 2023). Personal experiences with harmful ingredients become integral to reflective decision-making. Zhao et al. (2023) emphasized that educating consumers about cosmetic ingredient lists significantly reduces the use of illegal or harmful products. These findings show that ingredient-label literacy, influenced by consumer behavior theories, risk perception, and health literacy, plays a key role in consumer protection.

Sample Responses:
- "I know a skincare product contains harmful ingredients by checking the ingredient list and comparing it with trusted sources like BPOM."
- "By looking at the composition and my skin's reaction."
- "I check product reviews, search for BPOM registration numbers, and look up ingredients online."

- "I always read the ingredients on the back of the packaging."
- "I make sure the skincare product is registered with BPOM and has a legal distribution permit before using it."

2. Side Effects on the Skin After Use

Skin reactions after using skincare products are another key indicator used by consumers to assess the safety and compatibility of a product. Respondents reported that negative reactions such as redness, itching, stinging, acne, and irritation are early signs that the product may contain unsuitable or harmful substances.

These symptoms reflect the skin's response to certain active ingredients that can cause irritation or allergic reactions. According to Del Rosso and Draelos (2021), skin irritation from cosmetics is often caused by chemicals like alcohol, synthetic fragrances, or preservatives, especially in individuals with sensitive skin or compromised skin barriers. Shetty et al. (2022) noted that repeated exposure to irritants can worsen skin conditions and cause irritant or allergic contact dermatitis.

In addition, inappropriate product pH can also lead to side effects. Kim et al. (2021) stated that healthy human skin has a pH of 4.7–5.75. A product with an unsuitable pH can disrupt the skin microbiome and cause inflammation, leading to symptoms such as burning or peeling. Furthermore, active ingredients like AHA/BHA, retinol, and niacinamide, if misused or not properly explained, can increase skin sensitivity (Lee & Cho, 2023).

Consumer literacy in identifying side effects is also critical. Zhao et al. (2023) found that many consumers still struggle to differentiate between normal purging and harmful allergic reactions. This lack of understanding may cause them to continue using products that actually harm their skin.

Sample Responses:
- "My face felt hot and turned red after applying it."
- "It caused side effects on me."
- "If I get redness or itching the first time I use it, it means my skin isn't compatible or the ingredients are too harsh."
- "It caused acne and a burning sensation."
- "My skin got itchy after using a certain product."

3. Information and Education from Social Media, Reviews, and Communities

Thematic analysis revealed that many respondents identified harmful ingredients in skincare products through information from social media, consumer reviews, and online communities. This shows that information seeking and education about product safety is no longer limited to official authorities or product labels but is increasingly influenced by other users' experiences and digital content on social platforms.

According to Peer-to-Peer Communication Theory, people are more likely to trust information shared by fellow consumers than corporate or governmental sources (Hajli et al., 2021). Social media has become a collective space for consumer knowledge-sharing, public opinion building, and consumer advocacy regarding harmful products.

Social Influence Theory explains that individual risk perception is often shaped by the opinions and experiences of credible individuals within their social networks (Wang et al., 2021). Consumer Socialization Theory also shows that consumers learn not only through personal experience but also through social interaction, including online forums and review platforms (Jin & Phua, 2022).

Electronic Word of Mouth (e-WOM) significantly shapes perceptions of product safety and purchasing decisions, especially in the cosmetics industry (Lim et al., 2022; Goh et al., 2023). Additionally, Health Information Seeking Behavior Theory supports the idea that

individuals actively search for health-related information online to make informed personal decisions (Yuan et al., 2023). This emphasizes consumers' growing independence and critical use of digital information to evaluate product safety.

Sample Responses:
- "I often check TikTok or Instagram skincare content to find out whether certain products contain harmful ingredients."
- "I read blogs or scientific journals about skincare ingredients."
- "I check reviews from dermatologists on YouTube or Instagram."
- "I often read negative reviews about certain products that caused irritation."
- "I read testimonials from people in skincare forums."

4. Personal or Others' Experiences

Another theme that emerged is using personal or others' experiences to identify harmful ingredients in skincare products. Respondents realized a product was unsafe after experiencing negative effects themselves or hearing about similar experiences from friends, family, or other consumers.

This finding aligns with Social Learning Theory by Albert Bandura, which states that individuals acquire knowledge, attitudes, and behaviors by observing others (Bandura, 1977; Khatoon et al., 2022). Experience sharing—especially negative—through social media or reviews significantly shapes consumers' risk perceptions (Wang et al., 2021).

Word of Mouth (WoM)—whether offline or digital—remains one of the most trusted information sources in consumer decision-making (Kusuma & Nugroho, 2023). Zhang et al. (2022) found that e-WOM is more influential when the information comes from someone perceived as credible or relatable. Consumer Experience Theory adds that past experiences, whether good or bad, shape future purchasing behavior (Rahmi et al., 2021). Negative past experiences lead to greater caution and avoidance of similar products, even without scientific evidence.

Sample Responses:
- "My face suddenly broke out badly after using a certain skincare product. When I checked, it turned out it had unsafe ingredients."
- "I once used a cream that made my skin white in a week. But after stopping, it became dull. It had hydroquinone."
- "If many people report side effects from the same product, that's enough for me to find an alternative."
- "I heard from a friend about a product that contains illegal or harmful substances."
- "After consulting a dermatologist, I learned which ingredients to avoid."

5. Physical Indicators and Unrealistic Product Claims

Another common theme is the identification of dangerous skincare products based on physical characteristics and unrealistic claims. Respondents expressed suspicion when a product had an unusually strong smell, bright unnatural color, or delivered extreme effects like instant whitening.

This corresponds with Consumer Risk Perception Theory, which states that sensory and visual indicators often serve as initial evaluation cues for product risk (Choudhury et al., 2022). Over-the-top claims like "whitens skin in 3 days" or "permanently removes wrinkles after one use" raise consumer skepticism.

According to Deceptive Advertising Theory, unrealistic claims can be a form of misleading marketing designed to manipulate consumer perceptions irrationally (Tariq &

Awan, 2023). Consumers with higher cosmetic literacy are more sensitive to non-scientific or exaggerated patterns.

Critical Consumer Behavior Theory emphasizes the importance of critical thinking in evaluating products based on logic, scientific knowledge, and personal experience (Ali et al., 2023). Products that appear unnatural or promise drastic changes in a short time are often seen as red flags by critical consumers. Huang et al. (2021) showed that consumers who regularly assess physical product features and verify product claims skeptically are more likely to avoid risky products.

Sample Responses:
- "Instant results that are too fast (like whitening in just a few days)."
- "Strong or overly chemical smell."
- "No manufacturer information or official label."
- "Product reviews that sound too good to be true."
- "If the ingredient names are strange and hard to pronounce, I research them before using."

CONCLUSION

Based on the results of qualitative research regarding consumer awareness of harmful ingredient content in skincare products, several important conclusions were drawn:

1. **Increased Consumer Awareness**
   Consumers are becoming increasingly aware of the importance of reading labels, checking active ingredient contents, and verifying product legality (such as BPOM registration numbers). This indicates an improvement in cosmetic literacy.
2. **Role of Social Media and Reviews**
   Social media, consumer reviews, and influencer recommendations significantly influence perceptions and purchasing decisions for skincare products. Consumers actively seek information through platforms such as TikTok, YouTube, and ingredient-scanning applications.
3. **Negative Experiences Drive Behavioral Change**
   Consumers who have experienced negative effects from skincare products tend to be more selective and cautious when choosing products in the future. This underscores the importance of ingredient literacy and public education.
4. **Increased Preference for Professional Consultation and Scientific Approaches**
   Many consumers increasingly rely on dermatologists and scientific platforms when selecting suitable products, indicating a shift towards more science-based and evidence-based consumer behavior.
5. **Exaggerated Claims and Products Without Legal Certification Increase Skepticism**
   Products with instant claims or suspicious physical characteristics (such as strong odors, striking colors, etc.) serve as early indicators for consumers to identify potentially risky products.

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