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SOCIAL MEDIA INFLUENCERS AND PHARMACEUTICAL PRODUCTS: A REVIEW OF RISKS, MISUSE, AND REGULATORY CHALLENGES

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Abstract

Online platforms have emerged as significant tools for promoting medicines and beauty products within these sectors; SMIs significantly influence public perceptions of brands through their content creation on such sites. Many influencers often endorse medicines and beauty items like lotions, vitamins, and skin care formulas without adequate scientific understanding or healthcare guidance. It may deceive customers regarding product effectiveness, potency levels, dosages, as well as possible side effects of drugs. This current assessment thoroughly analyzes how SMI's impact is increasing within drug marketing and beauty products, highlighting potential medical hazards, moral dilemmas, and demanding more stringent regulation in India. A selection of pertinent research papers was gathered from reliable sources such as PubMed, Scopus, and Google Scholar, focusing on investigations into influencer marketing, pharmaceutical advertisements, consumer behavior patterns, and drug safety trends spanning from 2010 through 2025. Research reveals that although influencer marketing boosts brand awareness and customer interaction, it can lead to spreading false information and encouraging improper health treatments among consumers. Certain skincare products featuring active substances like salicylic acid, retinol, niacinamide, or hydroquinone may lead to severe skin reactions or adverse drug effects if improperly used. Enforcing ethical marketing policies, enhancing legal safeguards, and raising consumer knowledge are crucial for maintaining safety and clarity regarding products during the age of online promotion.

Keywords: Social media influencers, pharmaceutical marketing, cosmetics, adverse drug reactions (ADRs), regulatory framework, ethics, misinformation, pharmacovigilance

Introduction

The way people get, think about, and decide to use information about health and beauty products has changed a lot because of digital communication and the fast growth of social media. Now, platforms like Instagram, Facebook, YouTube, and Twitter (X) are big places where people get influenced by what others say. These influencers are people who have built trust within certain groups and use their large following to promote things like lifestyle, beauty, and even medicine[1]. Research shows that these influencers are now more important than traditional ads in shaping what people think about products, especially among younger generations like Gen Z and young adults who depend a lot on social media for advice and reviews [1,3]. The beauty and over-the-counter (OTC) medicine industries have been greatly affected by influencer marketing. Studies show that people are more likely to buy skincare and beauty products if they're recommended by influencers they follow and trust [2,3] . However, unlike doctors or pharmacists, many influencers don't have formal training in medicine or skin care. This can lead to sharing wrong or incomplete info about products. It's especially worrying when products contain strong active ingredients like salicylic acid, retinol, hydroquinone, niacinamide, or vitamins A, C, and E, which need expert advice to use safely [4,5]. If these products are used incorrectly or too much, because of bad recommendations, it can cause bad reactions, allergies, or even serious health problems. In recent years, the line between entertainment and healthcare communication has become less clear, with influencers acting as both promoters and seen as "experts." The pharmaceutical and cosmetic industries have increasingly worked with influencers to promote topical treatments, supplements, and skincare products. While this has helped increase brand awareness, it raises major ethical, legal, and public health issues. Research shows that people often trust influencers more than scientific evidence when deciding on pharmaceutical products [1,6]. Because of this, audiences may rely too much on influencer advice without talking to healthcare professionals, which can lead to self-medication and using products in unsafe ways.

Considering these problems, it's important to look at the legal and regulatory issues around influencer-sponsored pharmaceutical advertising. In India, laws like the Drugs and Cosmetics Act (1940), Drugs and Magic Remedies (Objectionable Advertisements) Act (1954), and Consumer Protection Act (2019) control how drugs and cosmetics are advertised and sold[7-8]. Also, the Advertising Standards Council of India (ASCI) Guidelines (2021) and the Information Technology Rules (2021) set ethical standards for influencers and online platforms [9]. However, even with these rules in place, enforcement is not strong enough, allowing false or misleading pharmaceutical endorsements to spread widely.[10]

This review paper seeks to closely look at how social media marketing affects the promotion of pharmaceutical and cosmetic products, with a focus on the ethical, medical, and legal aspects involved. It points out the risks of false claims made by influencers, the potential harm to people's health, and the importance of better regulations and public awareness to promote safe and reliable information in today's digital world[11].

1. SOCIAL MEDIA INFLUENCERS AND PHARMACEUTICAL PRODUCTS

The fast growth of information technology and the changes in how people live, especially because of lockdowns by governments and organizations to stop the spread of COVID-19, have helped e-commerce become more successful. Instead of going to cinemas, people now mainly watch films on Netflix. Instead of traditional TV channels, social media has become the main way people get entertainment. Social media includes online platforms and apps like Facebook, Instagram, and YouTube, where users can create, share, and exchange information quickly. Instead of celebrities, social media influencers have become the new role models who can change how their followers think and what they buy [2].

Younger generations, like Gen Z, have always seen social media as a tool for both fun and shopping. Millions of people spend a lot of time on these platforms, and a large part of them are from the younger generation. Sites like Facebook, Instagram, Twitter (X), Pinterest, YouTube, and Mauj are where influencer marketing is growing very quickly [1]. Especially in the cosmetics industry, beauty influencers on social media play an important role in setting trends and affecting

buying choices [3]. A study shows that women are more likely to buy cosmetics that are promoted by their favorite influencers. This suggests that influencer marketing is a good way to promote cosmetics and build trust with customers [1].

Influencer marketing has become more popular in recent years. A social media influencer is someone who has built a following in a particular area, has a large audience, and can influence others because of their genuine connection and wide reach. Companies work with these influencers to connect with their target customers, build brand awareness, improve how the brand is seen, and boost profits. On social media platforms, brands team up with influencers to introduce new products or highlight their brand's appeal [2].

In recent years, pharmaceutical and cosmetic companies have started using influencer marketing more often to promote over-the-counter products, skincare items, and health supplements. Especially for Generation Z, social media is a key place where they get information about beauty and wellness products, and influencers are often seen as trusted experts in skincare and self-care [1]. Research from India shows that influencers on sites like Instagram and YouTube have a strong effect on young consumers, shaping their preferences, buying choices, and loyalty to brands [1]. However, this influence is usually based on how trustworthy the influencer seems, rather than on actual professional or medical knowledge.

Influencer marketing can boost brand awareness and connect with consumers, but it also brings up ethical and health issues. Many influencers don't have enough knowledge about medicine or skin care, yet they often promote products with strong ingredients like salicylic acid, retinol, niacinamide, or hydroquinone. These ingredients can be harmful if not used right. Influencers' convincing messages might make people use these products too much or mix them, which can cause bad side effects and wrong information about how safe they are. Social media influencers often talk about skincare products that include ingredients like Niacinamide, salicylic acid, retinol, ascorbic acid (Vitamin C), and Vitamin E.

These are used in skin care and dermatology, but how well they work depends on their strength, how they are made, and how they are applied. For example, salicylic acid is safe in small amounts, like up to 2% in store-bought products [5-6], but higher levels can cause skin irritation, peeling, and even toxic effects if absorbed. Retinol, which is a type of Vitamin A, is good for reducing aging signs and treating acne, but using it wrong can lead to dryness, redness, and even birth defects if not used properly [7]

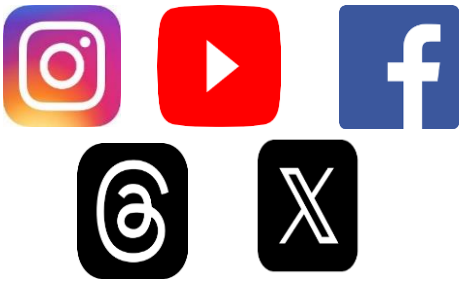


Fig: social media apps

2. The Impact of Celebrities and Social Media Influencers on Pharmaceutical and Cosmetic Product Promotion

Celebrities and social media influencers both play a big role in shaping how people view products, their attitudes, and what they buy, especially in the pharmaceutical and cosmetic industries. Influencers are good at connecting with people on a personal level, engaging them through interaction, and focusing on specific interests. Celebrities, on the other hand, bring a wide audience and create a sense of aspiration. However, when it comes to promoting products that need expert knowledge or proven clinical results, both celebrities and influencers can sometimes lead to ethical or health-related issues.

a. Celebrity Support for Cosmetic and Pharmaceutical Promotion

Celebrity endorsements have always been connected with building trust, increasing credibility, and making brands more recognizable. Studies show that how people see advertised products is heavily influenced by a celebrity's popularity, looks, and perceived knowledge, especially in beauty and healthcare [8]. In India, many pharmaceutical and cosmetic companies team up with well-known public figures to increase sales and improve their reputation. But when celebrities casually promote medicines or skin care products like vitamin supplements, creams, or fairness creams without knowing what's in them, what they can't be used with, or what side effects they might cause, it becomes ethically questionable. These kinds of casual comments, such as a celebrity saying, "I use this cream every day," make people think the product is safe.

According to Menon's doctoral research [9], while celebrity endorsements can attract a lot of attention, in fields like healthcare or medicine, they aren't

more effective than endorsements from non-celebrities. The study shows that people trust a product more based on how competent and trustworthy the person and the company seem, rather than just because the person is famous. So, when celebrities use their influence to promote beauty or health products, it can lead to people using these products incorrectly or without proper guidance.

b. Influencers play a big role in spreading celebrity messages

In today's digital world. They often refer to or copy what celebrities say in their online posts. For example, when a celebrity like Kriti Sanon or Alia Bhatt talks about a skincare or medicine product in a simple post, influencers might mention something like, "This is the same product used by..." to make it seem more real and trustworthy.
A strong marketing loop that boosts consumer persuasion is created through this multi-layered influence chain, which blends the relatability of influencers with the prestige of celebrities. However, influencers often lack expertise in pharmacology and may unknowingly spread incorrect information about dosage, formulation, or contraindications. This can result in improper use, allergic reactions, or adverse drug reactions when it comes to pharmaceutical and cosmetic products.

The mix of celebrity promotion and influencer influence raises the risk of people using unapproved medicines and beauty products. When viewers keep hearing claims from both celebrities and influencers, those claims get seen as more trustworthy, making it hard to tell the difference between personal experience and medical advice. This lack of control can lead to false information, improper use of products, and unnecessary side effects.

3. Digital Marketing & Consumer Behavior

In today's world, digital media has become a big part of daily life, changing how people talk to each other, decide on things, and buy products. Every industry, including the pharmaceutical sector, is quickly moving towards using digital tools. Now, more and more pharmaceutical companies are using social media and online shopping platforms to promote their products and services. This allows people to get health-related items and information through the internet. To make their brands more known and reach more customers, many companies work with social media influencers. They look for new ways to advertise their products [11].

Digital marketing is an important step for the Indian pharmaceutical industry. Companies are using technology not just to sell products, but also to teach patients, spread awareness about diseases, and help with monitoring health. For example, if a company wants to connect with people who have asthma, they might team up with someone who has asthma themselves. This kind of partnership builds a stronger emotional link with the audience and helps patients with similar issues feel more connected and trust the brand [11]. This method helps companies build a good reputation and keep customers loyal by using personal and meaningful online communication.

Pharmaceutical companies use different social media platforms like Facebook, Instagram, WhatsApp, Telegram, and YouTube to reach customers and run digital campaigns. This change to digital marketing is also important for the economy: the Indian pharmaceutical industry is expected to grow by 20% each year for the next five years, according to India Ratings, which is part of Fitch Group [12].

Even with new technology and expanding globally, good marketing still relies on four key factors: Product, Price, Place, and Promotion. These are the basics of marketing strategies that focus on customers [13]. But unlike old ways of advertising, such as newspapers or TV, social media is a lively and interactive space where customers take an active part in how brands tell their stories. Good reviews from customers can help build a company's reputation, but bad comments can also affect how people see the brand. This back-and-forth communication brings both chances and difficulties for pharmaceutical companies trying to keep ethical standards and build trust with customers in the online world [13].
In this setting, influencer marketing has emerged as a powerful method for promoting products in various sectors, including beauty, fashion, and pharmaceuticals [14]. The main group of people who benefit from these campaigns are modern consumers, especially Generation Z, who were born between the late 1990s and early 2010s. This group is very connected to digital platforms, spending a lot of time on smartphones, computers, and social media. Because of this, they are more likely to respond to influencer marketing that feels genuine, tells heartfelt stories, and includes suggestions from people they trust [14].

Additionally, social media influencers are key in shaping how people make buying decisions. Their ads often tap into the emotional, psychological, and social factors that influence choices. They connect with their followers by creating content that feels personal and relatable, especially when it comes to health and beauty topics. For example, skincare has become a big trend among young people looking to prevent issues like acne, pimples, or dark spots. Influencers often share tips about using vitamins like A, C, and E, and creams with ingredients such as niacinamide, retinol, salicylic acid, or hydroquinone. However, many of these influencers don't have enough knowledge about the correct dosages, concentrations, or possible side effects of these products, which can lead to misuse and harmful health effects [13].

This shows how effective digital marketing can be in engaging people, but it also shows how it can spread incorrect health information if not handled carefully. The combination of consumer behavior, influencer trust, and brand strategies defines today's pharmaceutical marketing. But it also brings up the need for ethical practices and better education for consumers to ensure safety and informed choices online**.**

4. Risk and misuse associated with social media influencers

This review paper focuses on social media influencers and their influence related to pharmaceutical products. They influence their audience by giving personal recommendations about medicines and cosmetic products, including how to use them properly, their side effects, and adverse drug reactions. This can lead to harmful effects on users. Products containing ingredients like vitamins A, C, and E, niacinamide, salicylic acid, or hydroquinone are often recommended by social media influencers. The risks caused by misusing these ingredients have already been studied before, and here is an overview of some of these ingredients.

Vitamin A: This is a nutrient our body needs, but we can't make it on our own, so we have to get it from food. It was the first vitamin to be given a name, which is why it's called vitamin A. It's fat soluble, meaning it stays in the body and can build up to harmful levels if taken in big amounts. Vitamin A refers to a group of compounds called retinoids, which include retinol, retinal, retinoic acid, and certain pro-vitamin A carotenoids like beta-carotene. All of these have the same biological activity as all-trans retinol [15]

Vitamin A is found in many natural foods. It is important for several body functions, including vision, growth of a baby in the womb, reproduction, how bones are formed, making blood cells, keeping skin and cells healthy, supporting the immune system, controlling gene activity, and acting as an antioxidant. Vitamin A is one of the most studied nutrients when it comes to supporting the immune system. It is known to be a good antioxidant that may help prevent cancer, especially skin cancer and lung cancer, and can also help prevent other illnesses. The suggested daily amount for men is 900 micrograms per day, and for women it is 700 micrograms per day [15].

Vitamin A, though essential for our body, but it can cause various acute and chronic toxic effects. The overuse of vitamin A leads to abdominal pain, vomiting, headache, lethargy, eczema, patchy hair loss, edema, anemia, respiratory tract infection, and chronic liver disease. Toxic effects of vitamin A result from taking too much over time; beta carotene's only adverse effect is giving the skin an orange color. Recently, it was found that beta-carotene can cause lung cancer and heart diseases to an extent of 20% according to the University of Colorado [15].

Vitamin B_3: Niacin is also called nicotinamide. It helps improve blood flow and reduces inflammation. It also plays a role in making hormones related to sex and stress in the adrenal glands. When someone doesn't get enough niacin, they can develop a disease called pellagra. Niacin has many good effects on fats in the body. It's often used for people who have low levels of good cholesterol, known as high-density lipoprotein, and high levels of triglycerides [19,20]. However, using niacin for a long time can cause a flushing reaction, which is a common side effect. This flushing happens because of substances called prostaglandins [21,22]. Niacin can also lower the number of platelets in the blood and affect how blood clots [23].

Other side effects linked to the stomach, bones and muscles, skin, and diabetes have been reported with niacin [24-28]. A study on extended-release niacin combined with laropiprant in high-risk patients found that it didn't greatly lower the chance of major blood vessel issues but did increase the risk of serious side effects [28]. People taking high doses of niacin pills experienced stomach problems like bleeding, ulcers, diarrhea, and high blood sugar. Niacin users also often had muscle pain, gout, infections, and even brain bleeding.

Vitamin C: Vitamin C, also known as L-ascorbic acid or ascorbate, is a necessary nutrient for humans and some animals. It has a structure similar to glucose and is a weak acid that acts like a sugar. In the body, vitamin C is usually found in areas with low pH, but in neutral conditions, such as when the pH is above 5, it exists mainly as ascorbate, which is the ionized form. In biological systems, ascorbate works as a reducing agent, helping to quickly neutralize various harmful substances called reactive oxygen species (ROS). It can be converted into other compounds in the body through reactions that involve enzymes using glutathione and nicotinamide adenine dinucleotide phosphate. Because of its ability to fight harmful oxygen-related molecules, vitamin C is considered an antioxidant in natural marine environments. The recommended daily amount of vitamin C for adult men is 90 milligrams, with a maximum of 2 grams (2000 mg) per day, while adult women need 75 milligrams, with the same upper limit of 2 grams (2000 mg) per day

In infants, the main toxic effects were skin rashes, as noted in reference [29]. This might be because of the body's reaction to collagen synthesis and interactions with vitamin C through enzymes. A study on vitamin C consumption found a link between higher intake and an increased risk of dying from cardiovascular disease (CVD) in postmenopausal women who also had diabetes, as mentioned in reference [30]. The study also looked at how much vitamin C people took, including from supplements, and how that affected the risk of CVD-related death in those who did not have diabetes at the start of the study.

Vitamin E: Vitamin E is a group of compounds that includes both tocopherols and tocotrienols. The most active form of vitamin E is called Î±-tocopherol, which is also the most commonly found type in the diet. If someone regularly consumes more than 1000 mg (1500 IU) of tocopherols each day, it can be beneficial. Î±-tocopherol is a fat-soluble antioxidant that helps protect cell membranes from damage by neutralizing harmful free radicals. While tocopherols are less well-known, they are actually more powerful antioxidants in the vitamin E family. They can help protect nerve cells from harm and reduce cholesterol levels [15]. However, taking more than 400 IU of vitamin E per day can lead to some side effects, such as blurred vision, diarrhea, dizziness, headaches, nausea, stomach cramps, and unusual tiredness or weakness [18].

Avoiding vitamin E supplements along with beta-carotene and vitamin C right after an angioplasty is advised only under medical guidance due to potential risks associated with these substances during this procedure. Those supplements hinder effective recovery. The researchers at [15], known as the GISSI-Preventione investigators, observed an elevated incidence of developing congestive heart failure among their study participants when compared to those not receiving tocopherol supplements; they also noted that vitamin E could potentially elevate mortality rates in individuals who have previously experienced myocardial infarction. Individuals who have experienced a previous heart attack must limit their intake of vitamin E supplements to moderate levels [16]. Individuals suffering from diabetes must refrain from excessive intake of vitamin E supplements. [15]. A synthetic form of vitamin E called alpha-tocopherol, specifically at 400 International Units, appears to hasten visual impairment among individuals suffering from retinal degeneration syndrome. Nevertheless, relatively smaller doses of 3 units fail to exhibit such an outcome. For individuals suffering from retinitis pigmentosa, it's advisable not to consume all-rac-alpha-tocopherol at doses exceeding 400 International Units daily as these high levels may exacerbate visual impairment symptoms. Nevertheless, smaller doses of 3 international units fail to exhibit such an outcome. Should you suffer from this ailment, abstain entirely from taking vitamin E supplements exceeding four hundred international units per day. The consumption of vitamin E could potentially elevate the likelihood of recurrence in cases of cancer. [29 30] The supplement vitamin E could exacerbate conditions affecting blood flow. Individuals suffering from hemophilia should refrain from using vitamin E supplements, especially if they undergo surgical procedures, as this could elevate their likelihood of experiencing excessive blood loss both intraoperatively and post-operatively. Avoid taking vitamin E for two weeks prior to your upcoming surgical procedure [31].

Vitamins	RDA/AI	UL
Vitamin E	15mg/d	400mg/d
Vitamin C	Female: 75mg/d Male: 90mg/d	2000mg/d
Vitamin A	Female: 700µg/d Male: 900µg/d	3000µg/d
Vitamin B3	Female: 14mg Male: 16mg	35 mg/d

Table 1. Dietary Reference Intake Values for vitamin E, C, A, and B3 [16]

RDA: Recommended Dietary Allowance, **AI**: Adequate Intake; **UL**: Tolerable Upper Intake Level, data based on the National Academy of Sciences. [16]

Salicylic acid

Salicylic acid serves as an extensively utilized beta-hydroxy acid for its diverse range of uses in both skin care and medicine. This substance has keratolytic, antibacterial, antifungal, and photoprotective effects; hence, it is frequently used as an OTC component in products like topical treatments for acne, peeling creams, and therapeutic ointments [32]. The treatment's effectiveness mainly stems from its capacity to weaken cell adhesion within keratinocytes and disintegrate the extracellular matrix between skin cells in the horny layer, facilitating shedding and peeling off the outermost layers of the epidermis. [32].

Salicylic acid's application varies by concentration based on its intended use; it appears at lower levels (5%), commonly seen in treatment of acne and dry skin conditions like xerosis. Moderate doses ranging between 6-10% are employed for managing severe cases such as psoriasis and inflammatory types of acne. Higher concentrations up to 40%, however, target specific issues including wart removal, thickened foot pads, and overly keratinized areas. Reference number three twenty-two provides further detail regarding these applications. Despite being typically deemed harmless when applied topically, the substance's ability to penetrate through the skin varies greatly based on how it is formulated and the state of the skin. Studies suggest that approximately 60 percent of an administered amount penetrates intact skin; however, this penetration could potentially rise tenfold if the epidermis becomes compromised due to damage or inflammation [33].

Systemic absorption efficiency of salicylic acid varies based on its carrier type; an example being a 5% solution administered via mineral oil or petrolatum yields approximately 2%. The material exhibits fivefold greater uptake compared to those based on polyethylene glycols. [33]. If salicylate concentrations surpass 35 milligrams per deciliter in blood serum, signs indicative of systemic poisoning known colloquially as salicylic acid intoxication manifest. [34]. Such manifestations might involve feelings of queasiness, projectile diarrhea, lightheadedness, disorientation, ringing in ears, rapid breathing, abnormal blood pH levels, and potentially leading to unconsciousness or even fatalities under extreme circumstances [34].

scientific proof highlights that topical salicylic acid toxicity is much more likely whilst implemented to huge body surface areas or underneath occlusive dressings, mainly in patients with pre-current dermatological problems such as psoriasis, ichthyosis, or erythroderma [35]. In those situations, the compromised pores and skin barrier enables immoderate systemic absorption, from time to time main to fatal consequences. An overview of mentioned instances among 1966 and 2012 recognized as a minimum 25 cases of topical salicylate toxicity, inclusive of 4 deaths, with concentrations starting from 2% to 30% implemented over tremendous regions of the body [35].

toddlers and neonates are especially susceptible to salicylic acid toxicity because of their better surface-region-to-frame-mass ratio. Even mild formulations containing best 1–2% salicylic acid have led to systemic poisoning in this populace [36]. Repeated use of moderate-power arrangements along with 6% creams carried out two times each day also can cause accumulation of poisonous plasma salicylate levels (>35 mg/dL), ensuing in metabolic disturbances and life-threatening salicylism [34].

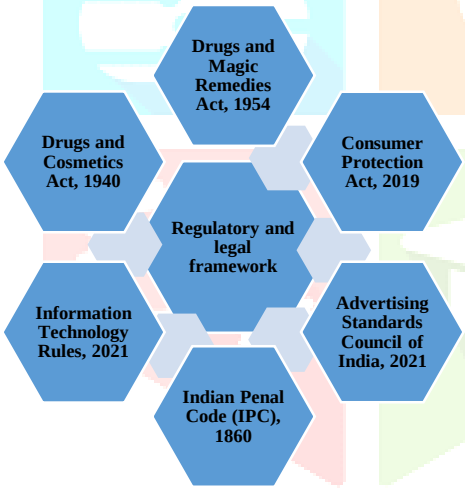
Because of these results, salicylic acid needs to be used carefully, particularly in cosmetics and over-the-counter skincare items that are advertised on social media. Many influencers suggest exfoliating creams or "anti-acne" products with this ingredient without knowing the risks related to how much is in the product, how much is used, or how it affects the skin. Using these products too often, mixing them with other treatments, or applying them to

already irritated skin can cause redness, damage to the skin's protective layer, and even harmful effects inside the body. So, it's important to properly educate consumers and have professionals oversee the use of these products to avoid unwanted side effects that happen when people use them without guidance or follow recommendations from influencers [32–36].

5. Regulatory and legal framework Governing Influencer Marketing of Pharmaceutical Products in India

When social media influencers promote pharmaceutical or cosmetic products, several Indian laws and regulations are involved. These laws are meant to stop false claims, misleading advertising, and endorsements by unqualified influencers. Some brands also use these influencers for their own profits, which can harm public health.

There are Indian laws and Acts that deal with false claims, misleading advertising, and endorsements for products that are not qualified. These laws and Acts are listed below.



I. Drugs and Cosmetics Act, 1940 [37]

The Drugs and Cosmetics Act, 1940 is closely related to this project because it controls how medicines and beauty products are made, sold, distributed, and advertised in India. The law makes sure that all drugs and cosmetics are safe, clearly labeled, and not making false promises. In the case of social media influencers, this law is very important because many of them promote lotions, supplements, and skincare items without checking if they are safe, properly made, or approved.

Influencers who promote products that aren't properly regulated or labeled, like steroid-based fairness creams, retinol serums, or niacinamide products, might be breaking the rules in Sections 17, 17C, and 18 of the Act. These sections stop misleading branding and false health claims. So, this law gives a legal way to spot and stop untrue ads for medicines and beauty products on social media. It also shows that influencers need to take responsibility and make sure the claims they share about products are true and meet scientific and legal standards, which helps prevent harmful effects on people using these products..

II. The Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954 [38]

The Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954 is a key law connected to this project. It was made to stop false, over-the-top, or magical claims in ads for medicines and treatments. This law is especially important now because of digital marketing, where influencers often promote drugs, beauty products, and herbal items by saying they work instantly, have miracle effects, or are completely safe, without any proof.

Sections 3 and 4 of the Act say that ads that trick people about how well a medicine works or call it a "magic cure" for things like acne, weight gain, diabetes, or sexual issues are not allowed. These kinds of claims are common in influencer posts, especially for fairness creams, detox pills, and skin-lightening products. This law directly ties into the main idea of this project, which is to look at the dangers of influencers promoting health and beauty products without knowing enough. It also shows the legal duty of influencers to not make unproven health claims and highlights the need for better enforcement of ad laws in India to protect people's health and stop the spread of false information.

III. Consumer Protection Act, 2019 [39]

The Consumer Protection Act, 2019 is closely linked to this project because it sets up legal rules for ads and endorsements that might be misleading. It gives the Central Consumer Protection Authority (CCPA) the power to look into and punish false or deceptive ads that trick people. Under Section 21, those who make untrue, unproven, or exaggerated claims about products can be fined up to 10 lakh rupees and banned for up to a year.

In this project, the Act is very important because many influencers promote products like fairness creams, serums, and supplements without having the right knowledge or scientific proof. These kinds of promotions can lead to wrong information and unsafe use of products, which may result in Adverse Drug Reactions (ADRs) in people.

The Act also includes digital ads, which means influencer marketing is now part of the legal system and needs to follow rules. This helps create a strong system that protects consumer rights, which is key to this project's aim of educating people about ethical influencer behavior, safe product use, and honest communication in social media marketing.

IV. Advertising Standards Council of India, 2021 [40]

The ASCI Guidelines for Influencer Advertising in Digital Media (2021) are connected to this project because they are India's first official effort to control influencer ads on social media. These rules focus on being open, truthful, and clear when promoting products. Influencers must mark paid promotions with tags like *#ad*, *#sponsored*, or *#collaboration*, and they have to make sure all product claims are accurate and supported by evidence. This is especially important for ads about medicines and beauty products, where influencers often promote items with active ingredients like niacinamide, retinol, salicylic acid, and hydroquinone without knowing the right way to use them, their possible side effects, or when they shouldn't be used.

The ASCI guidelines match up well with this project's goal of encouraging ethical behavior from influencers and raising awareness among consumers. These guidelines ask influencers to clearly state when they're paid to promote something and to check if their claims are true before endorsing a product. This helps stop false health statements, lowers the spread of incorrect information, and keeps consumers safe from using unsafe products or experiencing adverse drug reactions. As a result, these guidelines are a key part of the rules that manage influencer marketing in India, working together with laws like the Consumer Protection Act (2019) and the Drugs and Magic Remedies Act (1954).

V. Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 [41]

The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 are very important for this project because they set up a system for managing online platforms like Instagram, YouTube, Facebook, and Twitter. These platforms are often used by influencers to promote pharmaceutical and cosmetic products.

These rules make both the social media platforms and the content creators responsible for making sure the information they share is accurate and follows the law. According to Rule 3(1)(b)(vii), platforms must stop users from posting or spreading false, misleading, or harmful health information. Rule 3(2) also requires platforms to have a way for people to complain about misleading ads and get them resolved.

In this review, these rules help by making it easier to report and remove misleading or unsafe promotional content, such as claims like "instant fairness," "cure for acne," or "herbal immunity boosters." They also ensure that social media companies act quickly within 36 hours when content breaks Indian laws like the Drugs and Magic Remedies Act (1954) or the Consumer Protection Act (2019). As a result, these rules support the project's goal of promoting digital responsibility, ethical advertising, and consumer safety in influencer marketing for pharmaceutical and cosmetic products.

VI. Indian Penal Code (IPC), 1860 [42]

The Indian Penal Code (IPC), 1860 is relevant to this project because it deals with the criminal effects of misleading, harmful, or fraudulent advertising of products. While civil laws like the Consumer Protection Act focus on compensating consumers, the IPC holds influencers and companies legally responsible if they deliberately or carelessly mislead people.

Important sections such as Section 420 (cheating), Section 468 (forgery with the intent to cheat), and Section 284 (negligence regarding harmful substances) can be used when influencers knowingly promote unsafe, fake, or misleading medicines or beauty products. For instance, if an influencer advertises a steroid-based cream or an unsafe supplement as "100% safe" and consumers later suffer from side effects or Adverse Drug

Reactions (ADRs), the influencer and the brand could face legal action for cheating or negligence under these sections.

In this project, including the IPC shows how false advertising of drugs is not just an ethical issue but can also be a criminal act. It supports the view that marketing drug-related products without proper knowledge or following rules can pose a serious risk to public health and must be closely watched under both civil and criminal laws.

Conclusion

The increasing role of social media in shaping how people see products has made it a strong but risky tool for marketing drugs and cosmetics. While using influencers to promote brands has worked well in getting more attention and interaction from consumers, it often crosses into areas that aren't covered by medical ethics or regulations. Many influencers don't have proper training in medicine or skin care, but they still recommend products with strong ingredients like retinol, hydroquinone, salicylic acid, or vitamin-based items. When these products are used wrongly because of false claims or bad advice, it can cause serious side effects, poisonings, or long-term health problems.

This review shows the need for more ethics and proper knowledge about medicines among influencers who promote health and beauty products. Organizations like the Central Drugs Standard Control Organization (CDSCO), Advertising Standards Council of India (ASCI), and Consumer Protection Authority (CCPA) should closely watch online health marketing and punish misleading ads. Also, drug companies should make sure that any influencers they work with are given correct, science-backed information checked by experts.

From a public health angle, it's important to run awareness campaigns led by pharmacists, dermatologists, and health educators to help people tell real medical advice from paid promotions. Only by combining ethical marketing, strict rules, and expert support can social media promotions in the drug and beauty industries be both safe and responsible.

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