

## Regulatory Policy Content of Hazardous Materials Mercury in Illegal Bleaching Creams

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### ABSTRACT

Mercury (Hg) is a metal element that is often used in technology development, especially in the beauty sector. Several brands of creams can be seen in the market, have no manufacturing or expiry date stated, labeling is incomplete, or contain levels of bleach which can only harm the skin itself. The creams may have up to 10,000 ingredients in them, common ones being steroids, arbutin, ascorbic acid, hydroquinone, and kojic acid, including high levels of toxic metals such as mercury. There are still many Indonesian women who lose that white and smooth skin is a symbol of beauty. This makes them do various ways to get white and smooth skin. Facial whitening creams that contain mercury metal in cosmetic ingredients are widely used. Cosmetic products containing mercury generally promise a white face in a short time, so many women are interested in using them. This is used by cosmetic manufacturers who sell face whitening creams containing hazardous ingredients, such as mercury. Public policies need to be regulated to prevent impacts on the skin health of users. This article is the result of a study from several sources, namely information that appears in the community and also through several articles.

*KeyWords: Mercury, Harm the Skin Itself, Public Policy.*



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### INTRODUCTION

Humans in this world consist of various nations and races with various skin colors. Skin color is determined by the level of pigment or melanin. This pigment produces a brown color on the skin (Majeed et al., 2021). Some cultures, especially Asia, consider brown or dark skin as a sign of poverty because they have to work hard under the sun. Asian cultures associate lighter skin with feminine beauty, racial superiority, and power (Nadeem, 2018). Personal preference for white skin can be traced back as far back as 475-221 BC when white skin was considered a symbol of beauty, and innocence and represented a higher social status. It is for this reason that women in ancient China used to swallow crushed pearls and drink arsenic powder (Majeed et al., 2021).

On the sub-continent, the preference for milky white skin started with the successive invasions of the Aryans, Mughals, and British. Related they have white and strong skin, thus increasing the perception of white as a sign of power, superiority, and wealth (Majeed et al., 2021). The use of mercury metal in cosmetic ingredients is used to beautify themselves in many women who use facial whitening creams. Cosmetic products with mercury generally promise a white face in a short time, so many women are interested in using them (Hadi, 2013).

There are still many Indonesian women who think that white and flawless skin is a symbol of beauty. This makes them do various ways to get white and smooth skin. This is used by cosmetic manufacturers who sell face whitening creams containing hazardous

ingredients, such as mercury (Hadi, 2013). A number of the cream brands observed in the market did not have a stated manufacturing or expiry date, incomplete labeling, and contained harmful levels of bleach. These creams may have up to 10,000 ingredients, the most common being steroids, arbutin, ascorbic acid, hydroquinone, and kojic acid, including high levels of toxic metals such as metallic mercury (Majeed et al., 2021).

Apart from Pakistan, data on the presence of whitening creams containing mercury levels were also reported in Europe. Data from 2011 to 2013 showed that there were 35 illegal creams containing levels of metallic mercury that exceeded the limit (Desmedt et al., 2016). Food and Drug Supervisory Agency (BPOM) (Maulina et al., 2022). The pollution limit for heavy metals such as mercury in cosmetic products is no more than 1 mg/kg or 1 mg/L. Business actors who violate these provisions can be subject to administrative sanctions in the form of written warnings, distribution bans, withdrawal of circulation, destruction, temporary suspension of production, or revocation of notification numbers (BPOM, 2019).

Public policy is defined as whatever the government chooses to do or not to do by Dye & Zeigler (1992). Another definition according to James (1970) public policy is policies developed by government agencies and officials (BPOM, 2020). Public policy needs to be regulated so that this issue is not wild and has an impact on the health of its users. The main purpose of this article is to identify policies against regulating the hazardous substance mercury content in illegal whitening creams.

## METHODS

This article is the result of a study of the results of information that appears in society, then it is analyzed by finding and completing information or articles in journals, proceedings, reference books, seminar results, and cyberspace (internet).

## RESULTS

The toxicity of mercury to humans depends on the form of the metal mercury composition, the pathways of entry into the body (pathways), and the duration of development. For example, the metallic grade form of mercury ( $Hg^{++}$ ) is more toxic than mercury ( $Hg^{+}$ ). This is because the divalent form is more soluble than the monovalent form. In addition, the metal form of mercury is also absorbed more quickly and easily so its toxicity is higher (Hadi, 2013). The half-life of Mercury metal is estimated to be 42-60 days in the body. These metals are absorbed in the body through sweat glands, hair follicles, sebaceous glands, and mucosa. Mercury accumulates in the liver and kidneys, causing organ damage. Exposure to placental cells causes accumulation in the placental membrane and reduces membrane fluidity. This can lead to the abortion of the fetus or impaired development and growth of children (Majeed et al., 2021).

According to the World Health Organization (WHO), as much as 1.5-2% of compounds in creams are safe to use, but levels above this limit are considered toxic and associated with adverse health conditions. Research in Lahore, Pakistan showed that the 12 samples analyzed had very high concentrations of mercury in them, making this cream highly unfit for use (Majeed et al., 2021). James Anderson classifies the types of public policies, one of which is private goods policy. The policy regulates the provision of goods/services by the private sector for the benefit of individuals in the free market in return for a certain fee

(BPOM, 2022). One of these public policies is the regulation of the maximum limit of mercury content in whitening creams. This will be difficult to materialize, not only because of the lack of oversight by policymakers, but also because of factors from the community who implement it, such as legal culture, legal awareness of the community, and a desire for participation by the community (Suparman, 2016).

Efforts to reduce and eliminate Mercury metal in Indonesia have been initiated since 2010 and are still ongoing today. Various policies laws and regulations have been issued as a concrete form of the Government of Indonesia's commitment to solving problems arising from the use of Mercury. These policies laws and regulations are issued as a reference and legal umbrella or protection for individuals who are obliged to carry out Mercury reduction activities, as well as legal protection for people who are exposed or whose environment is contaminated by metal mercury contamination.

The strategy for reducing and eliminating metal mercury in Indonesia refers to the National Action Plan for Reducing and Eliminating Mercury in Indonesia by Presidential Decree 21/2019 Referring to Presidential Decree 21/2019 Article 10 letter a, it is stated that in implementing the Regional Action Plan for Mercury Reduction and Elimination (RAD PPM), the governor is tasked with preparing, implementing, and coordinating the implementation of the Provincial RAD PPM. As for the same task for regents/mayors, it is stated in Article 12 letter a. From the two articles, it is known that provincial and district/city regional heads are tasked with preparing RAD PPM.

The mandate is mentioned again in the Minister of Environment and Forestry Regulation 81/2019 Article 3 Paragraph (1) which reads "Governors and Regents/Mayors by their authority to prepare RAD PPM". The procedure for preparing RAD PPM consists of 3 (three) stages, namely: 1) Preparation of technical studies; 2) Preparation of RAD PPM materials; and 3) Determination of RAD PPM (Krisnayanti and Probiyantono, 2020). Related to this issue, in Indonesia an arrangement has been made through BPOM. By the Regulation of the Head of the POM Agency No.23 of 2019 concerning Technical Requirements for Cosmetic Ingredients, it is stated that Mercury and its compounds are included in the list that is not permitted in cosmetics (Hendrawati et al., 2015).

Regulation of the Minister of Health of the Republic of Indonesia No.445/MENKES/PER/V/1998 concerning Ingredients, Dyes, Substratum, Preservatives, and Sunscreens in Cosmetics, mercury and its compounds are prohibited from being used in cosmetics because in small amounts these compounds can be toxic (Bernhoft, 2012). Maulina et al (2022) except for phenyl rax nitrate and thiomersal as preservatives in preparations around the eyes, a maximum of 0.007%, calculated as Hg (Hadi, 2013; Krisnayanti and Probiyantono, 2020). Monitoring of the market needs to be done to prevent this from happening again. If a product has been found to contain high levels of metallic mercury, then a search for the manufacturer that produces the product will be carried out and will be given sanctions by their obligations, which is the responsibility of the authorities. In addition to product monitoring, monitoring of affected areas/locations such as areas close to factories must also be considered because of the contamination.

## CONCLUSIONS

There are still many Indonesian women who think that white and flawless skin is a symbol of beauty. Some cosmetic ingredients for facial whitening creams contain harmful ingredients, such as metallic mercury. These metals can cause adverse effects on health. Monitoring of the market needs to be done to prevent this from continuing to happen, as

well as environmental pollution due to its production. Various policies laws and regulations have been issued as a concrete form of the Government of Indonesia's commitment to solving problems arising from the use of Mercury metal.

## REFERENCES

- Badan Pengawas Obat dan Makanan (BPOM) Republik Indonesia [Internet]. Pom.go.id. 2015. Available from: <https://www.pom.go.id/new/view/more/klarifikasi/35/Deteksi-Cemaran-Logam-Berat-dalam-Kosmetika.html>
- Badan Pengawas Obat dan Makanan (BPOM) Republik Indonesia [Internet]. Available from: <https://notifikos.pom.go.id/upload/informasi/20190923110116.pdf> Mengenal Kebijakan Publik [Internet]. bppk.kemenkeu.go.id. [cited 2022 Dec 20]. Available from: <https://bppk.kemenkeu.go.id/pusdiklat-anggaran-dan-perbendaharaan/berita/mengenal-kebijakan-publik-912312>
- Bernhoft, R. A. (2012). Mercury toxicity and treatment: a review of the literature. *Journal of environmental and public health*, 2012.
- Desmedt, B., Courselle, P., De Beer, J. O., Rogiers, V., Grosber, M., Deconinck, E., & De Paepe, K. (2016). Overview of skin whitening agents with an insight into the illegal cosmetic market in Europe. *Journal of the European Academy of Dermatology and Venereology*, 30(6), 943-950.
- Dye, T. R., & Zeigler, L. H. (1992). American politics in the media age. (*No Title*).
- Hadi, M. C. (2013). Bahaya merkuri di lingkungan kita. *Jurnal Skala Husada*, 10(2), 175-183.
- Krisnayanti, B. D., & Probiyantono, A. S. (2020). Buku 1: Kebijakan Pengurangan dan Penghapusan Merkuri di Indonesia. *Jakarta: GOLD-ISMIA*.
- Hendrawati, A., Supriyadi, S., & Khumaedi, K. (2015). Identifikasi Limbah Merkuri dengan Metode Geolistrik: Studi Kasus Desa Jendi Kecamatan Selogiri, Wonogiri. *Indonesian Journal of Mathematics and Natural Sciences*, 38(1), 19-24.
- Maulina, N., Zubir, Z., & Nelvia, D. D. (2021). Uji Kualitatif dan Kuantitatif Kandungan Merkuri (Hg) pada Krim Pemutih Wajah yang Beredar di Pasar Kota Pantan Labu Tahun 2021. *AVERROUS: Jurnal Kedokteran dan Kesehatan Malikussaleh*, 7(2), 112-121.
- Majeed, T., Shah, S. H., & Anjum, I. (2021). Estimation of mercury and hydroquinone content in skin whitening creams and the potential risks to the health of women in Lahore, Pakistan. *Journal of Pakistan Association of Dermatologists*, 31(1), 33-41.
- Nadeem, M. (2018). Myths of skin whitening agents and the emerging use of glutathione. *Journal of Fatima Jinnah Medical University*, 12(2).
- Peraturan Menteri Kesehatan RI Nomor 57 Tahun 2016. Tentang Rencana Aksi Nasional Pengendalian Dampak Kesehatan Akibat Paparan Merkuri Tahun 2016-2020
- Suparman, H. A. (2014). Penegakan Hukum terhadap penyelenggaraan pelayanan publik. *Jurnal Wawasan Yuridika*, 31(2), 177-182.