69 - IMPLICATIONS IN FORMALDEHYDE USE IN PROGRESSIVE BRUSH

CRISTINY DE FÁTIMA AUGUSTO MENDONÇA MIYAMURA
JAQUELINE FERREIRA COUTO;
SORAYA GARCIA AUDI
FACULDADES METROPOLITANAS UNIDAS
SÃO PAULO - S.P. - BRASIL
tinycris13@yahoo.com.br

INTRODUCTION

The increasing search for procedures to achieve a standard of beauty, moves the aesthetic and the cosmetic market. According to data from Pyxis Consumo, a tool for scaling IBOPE Inteligência, in 2012 Brazil apent approximately R$36.24 billion in the sector. However, exposure to chemicals such as formaldehyde, is a common practice in hair, its application in hair treatments for straightening, neglects consumer and professional's health in order to achieve this goal.

As Sampaio (1981) describes the scalp has approximately 100,000 hair follicles which will give rise to one or more strands of hair. The thread is composed of keratinized cells without cytoplasm or nucleus; formed by medulla, cortex and cuticle.

Bone marrow is the inner part of the thread. The cortex provides strength, flexibility, elasticity, shape and color to hair; formed by polypeptides, is in this region that the majority of cosmetic procedures happen. The cuticle acts as a barrier protecting the cortex and the medulla (HALAL, 2011).

Also according to Halal (2011), the cortex of the hair is composed of strings of proteins and side connections which create bridges making the hair stronger and more elastic. They are composed by:

-Hydrogen bonds: they are weak bonds that can be broken by water or heat, consists of binding of an amino acid by another portion of the hydrogen present in both acid;

-Salt bonds: pH dependent, salt bonds occur when two amino acids are linked by a negative charge of one, with the positive charge of the other;

-Disulfide bonds: strong bond that joins two cysteine amino acids to create cystine through the sulfur atoms of both.

Produced from methanol, formaldehyde (CH2O) is a substance with different applications in industry, is often used for the purpose of straightening in hair salons. Its action occurs in the formation of methylene bridges between sulfur atoms present in disulfide bonds, "plastifying" the thread. However formaldehyde alone, does not express the ability to straighten, requiring the simultaneous application of heat, vaporizing formaldehyde and exposing both the professional hairdresser and the client to the toxicity of the product considered a carcinogen by the WHO (World Health Organization). (INCA, HALAL, 2011)

In ANVISA Resolution 162 from 2001, formaldehyde is permitted in hair cosmetics in the role of preservative during the manufacture of the product, with a maximum allowable concentration of 0.2%.

In 2001, ANVISA published a report on formaldehyde in progressive brush. A relationship between the concentration and the symptoms caused by exposure can be noticed:

-0.1 to 0.3 ppm: reported irritation at the lowest level;

-0.8 ppm: odor threshold;

-1 to 2 ppm: mild irritation threshold;

-2 to 3 ppm: irritation of eye, nose and throat;

-4 to 5 ppm: increased mucosal irritation and significant tearing;

-10 to 20 ppm: severe burning sensation, abundant tearing, coughing and abundant (15-16 ppm can kill mice and rabbits after 10 hours of exposure);

-50 To 100 ppm: cause serious damage in 5 to 10 minutes.

Parts per million (ppm) is the concentration measurement that is used when the solutions are very dilute. OSHA (Occupational Safety and Health Administration) the maximum concentration of formaldehyde vapors is 0.75 ppm over a period of eight hours.

MATERIALS AND METHODS

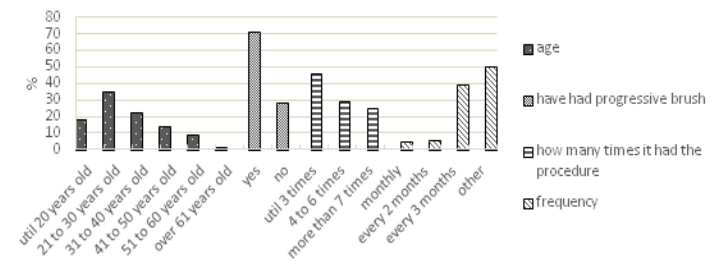
A bibliographical review has been done based on material already prepared, especially on scientific papers obtained by Access BIREME and Google Acadêmico, information sites of agencies such as INCA and ANVISA and research field with a sample of 196 women from São Paulo, selected randomly. Each question from the form sought information to indicate the real perception of the individuals about their health, identify symptoms possibly caused by exposure to formaldehyde and evaluate the frequency of exposure of these women. As a result, there were inferences and interpretations that inter-related them with the theoretical referencial.

OBJECTIVE

Assess the health perceptions, knowledge of the procedures involved in relation to hair procedures – progressive brush – to which are subjected, the toxic effects during and after the procedures.

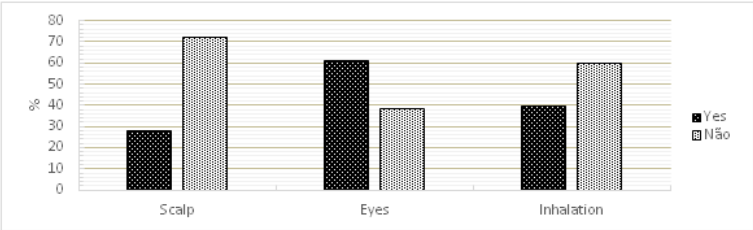
RESULTS

Graph 1 - Distribution in percentages of age, people who have had the progressive brush procedure, how many times that have had it and frequency of women interviewed in São Paulo. 2013.



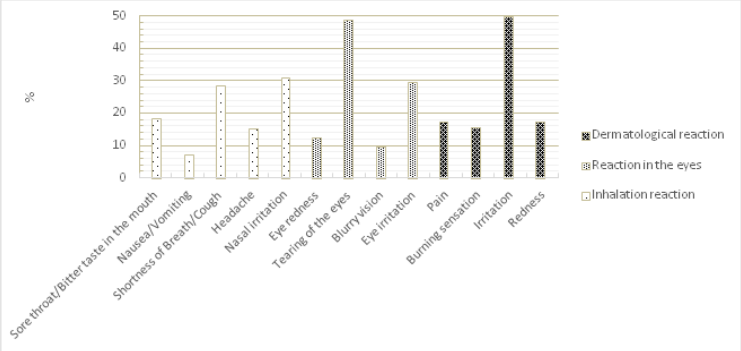
Women aged 21 to 40 years account for 57.14% of the sample. From the 196 volunteers, 140 (71.43%) had had progressive brush done, the majority of this total had the procedure 3 times more frequently than every three months.

Graph 2 - Distribution in percentage of reactions reported by the women interviewed in São Paulo. 2013.



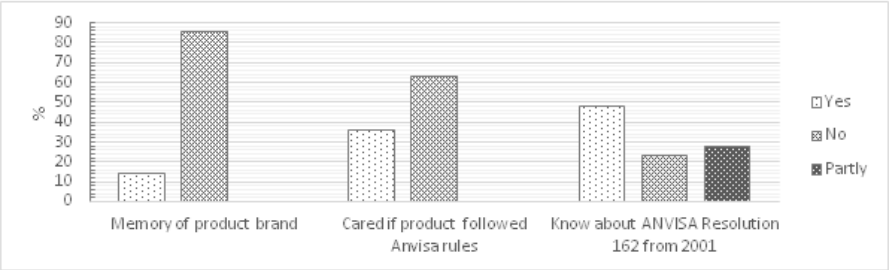
Eye reaction prevailed with 61.43%.

Graph 3 – Distribution in percentage of types of reactions reported by women interviewed in São Paulo in 2013



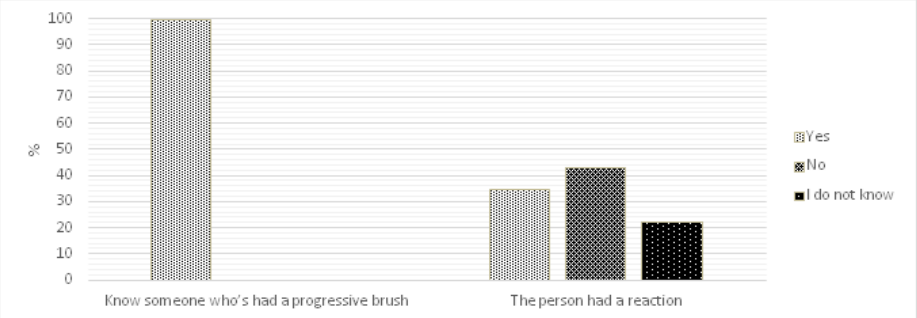
Among skin, eye and inhalation of smoke reactions; scalp irritation, tearing of the eyes and nasal irritation were the most cited, respectively.

Graph 4 - Distribution in percentage of memory brand of the product used, if it followed the rules established by ANVISA and knowledge of ANVISA Resolution 126 from 2001 (formaldehyde can only be used in cosmetic products for the purpose of preservative and not straightening hair) of women interviewed in São Paulo in 2013.



Although 48.47% (95) claim to have knowledge, or partly have knowledge as 28.06% (55) of ANVISA Resolution; from those who underwent the procedure 85.71% (120) do not remember the product brand, and 63.57% (89) did not care to check if it followed the established rules.

Graph 5 - Distribution in percentage of the interviewees who know someone who has undergone the progressive brush procedure and sufferred reactions, São Paulo. In 2013.



Almost all respondents (99.50%) know someone who has had a progressive brush. Those who were aware that the person had some sort of reaction totaled 68 (34.87 %), and the most cited reactions were scalp irritation and hair loss.

CONCLUSION

From the total number, 71.43% had or have had a progressive brush and 99.50% know someone who also had the same procedure done.

It's clear that even being considered a heinous crime, the addition of formaldehyde in products for hair treatmenti with the intention of straightening happens, since there have been reactions during or after the procedure. Among the skin, eyes, or inhalation of smoke reactions the most often cited are, respectively, scalp irritation, tearing of the eyes, nasal irritation, shortness of breath and cough. This data shows the relationship between the concentration and the symptoms caused by exposure to formaldehyde, already showing a concerning level of toxicity. The medium term use of formaldehyde with consecutive applications can also degrade hair fiber.

Research shows 150 from the 196 women interviewed, have full or partial knowledge of 162-2001 RDC ANVISA, yet from the ones that had the procedure done, most do not know the name of the product used, or whether it follows the established rules; a high rate of unconcern about their own health can be observed, and the placing of aesthetic standards first.

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IMPLICATIONS IN FORMALDEHYDE USE IN PROGRESSIVE BRUSH

ABSTRACT

Exposure to formaldehyde is a common practice in hair salons, its application in hair treatments for straightening, neglects the health of consumers. There is a relationship between the concentration and the symptoms caused by such exposure. Formaldehyde is allowed only in hair cosmetics products with a preservative function, during manufacture of the product with maximum concentration of 0.2%. This is a study consisting of 196 randomly chosen women, the subjects answered a questionnaire consisting of 23 questions. This study aims to evaluate the perceptions of health, involvement of toxic effects during and after the procedure and knowledge of those involved regarding the toxicological effects when it is done improperly. Our results show that 71.43% interviewees have had progressive brush, effects on the eyes prevailed with 61.43%, there were also dermatologic reactions (27.86%) and a reaction caused by smoke during the procedure (40.00%). 76.53% the interviewees have knowledge of all or part of ANVISA Resolution 162 from 2001. It is concluded that the obtained results suggest the addition of formaldehyde in hair care products, and despite the knowledge of the established rules, there is a high rate of unconcern for the product used, whether or not the professional or the manufacturer adds formaldehyde in the preparation and toxicity levels of exposure.

KEYWORDS: progressive brush, formaldehyde, formaldehyde

IMPLICATIONS DE L'UTILISATION DE FORMALDÉHYDE DES BROSSES PROGRESSIF

RESUMÉ

L'exposition au formaldéhyde est une pratique courante dans les couloirs du magasin, où son application dans les traitements capillaires avec le but de alisante, negligence la santé des consommateurs, il existe une relation entre la concentration et les symptômes causés par une telle exposition. Le formaldéhyde est autorisée dans les produits cosmétiques capillaires uniquement avec la fonction d'agent de conservation, au cours de la fabrication du produit, avec une concentration maximale de 0,2 %. Il s'agit d'une étude comprenant 196 femmes choisies au hasard, les bénévoles ont répondu à un formulaire se compose de 23 questions. L'objectif du présent travail est d'évaluer les perceptions de la santé, la participation des effets toxiques pendant et après les procédures et la connaissance de ceux qui sont impliqués en ce qui a trait aux effets toxicologiques lorsque le même est mal effectué. Les résultats montrent que 71,43 % des répondants ont déjà fait, brosse progressif, la réaction de l'oeil prévalu, avec 61,43 %, il y a eu aussi réactions dermatologiques (27,86 %) et la réaction provoquée par de la fumée au cours de la procédure (40,00 %). Ajouter à 76,53 % les personnes interrogées qui ont pleine ou connaissance partielle de la Résolution 162 de 2001 ANVISA. Il est conclu que les résultats obtenus suggère l'ajout de formaldéhyde dans les produits de

soins des cheveux, et en dépit de la connaissance des normes établies, il y a un indice élevé de régner comme le produit utilisé, il y a un indice élevé de régner comme le produit utilisé, si le professionnel ou le fabricant ajoute le formaldéhyde en préparation, si le professionnel ou le fabricant ajoute le formaldéhyde dans la préparation et les niveaux de toxicité par l'exposition.

MOTS-CLÉS: brosses progressif, formaldéhyde, formaldéhyde

LAS CONSECUENCIAS DE LA UTILIZACIÓN DE FORMALDEHÍDO EN LOS CEPILLOS PROGRESIVO

RESUMEN

La exposición al formaldehído es una práctica común en las salas de tienda, donde su aplicación en los tratamientos capilares con el propósito de alisante, negligencia la salud de los consumidores, existe una relación entre la concentración y los síntomas causados por la exposición. El formaldehído es en la composición de los productos cosméticos capilares sólo con la función de conservante, en el proceso de fabricación del producto, con una concentración máxima de 0,2 %. Se trata de un estudio de 196 mujeres elegidas al azar, los voluntarios respondieron un formulario consta de 23 preguntas. El objetivo del presente trabajo es evaluar la percepción de la salud, la participación de los efectos tóxicos durante y después de los procedimientos y el conocimiento de los que se ocupan con relación a efectos toxicológicos cuando la misma se realizan de manera incorrecta. Los resultados muestran que el 71,43 % de los encuestados ya lo han hecho, cepillo progresivo, la reacción en el ojo ha prevalecido con 61,43 %, también hubo reacciones dermatológicas (27,86 %) y la reacción provocada por el humo en el curso del procedimiento (40,00 %). Agregar a 76,53 % los entrevistados que tienen conocimiento total o parcial de la Resolución 162 de 2001 ANVISA. Se concluye que los resultados obtenidos sugieren la adición de formaldehído en los productos de tratamiento del cabello, y a pesar del conocimiento de las normas establecidas, hay un alto índice de reina como el producto utilizado, hay un alto índice de reina como el producto utilizado, si el profesional o el fabricante añade el formaldehído en preparación, si el profesional o el fabricante añade el formaldehído en la preparación y el nivel de toxicidad por exposición.

PALABRAS CLAVE: cepillos progresivo, formaldehído, formaldehído

IMPLICAÇÕES DO USO DE FORMOL EM ESCOVAS PROGRESSIVAS

RESUMO

A exposição ao formaldeído é uma prática comum nos salões de cabelereiro, onde sua aplicação em tratamentos capilares com a finalidade de alisante negligencia a saúde dos consumidores, havendo uma relação entre a concentração e os sintomas provocados por tal exposição. O formol é permitido em produtos cosméticos capilares apenas com a função de conservante, durante a fabricação do produto, com máxima concentração de 0,2%. Trata-se de um estudo composto por 196 mulheres escolhidas aleatoriamente, as voluntárias responderam a um formulário composto de 23 questões. O presente trabalho tem como objetivo avaliar as percepções de saúde, o acometimento de efeitos tóxicos durante e após os procedimentos e o conhecimento dos envolvidos com relação aos efeitos toxicológicos quando o mesmo é realizado de forma inapropriada. Os resultados observados mostram que 71,43% das entrevistadas já fizeram escova progressiva, a reação nos olhos prevaleceu com 61,43%, também houve reações dermatológicas (27,86%) e reação provocada pela fumaça ao decorrer do procedimento (40,00%). Somam-se 76,53% as entrevistadas que possuem conhecimento total ou parcial da Resolução 162 de 2001 da ANVISA. Conclui-se que os resultados obtidos sugerem a adição de formol em produtos de tratamento capilar, e apesar do conhecimento das normas estabelecidas, existe um alto índice de despreocupação quanto ao produto utilizado, se o profissional ou o fabricante adiciona o formaldeído na preparação e os níveis de toxicidade pela exposição.

PALAVRAS CHAVES: escova progressiva, formol, formaldeído.