

Psychosocial impact of scars in evaluation of aesthetic prejudice

Florica Mekereş^{1,2,3}, Gheorghe Florin Voiţă¹, Gabriel Mihai Mekereş^{1,*}, Florian Dorel Bodog¹

Abstract: Evaluation of the aesthetic prejudice is an important element in forensic medicine, but currently there are no objective methods to measure it. Aesthetimetric method inspired from Greffe and Hodin methods do not provide a level of framing a scar in the aesthetic prejudices, the appreciations remaining purely subjective. The authors proposal is to use the impact of psychosocial factors in order to assess how scars affect the quality of life of the affected person. We consider 12 psychosocial indices, from which 7 are minor criteria evaluated with 1 point and 5 major criteria evaluated with 3 points. We quantified aesthetic prejudices by setting a step standard of 5 points; 5 points below, signifies an individual's ability to adapt in the presence of the scar, resulting that social life is not affected; this step standard represents the psychosocial internalization of the scar.

Key Words: aesthetic prejudice, scale of psychosocial internalization, aesthetic method.

INTRODUCTION

Aesthetimetric method was proposed by D. Hodin, published with the title: "Esthétimètre. Barème esthétimétrique facial" (Rev Médecine Légale et dommage corporel, Ed. J. Baillière, Paris, 1973, nr.2, 111-116). This method is based on drawing geometric figures on the face and assessing how the scar is arranged and calculating using a formula the coefficient of disfigurement. The method involves dividing the face in 72 sectors from anterior facial image and 25 other sectors sidewise of the face, totaling 122 facial sectors. A sector at the rest of the body is equal to 5 cm². To determine the degree of the disfigurement, there are a few coefficients that can be used, including coefficient C - defined as the ratio of basis, receiving between 0.25 and 1 point, depending on the extension of the scar on each sector; coefficient F of correcting a fracture, doubles the first factor if there is a change in the relief in that sector; coefficient R of relieves - regarding

modifying the plan of the scar compared with the plan of the skin, noted from 1- 1.5 points; coefficient P - the plastic coefficient, evaluates arrangement of the scar compare with Langer's lines, respectively 0.5 if they are parallel and 1.5 if they are oblique or perpendicular; coefficient c - the coefficient of color that gets one point to the same color and 1.25 points for injuries with obvious discoloration; T - texture coefficient, where are awarded 1.33 points for rough skin lesions, irregular, tattoos or particular forms. The calculation formula for each affected sector is $C_s = C \times F \times R \times P \times c \times T$ for each sector, with the maximum value 9.975, rounded to 10. The total aesthetic coefficient is calculated by adding C_s for all sectors involved: $C_t = \sum C_s = \sum C \times F \times R \times P \times c \times T$. To determine the percent of the aesthetic deficit, it is used the mathematical formula for calculating: $C\% = 100C_t / 1220 = (100 \sum C \times F \times R \times P \times c \times T) / 1220$. The maximum value is 100% and corresponds to the total destruction of the face [1, 2].

1) University of Oradea, Faculty of Medicine and Pharmacy, Morphological Disciplines, Oradea, Bihor, Romania

* Corresponding author: University of Oradea, Faculty of Medicine and Pharmacy, 1 Decembrie Square, no. 10, Oradea, Bihor, Romania, Tel.: +40747432197, E-mail: mekeres_gabriel@yahoo.com

2) Forensic Medicine County Service, Oradea, Bihor, Romania

3) County Clinical Emergency Hospital of Oradea, Oradea, Bihor, Romania

Psychosocial assessment of the aesthetic prejudice

We propose the term of psychosocial internalization of the scar, which we define as the limit in which a person can adapt to a scar from the social, familial and psychological point of view. The scars acquired in childhood no longer affects the person's adult life, as once with the formation of personality is integrated as part of its normal appearance as a person. Thereby, this no longer affects the self-image, confidence or interacting with others, and no longer the attempt of hiding it [4-6].

Internalization can be defined as the adaptation with a scar, which depends on the person's initial appearance, age, and gender in particular. Usually, a person from urban area, a young woman is incomparably more affected by a scar than a man, old, from a rural area [7].

We propose the following criteria scale for psychosocial internalization of the scar (Table 1).

The threshold for aesthetic prejudice is ≥ 5 points,

and under 5 points it means that the person has managed to adapt to the scar without having psychosocial impact everyday life.

CASE STUDIES

Case 1

Female, 20 years old, presents a scar on the right upper eyelid following a road accident one year ago; as evidence of the lack of social and psychological internalisation of the scar, is that she reported impaired interaction with new people, socializing at work and seeking permanent solutions for the treatment and application for a new forensic expertise. These elements from our point of view are a measure of surpassing psychosocial internalization. Obtaining 7 points on the scale of psychosocial internalisation of the scars.

After calculating the aestetimetric deficit we get a total aesthetic value of the coefficient $Ct = 24.12$, and the aesthetic deficit percentage $C\% = 1.97\%$ (Fig. 1).

Table 1. The psychosocial internalization scale of the scars

Minor criteria	Major criteria
1. awareness of a scar's presence - 1 point	1. orbicularis damage of the eye or mouth - 3 points
2. female patient -1 point	2. mimic impaired -3 points
3. younger than age of 50 -1 point	3. negative influence of social interaction -3 points
4. multiple scars - 1 point	4. professions that give importance on physical appearance -3 points
5. nonlinear shape - 1 point	5. presence of post trauma psychiatric illness -3 points
6. length over 5 cm-1 point	
7. affected area over 3 cm ² - 1 point	

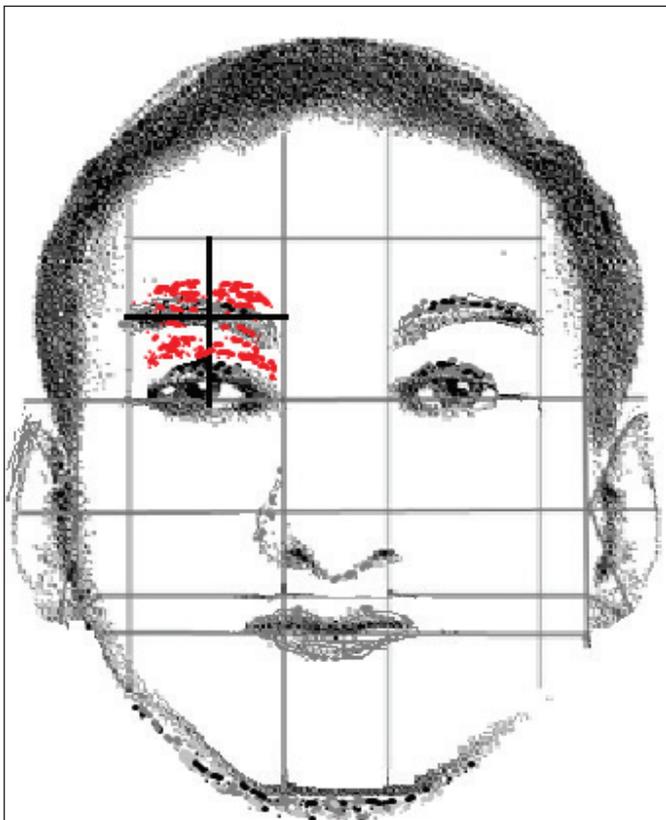


Figure 1. Scar at the right eye annexes (marked in red).

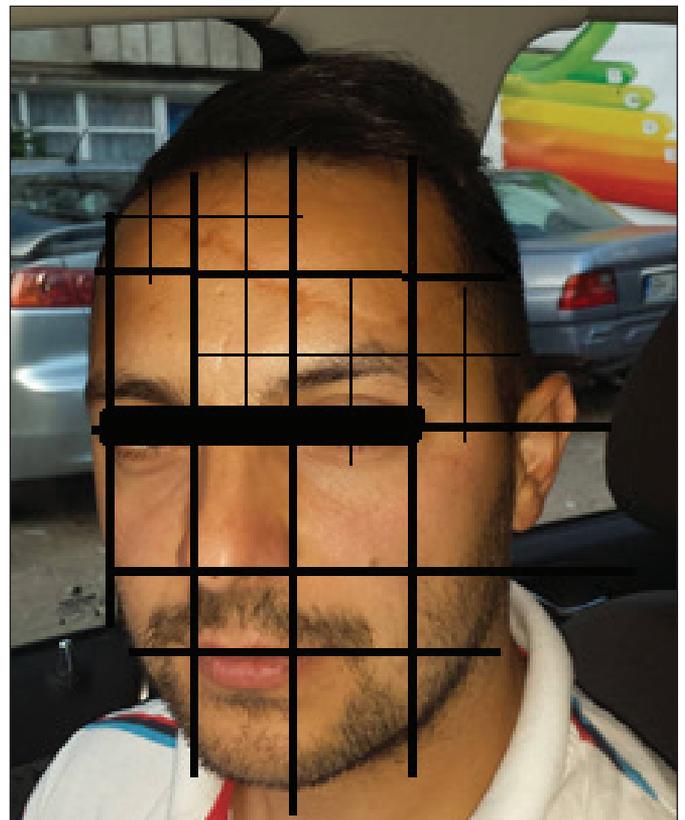


Figure 2. Scar in the frontal region.

Case 2

Male, 29 years old, coming from urban area following a car accident, presenting a scar, with starting point on the frontal area, 2 centimeters below the the line of hair insertion, right sided, and ends in the left temporal area. Subsequently, there was an adjustment period of one year in which he presented anxiety and withdrawal from social environment. After this period, the person has never been bothered by the scar anymore, he has actually integrated it as a part of his appearance,

not even being aware of its presence, interacting naturally in social life and reporting an improved social status in terms of masculinity appearance and an increased sexual attraction.

On the scale of psychosocial internalization of the scar, he gets 5 points, and from calculating aesthetic deficit he gets a value of total aesthetic coefficient $Ct=24.12$, and the aesthetic deficit percentage $C\% = 5.63\%$ (Fig. 2).

Case 3

Male, 63 years old, rural area, presents a scar on his upper lip, irregular, of 3/2 cm across the lip, following an aggression, about 8 months after the event, doesn't report any changes of personality, it didn't produced any behavioral changes in his psychosocial life.

On the scale of psychosocial internalization of the scar, he gets 4 points, and from calculating aesthetic deficit he gets a value of total aesthetic coefficient $Ct=24.12$, and the aesthetic deficit percentage $C\% = 1.97\%$ (Fig. 3).

Case 4

Tribal scars (tribes from the tropical areas - Central America, Africa, South East Asia). Even nowadays, there still are tribes with many traditions of producing scars on the face, scars that are considered as a normal aspect of being a part of the family (in the tribe), membership and gender, or are considered a normal process of maturization. These scars have no negative psychosocial and aesthetic impact. Hereby, we consider that these scars were psychosocial internalized due to tradition, a sense of belonging to the family or social group. These scars, in the Western world, would be considered a serious aesthetic damage, while inside the tribe is considered a normal aspect (Fig. 4) [5, 6].

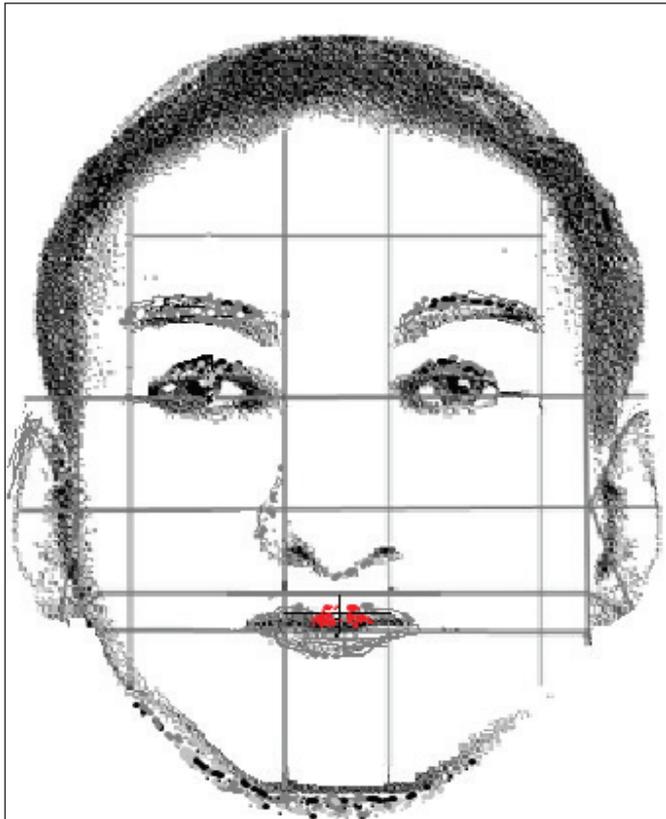


Figure 3. Upper lip scar (marked in red).



Figure 4. Tribal scars [10-12].

RESULTS AND DISCUSSION

Aesthetic method calculates a coefficient of deficit and aesthetic damage coefficient of the face, and for our cases: case 1: Ct= 24.12, C% = 1,97 %; case 2: Ct= 24.12, C% = 5.63%; case 3: Ct= 24.12, C% = 1.97 %. But these values remain at the subjective decision of a forensic doctor to find out if it is or not a aesthetically prejudice [1].

Evaluating on the psychosocial internalization scale:

Case 1 gets 7 points which is equivalent with the presence of aesthetic prejudice: 1 point - awareness of a scar's presence, 1 point - women, 1 point - younger than age of 50 years old, 1 point - nonlinear shape, 3 points- the orbicularis of the eye damage.

Case 2- gets 5 points which is equivalent with the presence of aesthetic prejudice so: 1 point - awareness of a scar's presence, 1 point - younger than age of 50 years old, 1 point - nonlinear shape, 1 point - length over 5 centimetres, and 1 point - affected area over 3 cm².

Case 3 gets 4 points which is equivalent with the absence of aesthetic prejudice thereby: 1 point - awareness of a scar's presence and 3 points - damaged orbicularis of the mouth.

Case 1 has presented aesthetic prejudice and case 3 has not presented aesthetic prejudice on the scale of psychosocial internalization, although on the aesthetimetric scale have the same score.

CONCLUSIONS

1. With psychosocial internalization scale of the scars, a forensic doctor can solve the problem of subjectivity in terms of aesthetic prejudice and sets a clear limit on the presence or absence of it.

2. Aesthetic method in current form does not provide a way for assessing aesthetic prejudice used in forensic practice. Establishing the presence or absence of aesthetic damage remains subjectively and strictly in doctor's hands.

3. Using the scale of psychosocial internalization could facilitate framing the facts in Article 194 of the new penal code by establishing clear criteria for the presence or absence aesthetic prejudice.

4. The new proposed scale takes in account psychosocial factors involved in individual life of cultural and religious traditions, not only by morpho-functional and topographic aspects.

5. The new method of assessing aesthetic prejudice, offer new therapeutic targets for aesthetic correction of the deficit through surgical, psychiatric and psychological means.

6. It provides a way of establishing a measurable amount of compensation offered by the insurance companies in case of trauma that has a consequence an aesthetic prejudice.

7. Studies on a larger group of people is needed to improve the scale, the initial shape is just a prototype because of the small number of patients studied.

Conflict of interest. The authors declare that there is no conflict of interest.

References

1. Dermengiu D. Evaluarea gravitatii leziunilor traumatice, reperi axiologice, criteriologice si metodologice, editura Gemma, 2015.
2. Beliş V. Treaty of legal medicine. Medical Publishing House. 1995 (1): 619-620.
3. https://www.researchgate.net/publication/200687882_The_usefulness_of_evaluating_aesthetic_prejudice_with_aesthetimetric_scales
4. Lawrence JW, Mason ST, Schomer K, Klein MB. Epidemiology and impact of scarring after burn injury: a systematic review of the literature. *J Burn Care Res.* 2012;33(1):136-146.
5. Pope SJ, Solomons WR, Done DJ, Cohn N, Possamai AM. Body image, mood and quality of life in young burn survivors. *Burns.* 2007;33(6):747-755.
6. Van Loey, Nancy EE, Maarten JM Van Son. Psychopathology and psychological problems in patients with burn scars. *American journal of clinical dermatology.* 2003: 245-272.
7. Mekereş F, Buhaş CL. Spontaneous human combustion, homicide, suicide or household accident. *Rom J Leg Med.* 2016 (24): 11-13.
8. https://www.researchgate.net/publication/288944310_BEAUTY_OF_HUMANS
9. <http://legeaz.net/noul-cod-penal/art-194>
10. <http://www.cornerstonepeople.org/blog/2013/2/5/tribal-scars.html>
11. <http://www.strangetruenews.com/2013/05/nuer-tribe-scarification-rite.html>
12. Mekereş F, Buhaş C, Rahoță D, Moga I, Voiță F, Mekereş GM. A new approach to exploring human anatomy. *Romanian Journal of Functional & Clinical, Macro- & Microscopical Anatomy & of Anthropology/Revista Româna de Anatomie Functionala si Clinica, Macro si Microscopica si de Antropologie.* 16(3), 2017.